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FUTURE EDUCATION METHODS

NOTE: The written record of this session is based on the presentations made at the Nashville meeting (April 2-3, 1987). The written record of the panelists' presentations is published only in the *Record*, Vol. 13, No. 1. Questions asked at the Nashville, Colorado Springs and New York sessions are published in the corresponding *Record*, Vol. 13, No. 1, 2 and 3. Each session had different moderators, panelists, and recorders.

The moderator, panelists, and recorder for New York were: Moderator: Godfrey Perrott; Panelists: Judy Faucett, Stuart Klugman and Warren R. Luckner; Recorder: Warren R. Luckner.

The moderator, panelists, and recorder for Nashville were: Moderator: Godfrey Perrott; Panelists: Linden N. Cole; and Recorder: Linden N. Cole.

The moderator, panelists, and recorder for Colorado Springs were: Moderator: Daniel J. Fitzgerald; Panelists: Warren R. Luckner, Reginald C. Yoder; and Recorder: Warren R. Luckner.

- o The Education and Examination Committee has proposed several changes in our method of educating and qualifying actuaries. These proposals are collectively called FEM and are described in a White Paper on FEM which the Society has distributed to the membership. The panel will discuss and answer questions on each of these proposed changes at this session.

The proposed changes include:

- Allowing limited alternatives to our present method of self-study that will educate actuaries more effectively for the future needs of their employers

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- Giving limited credit under certain conditions for university courses on mathematical topics that are not key actuarial topics
- Giving limited credit under certain conditions for research papers
- Supplementing the current self-study examinations on certain mathematical topics with intensive seminars for elective credit that will apply these topics in a practical environment
- Requiring attendance at a Fellowship Admission Course as a prerequisite to obtaining the FSA designation. This course will use the case-study method to teach professional ethics and integration of syllabus topics

QUESTIONS AND RESPONSES FROM NEW YORK

MR. PETER S. KREUTER: My concern is with any aspect of this proposal where in effect someone else's standards are substituted for the Society standards in granting credit for what used to be a Society examination. It seems to me that's exactly what happens when you allow college courses, even with the grade of B, even from an accredited university, to count in lieu of the Society examination. I think that classroom instruction is not a bad idea, but why not have the Society examination given at the end of the course and let that count as the standard as to whether the person passed or failed?

MR. GODFREY PERROTT: You're obviously not alone. I think there are two parts to your question, and I'd like to answer the second part first, which is why not let universities give courses and have the Society exam at the end of the course? The problem that comes from that, or the reason that we propose allowing Level 1 or particularly Level 2 credits, is that if the purpose of the university course is to prepare someone to pass a Society exam, that person will get taught differently than if it isn't the purpose. Universities are in a competitive environment like anywhere else; and if the purpose is to pass an exam, they will teach the students how to pass the exam and that will color the kind of teaching. The best example is probably Applied Statistics, where we have an exam that requires no manipulation of data, in effect; it requires the kind of manipulation you can do with a pencil in three minutes in the exam room. There are plenty of people that end up doing work similar to actuaries that have taken courses that require substantial manipulation of data and explanation of why the data isn't clean. So it's not valid to say that if someone understands the subject, they can pass the exam. It's clear to us and I think to any

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academics that if there is an exam at the end of the course, the course will be taught to pass the exam.

Going back to your first point, that you're uncomfortable with giving up any of the Society's control, so are we; and that's why we have proposed limits that the Society would still retain, such as the majority of control between Associateship and Fellowship using FES units. There are a total of 450 units that you have to pass; and I think if someone took advantage of all of the FEM proposals, they could maybe pass 100 units other than by Society exams. That still leaves 350 units, which is the predominance that they would have to pass by Society exams.

MR. STUART KLUGMAN: I'd like to start by commenting on the second part of the question. Perhaps if the Society would be able to grade the exams within twenty-four hours after they're given, then we might be able to use them as final exams in our courses, but I expect that's not going to happen very soon. In addition, I know of no university with an actuarial program where calculus courses are being taught by actuaries. Just as we are reluctant to let others determine our standards, you can be sure that the instructors of calculus courses are not going to be willing to let the Society of Actuaries set their standards for them.

On the first part, the statement about control is a valid point, but I think there's a more fundamental question and that is, is control of calculus something we should be doing? Are we giving away something or are we relating to something that's not essential to begin with from a control standpoint? Do we need a calculus exam? Is that something we should be devoting our energies to as a Society of Actuaries, or is that something better left to those who are more qualified?

MR. PERROTT: Do you want to add anything, Warren?

MR. WARREN R. LUCKNER: I guess I'd only add that I think the comment Stuart just made can also be made about Level 2. For example, an Applied Statistics course taught at a university with a person who's an expert in Applied Statistics, that requires students to go through and analyze a set of data, maybe do some computer manipulation, maybe write a report and give an oral

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report before the class, is an experience that we think is educationally better than what we currently do with that particular topic.

MR. JOHN W. PENNISTEN: I have two points I want to bring up. First of all, historically the Society exams, the Fellowship exams in particular, have focused on mastering a fair amount of technical material on Insurance and Employee Benefits. Are you considering bringing some management information into the examination process? What frequently happens is that people get through the examinations, they put in a tremendous amount of time in their off-duty hours studying for them, preparing for them, taking them, sometimes repeating them, and then near the end of when the Fellowship is obtained, they get put into a supervisory position, perhaps frequently, with just a small group of people. Or if they're pension actuaries, they move toward dealing with clients and benefit managers in addition to having some internal supervisory duties. They have really nothing from the exam syllabus at this point in time to prepare them for that experience. Quite often there are some unhappy experiences both for the new FSA and/or for the subordinates who work with them. I think, from reading the White Paper, you haven't had time to get around to looking at including management on the syllabus. Where do you stand with it right at this time?

I also want to share a personal experience from this question of enhancing the value of the FSA. I'm a Fellow of the Society of Actuaries and a member of the American Academy. I'm an Enrolled Actuary under ERISA. I have sixteen years of actuarial experience, including 9 1/2 in pension consulting. Several years ago I decided to change careers and go into data processing full time. I found that when looking for full-time data processing work, the sixteen years as an FSA, MAAA, and EA, and a dollar would get me a ride on the New York City subway. When I was out interviewing or circulating resumes, if I said that I was an actuary, then the response was, What's that? If I happen to meet somebody new, and they ask me what I'm doing and I say that I had sixteen years actuarial work, they say, "What's an actuary?" A couple of years ago I did change careers and I went into computers full-time. They now say, "Oh, wow, computers. That's a really good field. That's the wave of the future." I just wanted to share this little personal experience to emphasize that there is a need for, an urgency for, maintaining and enhancing the value of the FSA.

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There perhaps has been a little complacency; people would sometimes feel that they had done their ten exams and that was all they had to do.

MR. PERROTT: All of us actuaries know that actuaries walk on water. We haven't been very successful in convincing the rest of the world! Since Judy Faucett is the General Chairperson of the E&E Committee, I think she is ideally suited to answer your first question.

MS. JUDY FAUCETT: First of all, I'd like all of my subordinates in the room to close their ears at this point. There's been a great deal of discussion about putting management on the Society syllabus or providing some kind of intensive seminar in management skills. One of the reasons that we have not done anything in this area is that our syllabus already suffers from overcrowding. We do not have enough room on the syllabus to cover those topics that are not considered uniquely actuarial, and thus far our focus has been those areas that are uniquely actuarial. Another reason has been that some employers indicate they feel the training of their management staff is something that they really should be doing. Many companies have their own personal management style, and clearly there's no way that we can teach students or Associates or new Fellows a general management style that's going to be appropriate in each of their individual companies.

MR. PENNISTEN: If you look in the newspaper or the sources of ads for employment of actuaries, you almost always see that phrase, "good supervisory and communicative skills." You have to bring that with you when you get the new job. They aren't always going to give it to you internally.

MS. FAUCETT: I agree with you. I wouldn't want anybody who couldn't talk either. That's not the kind of person that we're looking for. All I'm saying is that right now this is not something that we have chosen to do. We're going to continue to evaluate that to see if there is something we can do and something that we can do effectively.

MR. ISRAEL J. KLEINMAN*: We have to make sure that we have standards of our own as professionals with regard to management, and with regard to other

* Mr. Kleinman, not a member of the Society, is Senior Research Consultant at Metropolitan Life Insurance Company in New York, New York.

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attributes. We have to keep in mind that when someone has an ASA or FSA designation, they represent the Society wherever they go; and if even one of them has some drawbacks with regard to the way they present themselves, they give this impression to the public. So there's a certain obligation on our part to do something, even if it's only to perhaps prepare something, in writing, particularly for those who might feel that they perhaps could use some supplementary preparation in that area. We shouldn't just consider ourselves a tail of employers. I think we should look to ourselves first and foremost as a professional society.

MS. FAUCETT: I don't dispute what you have to say. However, actuaries are very versatile in their particular job assignments. If we follow that line of philosophy, not only do we need to be looking at putting management skills in the syllabus, but we need to be putting programming and computer skills into the syllabus. We need to be putting perhaps stronger investment skills, stronger legal skills, and stronger accounting skills into the syllabus.

MS. MARY T. GRANT: I was wondering if there was any thought given to having a period of apprenticeship before the FSA designation was officially given; say two years working for an FSA to get some of the practical experience that people seem to be worrying about.

MR. PERROTT: That's been occasionally discussed. I think most people feel that the vast majority of FSAs have that experience. The U.K. does have that requirement. Is there by chance a U.K. actuary in the room that could speak to that?

MR. RICHARD J. SQUIRES: I'm a member of the Council of the Institute of Actuaries. Yes, we've been all through this process. I would like to support everything that the panel has said. I think the way the Institute is thinking and the things that we've done are very much in line. We have problems with a shortage of people with time to contribute towards education. A lot of people do give up a lot of time to help with tuition and examination and the rest, but it's still not enough. We have taken the line that it's best to leave to the universities the things that the universities can do best, and to concentrate ourselves on the things that we can do best, and in some cases, the things that only we can do for ourselves.

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We have this system requiring a minimum of two years of experience. You have to register the fact that you are working with an actuarial firm which can give you relevant experience, and we're considering whether we should expand that to include particular aspects. For example, at the moment we have a professionalism course which is completely optional. We have two people who run the course, usually one is from an insurance company and one is a pension consultant. It is a two-day course, with a number of lectures and a number of case studies. Most new Fellows now attend one of these courses, and I think they all get a lot out of it. We are considering whether we will put that in as a formal requirement between completing the examinations and being awarded the FIA. I think it's working. I think we're happy with the way things are going.

MS. FAUCETT: What has been the reaction of your students to the apprenticeship program? Have they been in favor of it?

MR. SQUIRES: I think generally most people, as you say, by the time they finish the exams have gotten more than the required two years of practical experience anyway, and I don't think it's a real problem with people's career progression. We did have a problem with just one or two people getting through examinations very fast with no practical experience, and we were worried about that. Largely though, we do rely on the main thing that we teach in the professionalism course, which is that it is up to the individual not to take on responsibilities for which he has not been properly prepared. In other words, if all your training is with a life office, it's up to you to decide you're not really qualified to just go out and value individual pension funds or do investment work or whatever. We put the onus on the individual. It is one of the things that is underlined in the professionalism course and the Institute expects that duty of its members.

MR. PERROTT: Did you say that at the moment it's voluntary, but the majority of new FIAs take it?

MR. SQUIRES: Yes, the professionalism course is voluntary. Each year three or four courses are run. We write to all the senior actuaries asking them to consider whether there are any relatively recently qualified people in their organization who haven't yet been through the course who ought to, and we get a very good response. I think we're getting near 90% now.

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MR. ROBERT J. LOMBARDI: I have two comments on the proposal to use college courses. In general I'm supportive of the objective to broaden the number of candidates coming in trying to obtain Fellowship, but I guess I'm a little bit concerned about raising false expectations. My perception is that the early exams sort of build, and the old Parts 1, 2 and 3 do a little bit of weeding out before people get too far along.

The second comment is on the inequity issue. The White Paper did address that issue from the perspective of the whole road to Fellowship, and my question relates to those first couple of exams. Would the Society contemplate changing the standards or the pass ratios they use on those early exams to be in line with what the expectations are of people using the college course route, or would they continue to use the standards that are now being used?

MR. PERROTT: We have attempted and will keep attempting to communicate especially to the individuals who serve as actuarial training directors, either at the companies or in academia, that we feel that the Level 1 credit in particular is a high-risk route for high achievement people, and it is very dangerous for someone that doesn't have a lot of confidence in their ability to pass SOA exams. We tried to design it so that it would be attractive to the top quality candidates that we want to attract and would be unattractive to the candidates that are having difficulty passing exams and are looking for easy outs.

As far as your second point, I don't think that it's been considered. It's a good point, and I'm sure it will be considered since we're here to listen to your comments; but I have not sat in any discussion that considered whether or not we should change the way that Courses 100 and 110 are graded. Do you want to comment on that, Judy?

MS. FAUCETT: Why don't you just take a straw poll of how this group would respond to that?

MR. PERROTT: That would be an interesting poll. I'm going to ask you to vote for one of two things, either (1) if Level 1 college credit is implemented, then the grading standards for the old Parts 1 and 2 should not be changed, or (2) if Level 1 is implemented, the grading standards for Parts 1 and 2, which are the only exams that Level 1 is eligible for, should be reduced to be com-

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parable to a good calculus course in college. How many people feel the standards shouldn't be changed? How many people feel they should be changed? It looked like three to one in favor of not changing them. That's an unscientific count, but there was definitely a predominance of people that didn't want to change.

MR. RONALD L. KLEIN: My point is similar to what other people have said, but I approach it from a little bit different standpoint as a director of an actuarial program. If you allow people in college to get college credit for these exams, we're not sure that they can pass exams. What might happen is we would have people come in with credits for Parts 1 and 2 and maybe even a piece of Part 3. We might be forced to competitively hire these people because they have these credits, and then they come in and they realize that they can't pass SOA exams, which are completely different. Someone made a comment on the panel that they spend too much time worrying about if they can pass exams or not. Well, let's face it, they have to pass exams to keep in the program, to keep in the profession. Whoever made the point about the first couple of exams being weed-out exams, I agree with that 100%. Maybe in passing Part 1 and Part 2, you don't learn that much, you just learn to pass the exam. But let's face it, you have to pass the exam to become a Fellow. If you impose standards that say you can use practical experience, you can use knowledge, maybe pass a couple of exams and we'll let you in and become a Fellow without ten exams, then I'm all for it. But if we say, no you have to get through these ten exams, then I think that I am strongly in disagreement with allowing credit for Parts 1 and 2.

MR. PERROTT: One comment I'd like to make to that is that the FEM proposal does not give credit under Level 1 until you have passed Society exams. We would hope that you would treat these people as having provisional credit and point out to them that when they pass the old Part 4 there are substantial benefits. They will suddenly get credit for three exams with the corresponding increases and better work assignments.

MR. KLEIN: I agree with what you're saying, but the point is that they come in and I hire them, and then what happens if they can't pass the exams? They may have credits for Parts 1 and 2. They can't pass Part 3 the first time. They can't pass Part 3 the second time; maybe they pick up a piece and in a

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year and a half or two years they're sitting around. They can't pass the exam. Now they don't have credit for anything and two years are down the drain. You could say that could happen if they do pass Parts 1 and 2, but at least if they do pass Parts 1 and 2, they've shown that they can pass exams. I would say right now that I'll bet a much higher percentage of people who pass Parts 1 and 2 will continue to pass exams at a higher rate than if they came in with credits. It's a special type of exam. I know I did really well in my calculus courses. I did really well in linear algebra. I did really well in probability statistics. I had all As in all my math classes, and I had problems with the first three exams. I really did. I took Part 3 twice. I took Part 2 twice, and I even had numerical analysis and statistics in college; and I got As in them.

I'd be now walking in and saying, "This is a great profession. It's easy." Suddenly I would get hit and say, "this is really tough." Whereas with Parts 2 and 3, I had a tough time; but I realized that it was going to be tough. My employers knew that I wasn't going to fly through the exams, but I knew what was in store for me. I think that these people might be hit with a real surprise at the employer's expense more than at a young person's expense where they can change professions really easily at that stage.

MR. PERROTT: I think there's certainly some truth to what you said.

MR. EDWIN R. SCHRUM: I do agree with the point there is certain weeding out and build up, yet at the same time, I don't feel sorry for any company that supposedly gets stuck with the student. I think our companies have to be flexible enough to handle students who don't pass exams. At the same time, I've seen or know of many students who go whipping through Parts 1 through 3 and are on their sixth try for Part 4, even though they just passed the first three exams on the first shot. I don't necessarily feel sorry for the company, yet at the same time, I do feel you've got that build up that is important to help you pass Part 4.

MR. HARRY I. KLARISTENFELD: I have a comment and a question. My comment is that even though I read that White Paper a number of times and listened to the comments today, I disagree with the vast majority of the things that are being said. I think that the area of our disagreement is a fundamental one; that is, I think that college courses and seminars and research projects

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and many of these other things may very well be very good educational tools, but I think that educational tools are a different thing than examination standards. These may or may not be a way of teaching them, but I think what the Society ought to be concerned with is maintaining standards. I found much of the points put forth not really to the point, but my question is a more fundamental one than that.

I reviewed the constitution of the Society of Actuaries, both when I first began taking examinations and more recently. In Article Three, which is the article before the Board of Governors is even mentioned, I was pleased to see that right up front, you can't become a member of this Society unless you pass examinations. That's good. Then there's something within Section Two, Subsection C, called Waiver of Examinations. Waiver can only be granted if the person has passed examinations that are substantially equivalent to the Society's examinations and that are required by another recognized actuarial organization. That doesn't sound like a college, and it doesn't sound like a seminar, and it doesn't sound like a research project. What I would submit to the people on this committee is that breaking what this says, whether legally or certainly in the plain understanding of it, would appear to me to be unconstitutional and that if such a revolutionary step is being proposed that it be subject to normal rules for changing the constitution.

MR. PERROTT: I know there is at least one Board member in the audience. My understanding is that the Board has considered the constitutional question and does not feel that it is against the constitution. Is there any Board member that would like to speak to that?

MS. FAUCETT: It's clearly a legal question, but it is one that has been reviewed by the Society's general counsel, and it is, at least his belief as an attorney, that the proposals that are being put forth to the membership are all within the Board's purview. I think there's language in there about examinations or other requirements that are proposed or required by the Board.

MR. KLARISTENFELD: The exact words are, "prescribed by the Board of Governors." The point that I'm making is really both legal and moral. The legal aspect is that that's true, except the fact that a separate paragraph is put in with the heading called "waiver of examinations." Why do you need that?

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Once you talk about prescription by the Board of Governors, it would seem to be a superfluous paragraph.

The moral aspect that I would suggest is that since it's possible that a non-lawyer who reads this, that is to say, a person who's taken five or ten years of their lives and passed exams, would think that this means the Society members would have to agree to such waiver, it would seem to be fair to open that up to the constitutional amendment process. I wonder if the Board doesn't feel confident enough that the membership would embrace this, then why is it being done? There is a document around, in fact I wrote one of the drafts, which proposes a constitutional amendment which would specifically make it impossible to have an examination waived on the basis of any of the proposals unless it is specifically voted on by the membership. Having reviewed this, it does not appear that a very large number of members are necessary in order to get such a proposal before the membership, so I would, at the very least, submit the comment that the Board may want to consider this possibility.

MR. CECIL D. BYKERK: I am on the Board and I've been involved with FES/FEM since its beginning, and I support all of what we're doing. Judy is right in the interpretation as I understand what our legal counsel has told us and that is that the Board prescribes the examinations and it's just a matter of prescribing certain examinations and then having other requirements, which may be fulfilled either by taking an examination or by satisfying other standards. Under that interpretation, it has been determined that there is no need for a constitutional amendment. As far as this being a revolutionary concept, we must have had the revolution a few years ago because we already waive Part 1 credit based on GRE credit.

MS. FAUCETT: I think it's possible, although I haven't been around as long as the constitution has, to say what the intent was of the people who wrote it. The provision relative to waiver of examinations may be to cover the examinations of the Faculty and allow for some credit to be transferred over from the UK system, where they are substantially equivalent or cover similar topics.

MR. MARK J. GREENE: I'll ask whether or not the Society's legal counsel would approve that a small group of Fellows, I believe that it's 5%, could force the

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referendum or an amendment such as the previous questioner was talking about, or is that out of the question also?

MR. PERROTT: I have no idea what the requirements of the Society constitution are to amend the constitution. I would suggest that question could legitimately be directed probably to John O'Connor initially, and he would see that it was answered.

MS. FAUCETT: As far as I know, that question has not been specifically posed of general counsel.

MR. JOHN R. MCCLELLAND: It's been almost 20 years since I was taking exams, but with the benefit of hindsight, I wish that the content had been less technical insurance and employee benefit oriented and much more general business problem solving. I would urge the committee to go in that direction. My next suggestion is not what you're hearing from everybody else, but I don't think you've gone far enough. We should be using, as best we can, the universities and colleges of this country and of the continent to improve what we're able to do, and we're not at all beginning to recognize what that power would be to make a better educational system for everybody.

MR. KREUTER: What concerns me and a lot of the membership here is that we feel or suspect that a reduction in the Society's standards is what's in the offing in connection with these college courses. I omitted that from my comment before, but I think that in the little poll you conducted, it was just implicitly assumed that yes, in order to attain the same level from Society examinations as you do from a college course, you have to increase the pass ratio. I think in order to overcome the membership dissatisfaction, you'd have to provide some kind of explanation of why the Society standards should be reduced. Were they too high before or what's the reason for this kind of reduction?

MR. PERROTT: I think the simplest consideration of Society standards is that there have not been any people that have been prevented from being an FSA by failure to pass Part 1 or Part 2, and the college credit proposal addresses only those exams. I have not yet met anyone who seriously has contended that someone who passed the old Parts 3 through 10 has not met just as high standards as someone who passed Parts 1 through 10.

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MR. SHARWIN M. KERSH*: I think we should take a lead from the Institute and Faculty of Actuaries. They have had waivers for a number of years, and I think they have actually worked so well that it has actually happened that on occasion the college courses have been more difficult, and people who haven't got credit for those college courses have actually gone and passed the examination on the first attempt.

MR. GREENE: I'd like to address the alternative credit for other designations. A number of people in this room are interested in the concept of the Valuation Actuary, and a lot of people would like to get more involved on the investment side of things. The specific proposal was the CFA designation. I'm sure a lot of Fellows would like to pursue the CFA designation, and I was wondering if the Institute of Chartered Financial Analysts would give any consideration to the recognition of the FSA credential in pursuing their designation.

MR. LUCKNER: I would make just one clarification. CFA is an example. We're not specifically saying that we would do that particular one. One of the potential advantages of those particular possibilities is that there may be some reciprocity of treatment, but I don't know how significant that is, and I don't know how significant or extensive use there would be of these particular options, but it should be something that would be available.

MR. PERROTT: I don't think we know anything, but as Warren says, it is certainly possible that reciprocity could be arranged if we did anything.

MR. BYKERK: I did want to add some comments about the question of voting. With regard to a vote by the Society membership on any or all of these issues, from my own personal point of view, the biggest question is can the questions be couched in a manner that you can take a nay or a yea vote? That becomes very difficult when you examine what we're trying to do here. The Board is looking to the responses to the White Paper, and we'll analyze those responses and try to determine what is the best course; and if after the analysis of the White Paper comments, we feel that there is a strong enough vein in the membership opposing these, we may very well, at that point, decide to take a

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vote. I think we have to think about what you would vote on, and for those of you that are considering some kind of an amendment to the constitution, think about what kind of hamstringing you could do to the Board and the general management of the organization if you wrote into the constitution a whole litany of things that were required and it took a constitutional amendment to get them out.

MR. PETER G. FERRIS: I'm just wondering if you have a concrete mechanism in place to monitor the success of the program and not only the success, but to know when it's time to make further changes in either direction.

MR. PERROTT: Our implementation plans haven't gotten that detailed, but it's clearly something that we will want to do, and I suspect the Board or the Education Policy Committee will demand that we do it on any FEM proposal that is in fact implemented. Clearly, there needs to be a means to monitor whether or not it's working and whether changes are appropriate.

MR. PETER R. SCHAEFER: I think we all agree with the goals you have. We're all in support of those. I'd like to give you the opportunity to explain how implementing the FEM proposal will achieve the goals of enhancing the designations and attracting better people to the profession.

MR. PERROTT: We don't feel that it will achieve the objectives. We think it will move us towards the objectives. In particular, we're thinking of people who have not gone to actuarial schools, but who learn about the possibility of becoming an actuary when they completed college. We've looked for proposals that might make the profession more attractive by giving the strong candidates at that level a means of getting credit for some of the early exams. In terms of enhancing the designation, we have tried to include, and we feel strongly that we should include, educational methods that are better than the self-study exam type of process as an alternative.

MS. FAUCETT: One of the goals of the Examination and Education Committee is to put the education back into the E&E System. It is the primary goal of the Society to educate actuaries, not to set examination standards. One of the things that we've probably done best is to convince people that we have very high standards, and therefore, we are extremely well educated. I would

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prefer us to focus on what it takes to function as an actuary in the environment of the future and the necessary qualifications for that, rather than look at what has served us well in the past. Whether or not any of us support one, none or any of the FEM proposals, I think that they are something that we should consider as to whether or not they better prepare the actuary for the future. This discussion is a healthy one. It is important that we all understand where the actuarial profession is going and what people need to be capable of doing in the future. Hopefully, just that discussion alone will help to enhance the value of the FSA and help us to meet all our goals.

MR. JAMES M. SCHOEN: I flew through Parts 1 and 2 very easily, and I didn't study for Part 1 or Part 2. I didn't think I understood the statistics at all; so to say that the qualifications are really that tight, I disagree with that. I didn't understand stats until I took Part 5. I think one of the key elements of giving credit for Parts 1 and 2 out of college is that people will probably have the opportunity to take some of the later exams while they're still in college. It would have helped me a lot to understand what it really meant to be an actuary if I took those exams ahead of time. In that sense, it probably would enhance what an FSA is if the people that went into it really understood it ahead of time.

MR. KLEIN: It seems that the whole committee is putting in a lot of time discussing different points of view. I must admit that. What you've just said in one of your last comments was that one of the reasons you're doing this is so that small schools that don't have any actuarial people involved or maybe there is no one in the school who can tell students what an actuary is, can have students pass calculus and come out and can go into actuarial science with credit for Part 1. Maybe your time would be better served trying to communicate with the colleges and trying to set up some sort of central department communicating with the math departments of as many colleges as possible, to educate them and prepare the students for the exams as they stand or with FES, which I do agree with. Maybe you can communicate to many colleges and you wouldn't have to do all this work with changing all these standards, which seem to be very controversial. I thought everybody was on my side, and then someone gets up and 50% of the people are on their side; so it looks like it's pretty much split. I don't think anybody would disagree that if you educate as many colleges as possible, that might be a solution that might have a lot less controversy.

FUTURE EDUCATION METHODS

MR. WALTER B. LOWRIE: Actuaries have been criticized for being too technical and too specialized. If actuaries wish to be technical specialists and remain aloof from management, such as many engineers do, then the present exam system is fine. If, on the other hand, actuaries wish to become part of insurance company management and handle broad business-type problems, then more flexibility and more diversity must be built into the actuarial education and examination process. I view FEM as a beginning in this direction. We should try to build in an MBA-type education with such subjects as marketing, management, personnel relations, and computer-related subjects. Training should be given in handling broad business-type problems in a real world setting. The new Fellowship examination structure is a good beginning in this direction. I wholeheartedly support flexibility and the new topics that will keep us from walling ourselves in with blocks of tradition and mortar of arcane details.

MR. HAROLD G. INGRAHAM, JR.: I appreciate the chance to say a few things about this. In my year as president and talking to about two dozen actuaries' clubs, I've had the opportunity to focus particularly on the more controversial parts of FEM. Let me share with you my own perspective, which not surprisingly, relates to my own college days and my education. I went to MIT, which is a very fine school, but they can't spell actuary there. They have other priorities. Everybody goes into computer science. Now, I was taking, in my senior year, courses like functions of a complex variable, vector analysis, my fifth term of mathematical statistics, studying point set theory and autocorrelation functions, subjects I've long forgotten. I discovered the actuarial profession when I was almost ready to graduate, and I was interested in it, but I was not going to go back and restudy calculus, which I hadn't seen since in 3 1/2 years. The only reason that I took the first math exam was because I was an impoverished student tutoring freshmen in calculus. How many people like that are out there that we've missed in the last 20 years? There are people who we really ought to be bringing into our system to enrich the system, people who are just turned off by having to go back and restudy what they feel they've already learned.

Now, I happen to be a very strong advocate of abolishing Part 1. I think it should be put in the same category as trigonometry and solid geometry. I think we need more space in our Associateship exams for really important material. By really important material, I mean examining on the Valuation Actuary area so that

PANEL DISCUSSION

we can bring our Associateship hurdle bar up to the same level as the Casualty people who have already put it there. They put Loss Reserve material on their examinations. We have a crying need to strengthen our Associateship syllabus. I think, frankly, our recruiting literature is wrong in that it overemphasizes the mathematical aspects of the profession, and so a lot of people come in because they think it's more mathematically oriented than ultimately it really is. I know I'm getting into a much deeper area than simply FEM, but I think there is a lot of merit in considering, under certain controlled conditions, a Level 1 and a Level 2 alternative. How many people will use it? I don't know, but I think we ought to at least spread our base a little bit. We are not going to stuff it down your throat. We are going to carefully review all of the responses we get to the survey. If there's something particularly controversial, as I expect college course credit certainly is going to be, then that will define whether or not we need to bring it to a vote, and we'll vote that one up or down; but not the rest, which I have a feeling might be much less controversial. It's not going to be voted up or down in bulk, but rather piece by piece; and I think that's the promise that we make. If we have a 50/50 split, that's nowhere near a consensus in my view and then we probably will bring it to a vote. But I hope if it does come to a vote, you'll think carefully about all of the consequences and not simply continue to cherish the standards of the past because one of the things we have to concern ourselves with is, Are we really getting the broad spectrum of people coming into our profession that we ought to be getting?

MR. KLUGMAN: The experience I just heard related is by no means unique. On a regular basis, I see students in my office who inquire about what they have to do to be an actuary. Very often they are MBA students who had calculus perhaps four or five years ago, and I tell them that they need to improve their calculus if they want to be actuaries. They ask how much, and when they discover what it takes to pass Part I, they suddenly become, once again, enamored of their MBA prospects. The idea of being an actuary no longer holds as much interest as it did a few minutes ago. The amount of calculus that they would need to know to be actuaries, to pass the subsequent exams, is clearly an acceptable amount to them. It's clearly an amount of calculus that they would be willing to relearn, to restudy, but what we're asking of them is just enough to have them explore other options. I think there are a lot of people who can make quality actuaries, who can do the job we want them to be able to do, who aren't doing it because of, at least what I view, an unnecessary obstacle.