



**Task Force on FCAS Education**  
**Final Report and Recommendations**

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# Report of the Task Force on FCAS Education

## *Executive Summary*

The Task Force on FCAS Education (TF-Ed) was created by the following two CAS Board actions at the September 2004 meeting:

“1. That the Board instruct the Executive Council to establish a task force to propose within the next year a set of learning objectives by which FCAS can be attained:

- with less material than the current exams,
- with fewer than the current 9 exams,
- while meeting the requirements of the IAA,
- while being consistent with the Centennial Goal.

“2. It is the Board’s sense that this can be accomplished with eight exams (or seven exams with a workshop or seminar).”

The Task Force was to assume that the learning objectives for Preliminary Education would be designed by the Task Force on Preliminary Education whose work encompassed Exams 1 to 4 and VEE. Therefore TF-Ed worked on restructuring examinations 5 through 9.

The Task Force found that:

- It is reasonable to redesign the education and validation process in such a way that it is comprised of eight exams or seven exams with a workshop or seminar. A majority of members agreed that the five current examinations 5 to 9 should be replaced with coursework, three examinations and an intensive seminar. A minority position is that even with the addition of coursework, an intensive seminar, or both, the scope of the exams could not be significantly reduced and that such changes would probably lengthen travel time. The main concern of this group is that if the number of exams is reduced, important topics about ratemaking and reserving will not be included in the syllabus.
- Difference of opinion on the importance of topics keep the learning objectives for Exams 5 to 9 as extensive as they are today in terms of topics and level of mastery. Most members of the TF-Ed agree that these differences can be balanced and the scope of the examinations can be reduced if the CAS Board focuses attention on these issues.
- CAS has not articulated a policy with respect to the capabilities of its future members. **In other words, although the most detailed learning objectives should be set by the appropriate standing committees in consultation with educational experts, responsibility for the top-level description of capabilities of all candidates who are eligible for membership rests with the CAS membership or its elected representatives, the Board of Directors.**

## **Recommendations**

1. The Board of Directors should establish a membership education policy, stating the process objectives of educating and validating the educational achievements of candidates for membership in CAS. This policy should be broad enough to remain unchanged in most years but sufficiently specific to guide the work of the Executive Committee and the Society’s standing committees. This requires attention to the two highest levels in a “top-down” approach described in Figure 1. The policy statements should stipulate borders

between basic education of CAS members, additional education expected of specialists among the membership, and education expected of other professions, see Figure 2.

2. At a minimum, the Board should address ten questions that together define the scope of the concerns the Task Force has identified, see Table 1.
3. The Board should delegate developing the membership education policy to appropriate CAS committees.
4. Recognizing that syllabus redesign will take time and that today’s candidates have experienced changes in the syllabus, the Board should deal with the recommendations of the Task Force on the ACAS Vote without waiting for the result of a redesign of the syllabus.

Fig. 1 Top-Down Enumeration of Capabilities  
Refer to “Conclusion: Top-Down Statement” at the end of the report

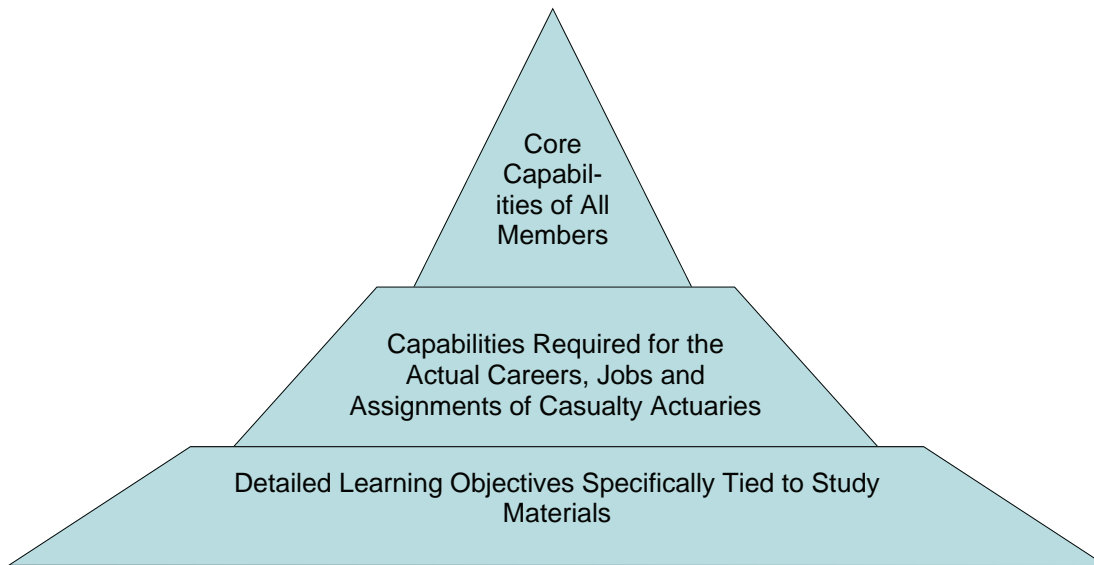
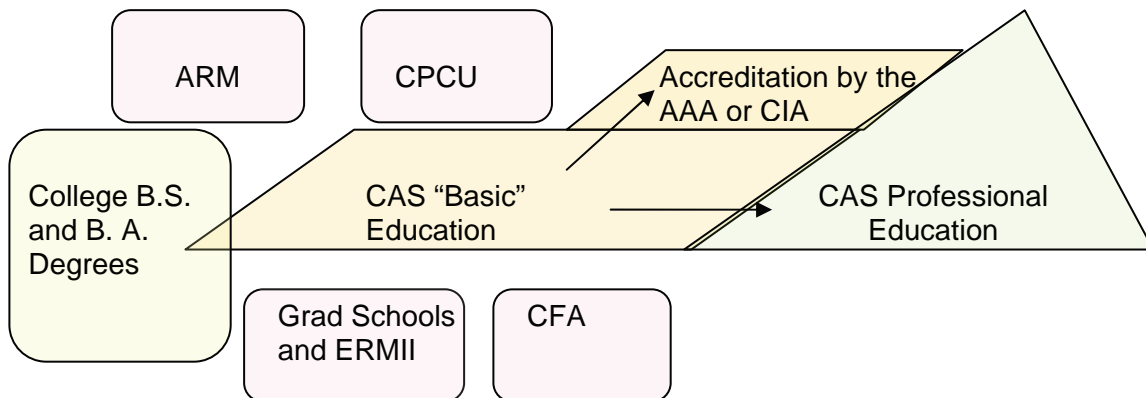


Fig. 2. The Edges of CAS “Basic” Education



<p>Table 1</p> <p><b>Board Policy Questions</b></p> <p>Answers are to be expressed in terms of the candidate’s capabilities and the method of validation.</p> <p>Capabilities are what the candidate should be able to do in actual practice. In some answers it will be appropriate to indicate the candidate’s level of mastery.</p> <p>Although this list reflects the findings of TF-Ed, it may need revision.</p>
<p><b>Overview- Four Vantage Points</b></p>
<p>A.1. What capabilities are basic to CAS membership, Figure 2, and what are associated with specialty areas of practice?</p>
<p>A.2. What capabilities are implied by the Centennial Goal and SAM Goals, and how are such capabilities “basic” or “specialty”?</p>
<p>A.3. Which capabilities are foundational for accreditation by the AAA or CIA as a casualty actuary practicing in the US or Canada, and which exist to support the CAS’s purpose to advance the body of knowledge of casualty actuarial science worldwide?</p>
<p>A.4. How do the answers reflect our stakeholders’ needs today and in the coming decades?</p>
<p><b>Scope – The Edges of the Profession</b></p>
<p>B.1. In the requirement for CAS membership, what balance is appropriate between breadth of study (breadth of concepts) and depth of mastery (facts and practice necessary to apply concepts)?</p>
<p>B.2. In the requirement for CAS membership, what balance is appropriate between nation-specific laws &amp; accounting requirements and widely applicable concepts?</p>
<p>B.3. In the requirement for CAS membership, what balance is appropriate between general-purpose skills in mathematics and stochastic processes versus training in methods traditionally used in practice?</p>
<p><b>Implementation</b></p>
<p>C.1. Who should make the year-in, year-out decisions about which capabilities are best validated by coursework (e.g. undergraduate courses, graduate courses, on-line courses), exams, intensive seminars, or medium-sized seminars? How often should revisions be adopted (e.g. annually)?</p>
<p>C.2. How should standing committees regard the education and validation work of other groups including colleges and universities, ERMII, AICPCU, GARP, the CFA Institute and others?</p>
<p>C.3. How quickly should the syllabus-level learning objectives respond to current events?</p>

C.4. How strongly should the syllabus-level learning objectives be influenced by others (such as the report by Standard & Poor’s, the Morris report, and the COSO proposal for implementation of Basel II’s risk management initiative)?

*The recommendations for Board Policy are explained further at the conclusion of the body of this report.*

## ***I. The Task Force and Its Assignment***

The Task Force on FCAS Education (TF-Ed) was created by the Board of Directors in September, 2004. The “Overview for the Task Force on FCAS Education” (Attachment 1) guided our work. The Overview sets forth our charge, objectives, values and work plan.

At that time, Issue No. 4 of Volume 31 of *The Actuarial Review* was being prepared for printing. The four front-page articles were “Braithwaite Wins President-Elect; D’Arcy to Become CAS President”, “Important Changes to Exams 1-4 Due in ‘05”, Board Discussion on Classes of Membership Continues”, and “From the President: Are You Qualified?”, which discussed proposed changes to the AAA qualification standards. Candidates were concerned about these changes and others as well. The veteran actuaries who were recruited to serve on TF-Ed were listening to candidates and to their fellow actuaries.

The Overview was revised several times as members of the Task Force were recruited. Volunteers were recruited to reflect a diversity of career paths, educational experiences, volunteer and work experiences. Previous volunteer experiences included participation in:

- The Executive Committee
- The Education Policy Committee, the Syllabus Committee, and the Examination Committee
- The Task Force on the ACAS Vote
- The Task Force on Classes of Membership
- The Future Education Task Force

From the outset, we worked to create a common language by reading a common set of documents related to the CAS educational process. As membership in the Task Force grew, the list of readings changed and grew.

## ***II. Research and Reports***

Four principles guided the organization of our work. First, the task force members would be encouraged to express their unique and diverse opinions. Second, we would expect to reach a consensus on recommendations that would be consistent with our charge. This meant that writing done early in the process would be expected to be useful in preparing the final report with the rationale for the proposed changes to the syllabus. Third, we would be careful not to presume to have a consensus that we did not have or in other ways to create a report with less than the

complete support of the members of the task force. Fourth, we would finish on time, that is, within a year.

## **Initial Survey of TF-Ed Members**

TF-Ed began its work by asking each member to comment on the CAS Goals, the 2005 Syllabus, and their individual training, work experience, and volunteer activities. Several clusters of experiences and opinions were evident. At this early stage, it was clear that there was nearly a consensus on the following findings:

### **Initial Findings from Survey of TF-Ed Members**

1. The CAS can continue to improve the educational experience by writing learning objectives that are clearer and that more precisely describe the desired capability. (The learning objectives in the examinations for the CFA designation can serve as a model.) Some of the current learning objectives set an unnecessarily high standard of mastery.
2. Much of the syllabus inflation arises because material is tested fairly uniformly to a standard of a high level of mastery, while the learning objectives require, or could require, only exposure to the material. Although the situation has improved, testing too often expects a degree of mastery of a reading beyond that implied by the learning objective.
3. One dimension of tension is between the desire to teach what employers have come to expect and the desire to teach what the future actuary should know. There was a lot of support for nearly all of the material on current syllabus, and support for adding ERM, GLM, and a seminar experience.
4. One growing area is a technical understanding of financial risks and the integration of financial risks with hazard risks. Much of today's Exam 8 is more than necessary, but actuaries should be able to apply financial concepts and be able to discuss actuarial issues using the vernacular of the CFO's office.
5. Learning objectives could be removed from Exam 8 and made a part of Continuing Professional Education, possibly recognized with a certificate.
6. A related area is the treatment of enterprise risk. The actuary should influence corporate decision-making. This requires an understanding of traditional styles of managerial decision-making and an ability to communicate threats and identify business strategies and tactics to deal with them. Actuaries often do not speak the vernacular of management.
7. The changes in the structure call for new study material to be written, particularly for the integration of hazard risk with other risks that is core to the insurance enterprise.
8. It often happens that as a research article ages the learning objective for it changes from "required mastery" to "general familiarity", at which time an overview paper is more appropriate than a long reading list.
9. The candidates who entered in the late 1990's have experienced a lot of change in the syllabus. Further changes should be based on a patient and open discussion that indicates a respect for each person's experience as a candidate.

## **No Shared Vision**

In early April, the members of the task force were assigned to eleven Writing Teams, each focusing on a different aspect of the current FCAS education process. Most task force members were

assigned to 3 or 4 of the 11 Writing Teams. (This was done in order to seed good ideas from one writing team into the other teams.) The Writing Teams were:

- 1 Operations, Planning and Execution
- 2 Actuarial Models of Hazard Risk (later disbanded and merged into Groups 8 and 11)
- 3 BASIC Pricing Insurance Products
- 4 ADVANCED Pricing Insurance Products; U. S. Rate Filings
- 5 BASIC Reserving: Estimates of Ultimate Loss and Loss Expense
- 6 ADVANCED Reserving: Nature and Implications of Reserve Risk
- 7 Risk Management: Direct, Assumed, Ceded and Net Exposures
- 8 ERM: Integrating Operational Risk, Currency Risk, Regulatory Risk, and Asset Risk with Hazard Risk
- 9 Introductory Everything
- 10 Intermediate Everything (later disbanded and merged into Groups 9 and 11)
- 11 Advanced Everything

Each Writing Group was asked to look at a subset of the existing learning objectives and identify objectives that were currently covered at an inappropriate level (too detailed or not enough depth), covered in an inappropriate manner (more conducive to learning and demonstrating mastery through an internet-based process or a seminar or some other process instead of our traditional exam), whether certain learning objectives could be eliminated entirely and whether critical learning objectives were missing. Writing Groups conducted their analysis and prepared a written report and recommendations during April and May of 2005. During this time the eleven writing groups were reorganized into nine.

Because of the importance of determining which topics warrant complete mastery, which warrant only a general familiarity, and which warrant something in-between, the Task Force adopted a scale which could be used to organize the findings from the nine Writing Group reports. The codes were: 1) mastery of the subject; 2) working knowledge; 3) high level, general understanding; 4) only want the candidate exposed to the subject; and 5) not essential, but nice to have. As it turned out, adopting these codes shaped the work product of the Task Force to a considerable extent.

One finding became clear from the communication about the Writing Group assignments and from the reports of the various Writing Groups: the CAS has not articulated a policy with respect to core educational goals. Statements such as the following (which appear in the Foreword of the CAS Yearbook) are not sufficiently aligned with the way casualty actuaries' capabilities are described in the Syllabus to provide useful guidance to the writing of learning objectives.

“The purposes of the Society are to advance the body of knowledge of actuarial science applied to property, casualty, and similar risk exposures, to establish and maintain standards of qualification for membership....

“From the beginning...the Society has grown constantly...in range of interest and in scientific and related contributions to all lines of insurance other than life....

“The membership of the Society includes actuaries employed by insurance companies, industry advisory organizations, national brokers, accounting firms, educational institutions, state insurance departments, and the federal government. It also includes independent consultants.”

These policy statements describe how things are today, but not how they should change in the future. **Members of the Task Force expressed a diversity of opinions on nearly every possible capability of the actuary of the future.** For example, with respect to “how things are done” or “traditional methods”, one member wrote, “The most important hands-on experience a newly minted FCAS needs is working in the insurance industry, and I think we should have a formal experience requirement.” Another wrote, “Many companies may still use these procedures, but clearly they do not define best practice. My experience is the Syllabus Committee is extremely reluctant to part with these dinosaurs, although I think mostly they should.” Those may be two polar positions, but they do not overstate the lack of shared vision among the veterans who served on TF-Ed.

The Task Force members also expressed a range of opinions about what was meant by “being consistent with the Centennial Goal”:

“CAS members will be recognized as the leading experts in the evaluation of hazard risk and the integration of hazard risk with strategic, financial and operational risk.”

To some this meant that some CAS members would be highly regarded for their skills in integrating hazard risk with other risks, while to others this meant that our public should expect all CAS members to be capable of such holistic work. Change either hurts people or it takes time. One way to increase recognition of our members’ capabilities in the integration of hazard risk with financial risk would be to offer Certificates in Finance and DFA rather than to include this material in basic education. (Later, TF-Ed discussed the credentials offered by other professional societies.)

The Writing Groups received their assignments on about April 7, 2005. By the end of April, most were still struggling with terminology, discussing the roles of the casualty actuary and searching for clearer guidance. It appeared that TF-Ed would not be able to build a consensus report that was responsive to its charge - or at least, that the existing work plan wasn’t going to work.

Members of TF-Ed who attended the Spring Meeting in Phoenix in early May met twice to understand the problem. **The lack of useful results seemed to be primarily due to the differences in perspectives of the members - or, to put it more critically, a lack of shared vision for the meaning of membership in the CAS.** In addition, most members did not feel comfortable with the TF-Ed in the position of policy-maker.

Therefore, following the meeting in May, we surveyed the members of TF-Ed, CAS Board and Executive Council members about strategic issues that could provide guiding principles on the redesign effort, namely “Big Picture Issues.” (The questions are shown in Attachment 2.) Nearly all responses to the Big Picture Issues questions were received by June. (Attachment 2 also includes a summary of the replies we received.)

## **Findings of the Nine Writing Teams**

By the end of May, five of the nine Writing Teams were finalizing their reports and the others had made significant progress.

**Writing Team 1 - Operations, Planning and Execution** – reported that this particular content base did not lend itself to the creation of a new subject-based exam. Team 1 found that an actuary operating in an operational, planning, and execution role needs a broad knowledge base in order to see ramifications of his/her work beyond his/her specialty. However, Team 1 found that most of the learning objectives could be tested for working knowledge rather than for mastery of the subject. Specifically,

- These learning objectives represent the breadth of knowledge for a Fellow qualified to practice in a P&C institution in the US. From the perspective of training a Fellow in operational

aspects of a P&C institution, these topics are appropriately spread across several exams. Pedagogically, separate treatment by topic may be appropriate.

- Work experience is also a critical aspect of actuarial training in these areas. Several years of experience helps the candidate apply these areas of knowledge.
- In order to function effectively as a Fellow across a wide variety of job functions and across a career, each of the existing learning objectives is essential in the evaluation of hazard risk and the integration of that risk evaluation in a broader context of ERM.
- Within the context of Operations, Planning, and Execution, it is not necessary to test any of these objectives rigorously. The qualified Fellow needs an excellent working understanding of the existing learning objectives, but is more likely to obtain that understanding through practical experience than through examination. Directed readings in industry literature could provide exposure to important topics not covered by the current syllabus.

Writing Team 2 was consolidated with Teams 8 and 11.

**Writing Team 3 – Basic Pricing of Insurance Products** – found that many of the learning objectives on the 2005 Syllabus could be reduced in level of mastery to “high level, general understanding” or removed from the syllabus altogether. Their findings were essential for the later conclusions that both basic and advanced ratemaking could be brought together into one content-based exam and that much of the ratemaking material is suitable for education and validation by an on-line course.

**Writing Team 4 – Advanced Pricing and U. S. Rate Filings** – found that some learning objectives could be reduced in level of mastery to “high level, general understanding”. This does not imply a smaller exam, however, because they also found that additional learning objectives should be added to the syllabus.

Writing Team 4 found reasons to set some of the learning objectives for Advanced Pricing only at the level of “general understanding”. The reasons include, first, the way the learning objective was written implied it was focused on nation-specific coverages or perils. Second, the technique is only used for a specific line of business or type of insurance and most actuaries will never use it. Third, the technique is complicated and the student will not retain the details learned in an exam process and will have to relearn the technique if they need to use it in their job.

Writing Team 4 also found that to be skilled in pricing, the actuary needs only a general understanding of the accounting topics. Similarly, the finance topics require only a general understanding or merely exposure to the topic. In other words, pricing actuaries should have more skills in estimating costs, but do not need to serve as experts in accounting or finance. The finance topics only relate to advanced pricing to the extent that they deal with rate of return concepts and this is more than adequately covered by the current advanced pricing syllabus material.

Writing Team 4 recommended that learning objectives should be created for nine topics: Applications of GLM for class ratemaking; Understanding complicated reinsurance contracts; Pricing techniques for different types of reinsurance contracts; Claims-made tail coverage; Unique exposures or perils; Using limited data; Catastrophe exposures; Adjusting ratemaking data for changes in laws, benefits and coverage provisions; Advanced applications; and Techniques in advanced credibility topics.

**Writing Team 5 - Basic Reserving: Estimates of Ultimate Loss and Loss Expense** – found that most of the learning objectives for basic reserving could be restated to require only a high-level, general understanding.

**Writing Team 6 – Advanced Reserving: Nature and Implications of Reserve Risk** – found that nearly all of the learning objectives for advanced reserving warranted mastery by the candidate and

have been successfully validated by examination. Some of the study material on Exam 6 and Exam 7 are intended to provide a background for the “advanced” skills that follow. In short, background material could be moved to an on-line course and the exam could test mastery of advanced methods. They also found that a few topics arise so rarely in practice that only a general understanding of the method is needed; examples are mass torts, individual risk rating, and company valuation. Their findings are consistent with having a single exam on all Reserving topics, while placing as much background material as possible into on-line courses.

Although they found that nation-specific reserve methods are not essential for the CG, Team 6 found that reserve methods used widely in the U.S. should be mastered by every candidate because these methods appear in the reports prepared by casualty actuaries and are used only by casualty actuaries.

Team 6 also found that the material on pricing deductibles and excess layers, on provisions for profit and contingencies, and on loss-sensitive rating might be better understood with a hands-on approach. They reported that working with other actuaries on a group project for each of these topics would probably give a better perspective on how these topics can be used in a realistic environment. In addition, they reported that a seminar could give a perspective that would integrate different learning objectives into a more complete analysis for a company.

**Writing Team 7 - Risk Management (RM): Direct, Assumed, Ceded and Net Exposures** – found that the actuaries concerned with the enterprise risk and the treatment of hazard risk need education on topics that are not on the current syllabus, including:

- The stochastic nature of reserves
- The financial strength of the organization and effects of issuing debt, offering stock, or expanding underwriting volume
- Gross and net retention, and concentration of risk, and their impact on rating agency metrics and measures of volatility such as DFA
- Issues that stress SAP and GAAP accounting
- Parameter risk
- Valuation

Writing Team 7 prepared a list of new learning objectives related to the management of hazard risk which is reproduced in Attachment 7. This should be made available to whoever becomes responsible for implementing the new education and validation structure.

Team 7 reported that Risk Management is not a suitable way to organize material by content. The capabilities arise from work on the other content items (ratemaking and reserving). The new learning objectives (and some of the existing learning objectives) are all “advanced” topics in that they rely on expertise with the Preliminary Ed material, the proposed on-line courses, ratemaking and reserving.

Taken as a whole, Team 7 found that the role of reinsurance as a risk management tool, the ways that value is created in an insurance company, and the implications of SAP, GAAP, and rating agencies are three ways of looking at the same risk management issues. An intensive seminar experience may be the best way to educate and validate candidates about this perspective. If the material is handled by an intensive seminar, this could be a capstone experience of basic education, or provide a credential. Writing Team 7 found that the CG does not unambiguously say whether such a seminar would be in basic education or continuing education.

**Writing Team 8 – ERM: Risk Integration** – Found its attention drawn to the core FCAS educational requirement supporting financial risk management and investments for insurers. There

were widely divergent, and strongly held, views expressed by the participants. The Team reached no majority or consensus opinion regarding investment material and ERM in basic (Fellowship) education.

Team 8 found that the pressures for an expanding syllabus are greatest at this level. Some members emphasized that as actuarial core knowledge has expanded, so to, has the amount of material covered on each of our examinations. The material expansion is critical to our professional status with our employers. As the principal analysts for ratemaking and reserving, our employers expect that we can professionally apply new concepts in these areas. These members believe that the volume of good material on these topics is so great as to preclude the addition of much investment or ERM material in the basic syllabus.

On the other hand, the other group is committed to the CAS' objectives for future growth and greater professional opportunities in investment portfolio management and financial risk management. This has already resulted in the addition of much of the current material for Part 8. This is in addition to the already extensive, and growing, actuarial knowledge base.

The Team found that it is more true than ever that our members can't automatically be considered "experts" in either ratemaking or reserving based solely on the examination syllabus. The recent rapid development of new tools, the recent criticism of the profession's reserve work, and the increasing amount of employment by quantitatively oriented people who are not seeking actuarial designations all speak to this point. The members of Team 8 did not agree on the implications of this change, however.

Indeed, a minority felt that the implication is that "less is more"; that is, that creating a more attractive educational process with a shorter travel time would attract and accredit more and better actuaries who could then pursue true expertise as technicians or as financial risk managers.

One member of Team 8 felt that the existing material on part 8, much of which was considered under the rubric of "Advanced Everything" by Teams 9 and 11, was in fact only a "good introduction to financial risk measurement and financial risk management." Observing that many candidates assume that they won't use this financial risk capability in practice and direct their study toward passing the examination, this team member thought that the financial material might be validated better if it were spread over introductory, intermediate and advanced examinations.

Team 8 reported that the following questions must be answered if the proper role of new or advanced loss estimation techniques, investments and finance, and ERM are to be decided:

1. What are our professional biases, do they serve us, and how do they affect the actuarial examination process?
2. Do we believe that the actuarial examinations, together with a shorter (or longer) travel time, work hand-in-hand in developing "experts"?
3. Can the FCAS designation really equate to being an "expert" in both pricing and reserving, much less extending into enterprise risk management (ERM)?
4. With the tremendous growth of ideas, techniques and thought leadership in risk management coming from many professional areas, including actuarial, financial, economists, etc., should we continue to advocate single track examinations that purport to develop narrowly defined expertise?
5. Instead should actuaries be committed to a life-long pursuit of strategic and tactical solutions relating to financial, hazard and operational risks within society and the management of those risks?

**Writing Team 9 – Basic Everything** – found that the introductory material on exams 5, 6, 7, and 8, are all essential. In addition, they found that mastery, or at least working knowledge, of the

material was the desired level of capability. They found that actuarial capabilities that might be presumed to be prerequisite to success with advanced topics could be studied independently and validated by examination better than by an on-line course.

Writing Team 10 was consolidated with Teams 9 and 11.

**Writing Team 11 – Advanced Everything** – found that the pricing and reserving topics need to be mastered by the candidate, but that general understanding or even exposure to the subject would be sufficient for the advanced accounting and finance topics.

Team 11 also found that two topics should be added to the basic syllabus. One, actuaries should be capable of using GLM models (at least in the sense that GLM is used in auto pricing today). Two, actuaries should be capable of analyzing, quantifying and communicating about a reasonable range of reserves. The learning objectives for GLM and reserve ranges could be stated in terms of working knowledge or even mastery, just as for other pricing and reserving topics. Some members of Team 11 felt that the best way to educate and validate working knowledge of GLM would be through an intensive seminar with a facilitator working through examples, especially to develop a respect for data issues; other members felt that GLM could be studied independently and validated by examination.

Team 11 noted that not every actuary will use every part of this advanced material. However, they found that the designation “FCAS” should indicate familiarity with the major methods that casualty actuaries use in all major areas where we practice.

## **Synthesis**

### **Meeting in Chicago, June 14, 2005**

The discussion in Phoenix also indicated that a meeting of the entire TF-Ed would be appropriate. The full Task Force held a full-day meeting in Chicago on June 14 to discuss the reports and Big Picture responses and to formulate ideas for a recommendation.

One finding emerged quickly: The study materials have improved with the introduction of learning objectives and statements of capabilities of successful candidates. This process can materially improve the educational experience of candidates and should be encouraged.

The first discussion was about using on-line courses for topics that are best described as “a lot of reading that you don’t need to memorize in detail”. Several members of TF-Ed had taken the CAS’s on-line course in Finance. We agreed on the following functional implications for such an on-line course, in contrast with an exam or seminar experience.

#### **What We Mean by “On-Line Course”**

- 1. Course lecturer and lesson plan lasting 1 or 2 weeks**
- 2. Quizzes on reading at frequent intervals**
- 3. Participation is expected and monitored**
- 4. Final exam, but it is not 100% of the grade**
- 5. Grade depends on participation, quizzes, homework, and final exam**

**Such a course works particularly well for material for which we want to achieve a general understanding.**

Perhaps because the Preliminary Education material was outside of the scope of our work, the Task Force did not address the question of when coursework could be handled by college-level classes, by the examinations of other professions such as CPCU, or by on-line courses. Such a decision could be dealt with administratively, with consideration of the alternatives, the number of

candidates that would sit, and so on. There was a general consensus within the Task Force that the best way to validate that a candidate had a general familiarity with a great deal of reading material was by coursework rather than by CAS exam.

Neither did the Task Force discuss whether courses by other groups such as the American Institute for CPCU (AICPCU), the CFA Institute, GARP and PRMIA could be used for credit.<sup>1</sup> We did not rule this out. Because this could be determined as part of implementation of any new structure, if the reader wishes to think of “VEE” and “On-line Course” as merely different labels for the same solution to the problem of validating that the candidate has familiarity with a lot of material on a single subject, with the CAS having to administer a course when the outside world does not, the reader would not go far astray.

Those present on June 14 discussed a proposal to have three exams that would be, first, “Intro to Everything”, then “Ratemaking” and “Reserving”. While a few believed this would work, or could be workable with the addition of a course or a seminar, most felt that this would not provide enough depth of education.

The Task Force then discussed a proposal to have three exams, “Intro to Everything”, “Intermediate Everything” and “Advanced Everything”. One problem was that this would mean that several exams would need to be offered in both US and Canadian versions. Another problem would be that each exam would be more of a variety of topics than today, which would be a challenge for the student.

The Writing Groups had worked hard to review the learning objectives in detail and had decided that **most of the existing syllabus topics are indeed important for basic education**. On the other hand, in the Writing Groups and on June 14 **we did not have a consensus on many topics as requiring mastery**. The lack of consensus about the particular skills that define the casualty actuary prevented the task force from defining a more specific statement about which topics should be added to the syllabus and which topics should be tested for general understanding rather than mastery.

We noted an increase in the use of stochastic models over the past 15 years, including GLM packages for auto insurance pricing and an increased level of use of ICRFS software for loss reserve studies. Three members of TF-Ed predicted that casualty actuarial studies will be more reliable and easier to maintain as traditional methods are replaced with good stochastic models. Although most members felt that experience and an understanding of the process at hand was more important than dexterity with mathematical modeling, there was nonetheless a consensus that if mathematical models are going to be used more in the future, then this is a job for CAS members. People might expect IT development to be done by IT professionals; we wouldn't be upset if people expected statistical analysis be done by statisticians; but we wouldn't want our stakeholders to look to any profession besides “casualty actuary” for the modeling of P-C loss costs.

One significant issue that emerged at the June 14 meeting was the ongoing studies of travel time by the Education Policy Committee. Arlie Proctor informed the group that new statistics and a new year of data were now indicating that the initial concern that partitioning the exams had caused an increase in travel time seems to be an artifact of the process of estimating travel time. Put more generally, **there is now data that is consistent with the idea that increasing the number of experiences may not directly increase travel time**. There is some evidence that travel time is somewhat unaffected by changes in the structure of the educational process. This information is

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<sup>1</sup> The CFA Institute, formerly the Association for Investment Management and Research (AIMR) - offers the Chartered Financial Analyst (CFA) designation. The Global Association of Risk Professionals (GARP) offers the Financial Risk Management (FRM) designation. The Professional Risk Manager's International Association (PRMIA) offers the Professional Risk Manager (PRM) designation. Both GARP and PRMIA serve the financial risk management profession.

consistent with the idea that the educational process can be made more attractive by matching the method of education and validation to the nature of the learning objective, and with the idea that this improvement may show up in ways other than a decrease in travel time.

### **Survey #1 on Alternative Structures**

Based on the input from the June 14 meeting, a proposal-writing subgroup began to synthesize ideas into potential proposals. Two essential proposal outlines seemed consistent with ideas developed by the Task Force on June 14. These were:

- Seven exams: Replacing exams 5 through 9 with three traditional exams, plus two internet-based courses covering background material at lesser depth, plus a capstone seminar (possibly with several options, e.g. DFA modeling, stochastic reserving techniques). The three new exams would cover ratemaking, reserving and special problems, respectively. Each exam would be offered in nation-specific versions (US and CN).
- Eight exams: Replacing exams 5 through 9 with four traditional exams, plus two internet-based courses covering background material at lesser depth, plus a capstone seminar (possibly with several options, e.g. DFA modeling, stochastic reserving techniques). The four new exams would cover ratemaking, reserving, nation-specific topics, and special problems, respectively. Only one of the exams would be offered in a nation-specific version (US and CN).

The full explanation of the two proposals is included in Attachment 3.

An electronic survey was conducted of the task force members to gauge the level of consensus on these design recommendations and feelings about the pro's and con's of these alternatives compared to the existing education structure. The survey was completed before the end of July. The results of the survey are included in Attachment 3.

The survey indicated consensus on several of the design ideas:

- Use of internet-based courses to cover material that is important for candidates to read and understand at the overview level but which should not be tested in detail.
- Use of a capstone seminar to gain hands-on experience with applications of the principles learned earlier in the education process.

The survey indicated disagreement with several of the design ideas. Having three nation-specific exams was not desirable. Ratemaking, in particular, does not require a nation-specific exam. Three respondents agreed, and eight respondents disagreed, with the statement, "With respect to ratemaking and the filing of rates for property-casualty companies, differences in practice between FCAS's practicing in the U.S. and FCAS's practicing in Canada are large enough to imply that it is appropriate to offer nation-specific learning objectives."

The opposition to having three nation-specific exams made it difficult to characterize the overall preference for a 7-exam structure (Ratemaking, Reserving, Others) vs. an 8-exam structure. The survey indicated a modest preference for the 7-exam option over the 8-exam option if the nation-specific wasn't spread out over 3 exams as proposed in Option A. (As we shall see, a later attempt to document a consensus supporting a specific 7-exam option that had only one "nation-specific" exam was unsuccessful.)

The survey also raised additional design suggestions such as the possibility of concentrating nation-specific content into a seminar (co-sponsored by the AAA, CIA or other local actuarial organization) instead of a traditional exam.

The survey indicated that two sets of topics are suitable for validation by coursework. These are:

A. On-line Course in Property-Casualty Insurance Operations: General overview, with some US orientation because of the size of the US market, but international and general in scope.

B. On-line Course in Accounting, Financial Reporting and Statistical Reporting: General overview, with little or no nation-specific material, and including an orientation to issues peculiar to the P-C insurance industry. The course would cover many pages of the readings now on the Syllabus. (A look at the current syllabus will clarify this conclusion.)

Comments received during the survey process indicated that there was hope for a consensus. The proposal-writing subgroup drafted a revised proposal based on this first round of feedback.

### **Survey #2: Consensus that the Task Is Insufficiently Defined**

The second survey was begun on August 19 (see Attachment 4). The proposed structure is like the 7-exam alternative in the first survey. The major difference is that only one exam, the one on reserves, is offered in nation-specific versions (US and CN). The proposed structure has less material on accounting and reserving and a slightly less material on ratemaking than the 8-exam structure in the first survey. We expected that this structure would be more popular than either of the structures in the first survey.

Only 9 of 15 respondents indicated they “strongly supported” or “somewhat supported” the proposal. Not only was this far short of a consensus, but 12 of the 15 respondents expressed concerns and their concerns were quite diverse (question #2).

The second survey also checked for consensus on the best way to handle two forces that inflate the syllabus, nation-specific material and the Centennial Goal (and SAM Goal #3 in particular). As Attachment 4 shows, there was no consensus. Only 5 of the respondents agreed with the statement, “Although nation-specific material may appear as examples in syllabus and background readings, it is not appropriate to require that candidates learn nation-specific material, i.e., nation-specific laws, regulations, and accounting practices should not be included in learning objectives.” The Centennial Goal in particular was not widely supported. Only 5 of the 15 respondents disagreed with the statement, “The work of the Task Force on FCAS Education indicates that the third SAM goal cited above should be revised.”

Although there was a consensus that online courses covering insurance company operations and insurance coverages should be waived for candidates who have passed the appropriate CPCU exams, this did not imply that other credentials (or work experience) could take the place of online courses. (See questions 9 and 10 in Attachment 4.)

The survey triggered an exchange of email correspondence. This, too, conveyed a range of understanding of what policy might underlie the current CAS syllabus and any changes to it.

### **The 2005 Travel Time Report**

Following our surveys, a report on travel time was given to the Executive Committee on October 12, 2005, which will be available to the Board at its meeting in November, 2005. The report makes several additional points that are consistent with the TF-Ed’s findings and impressions. Most important, a table, “Travel Time: Exam Progress Statistics: A, CAS-Specific Exams”, highlights that the last few years have been characterized by an unusual amount of syllabus change.

In addition, the report makes four related points about the meaning of “travel time” statistics. These four points confirm the wisdom of setting the goal for the TF-Ed and its successors in terms other than to “reduce travel time”. The findings are:

- Significant numbers of candidates drop out of the process. Measuring and improving the overall quality of the education and validation process must consider candidates who drop out after making a significant investment in the process.
- Demographics—age, at least—play a significant role in travel time. We have little demographic coding for successful candidates and essentially none for candidates who drop out after passing two, three or four exams. Changing demographics could be a significant confounding factor in assessing the education and validation process, especially in light of the widely held perception that there was a different mix of new candidates during the dot-com boom.
- The distribution of travel times is poorly defined. It has a wide dispersion and a long tail, so statistics such as the mean tend to mislead the inquiry.
- Consistent data is, however, available for the candidates who complete the process with the greatest speed. The fastest candidates who entered the process in the late 1990's are completing fellowship almost two years faster than their colleagues in the 1980's. This conclusion is not only subject to some of the data problems, but also may not be relevant for the typical candidate. Nonetheless, the experiences about these exceptional candidates suggest that if there are complaints about the 2005 Syllabus, they are not solely due to the magnitude of the travel time.

It is possible that employer support for candidates has changed over the decades or is a function of one's place in the exam process. For example, the growth of consulting employment may have meant that increasing numbers of candidates are in employment situations that do not actually provide time to study, and this effect might be most strong for people who have completed six or more exams and have some experience and have become attractive employees to consulting firms. Changing levels of employer support have not been considered. The same could be said about the increasing diversity of jobs that candidates hold.

### ***III. Findings, Conclusions and Recommendations: Scope and CAS Policy***

The Task Force developed significant findings and conclusions related to how best to educate and validate a candidate. The Task Force did not agree on the proper role of the education and validation process, however. The Task Force concluded that the CAS has not yet made a policy-level statement of the common core capabilities it can expect of all members.

#### **Finding: Learning Objectives Are a Major Innovation**

**Learning Objectives**—statements which set forth, usually in broad terms, **what the candidate should be able to do in actual practice**—are a major innovation in the design of the structure of the education and validation process and will play an increasingly important role in the future. As the Syllabus explains, Learning Objectives, knowledge statements and lists of readings complement one another. Knowledge statements identify some of the key terms, concepts and methods that are associated with each learning objective, and are illustrative, not limiting.

We found that:

- 1) Learning objectives can be expressed in a top-down manner. (See Figure 1.)
  - At the top level, broad learning objectives help to identify the member of the CAS in contrast to other professions such as Underwriting and Accounting.
  - At the most detailed level, the learning objectives are shown in the “Syllabus of Basic Education” and in the descriptions of some Professional Education courses and seminars.

- 2) The wording of learning objectives changes over time. This is true of individual learning objectives and of the set of learning objectives as a whole. The more specific the learning objective, the more likely it is to be in need of revision to reflect current expectations. Changes in the wording of learning objectives can lead to replacing long reading lists with survey articles, or to validation by coursework rather than examination, as well as lead to the addition of new study material to the syllabus.

Continued improvement in the education and validation process can be achieved with little inconvenience to the candidates by continuing to improve the wording of the learning objectives. Improving the wording of learning objectives at the lowest level, where they refer to specific study material, can be expected to make the topics—whatever the list of topics—more accessible to the candidates and to improve the candidates’ use of study time.

**Finding: Some Topics Are Better Validated by Coursework than by Examination**

When a set of topics meets both of the following criteria, it is best validated through coursework rather than by examination:

1. The learning objectives require only a familiarity or exposure to the subject material, and
2. The study material comprises many pages of reading and many items of illustrative nature.

**Finding: Some Topics Are Better Validated by Seminar than by Examination**

When a set of learning objectives can’t be validated in an examination setting, a seminar experience may be an appropriate alternative. Although the Task Force did not prepare an exhaustive list, three topics were discussed at some length.

- DFA - One reason the Dynamic Financial Analysis Seminar has been well received is that it uses case studies and a “hands-on” DFA model specifically designed for the course to integrate an actuary’s basic education for application it to real-life risk management situations. Under the tutelage of an experienced modeler and teacher, attendees get to experience how the models help management understand a property-casualty insurance company risk-return trade-offs under considered business strategy alternatives.
- Stochastic Modeling of Loss Reserves - Models of the loss development process may involve many parameters which are sensitive to seemingly small choices, and are easily “over-determined”. This is true for stochastic models of triangles of incremental paid losses, for models in which costs are analyzed separately for claims that are classified differently, and for Markov models of claim payments and transitions.
- SAO’s – Preparing a Statement of Actuarial Opinion with respect to the reserves of an insurance company requires nuance in the use of language, a sense of shared values among practitioners, and a respect for the roles of management, auditors, regulators and rating agencies. These qualities (nuance, shared values, respect) lend themselves to a seminar experience.

**Finding: There Should Be a Single Nation-Specific Examination**

The comments in Survey #1 and Survey #2 indicate both that there should be at least one exam offered in both US and CN versions, and that there should not be more than one such exam. The comments seem to suggest that the exam should include reserving topics, but the comments do not indicate whether the exam should be limited to reserving topics. Specifically, members of the Task Force expressed the view that it would not inconvenience candidates from outside of Canada to learn something of the special ratemaking issues in Canada nor inconvenience candidates from

outside the United States to learn something of the special ratemaking issues in the United States; the details could be worked out so as to have a single nation-specific exam.

### **Finding: The CAS Has Not Articulated a Policy for FCAS Education**

The CAS has not articulated a policy with respect to the goals of the program of basic education. Whether or not the goal assigned to the Task Force is practical will depend on the CAS's willingness to give up traditional educational goals and to forego new educational goals. Some members of the Task Force expressed concern that the Board might err on the side of reducing education at a time when new capabilities, including statistical modeling and ERM, warrant special attention. Other members expressed concern that the Board might fail to trim the scope and depth of the learning objectives, thereby deterring or delaying good candidates for membership.

We noted an increase in the use of stochastic models over the past 15 years. What does the CAS want our role to be in this context?

The Centennial Goal, "CAS members will be recognized as the leading experts in the evaluation of hazard risk and the integration of hazard risk with strategic, financial and operational risk," also implies the addition of new topics to the syllabus of basic education. Mitigating this, if the Centennial Goal is interpreted to direct us to have all members familiar with the subject matter and some members capable of demonstrating expertise in the integration of hazard risks with other risks, then the new topics could have learning objectives that are set for "general understanding" rather than mastery.

### **Conclusion: Continuing Education Should Be Strengthened**

There was a consensus that Continuing Professional Education needs to be stronger. Figure 2 shows graphically how strengthening the role of continuing professional education could release some of the pressure that expands the syllabus. However, a change in the relationship of basic education to continuing education should be controlled by CAS policy. Relevant policy statements that would promote a change in the role of continuing education do not exist today.

Although most of the TF-Ed expressed the view that practice rights with respect to NAIC reserve opinions should continue to be based on a combination of CAS membership and appropriate work experience, several members recommended that validation of capability to prepare Statements of Actuarial Opinion for NAIC Annual filings, including much nation-specific material, should be moved out to Continuing Education (as a certificate) because this is an area of intensive practice for a group of specialists who comprise a decreasing proportion of the CAS membership.

### **Conclusion: Policy Questions**

During task force discussions, a number of strategic issues have been raised that clearly impact the task force deliberations but which may require policy decisions that are outside the scope of the task force charge. The biggest of these is how the international part of the Centennial Goal affects education design. Policy-level questions include:

1. Should CAS education include nation-specific content or should the CAS education process focus on actuarial techniques and models and let nation-specific content be the responsibility of the local actuarial organization, either separate from or in conjunction with the granting of the FCAS designation?
2. If nation-specific experience should be required before granting the FCAS designation, what form(s) of delivery/verification would be acceptable (e.g. traditional exam, seminar held by CAS and/or local actuarial organization, on-the-job training certified by FCAS and/or other responsible individual)?

3. If nation-specific expertise should be required before granting the FCAS designation, what should the CAS role be with respect to countries other than the U.S. and Canada?
4. Does the CG describe a future in which actuaries are Enterprise Risk Management leaders who spend much less time engaged in traditional activities such as calculating rate indications and selecting loss development factors than they do today, or does the CG, while expressed in broad terms, encompass all of the activities that are traditionally within the realm of actuarial expertise?
5. Does the CG describe a future in which the CAS is concerned with validating the education of enterprise risk managers other than for property-casualty enterprises?
6. (To facilitate implementation) Should the educational structure have a single “capstone” experience?
7. (To facilitate implementation) Should the last exam be “advanced application of everything that has gone before” or “miscellaneous topics that don’t fit readily into exams on ratemaking and reserving”?
8. (To facilitate implementation) Should the Board move ahead with the recommendations of the Task Force on Classes of Membership and the Task Force on the ACAS Vote?

### **Conclusion: Policy Is the Top of a Top-Down Statement of Capabilities**

The broadest statements of what the member of the CAS should be able to do in practice essentially define the CAS as a professional society. Developing and maintaining a short list of what members of the CAS should be able to do in practice is policy-making at the highest level. **In other words, although the most detailed learning objectives should be set by the appropriate standing committees in consultation with educational experts, responsibility for the top-most level of learning objectives rests with the Board of Directors.**

A top-down statement of learning objectives - statements which set forth usually in broad terms, **what the candidate should be able to do in actual practice** - could be kept up to date by a standing committee of the CAS. Once the top-most level statement of capabilities has been established as CAS policy, the ongoing work will be to translate those top-most statements into sufficiently detailed mid-level statements of capability which in turn will guide the Syllabus Committee and the Examination Committee in the development of the learning objectives published in the Syllabus. It is not clear which committee should be maintaining this mid-level list (Education Policy, Syllabus, Long Range Planning, or some other). It is clear that the choice of committee is important to the success of the process.

At a minimum, the top-down statement should guide future decisions about the following eight dimensions that determine the scope of the syllabus of basic education:

- What learning objectives are basic, and what are associated with specialty areas of practice? Just as every future MD must study immunology, and the Medical School training in immunology is continually changing, so in our profession some basic material is changing. New material must be added to the basic syllabus all the time. The syllabus will inflate if nothing is taken off.
- What learning objectives are most suited to coursework, exams, intensive seminars, medium-sized seminars, or lectures and reading? There is pressure to minimize the number of such experiences, but our conclusions suggest that **more experiences** including **fewer exams** can provide a more attractive education and validation process. The devil will be in the details.

- The opportunity to bring in the education and validation work of other groups including CPCU, GARP, the Chartered Financial Analyst Institute, ERMII and others.
- The pace of change of the learning objectives: being responsive to current events seems to inflate the syllabus, as does being forward-thinking. Details include:
  - Responsiveness to outside influence (such as the report by Standard & Poor's, the Morris report, the COSO procedures for implementation of Basel II's risk management initiative)
  - Centennial Goal and SAM Goals to keep the CAS relevant for the long term.
- Nation-specific laws and accounting requirements, versus widely applicable concepts
- Training in mathematics and stochastic processes versus training in methods used in practice
- Training in "facts" versus principles
- Validation as a casualty actuary practicing in the US and Canada versus the CAS purpose to advance the body of knowledge of casualty actuarial science worldwide

A top-down list of learning objectives that makes the transition from broad CAS policy to specific learning objectives for specific topics in the context of specific educational materials, together with committee assignments to keep that document up to date, holds the promise of ending the pattern of special-purpose committees and task forces that has characterized changes to the upper-level of the CAS educational process up until now. This will lead to changes in the structure of the educational process, but at this time it is premature to forecast the change in the number of examinations.

## **Recommendations**

1. The Board of Directors should establish a membership education policy, stating the process objectives of educating and validating the educational achievements of candidates for membership in the CAS. The membership education policy should be stated broad enough to remain unchanged in most years but sufficiently specific to guide the work of the Executive Committee and the Society's standing committees. This requires attention to the two highest levels in a top-down approach. (See Figure 1.) To be that specific, the policy statements should stipulate borders between the basic education of CAS members, the additional education expected of specialists among the membership of the CAS, and the education expected of other professions (See Figure 2.)
2. At a minimum, the Board of Directors should address ten questions that together define the scope of the concerns the Task Force has identified. (See Table 1.)
3. The Board of Directors should delegate the work of moving from the top down to the appropriate CAS committees.
4. Recognizing that this will take time and that today's candidates have experienced changes in the syllabus, the Board should deal with the recommendations of the Task Force on the ACAS Vote without waiting for the results of a redesign of the syllabus.

## ATTACHMENT 1

### **Overview for the Task Force on FCAS Education**

by

Oakley E. (Lee) Van Slyke, FCAS, ASA, MAAA

As of March 16, 2005

#### ***Charge***

The Task Force on FCAS Education was created by two CAS Board motions at the September 2004 Board Meeting:

“1. That the Board instruct the Executive Council to establish a task force to propose within the next year a set of learning objectives by which FCAS can be attained:

- with less material than the current exams,
- with fewer than the current 9 exams,
- while meeting the requirements of the IAA,
- while being consistent with the Centennial Goal.

“2. It is the Board’s sense that this can be accomplished with eight exams (or seven exams with a workshop or seminar).”

The Centennial Goal of the CAS reads in part, “CAS members will be recognized as the leading experts in the evaluation of hazard risk and the integration of hazard risk with strategic, financial and operational risk.” The IAA requires training in finance that may be greater than is currently required for the Associateship level of CAS membership. The Task Force’s charge, therefore, is to create a set of learning objectives broader than the current learning objectives for the ACAS that can be reasonably tested in eight exams, or possibly seven exams and a workshop.

The work is to be complementary to that of the Task Force on Preliminary Education. Their work encompassed Exams 1 to 4 and VEE credit. We will assume that the learning objectives outlined in their report have been met by candidates for the FCAS designation.

#### ***Measurable Objectives***

The Task Force’s report reasonably can be expected to consist of recommended learning objectives and recommendations for which of those learning objectives should be placed on each examination or workshop. It will include recommendations on how to deliver education and how to assess achievement at least with respect to exams vs. workshops.

The report is not, however, expected to deal with implementation issues. The report is also not expected to deal with readings or methods of measuring a candidate’s education by examination or workshop. To the extent that our discussions uncover issues about implementation or readings, Task Force members who have been selected from the affected CAS committees can take that information to their committees for follow-up work.

## **Values**

The decisions of the Task Force shall be guided by the change that is implicit in the Task Force's charge: to reduce the material and to have fewer than nine exams while providing an educational program sufficient in scope that the successful candidate will be recognized as a leading expert in the evaluation of hazard risk and the integration of hazard risk with strategic, financial and operational risk. Accordingly, although the report might evaluate its recommendations in terms of other values, those other values should not be given greater import than the values of scope and a reduction in the number of exams. Other values include: the possibility that exams will have a higher pass ratio; the travel time from completion of the preliminary education to the completion of FCAS education; the possibility that later exams might be offered in both the spring and fall sittings.

Although we are engaging in the project with the expectation that it will be possible to reduce the number of examinations and improve the education of Fellows, we recognize the possibility that the work of this Task Force may lead to the conclusion that this is not possible.

## **Work Plan**

I have discussed a tentative work plan with each of the Task Force members so that each might understand the nature of his or her commitment. During the next few months, I would like an e-mail discussion among all the task force members that would lead to a consensus regarding the work plan. With that understanding, our work might be something like this:

1. Exchange ideas and establish a commitment to the work plan. (January and February 2005)
2. All task force members become generally familiar with the following documents. (January to March 2005)
  - 2.1 Results of the Preliminary Education Committee, including the learning objectives of preliminary education [see <http://www.casact.org/admissions/syllabus/pe2005/> and <http://www.casact.org/admissions/news/vffprocess.htm>]
  - 2.2 Learning objectives in exams 5 to 9 of the 2005 syllabus [see the links to specific exams at the bottom of the Introduction page at <http://www.casact.org/admissions/syllabus/2005/materials.htm>]
  - 2.3 Report by the Future Education Task Force [see <http://www.casact.org/admissions/reports/FETFREpt.htm>]
  - 2.4 Most recent Travel Time report (11/2/2004) [*not yet posted*]
  - 2.5 "Survey on CAS Professional Skills" prepared by the Future Education Task Force [see <http://www.casact.org/members/reports/fetf.htm> ]
  - 2.6 The Actuarial Control Cycle [[http://www.actuaries.asn.au/PublicSite/education/education\\_frameset.htm](http://www.actuaries.asn.au/PublicSite/education/education_frameset.htm)]
  - 2.7 Report by the Task Force on Classes of Membership [<http://www.casact.org/members/reports/TFClassesOfMembership.pdf>]

- 2.8 IAA standards [see <http://www.actuaries.org/public/en/syllabus/guidelines.cfm> and <http://www.actuaries.org/public/en/syllabus/syllabus.cfm>]
  - 2.9 SOA Part 5 and the way the SOA is communicating it [see <http://www.soa.org/ccm/content/exams-education-jobs/candidate-and-exam-information/fall-exam-session/fall-2004-course5/>]
  - 2.10 Mutual recognition standards [see <http://www.casact.org/members/MR/>]
  - 2.11 The Centennial Goal and its purposes, including the white paper by the Long Range Planning Committee [see <http://www.casact.org/aboutcas/SAM.htm>]
  - 2.12 Morris Review – Interim Assessment [<http://www.morrisreview.org.uk>]
  - 2.13 “Benchmarking ERM Practices in a Derivatives Firm” by Donald Mango [<http://www.casact.org/pubs/actrev/nov04/benchmark.htm>]
3. Teams of task force members report on the learning objectives of the current syllabus, perhaps from a diversity of perspectives (e.g., subject matter, historical role in CAS education, level of difficulty, reason for inclusion)
- 3.1 Agree on organization of teams and learning objectives; that is, designate the 15 or so “groups of learning objectives” and who is on each team. Each task force member is expected to serve on 3 to 4 teams. (Deadline 3/11/05)
  - 3.2 Agree on questions to be addressed in each review paper, with the idea of producing a four- to six-page document for each “group” of learning objectives (Deadline 3/22/05)
  - 3.3 Write the papers. (Deadline 4/30/05)
  - 3.4 Identify any existing learning objectives that do not address the Centennial Goal, and suggest whether they should continue to be included, and if so, why. (Deadline 4/30/05)
4. During the same time as Step 3, identify and evaluate alternative ways of organizing the learning objectives (e.g., by subject; in terms of difficulty; when encountered in one’s career). (Deadline 4/30/05)
5. Revise individual papers to reflect one another’s work products. (Deadline 5/31/2005)
6. Task Force members who volunteered to coordinate and edit the diverse reports (in the broadest sense of what an editor does) create an integrated, readable document that reflects a consensus of the members of the Task Force together with such findings, observations and conclusions as seem relevant to the deliberations by the Board, the affected CAS committees, and the members and candidates. This report is to include a full report of all criticisms that have been identified, as well. (Deadline 8/8/2005)
7. Executive Council reviews draft (August 17)
8. Revise the report and submit to CAS Board. (Deadline 9/5/2005)
9. CAS Board discussion (September 15-16)

### ***Methods of Communication***

We expect that either e-mail or a secure part of the CAS Web Site will be used to manage document preparation.

**Project Management:** Regularly scheduled conference calls can be used to guide the overall work of the Task Force. Regularly scheduled conference calls for the Task Force as a whole will be limited to discussions of the management of the Task Force, and will not be used to discuss the contents of individual papers.

**Diversity:** Time to get to know one another will be set aside at the most popular CAS functions, such as the Ratemaking Seminar and the CAS Spring Meeting, when the smallest amount of additional travel is encountered. We have been invited by Task Force member Arthur Schwartz to have a similar gathering at the North Carolina DOI. These gatherings will allow for more in-depth understanding of one another's points of view, but are not planned to be working sessions. Any and all communication to develop understanding of one another's points of view is encouraged, but none of these meetings will be obligatory.

**Document Preparation:** Preparation of the 15 or so reports on specific "groups of learning objectives" will be delegated to teams who may use conference calls, e-mail and perhaps a secure part of the CAS Web Site to get their work done. Each team should be given a fairly free hand at document preparation. I don't expect to mandate a format for the various reports. The overlap of Task Force members on different teams should promote a sufficient degree of common format, while not discouraging creativity in designing a report format for this novel purpose.

ATTACHMENT 2  
BIG PICTURE ISSUES (SURVEY)

May 20, 2005

To: TF on FCAS Education  
From: Lee Van Slyke  
Re: Big Picture Issues

One consensus of the small number of TF members who met in Phoenix is that we need to write to “The Big Picture Issues”. I was given the task of starting this by listing the Big Picture issues. Please mark this up and send it back. Thanks. --Lee

In no particular order:

1. Mathematics early or always: Assuming there will be seven exams plus one or more intensive training sessions, should the mathematics be concentrated at the front end, or should some practice-oriented material (introduction to Casualty Actuarial Practice) be placed first so that candidates will have the context for both work and later exams?
2. Mathematics Exam or Training: (At the morning session on May 18, I took a straw poll on whether training in the use of Excel-based regression models should be done by examination or by hands-on training session. I think there were zero votes for “examination” and about 100 votes for hands-on training.) Should Part 4 be replaced with a hands-on training session re modeling frequency, severity, and aggregate loss? What about modeling the loss development process?
3. Reserve Opinions: Should all material essential for being qualified to sign AO on reserves be required of all future FCAS’s, or should some material (such as nation-specific material) be part of mandatory Continuing Ed?
4. Nation-specific material: When is it appropriate to use nation-specific material to teach casualty actuarial practice, and when does that make our exams useless for people who aren’t practicing in the United States?
5. Nation-specific material: Do we need separate exams for Canada and the US, or can that be handled by Continuing Ed?
6. Apprenticeship: What is the proper role of on-the-job experience?
7. Continuing Education: What’s the relationship of any of these topics to the role of mandatory Continuing Education?
8. Role of FCAS in the global community: As of (say) the year 2014, should the FCAS designation imply a local geographical identity, or is that the role of the MAAA and CIA designations? If “FCAS” doesn’t mean “US or Canadian actuary”, what does it mean?
9. CEO or Specialist: How much should the FCAS designation imply that the recipient is broadly trained in property-casualty insurance and is uniquely ready to be considered for a leadership position? If the answer to the first question is “a lot”, what kinds of topics require “mastery” and which ones require only “general knowledge”?
10. Level of Mastery: Can we move this project into warp speed by identifying several BROAD areas of LO’s for which only General Understanding is appropriate, this eliminating a lot of detailed listing of LO’s?
11. Hiring: Should the employer expect to hire an actuarial candidate or FCAS when the employer wants expertise in statistics, data mining, policy form change, data base design, or other professional work for which recognized professional societies exist, or should the employer expect to hire someone from that profession?
12. Whom do we serve? As of (say) the year 2014, who will be turning to FCAS’s, and why?

13. What do these answers imply about the Centennial Goal, “CAS members will be recognized as the leading experts in the evaluation of hazard risk and the integration of hazard risk with strategic, financial and operational risk.”?

### SUMMARY OF RESPONSES

*The responses that follow are edited for length. Different fonts (and colors) indicate a change of voice, but no one font or color signifies any particular writer.*

#### **Q1 Mathematics: Early or always?**

*Assuming there will be seven exams plus one or more intensive training sessions, should the mathematics be concentrated at the front end, or should some practice-oriented material (introduction to Casualty Actuarial Practice) be placed first so that candidates will have the context for both work and later exams?*

**Summary: Strong support for early but also support for throughout, and support for Practice material early. However – some of the reasons for early math are explicitly or implicitly to act as screening tool. One observation – to the extent that support for math early is motivated by the screening aspect, that can be accomplished with some tough math early, but it doesn't require all math to be early.**

*I think math should continue to be concentrated at the front end. So I would prefer to see the theory part of the math concentrated in the beginning.*

*My preference is to have the mathematics at the front end. I've always felt that this was a good way to identify those candidates who have both the aptitude and the endurance to go through the exam process. I'm not sure a practice oriented exam does much good if a candidate can't get through the math later on.*

*Practical Casualty Actuarial material belongs somewhere in the first three exams. Math should still be heavily concentrated at the front of the exam series.*

*I think some core mathematics needs to be up front, but I would actually prefer for the mathematical tools to be presented along with the practical applications for which they are needed.*

*Ideally, casualty practice oriented material would be early in the process to give the math some meaning for our students, but this is something we have been willing to give up to be able to sponsor joint initial exams. Having math early allows candidates who are not focused on casualty, or even on being an actuary, to move up the exam ladder easily.*

*I would recommend an on-line course that would introduce the student to terminology, data, coverages, policy forms, rate manuals and other basic material. This could also include very basic ratemaking and reserving technique as a building block to later exams.*

*It's very important to have an early exam that introduces students to the basics of pricing, reserves, and policy forms very early.*

*Most mathematics should be early. I think that this is where you find out if a student has the ability to do the work.*

*Those who cannot clear these hurdles should be screened out early.*

*I am less and less comfortable with the idea of producing a whole bevy of technicians who have a smattering of actuarial techniques that don't require much math but who can't get any further in the exams. Math is critical and some people just cannot cut the math. .... So – early and always.*

*Therefore it is better to have a “basic/intermediate” exam three on modeling (early in the syllabus), and a later “advanced/specialized” exam on modeling (exam four) much farther on, and close to FCAS.*

OTHER THAN ITS IMPLICATIONS ON TRAVEL TIME, I LIKED THE FUTURE ED TF PROPOSAL FOR AN “EXAM A” WHICH WOULD GIVE CANDIDATES AN EARLY EXPOSURE TO THE P&C ACTUARIAL FRAMEWORK BUT OTHERWISE, I THINK THE HEAVY MATH NEEDS TO BE CONCENTRATED ON THE FRONT END.

Mathematics is the basis for our activities. It should be integrated throughout the actuarial exam syllabus.

Mathematical theory should be at the front end. The application of that mathematical theory in business contexts should be a critical component of the practice-oriented material in the later exams. Mathematical and statistical analysis are the (supposed) strengths of our profession. So the answer is “always.”

There should be a concentration of math at the front end for several reasons: (1) Math and analytic skills set actuaries apart from the population. Math oriented early exams allow companies to identify these folks. (2) Students are fresher in math soon after college. (3) Students can take math oriented exams before they graduate. However, math should be required throughout the seven exams.

### **Q2 Mathematics: Exam or Training:**

*(At the morning session on May 18, I took a straw poll on whether training in the use of Excel-based regression models should be done by examination or by hands-on training session. I think there were zero votes for “examination” and about 100 votes for hands-on training.) Should Part 4 be replaced with a hands-on training session re modeling frequency, severity, and aggregate loss? What about modeling the loss development process?*

**Summary: Strong support for seminars, with many mentioning complement as opposed to replacement. Some reservations about time, costs, effectiveness and the creation of a barrier to non-North Americans. A caution that we need to identify which subjects are best suited for seminar treatment.**

I think some of the part 4 material (loss distributions/models) could be reinforced or even tested in a seminar environment, but I don’t think we can eliminate or even significantly reduce the reading and preparation time required to learn the material. So what do we gain by using a seminar? Employers will now have to pay for candidates to go somewhere for a couple of weeks for a seminar, and they will lose them from work for a block of time in addition to an hour a day of studying. We will have also created another “barrier to entry” for anyone outside of North America who wants to pursue the FCAS designation.

I hate to say this, but both – although perhaps not as rigorously as current.

We should explore every opportunity to replace formal exams with practical hands-on training sessions.

Modeling can be taught better in a seminar than a self study exam process.

The student needs **some** rigorous testing in the theory and **lots** of hands on learning.

I totally agree with this idea. That being said, I strongly favor hands-on seminars like the long-running Agg Loss Distribution seminar that Klugman does so well. The success of classes like that have a lot to do with the basic benefits that can be expected from a class taught by a knowledgeable and experienced professor. However, I doubt that the entire Part 4 can be replaced with a class in that format. We may complement it with a seminar but I still believe that an examination is required.

Absolutely not. A hands-on training session would not give as rigorous an education. There are also excellent study materials in these areas. It is also easy to craft exams that test students understanding of this material. There are a number of key topics that every actuary should know in these areas and they should know them in great detail.

I know that I learned the modeling better from Klugman's seminar than from studying for the exams. It was terrific to be able to work with real data and compare notes with other actuaries.

I THINK SOME OF THE MODELING CONCEPTS COULD BE CONVEYED BETTER WITH A HANDS-ON COURSE. HOWEVER, I THINK A LOT OF MATERIAL COULD BE CONVEYED BETTER THIS WAY AND WE HAVE TO BE JUDICIOUS ABOUT HOW MUCH MATERIAL CAN BE PUT IN HANDS-ON COURSE(S).

If we want to embrace the future, CBT with Excel (given in a test center) would be the ideal way to go. Comprehension demonstrated by answering some recall questions then applying the techniques to actual data in a spreadsheet.

In addition, we should begin to place greater emphasis on computer applications for statistics (i.e., regression analysis, hypothesis testing, etc.), curve fitting, tail VaR, interest rate models, optimization techniques, and simulation methodologies. From a technicians' approach we could even introduce the use of commercial modeling packages such as MatLab, SAS, VBA, Excel, @Risk, Crystal Ball, etc.

I think both examination and seminars are important methods for testing mathematics. Both should be used. Theoretical, conceptual material should be tested via exam. Application of that material should be taught via seminar.

I am not in favor of replacing Part 4 with a hands-on training session. We may complement it with a seminar but I still believe that an examination is required. Perhaps the nature of the exam should change to computer based, and to critiquing models instead of applying them with calculators. Modeling the loss development process should absolutely get more attention, probably first with seminars that teach linear modeling and emphasize stochastic modeling / analysis.

### **Q3 Reserve Opinions:**

*Should all material essential for being qualified to sign AO on reserves be required of all future FCAS's, or should some material (such as nation-specific material) be part of mandatory Continuing Ed?*

Yes, all material essential for being qualified to sign actuarial opinions should be required of all future FCAS's, including nation-specific material for US and Canadian actuaries.

Basic Ed should teach the foundation (history, models, techniques). CE and experience should be required for ongoing practice rights.

All future FCAS's should have what is necessary to sign an AO on reserves – but not necessarily on US reserves. I favor keeping the truly nation specific accounting/regulation material on a single exam and requiring everybody to pass such an exam – but I'd allow, as examples, CAS US-7, CAS Can-7, IA/FA (UK) Gen Ins Specialist Applications exam, IAAustralia Part III Course 3a, etc. The Indians & South Africans have their own version of the UK exam. The Chinese are working on theirs, etc. We should make it very clear that Can-7 does NOT qualify a candidate to sign a US NAIC statement opinion. Note that in the US the AAA qualification standard requires an exam on the relevant law and regulation. When the SoA decided to go generic in 2000, the AAA created its own seminar/exam which is required if you want to sign a Life or Health opinion. I'd rather keep that within the CAS.

Great question. While there may be some logistics problems (i.e., AAA Qualification Standards specify member of CAS as qualified to sign opinions), I think that some portion of the requisite materials could well be part of mandatory Continuing Ed. In addition to freeing up the syllabus for other, more general materials, this could serve to lengthen the time between attaining Fellowship and being able to sign an AO. In light of current issues with reserves and credibility, I don't think this is a bad thing.

I could also see that mandatory continuing ed for opinion signers would be more structured/serious than the current 12 hours a year. (but that is beyond your committee's charge)

Continuing Ed. Only a small minority of FCAS's sign statutory SAOs.

All material essential for being qualified to sign Actuarial Opinions should be required to become an FCAS. The only other option is to have a separate exam related to Actuarial Opinions required for MAAA. Still this is not a great solution – because the current NAIC requirement for Actuarial Opinions is member of the CAS – not a MAAA.

Although an understanding of the risks and variability inherent in any reserve analysis could be lumped in with the techniques, I do not think it requires the same level of mastery. It could be part of a mandatory Continuing Education Seminar. More importantly the best way to learn about variability is through experience, doing reserve analysis for different types of losses and seeing how they actually develop. Finally the “Nation Specific material” which would include a general understanding the annual statement and annual statement instructions and probably higher level of understanding of schedule P since reconciliation is required. I would support doing this through mandatory continuing education, which should include some sort of verification of knowledge learned in the Seminar. I would also require this seminar of all potential FCAS's to gain a basic knowledge of accounting/statement blanks etc. for their nation of practice. This concept could be expanding by requiring all FCAS's who are signing Actuarial Opinions to take a refresher seminar every 3-5 years.

But it comes down to what is meant by qualified – if we are only talking about knowing nation-specific rules and regulations, then I would certainly favor removing that from the syllabus.

All material essential for being qualified to sign AO on reserves should be required of all future FCAS's.

In theory, I think it would be reasonable to consider moving some of this to continuing ed since not all actuaries are going to sign AOS. However, as a practical matter, the AAA and the NAIC and various state regulators expect that FCAS means that the educational requirements to sign AOS have been completed (although the standards also have a minimum experience requirement). So I think it would be difficult for us to move any of this to continuing ed.

I don't believe that simply having an FCAS qualifies one to sign a Statement of Actuarial Opinion. If the CAS wants all FCAS' to have this qualification, then we need to include far more education as to the purpose, form, format, and especially professional responsibilities required for the signing of the Statement of Actuarial Opinion (SAO). In addition, we must enhance continuing education for established FCAS' that sign SAOs. It must be recognized that the actuary's education process must extend over ones entire professional career.

Passing all our exams and becoming an FCAS should also qualify the individual to sign actuarial opinions in the nation for which the exams covered (US or Canada for now). The SOA recently tried a different approach and had an adverse reaction from many members.

I do not believe that S.A.O.s in the U.S. are improved by having FCASs study Canadian or Australian nation specific material. I would suggest that our Continuing Ed requirements are too loose. We do not demand or dictate what needs to be learned, merely that folks attend a certain number of hour of training. Older FCASs are not required to study up and become proficient with loss distributions. We do not require that all FCASs demonstrate knowledge on key issues evolving in the CAS.

#### **Q4 Nation-specific material:**

*When is it appropriate to use nation-specific material to teach casualty actuarial practice, and when does that make our exams useless for people who aren't practicing in the United States?*

I favor keeping the truly nation specific accounting/regulation material on a single exam and requiring everybody to pass such an exam...

Nation specific topics could either be placed on a final, fellowship exam (or seminar) or be left for continuing education.

The international CG would suggest that nation-specific material is necessary throughout the exam. However, this makes exam writing very difficult to impossible in nations where we only have a few members.

I have two thoughts on this. First of all, the CAS needs to continue to be responsible for the education of US and Canadian casualty actuaries. Thus, the CAS should continue to have a nation-specific exam for at least the US and Canada. Second, the US is one of the largest insurance markets in the world. Many of the companies outside North America that employ actuaries either own companies in North America or have relationships (reinsurance?) with them. I don't think having North American examples of actuarial techniques that could be used anywhere makes the exams useless for those practicing outside North America. I do think that other countries with developing insurance markets might eventually be better served by using our exams/learning objectives as an example of a rigorous actuarial education, and create their own nation-specific exams. I don't think the CAS could be successful creating a bunch of nation-specific exams outside of North America—we don't have the expertise.

It is useful for a) all US actuaries and b) where the use of nation-specific material serves as a backdrop for a particular method or model. Nation specific material is only useless when it relates strictly to law, accounting, or unique products.

The products in the United States are not always the same as other countries and I don't believe that you can cover even the basic topics without recognizing nation-specific material.

I would like to see exams as nation generic as possible. Nation specific topics could either be placed on a final, fellowship exam (or seminar) or be left for continuing education.

We must remember that we are a US / Canada organization and our primary responsibility is to casualty actuaries in the US / Canada. How useful our exams are for actuaries not practicing in the US is not relevant.

With the convergence of business rules (for example, the International Association of Insurance Supervisors, International Accounting Standards, etc.), the nation-specific materials will become less critical. In addition, the basic principals of insurance economics remain across national boundaries. Only the rules for recognizing these economic realities may differ. I have never felt that understanding another set of rules was undesirable, if anything, it allowed me to understand my own nation-specific rules better.

A large proportion of those studying to be actuaries who are not in the US are in developing countries where knowledge about the US may help them as they develop their insurance industry. Perhaps knowing what we have done may be helpful in knowing what to repeat and what to avoid.

I THINK USING NATION-SPECIFIC EXAMPLES TO SHOW APPLICATIONS OF THE BASIC PRINCIPLES IS FINE (BUT THESE PROBABLY SHOULDN'T BE LIMITED TO U.S.-SPECIFIC EXAMPLES). I THINK REQUIRING CANDIDATES TO STUDY DETAILED U.S. (OR CANADA) REGULATORY OR ACCOUNTING OR APPLICATION EXAMPLES MAKES THE EXAMS LESS USEFUL FOR NON-U.S. CANDIDATES.

This is a balance issue. It would be good to expose candidates to a variety of approaches from different countries. Countries where we have few members are likely to get less attention than countries where we have a lot of members, in part due to the familiarity of the exam committee members with their local approaches. We don't need to cover all possible approaches, but some variety would be beneficial and also help make our exam process more applicable in other countries.

**I suggest no change to the status quo. Rather international actuarial organizations in that person's home country can require a "home" exam that they design and test on "home" issues.**

It is more important to test the concepts rather than the details. For example, no-fault auto insurance and its various manifestations may be worth testing, but asking details about which states have what is

not. Same goes for Workers Comp. We should teach the concepts in WC ratemaking, but avoid asking students to regurgitate an NCCI filing.

**Q5 Nation-specific material:**

*Do we need separate exams for Canada and the US, or can that be handled by Continuing Ed?*

Yes, we need separate exams.

We need separate exams for US and Canada.

We need separate exams simply to account for the fact that the CIA exams must be available in French. The topical differences between Canada and US for statutory accounting and the role of the actuary are far too much to leave for CE without creating exams for them.

**We can easily have different Continuing Education Seminars for each and every country.**

But it comes down to what is meant by qualified – if we are only talking about knowing nation-specific rules and regulations, then I would certainly favor removing that from the syllabus.

**The current exam set-up, with separate exams for the US and Canada, seems reasonable.**

We are historically committed to a Canadian exam. I would not recommend a similar strategy for the other nations.

I believe that we need to recognize the nation-specific differences in the examination process. We currently have one exam that is split between US and Canada and I believe that instead it should probably be two exams (ratemaking and loss reserving) where the core material is joint and the nation-specific topics are also included as separate questions.

GIVEN #3, I THINK THIS MATERIAL NEEDS TO BE INCLUDED IN FCAS EDUCATION ON SEPARATE NATION-SPECIFIC EXAMS.

If one recognizes the fact that insurance is a global business, understanding nation-specific rules may include the benefits of arbitrating accounting rules in the international insurance markets. If anything, the CAS should expand the education toward a comparison of multiple nation-specific materials even if it concentrates on the US and Canadian markets.

**Q6 Apprenticeship:**

*What is the proper role of on-the-job experience?*

**To teach business skills.**

Specific and detailed knowledge, interaction and general business skills, applied judgment, negotiation, etc.

Massive – every bit as important as the exams.

I certainly agree that experience is key to being a successful professional, but I don't think that the exam process needs to be concerned with that.

If we envision people finishing regularly in under 5 years perhaps we should consider documented OTJ experience.

It doesn't replace theoretical training but it is also needed to fully understand the concepts.

Exams provide the basis to be a generalist. On the job experience allows specialization.

ALLOWING CANDIDATES TO GAIN MORE DEPTH THAN CAN BE CONVEYED THROUGH EXAMS AND TO SEE HOW ACTUARIES PRACTICE IN THE REAL WORLD.

In designing our education program I do not think it is wise to assume each and every future FCAS will obtain some level of base knowledge on the job.

While the exams are a significant objective measurement of actuarial development, OJT is no less important. The best actuaries are trained by the best actuaries and debate issues, methods, and approaches with bright peers. We probably do not spend enough time teaching our actuarial leaders how to train other actuaries, and how to be leaders.

Over the years, I note I often have a different view of Actuaries. I entered the profession, not to be an actuary, but to understand the pricing and reserving required to own and manage an insurance company. Given that view, I never ever, ever thought that my primary objective was actuarial exams; leaving my employment objectives as a secondary issue. On-the-job experiences created my definition of an actuary. Actuarial examinations were for my personal expansion. Beyond a certain level, the actuarial syllabus failed to meet my requirements. As I see it, the FCAS designation should provide a basic understanding of financial and hazard risk issues and operational research procedures. Today, it seems that most members want that the FCAS' designation to be limited to the narrow world of hazard risks (pricing and reserving). The FCAS' education is based on the writing of our predecessors as they experimented and developed explanations for their observations in these two areas. While the education is good, it produces a very limited insurance manager.

It is on-the-job experience that completes the actuary. It is only there that the FCAS can learn to balance theory with reality, evaluate the strengths and weaknesses of models, and influence other insurance professionals. The benefit of the FCAS education is that it adds consistency in logic and thought. The downside is if the examinations are so detail oriented that to become an FCAS, the only take away is consistency of knowledge. With such consistency there becomes "group think." Due to the difficulty of the examination process there is a tendency to believe FCAS' are the only ones that understand "risk concepts." This can become a direct affront to business creativity, especially when management is looking for solutions to it new set of macro- and/or micro-economic characteristics. These problems aren't always solvable with old solutions. Eventually, the successful actuary will build techniques to respond current problems using logic, business acumen, and on-the-job experience over the basic substructure of the FCAS' examination knowledge.

On the job experience should help candidates pass the exams, but should not be a separate requirement and we should not give people credit for working.

Our learning objectives give candidates a "tool kit" of techniques, but it's important to learn to apply those techniques on real data and in real business situations. In turn, on-the-job experience is helpful in learning material we have on the later exams.

### **Q7 Continuing Education:**

*What's the relationship of any of these topics to the role of mandatory Continuing Education?*

I think mandatory continuing education is a great idea.

I also agree with the comments some have made that our continuing ed requirements should be more than they are now.

**Continuing education is the personal responsibility of the credentialed actuary. No topics should be mandated for continuing ed.**

I favor mandatory continuing ed at the national qualification standard level (AAA or CIA). And I think it should be specific as to what you should know for critical things like reserve opinions and ratemaking opinions.

Our continuing education requirements don't go far enough.

I believe we need to seriously address Continuing Education. If my answer to 6 is correct, that exams provide the basic framework for being able to practice as an actuary, then Continuing Education should serve to focus on areas of Specialization. (Loss Reserving, Pricing, Modeling ...)

I think creating mandatory continuing education for some of the subjects on our current syllabus is an important option if we are going to create an education program that meets all the goals of the CAS Board.

I believe our CE requirements are far too lenient. We should have periodic re-certification exams similar to teachers, EMTs, engineers, etc. This supports the idea that the state of practice is evolving, and would force maintenance and enhancement of knowledge. Our CE offerings may need to be modified to serve member needs under that approach.

As noted above, I believe that our mandatory continuing education needs to be more specific as regards what everyone is required to know, or at least be exposed to. There should have been a requirement that all actuaries receive consistent and specific training on Sarbanes-Oxley, as an example.

**I have proposed that continuing education designations become available for actuaries choosing to become experts in a given area. The honest truth is that casualty practice is burgeoning, growing, expanding in so many areas that no one can be said to be an expert in all areas. Shrinking the travel time is actually less reasonable than it seems. Therefore I have proposed that optional CE designations be given in areas such as data mining; credibility research, catastrophe modeling, experience and retro rating, and so on; which could occur either for attending a certain number of sessions on that topic, in person or better yet via the Internet, and submitting a paper or analysis.**

I'M IN FAVOR OF INCREASED STANDARDS FOR CONTINUING EDUCATION. I BELIEVE WE NEED TO RELY MORE ON CONTINUING EDUCATION FOR COVERING THE BREADTH OF TOPICS THAT THE ACTUARIAL PROFESSION NEEDS TO ADDRESS BUT WHICH EACH INDIVIDUAL ACTUARY DOES NOT NEED TO ADDRESS. THIS IS PARTICULARLY TRUE OF DEVELOPING APPLICATIONS (e.g. ERM).

I would like to see a basic actuarial examination process that provides a great foundation in insurance economics, financial risk models (Black/Scholes/Merton, discounted cash flow, etc.) interest rate models, hazard risk model (frequency/severity /aggregate loss distributions, etc.), regression analysis, statistical experimental designs, mean and variance testing, financial analysis, operational research techniques and computer simulations. Around this basic foundation, we would offer advanced actuarial examinations in ratemaking, reserving, financial valuation, financial risk management and operational risk management. Thereafter, there would be a continuing education expanding the current techniques, models, and procedures for each of these areas of knowledge, plus education in such areas as leadership, marketing, finance, financial engineering, investments, and current issues.

I think we need to be careful not to put material into our basic education (what must be learned to become an FCAS) that could be put into continuing ed. I also agree with the comments some have made that our continuing ed requirements should be more than they are now.

Mandatory continuing education should help keep members current.

#### **Q8 Role of FCAS in the global community:**

*As of (say) the year 2014, should the FCAS designation imply a local geographical identity, or is that the role of the MAAA and CIA designations? If "FCAS" doesn't mean "US or Canadian actuary", what does it mean?*

FCAS to me implies a local geographical identity. We need to train our actuaries to be the experts in hazard risk, but the focus needs to be on hazard risk as defined in the US and Canada. Most of the people that we train will work in the US and Canada and we need to make sure that we are satisfying the needs of this primary market for actuarial services.

**FCAS should mean US or Canadian actuary.**

The CAS is a US/Canadian organization and should remain so. Our structure, in that we separate education (CAS) from practice rights and discipline (AAA) makes it almost impossible for us to become a world organization. We need to work with and help develop organizations in other countries, perhaps sharing our materials and syllabus.

To me, FCAS means “Actuary trained in US actuarial practices, certified to sign SAOs in the US.”

The Centennial Goal risks throwing away the value of the FCAS designation in the US and Canada in order to gain an international influence that may never emerge.

Unless there is a structured education process for MAAA, FCAS needs to mean “US or Canadian Actuary.”

Means a specialist in general insurance who has the basic ed portion of what is required to be qualified to practice in at least one locality....

FCAS means someone qualified to be a general insurance actuary.

An expert in quantifying risk for insurance or related entities, other than life insurance.

I am in the camp that thinks we are probably biting off more than we can chew if we try to incorporate “global” regulatory, accounting and product issues. I do favor continually ensuring parity with regard to subject matter expertise, but trying to make FCAS a global certification is going to be far too difficult. I am not against it in concept – I just don’t think it would be successful.

WE CAN’T IGNORE OUR RESPONSIBILITY TO ENSURE AN APPROPRIATE AVENUE FOR EDUCATING U.S. AND CANADIAN ACTUARIES SINCE THIS IS AND PROBABLY ALWAYS WILL BE OUR AREA OF GREATEST DEMAND. HOWEVER, I WOULD HOPE THAT BY 2014 WE MOVE TO A POINT WHERE “FCAS” HAS A BROADER MEANING THAN JUST “US OR CANADIAN ACTUARY”.

According to Thomas Freedman’s “The World is Flat – A Brief History of the 21<sup>st</sup> Century,” the major trend in outsourcing services to other parts of the world will become commonplace. Accordingly, actuarial services are and will be performed in China or India, or northern Montana (it’s not the end of the world, but you can see it from there!). The skill sets of an actuary will be global. Locally, there may continue to be a demand for someone who has knowledge of the local regulatory/political requirements that will be required to sign a SAO. Again, I do SAOs for various offshore regulatory authorities, but do not live there, and in some cases, have never even set foot in the country.

It seems to me that many CAS members have not recognized globalization of services. As such, there is no reason that an actuary in Mexico, Hong Kong, or India would not want to become an actuary using the CAS educational process. But to accomplish this, we need to build an educational system that meets the needs of these individuals and allows web-based education and testing. I strongly advise against setting an educational process that is too “provincial” in scope given the global inertia for outsourcing.

FCAS is likely to still have a strong North American flavor in 2014, but we should also have many members practicing in other countries. These could have become an FCAS by mutual recognition or by passing our exams. It is hoped that the CAS will provide value for casualty (general) actuaries wherever they are working.

I am in the camp that thinks we are probably biting off more than we can chew if we try to incorporate “global” regulatory, accounting and product issues. I do favor continually ensuring parity with regard to subject matter expertise, but trying to make FCAS a global certification is going to be far too difficult. I am not against it in concept – I just don’t think it would be successful.

## **Q9 CEO or Specialist:**

*How much should the FCAS designation imply that the recipient is broadly trained in property-casualty insurance and is uniquely ready to be considered for a leadership position? If the answer to the first question is “a lot”, what kinds of topics require “mastery” and which ones require only “general knowledge”?*

I do not think that the CAS examinations appeal to or encourage leadership. We seem to believe the examinations are extremely difficult, only the “best” will become FCAS, and as the “best” we should naturally be leaders. But leadership is a “soft” issue and something that as “quants” we do not feel comfortable with pursuing. Today however, the insurance business requires that each of us play a leadership role at some level within our organizations. While leadership at the Chief Actuary or the CEO is great, all actuaries must be able to demonstrate leadership skills. We must develop the skill sets to be able to communicate and influence others actions in a way that we believe is beneficial to our organizations. If actuaries are to succeed over the long run, we must become less introverted and more extroverted. The CAS must begin to emphasize, extort, value and offer training to enhance the personal leadership characteristic among our membership.

I think the exams should provide one with:

- 1. Depth of knowledge for those areas that are critical to be an actuary (whatever that means), and**
- 2. Breadth of knowledge of other aspects of insurance (accounting, underwriting, law...)**

**Ideally, the exams would also reward those who have the ability to integrate information from various (and perhaps diverse) sources as a means to solving problems.**

The FCAS should have attained the insurance and math education required to be a thought leader.

“Not at all” – the FCAS designation should imply only that the receipt is trained in the statistical analysis of insurance losses.

The FCAS designation should imply that the new Fellow is broadly trained in P&C and is uniquely ready to be considered for a technical position in that field.

The FCAS should only imply that the recipient is trained in the technical aspects of actuarial science.

I DON'T THINK IT'S REALISTIC TO POSITION ACTUARIES AS PRIME CANDIDATES FOR CEO POSITIONS BUT IT IS REASONABLE TO POSITION THE PROFESSION AS PRIME CANDIDATES FOR OTHER LEADERSHIP POSITIONS (CHIEF ACTUARY, CHIEF PRODUCT EXEC, CRO, CFO). OUR GOAL TO BE THE PROFESSION THAT CAN BRING EVERYTHING TOGETHER IMPLIES PRETTY BROAD TRAINING AT THE GENERAL KNOWLEDGE LEVEL. AGAIN, IT'S NOT CLEAR HOW MUCH OF THIS NEEDS TO BE ACCOMPLISHED IN BASIC EDUCATION VS. CONTINUING EDUCATION.

CEO candidates are fairly rare in the general public. I don't think we can aim our education at producing them. I agree we have too much accounting and finance, especially the mathematical finance (too deep).

We can improve the breadth of subject matter so that students are better equipped for senior insurance industry executive positions. More knowledge of the business of insurance and corporate financial management couldn't hurt. I am sure quite a long list of topics not covered on the current exams could be compiled by senior industry executives, if asked.

A new FCAS would likely be recognized as a specialist, but our continuing education programs, volunteer opportunities and leadership development programs should help more experienced members to develop management skills.

Our education goal has always been to broadly train our members in PC insurance, and we did not waiver when the SOA experimented with tracks. We should not change this goal now. The two broad categories that we should not change are Loss Reserving techniques and Pricing techniques. These should require mastery.

We should be training actuaries, and not CEO's. Those actuaries who want to be CEO's will find their own way—by definition, they're going to be highly-motivated individuals.

**Specialist.** Get an FCAS faster and you'll have time to do an MBA if you also want to be CEO. I was impressed a year or so ago that all but one of the Mexican actuaries on the NAAC (former Council of Presidents) also had MBA's. They get their actuarial credentials pretty quickly and still have time for the MBA – often before age 30.

### **Q10 Level of Mastery:**

*Can we move this project into warp speed by identifying several BROAD areas of LO's for which only General Understanding is appropriate, this eliminating a lot of detailed listing of LO's?*

**Yes, I think you can.**

Yes. All the CPCU type material on coverages, forms, tort law, regulation that is on current part 5. Also, all the material that is nation specific and not related to techniques should require a much lower level of mastery because the practicing actuary can always look up what they need to know to do a job. All we need to ensure on the front end is exposure to this material. I would also put most of the finance material in this category.

**No.**

**Two areas are a) much of the material on Exam 8 on investments and portfolio management (with the exception of option pricing which is very important), and b) much of the material on regulation, taxation, and accounting from Exam 7.**

There is very little on the exam syllabus outside of statistics, operational research and modeling (see Questions 2 and 7 above) that I think should be mastered. Spending exam time on policy forms is a waste of examination time. This type of education represents changing landscape-it is not fixed by principles. Unfortunately, when we spend time on such landscape issues, we begin to believe that it is fixed and hence have extreme difficulties in changes to a different season.

Example of a landscape change: Today we do not believe that we can treat the insurance contract in the same context as a "financial put option." Why, because even if the insurance company reinsures the contract, the contract is written in such a manner that the writing carrier must retain the risk and can only be reimbursed by the reinsurer. It is not liquid. The landscape would change entirely, if there is contract wording placed in the insurance contract that allowed the contract to be transferred to another party. Think of the financial innovations arising from this change for insurers and the financial markets!

We need to develop mastery on the topics most actuaries need to do (for example, personal lines ratemaking, loss reserving, basic commercial lines ratemaking) and a general understanding of those specialty topics only a small number of actuaries work on full time (for example, surety, retrospective rating, DFA, ERM).

[Several of the responses led me to believe that this question was not understood by others the way it was understood by these respondents. Their responses are not summarized here.—Van Slyke]

### **Q11 Hiring:**

*Should the employer expect to hire an actuarial candidate or FCAS when the employer wants expertise in statistics, data mining, policy form change, data base design, or other professional work for which recognized professional societies exist, or should the employer expect to hire someone from that profession?*

Maybe, since our experiences and education might make the FCAS the perfect candidate for some of these jobs. However, I do not think the focus of our education program should have a goal to make the FCAS an expert in all these areas.

If we do not perform these functions within our insurance company what is our purpose? Granted, I recently told a client that we needed to hire a statistician as I was not qualified to perform a specific task. I do not like the fact that as an Actuary, I had to tell my client to hire another professional for a question in which an actuary should have been able to respond. The end result of giving to other professionals is to further isolate the scope of actuarial skills.

Let's not pretend that only actuaries can add value in the areas of statistical analysis, data mining, policy form change, etc. Professionals in other areas can add significant value to our industry and to our profession. In some cases we are simply not sufficiently expert. A smart company will look at its specific needs and determine who fills those needs. If they need statistical analysis, data mining, etc. very often we should be the ones demanding that someone from outside the profession provide those skills. Perhaps we are the right people to scope the work, manage the function, oversee the analysis, and be the bridge between the naïve but highly specialized skills and the realities of our business.

This to me is a generalist/specialist question. The CAS should train actuaries to be specialists in pricing, reserving and financial risk management. To the extent the skills suggested above impact actuaries' abilities to function as specialists in pricing, reserving and financial risk management, then they need to be taught in some way. But I do not think that actuaries should be experts in statistical modeling, data mining, data base design, etc. For those who need such expertise, there are better avenues to gain that training.

The employer should expect to hire an FCAS if and only if the FCAS has gained sufficient work experience in this area.

The nice part about hiring an FCAS is that you have someone who is capable of working with special topics (as well as ratemaking, loss reserving, etc.), but that is not to say that they have all the expertise that is needed for one specific topic.

Hire the specialist. Hire the FCAS to figure out what to do with what the specialist produced.

SOME ACTUARIES WILL BE ABLE TO PROVIDE THIS EXPERTISE BUT I DON'T THINK WE CAN EXPECT ALL ACTUARIES TO HAVE SPECIALIZED EXPERTISE IN ALL OF THESE AREAS.

From that profession, unless the FCAS has work experience in those areas. My hiring approach has been that FCAS is typically a position requirement, but suitability for a role is more a function of work experience, skills, talents, temperament, etc.

Depends on the background of the candidate. FCAS does not make someone an expert in these areas.

My main concern is that we're hiring these folks to do personal lines pricing, and small commercial pricing. It's happening at both an experienced level (stats/data mining experts) and entry level (the personal lines entry-level folks are being taught these techniques, not our actuarial students). I hate to see us lose pricing turf, but I'm also concerned about the bigger picture. How will you feel about opining on reserves, when you have very little information about the "black box" being used for pricing and you don't have any actuaries in the pricing group who speak "actuarial" or "insurance" instead of "stats"?

The employer should expect to hire someone from that profession. That person may also be an FCAS – but that would be an “extra” consideration in the hiring decision.

That depends on the level of expertise needed. Actuaries will know statistical analysis, but if the job is essentially a full time statistical analyst position, then a Ph.D. in stats would likely be the best choice.

### **Q12 Whom do we serve?**

*As of (say) the year 2014, who will be turning to FCAS's, and why?*

We should not do anything to our educational program that will harm our value to the Property and Casualty Insurance Industry. At the same time I do not think we should exclude our profession from the opportunities to serve non-insurance entities that need to quantify risks through quantitative techniques.

Like today, primarily P/C insurance companies, but hopefully P/C insurance companies globally!

The P&C insurance/reinsurance industry will continue to be the largest employer of actuaries.

IF WE'RE SUCCESSFUL IN MOVING TOWARD THE CENTENNIAL GOAL, WE'LL CONTINUE TO SERVE OUR EXISTING MARKETS AND EXPAND IN TWO DIRECTIONS—SERVING MORE BROADLY INTERNATIONALLY AND SERVING MORE BROADLY WITHIN THE GROWING FIELD OF RISK INTEGRATION.

We serve our current and future members, society at large, and current and potential employers. Insurers, other companies trying to quantify hazard risk, insurance regulators, rating agencies, consulting firms, companies trying to integrate hazard risk into an overall risk framework will be among the groups turning to FCAS' in 2014. They will do that if we are the best people to meet their needs.

I will venture 90% of our members will be employed by insurers or insurance-related entities – the traditional practice areas.

I think first and foremost we serve the insurance industry, but I think we need to consider all three areas noted above – pricing, reserving and financial risk management.

We are still charged with supporting the fundamentals of the business, i.e., pricing and reserving. We serve the industry in those areas first and foremost. We are uniquely skilled and qualified to reach into the space of general risk management within the industry. I think we acknowledge that our foundational training may be great for becoming a CEO but we are not training all actuaries to be CEOs; the same is true for risk management.

The majority of our members will be employed by insurance companies and consulting firms helping companies manage risk, just as it is today. I don't doubt we'll be into other things too, but it won't be in huge numbers.

Most still in insurance – or “insured operational risk” - but I sincerely hope we can make measurable progress at getting our skills recognized beyond insurance in the next decade.

**Our traditional employers have been insurance companies and reinsurers. I don't see that changing. However there will be more actuaries in the future taking on projects or jobs, that are similar to risk managers or quantitative financial analysts.**

Over the years, very little of my career has been in the employ of an insurance company – I work in the alternative markets. Granted I am in the minority. While the largest employer will stay insurers and reinsurers, I see actuaries with expanded education and training moving into more corporate situations as operational risk managers – whether those jobs are in consulting or employed positions.

Insurance companies, consultants for companies retaining risk, investments banks, other financial service companies, business process analysts in other industries.

### **Q 13 CG**

*What do these answers imply about the Centennial Goal, “CAS members will be recognized as the leading experts in the evaluation of hazard risk and the integration of hazard risk with strategic, financial and operational risk.”?*

For me, they imply that perhaps we need to refine our Centennial Goal.

**Achieving this goal will be a matter of individual achievement, not one of organizational achievement.**

If the CAS has any hope to stay intact in the long run, this is the direction that we need to pursue. Collapsing back into the narrow definition of FCAS and restrictions to the U.S. and Canadian actuarial markets will eventually eliminate the casualty actuarial profession as a stand alone professional society. At best, CAS members will top-out due to limited skill sets and a political improbability that it can maintain a regulatory requirement for FCAS P&C SAO's. Casualty actuaries that seek greater skills in financial risk management will find that educational base, and professional affiliation, with the SOA. Quite simply the SOA will be the Actuarial Society for the future.

The evaluation of hazard risk, as I think the term was intended, should be the primary focus of the exams.

The implication of the centennial goal is that our employers or clients will be farther afield from the insurance industry than is the case today. If so, that means that some of the more detailed insurance related topics may need to be watered down. I think this also means that Continuing Education will play a more important role in supporting the broader area of specialization that the centennial goal implies. The challenge is to identify the knowledge that will address the evaluation and integration of risk.



**OUR PROPOSAL CLEARLY NEEDS TO BE COGNIZANT OF THIS GOAL. AGAIN, WE NEED TO BE CAREFUL ABOUT OVERREACHING WITH RESPECT TO BASIC EDUCATION AND ALLOW GREATER RELIANCE ON CONTINUING EDUCATION WHERE APPROPRIATE.**

**I am not sure how much “integration” material we could put on the syllabus anyway, given almost nothing exists today, and that syllabus should represent core, lasting fundamentals of practice, and right now not many members practice in this area at all, not even in the integration of all the risks facing a P&C insurer.**

We need to keep focused on math / stats – but be better prepared to apply those skills outside of an insurance context.




ATTACHMENT 3  
SURVEY #1 ON ALTERNATIVE STRUCTURES

# Survey 1

Definitions: Please read the description of the "On-Line Course" and recall the discussion on June 14. With respect to the statement, "This description reflects our consensus", do you:		Number of Responses	Response Ratio
1. Agree		14	82%
Disagree		0	0%
Neither		0	0%
Don't Know		3	18%
<b>Total</b>		17	100%

## 2. Comments on the description of the "On-Line Course":

#	Response
1	In practice on line courses do have a lecturer.
2	I think this fairly represents the amalgum of ideas presented.
3	I don't recall discussing quizzes, just a general consensus that participation be required. Nor need readings be "long". There was some discussion about the timing to facilitate combining courses with other things, but I don't recall the details. However, I think that if someone does, the rationale for the timing recommendation should be included.
4	I agree that the description works, but I can also see a self-administered course you can take at your own pace. The self administered course would not allow you to go on until you passed the various scheduled quizzes. This can work the same way as the one you outlined, only it would offer the student flexibility in when they take the course.
5	Course should be available "on demand" (i.e. candidate can schedule at any time) and self-paced (candidate can go faster or slower than the "standard" 10-12 weeks).
6	Could also offer a "summer school" version at a faster pace.
7	None
8	Troubled by the assumption that these will necessarily have high pass ratios. Is this because these courses are so good at testing material? I worry these will become silly wastes of time with no one really learning anything.
9	I understand the concept, but don't necessarily agree with the proposed content for online courses
10	This is an excellent way to take material off the syllabus that is important as background reading.
11	This is an interesting proposal. It would help move students along a learning process, but could be a disincentive for students who prefer to study at their own pace and can master the traditional exam material quickly.
12	It's fine.

Definitions: Please read the description of the "Intensive Seminar" and recall the discussion on June 14. With respect to the statement, "This description reflects our consensus", do you		Number of Responses	Response Ratio
3. Agree		13	76%
Disagree		1	6%
Neither		0	0%
Don't Know		3	18%

<b>Total</b>	17	100%
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**4. Comments on the description of the "Intensive Seminar":**

#	Response
1	Might be useful to clarify that the project started during the five day seminar may require enough effort to complete that it is expected that it will be completed after the end of the five day period. The description does not specifically say the seminar occurs at a single, physical location. Is that assumed? True?
2	We should stick with the first definition.
3	This description baffles me. I agree that the intensive seminar was 5 days and the less intensive alternative was 2 days. I also think the number of days can easily be modified to fit the material. I think you can have pre-requisites and/or some type of post seminar verification in either case. pre-reqs and post seminar verification decisions can be made based on the material in the seminar and the knowledge level we require. The intensive seminar does not have to be project based. If we do accounting, policy forms, manuals etc it would be hard to have a project. However, we did discuss a modeling seminar that could be project based.
4	Need not be five days, but must be enough to be truly an experience to remember.
5	I have selected agree - but I don't recall the seminar proposal being 5 days.
6	Good idea -- but they need to be rigorous. I don't know why you'd start off with the assumption of a high pass ratio. People won't take a seminar seriously if it is mickey mouse.
7	I understand the concept, but don't necessarily agree with the proposed content for intensive seminars
8	Some material can actually be taught, and learned, better in an intensive seminar than a traditional exam. Anything that could benefit from hands-on experience (modeling, DFA) would be an appropriate topic for these seminars.

**5. From a purely administrative point of view, please rate on a scale of 1 to 5 the proposal to have nation-specific material for the U. S. and Canada appear on three different examinations (parts 5, 6 and 7):**

	1 No Significant Problem	2	3 Likely Administrative Hurdle	4	5 Completely Impractical
<i>The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option</i>	0%	31%	6%	25%	38%
1. Nation Specific	0	5	1	4	6

**6. Considering only the relations between the CAS, the CIA and the AAA, please rate on a scale of 1 to 5 the proposal to have nation-specific material for the U. S. and Canada appear on three different examinations (parts 5, 6 and 7):**

	1 Quite Likely to be Beneficial	2	3 No Obvious Problem	4	5 Quite Likely to be Damaging
<i>The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option</i>	13%	0%	31%	44%	13%
1. Nation-Specific Material	2	0	5	7	2

**7. Considering only the relations between the CAS and the international actuarial community, please rate on a scale of 1 to 5 the proposal to have nation-specific material for the U. S. and Canada appear on three different examinations (parts 5, 6 and 7):**



	1	2	3	4	5
<i>The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option</i>					
1. Nation-Specific Material					

The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option

1	2	3	4	5
Quite Likely to Make CAS Exams more Attractive to Candidates from Outside the U.S. and Canada		No Obvious Problem		Quite Likely to make CAS Exams less Attractive to Candidates from Outside the U.S. and Canada

1. Nation-Specific Material

6%	6%	25%	25%	38%
1	1	4	4	6

8. Have we missed something important; that is, do you have an alternative to the 7-exam and 8-exam structures being reviewed at this time that you think that the Task Force should consider?		Number of Responses	Response Ratio
Yes		9	60%
No		6	40%
<b>Total</b>		15	100%

1The nation specific material should be confined to one exam for both exams. Also, we should only focus on the essential nation specific material. For example, don't test details of no-fault or liability laws by state. Do not require knowledge of any state or province laws.

2Consider the 7-exam option with only one nation (Canada) specific exam.

3Provided we give ourselves sufficient lead time for the transition, I can support either proposal.

4I suggest we remove one exam by moving the material on exam 2 to exam 3, creating a single exam much like the old exam 4 (or 3, depending on your age.) This should be facilitated by the SoA's plans to move a block of material from 3 to 4. I am very concerned that we might be throwing out the baby with the bath water, and reduce the material covered to the point where the FCAS is less useful to employers. Here's an alternative proposal: 1) unchanged VEE unchanged 2) current exams 2+3, minus some distribution material 3) current exam 4, + distribution material from exam 3, at a lower level NB: Exams 2 & 3 would be difficult enough to select candidates capable of doing actuarial work from a technical perspective. They could be easier than today's 3&4 and accomplish this, in my opinion. C1) on-line course in P&C operations A) Intro to P&C, covering very basic ratemaking and reserving. (Triangles and trends, but no more complicated adjustments, for example.) This should be tested like exam 1, on-demand. C2) on-line course on basic accounting, financial reporting, and statistical reporting. C3) On-line course on Financial Markets and Instruments. (8a, d, e, & f) 4) Intermediate Ratemaking and Pricing (What's left on exam 5 after the stuff above has been removed, plus GLM and other classification ratemaking techniques, PLUS the high points of 8b, c) 5) Intermediate Reserving, accounting and taxation (nation specific) S1) Nation specific regulation (A seminar with a lot of pre-reading. This would be an excellent way to present how hearings actually work, for example. Probably 2-3 days. Would not require a computer. This could be yet another on-line course, but I think the material can be a little soporific, and mock hearings, e.g., would make it much more memorable and useful.) 6) Advanced topics, including Pricing (reinsurance, catastrophes, individual risk rating, excess&deductible&retro, rate of return), 8 G, H, I, & J, and methods of estimating reasonable ranges of reserves. S2) Capstone intensive seminar in DFA or Stochastic Modeling. This is a lot of "things" (6 exams, 2 seminars, and 3 on-line course, plus 3 VEE requirements) but I think it would be both more educational and easier to get through than our current basic education requirements.

5The MaryFrances Miller proposal for a nation-specific seminar, co-sponsored by AAA and CIA.

6Why can't the 7 exam structure test concepts only in the exams and cover the nation specific material we want actuaries to cover in a seminar. In either pricing or reserving we can use nation specific examples to test ratemaking or reserving concepts, but not require any in depth knowledge of the nation specific material.

78-exam structure with recombination of current exams 2,3,4 into two exams would give us another 7-exam option without 3 nation-specific exams.





8Honestly, I think both alternatives will result in poorer coverage and comprehension of material than what we have now. I think they both look "watered" down -- we're talking high pass ratios, reduced exams -- the CAS designation could become next to meaningless. I like Ginda's alternative proposal better than either structure proposed on 6/14.

9 One nation-specific exam that includes everything about the particular regulatory regime -- including rate filing requirements -- as the final exam.

10 I favor the Eight exam alternative. However, in my opinion, there is too much material being jammed into the proposed Part 8. I would break this into three "mini exams" (each lasting about two hours), and simply require the student to pass any two of three. There are several reasonable ways to partition this material.

11 Although these proposals do have only 7 or 8 exams, by requiring two online courses and an intensive seminar, they could be viewed as increasing the requirements for fellowship and could increase travel time. Combined with the expansion of the basic examination process from 4 exams to 4 exams plus 3 VEEs, we seem to be making it more difficult to complete our certification process. I would like to see a way to reduce the number of exams without adding other requirements, something that would represent a clear cut to the process.

12 Put all of the nation-specific material in an intensive seminar with an open book exam at the end for the US & Canada, and allow candidates from other countries to submit alternatives such as their own country's exam or seminar (if there is one) or take either the US or Canadian seminar. E.g. accept the UK practicing certificate as an alternative. I guess you end up with the 8 exam structure but with #8 being a second seminar.

Which of the following reflects your personal opinion about the 7-9. exam syllabus in Appendix 1:		Number of Responses	Response Ratio
The Task Force should recommend this syllabus essentially as presented. At worst it provides an excellent starting point for the next step of the Task Force's work.		6	38%
The Task Force should recommend this syllabus only if specific changes are made (see Question 10.)		5	31%
The Task Force should not recommend this syllabus although it could be a starting point for the next step in the Task Force's work.		2	13%
The Task Force should not recommend this syllabus and it is a poor starting point for the next step in the Task Force's work.		3	19%
<b>Total</b>		16	100%

10. If you answered B to question 9, please list the specific changes to the syllabus in Appendix 1 that would make it the syllabus that the Task Force should recommend.

#	Response
1	Syllabus seems not to adequately cover FE topics.
2	No specific changes, but needs broader exposure to admissions committee leadership for comment.
3	Our Task Force must have in its report that the CAS MUST improve the syllabus material. We must write syllabus material so it can be used to test the real learning objectives and not those that fit the existing material.
4	Eliminate all rate filing and other regulatory content from the ratemaking and reserving exams. Make these two exams be about the actuarial concepts and the alternative models and methods. Stochastic reserving on the reserving exam; multivariate predictive models on the ratemaking exam.
5	See #8 answer - move the truly nation specific material to a seminar unless there is merit in a particular example even for practitioners from other countries





11. What are the top three things (Please number your responses) that you like about the 7-exam syllabus that is shown in Appendix 1?

#	Response
1	1. Potentially shorter travel time compared to current route 2. Online courses may be an effective way to change the way students feel they have to prepare for material where we want a level of familiarity, rather than complete command. 3. The intensive seminar seems to be a better way of communicating technically difficult material.
2	1-May reduce travel time. 2-Eliminates less important material. 3-May attract a larger pool of students.
3	1. logical flow of topics 2. most likely to shorten travel time 3. best integrated with actual work
4	1) Combining accounting material by topic, instead of "nation-specific" vs. "non nation specific" would allow us to remove some redundancies.
5	1. Clear reduction in steps towards FCAS 2. Efficient rearrangement of material 3. The usage of intensive seminars and online courses to streamline exams.
6	1. Reduces # of exams by 2 (from 9 to 7) 2. Recognizes appropriate differences in depth of learning. 3. Intensive seminar will provide a good learning experience.
7	1. Use of on-line course for bulky readings and necessary background material. 2. Use of intensive seminar for material that doesn't suit self-study. 3. Candidates who are in a rush to become certified to sign opinions will have a shortened travel time.
8	1. (Obvious)That is down to 7 exams. 2. Appropriate use of seminars 3. None
9	1. I like the introduction of two online courses. 2. Financial instruments remain on the syllabus & greater prominence of ERM 3. Alternative insurance mechanisms such as captives
10	1. Intensive seminar 2. Includes coverage of stochastic reserving. 3. ??
11	1. It is shorter 2. One exam on ratemaking; one on reserving 3. no third thing I like
12	1. It gets the student quickly, via the two online courses, to the background "orientation" material needed to do their job 2. It looks quite doable in terms of being both comprehensive and yet not so much material so that travel time will be substantially reduced 3. It intelligently tests the important things, and leaves online courses or seminars for either background material or material where a hands on approach is preferable to "book learning" 3.
13	1. Seven exams 2. Clear separation of the topics
14	1. Focuses the testing on what you really have to be able to do to be an actuary while still teaching the background stuff. 2. Much more focus on uncertainty than in the current syllabus. 3. Capstone seminar ties the pieces together
15	1. 7 exams are politically correct (I really don't like the 7-exam syllabus).

12. What are the top three concerns (Please number your responses) that you have about the 7-exam syllabus that is shown in Appendix 1?

#	Response
1	1. Way too much nation specific material. We should be teaching and testing actuarial concepts, not memorization of law and regulations.
2	1. Some may get the perception we have replaced five exams with six (3 exams, plus 2 online courses, plus intensive seminar) 2. The logistics of designing two online courses and multiple intensive seminars, staffing and administering them. 3. The possibility that moving nation specific material to three exams increases administrative burdens.
3	1-Three nation specific exams is not practical (and is unnecessary) at this time. 2-FE topics not adequately covered. 3-This option has a more problematic transition rule.
4	1. these exams will be monsters 2. not sure I like the "pick one of three" seminar concept 3. Part 7 seems to have too many loosely connected topics, will be very difficult for students to wrap their arms around it and see the big picture.
5	1) There will be too much material to reasonably test in 3 exams. There is SO much material on some of these exams that a reasonable student will skip huge swaths of it, counting on learning the other 70%. 2) Finance (exam 8) seems to have disappeared. 3) There is no room in this structure for an "intro to P&C" exam, which I continue to think would be very helpful for both students and employers. 7) I am not terribly concerned about "nation-specific" material, as I don't think we can (or have) remove it from the other exams. Every coverage that we teach (about, pricing, reserving) lives within some set of laws and regulations. Even the vocabulary for discussing similar items differs from country to country.
6	1. Transition 2. Transition 3. Transition
7	1. 3 nation-specific exams is not workable! The basics of casualty actuarial practice are not nation-specific. We shouldn't need 3 nation-specific exams to train qualified casualty actuaries. 2. Does not include an actuarial control cycle framework. 3. Is there enough Finance material to meet IAA requirements?
8	1. Admin problem of requiring new CAS-CIA committees for exams. 2. New Part 7 will become an ever-changing grab-bag of faddish topics. 3. Will require lots of volunteer and paid effort to change this much.
9	1. Dont like the options on the seminar 2. just one exam to cover beg., intermediate and advanced topics 3. exams may be "too big"

- 10 1. 7-exams - except that I count only 6 (2 online, 3 exams, 1 intensive seminar) Are there still the preliminary exams? If so, have we expanded the examination process? 2. I would like to see greater emphasis on methods of quantifying uncertainty in reserves and rates (risk loads) 3. Reinsurance Risk Transfer seems to be missing
- 11 1. Not enough loss distribution analysis or financial theory, needs more focus on risk management and ERM. 2. "Special Problems" is a messy hash of topics, most of which do not belong together. 3. The current Part 8 material seems shrunk away to almost nothing -- material that should have been expanded, not diminished.
- 12 1. Need to move the rate filing stuff out of the curriculum as it is not needed to be an actuary 2. Exam 7 is a hodge-podge with no clear theme that will make studying and examining very difficult. 3. Nation-specific stuff should not be on every exam
- 13 1. The third seminar on tax accounting and regulation, in my opinion, can not be optional for any Fellow; it must be mandatory 2. There's not enough material on loss modelling and simulation. What is on the current syllabus is probably too much. There needs to be enough to give the student a good grounding without getting wrapped up in esoteric theory (as the current syllabus in my opinion, unfortunately does) 3. A bit too much material is jammed into proposed exams; they are covering basic intermediate and advanced areas in each exam; some advanced material is better covered separately in mini exams
- 14 1. Is the coverage of investments and financial analysis adequate 2. Can we integrate nation specific material across multiple exams
- 15 1. Is there enough grounding for the financial economics to be able to do the applications? 2. Too much emphasis on how different countries differ rather than on how the concepts are the same.
- 16 1. Allowing choices for the individual seminars. If everyone doesn't need it as basic education, then it should probably be continuing ed. How do you allow someone to become an FCAS who doesn't cover seminar 3? 2. Nation-specific material for three exams. We don't have the staff to handle it, and if we end up working with other nations, we'll have to do 3 special exams for each country. 3. Too much material in parts 5, 6, and 7.

13. Which of the following reflects your personal opinion about the 8-exam syllabus in Appendix 2:		Number of Responses	Response Ratio
The Task Force should recommend this syllabus essentially as presented. At worst it provides an excellent starting point for the next step of the Task Force's work.		5	31%
The Task Force should recommend this syllabus only if specific changes are made (see Question 14.)		5	31%
The Task Force should not recommend this syllabus although it could be a starting point for the next step in the Task Force's work.		4	25%
The Task Force should not recommend this syllabus and it is a poor starting point for the next step in the Task Force's work.		2	13%
<b>Total</b>		16	100%

14. If you answered B to question 13, please list the specific changes to the syllabus in Appendix 2 that would make it the syllabus that the Task Force should recommend.

#	Response
1	Limit the nation specific material.
2	No specific changes, but needs broader exposure to admissions committee leadership for comment.
3	I would move classification ratemaking to part 5
4	1. Remove rate filings from exam 5 2. Rename exam 8 as "advanced topics, and carefully cull through the learning objectives to focus on what all actuaries should be exposed to 3. Make the nation-specific exam be the last one.
5	1. The intensive seminar on tax accounting and regulation needs to be a requirement for all Fellows if Fellow indicates readiness to sign opinions
6	Don't lose the capstone seminar!





15. What are the top three (Please number your responses) things that you like about the 8-exam syllabus that is shown in Appendix 2?





#	Response
1	Good coverage of the material.
2	1. Potentially shorter travel time compared to current route (but less of an improvement than seven exam option) 2. Online courses may be an effective way to change the way students feel they have to prepare for material where we want a level of familiarity, rather than complete command. 3. May be less of an administrative strain to the system than the seven exam option.
3	1-Appears less of a drastic change to the current syllabus. 2-Allows for not including too much diverse material in the same exam. 3-Is just as likely to reduce travel time.
4	1. exams are manageable and logically grouped 2. lends itself best to international usage 3. transition will be less painful than for the 7 exam system, could be implemented faster
5	1. Reduces number of exams by 1 (could reduce by 2 if exams 2,3,4 were combined into 2 exams). 2. Only one nation-specific exam. 3. Recognizes appropriate differences in depth of learning.
6	1. More easily implemented than 7-exam approach 2. Those who complete it will be better trained than current ACAS's. 3. Use of on-line courses for bulky material.
7	1. better exam size (vs 7 exam option) 2. ERM DFA included in exam process (not to imply that this is the best environment) - I just think that having it on an exam gives the topic more "legitimacy"
8	1. The examinations are generally not nation-specific-easier for actuaries in other countries to sit for exams. 2, 3, 4: Same as for the 7-exam system.
9	1. Better that Pricing and Reserving are not nation specific. 2. ?? 3. ??
10	1. One exam on ratemaking; one on reserving 2. Nation-specific material is on one exam
11	1. It's comprehensive. It covers all the important things without much extraneous material 2. It does look like it would reduce travel time substantially 3. the on line courses upfront are a great way to orient the new student
12	1. It keeps the nation specific material to a single exam
13	1. Same as comments 1-2 for the 7 exam version 2. Separates the nation-specific material to one place
14	1. It's a common basic education for most candidates (with the only difference as one nation-specific exam). 2. Doesn't cram too much diverse material on the same exam. 3. Less exams than we currently have.

16. What are the top three (Please number your responses) concerns that you have about the 8-exam syllabus that is shown in Appendix 2?

#	Response
1	Too detailed coverage of nation specific material
2	1. Some may get the perception we have replaced five exams with six (4 exams, plus 2 online courses) 2. Travel time savings, if any, are too small to justify the work involved to make the changes.
3	1-Transition rules. 2-One exam may not be sufficient to adequately cover rating and reserving material. 3-The anticipated reduction in travel time may not materialize.
4	1. Part 7 will be very dry and subject to testing at a painful level of minutes. 2. We're adding back ASOPs that are currently only in the COP 3.
5	1) Parts 6 & 8 look too big.
6	Why would we opt for 8-exams when it gets cluttered with nation-specific material, and uses an exam where an intensive seminar would cover the material more effectively?
7	1. Does not include an actuarial control cycle framework. 2. Does not provide an option for non-US/Canada candidates (although the current system doesn't either). 3. Is there enough Finance material to meet IAA requirements?
8	1. Fails to take advantage of intensive seminar. 2. May not be better liked than current syllabus.
9	1. Part 7 seems like a "weak" exam 2. just one exam to cover beg., intermediate and advanced topics
10	1. Length of examinations are now seven (2 online, 4 exams, 1 intensive seminar) plus preliminary exams. 2, 3: same as in question 12
11	Same as 7-exam syllabus.
12	1. Last exam is a hodge-podge 2. 8 exams with one or more seminars is too long
13	1. Not enough material on loss modelling and simulation. Current syllabus has too much though. 2. There's a lot of topics on proposed exam eight that don't have anything in common. I'd break it into mini exams, maybe two or even three with a "pass any two of three" 3. Can't think of third; it looks pretty good!
14	1. Is the coverage of investments and financial analysis adequate

- 15 Still leaves ratemaking and reserving as almost unrelated topics
- 16 1. DFA and ERM on part 8--we need to be careful this doesn't take over the exam; anything more than the minimum could be covered in continuing ed. 2. Execution--how do we make the two courses work with exams? Will a student be able to take both of them in the 6-month period between two exams? We need to make sure we don't create a logistical nightmare. 3. I don't love having WC on a late exam.






			Number of Responses	Response Ratio
17.	With respect to ratemaking and the filing of rates for property-casualty companies, differences in practice between FCAS's practicing in the U.S. and FCAS's practicing in Canada are large enough to imply that it is appropriate to offer nation-specific learning Objectives.			
	Agree		3	18%
	Disagree		8	47%
	Neither		1	6%
	Don't Know		5	29%
<b>Total</b>			17	100%

			Number of Responses	Response Ratio
18.	With respect to ratemaking and the filing of rates for property-casualty companies, regardless of the size of differences in practice between FCAS's practicing in the U.S. and FCAS's practicing in Canada, all candidates should be skilled at the entire range of practice across the U.S. and Canada.			
	Agree		6	35%
	Disagree		5	29%
	Neither		3	18%
	Don't Know		3	18%
<b>Total</b>			17	100%

ATTACHMENT 4  
SURVEY #2 ON ALTERNATIVE STRUCTURE

# Survey 2






## Survey on 7 Option Proposal

Please indicate your level of support for the proposed examination system presented in the "Outline for 7 Exams."		Number of Responses	Response Ratio
Strongly Opposed		2	13%
Somewhat Opposed		3	20%
Neutral		1	7%
Somewhat Support		6	40%
Strongly Support		3	20%
<b>Total</b>		15	100%





## 2. If your response was not "5=Strongly Support" in Question 1, please list some changes or modifications that would increase your level of support.

- 1 The three exams (5-7) appear to me to be terrifyingly broad in scope. I'm afraid that covering the material for any of these exams in a 6 month timeframe would be very difficult.
- 2 With 7 exams, 2 online courses and an intensive seminar, it appears that we have increased the number of events required to become an actuary, and hence the travel time as well.
- 3 Adding back the basic pricing and reserving material currently on exams 5, 6, and 9 that has been trimmed out.
- 4 I feel the vision is not nearly forward looking enough. We need more (1) financial theory, (2) predictive regression based modeling, and (3) more stochastic simulation modeling (optional intensive seminar not enough). These three areas represent the future for actuaries. Traditional actuarial methods in pricing and reserving are no longer "best in class" by any standard. The two exams where we currently can most easily include new techniques and ideas are Exams 8 and 9. Under this proposal, however, the material would be compressed into something called "special problems." Issues of rate of return and risk modeling are not, I would argue, "special problems" but are today the future of the actuarial profession if it is to continue to command a leadership role in the insurance industry.
- 5 How about FE topics? Are we planning to cover these topics in Exam 3?
- 6 I am skeptical of the online courses for anything other than the most basic CPCU material. I have great difficulty seeing the logic of what is covered on which exam. I think accounting is an integral part of reserving and cannot be left as an optional topic. We need to sort out which accounting topics are best left on the syllabus, but from this plan it is hard to tell what is planned for the optional seminar. I also doubt that a seminar is appropriate for accounting issues. I would not call the third exam "problems" and would suggest "topics". I thought someone suggested removing individual risk rating? None of these exams seems to cover advanced topics. In general, I don't think enough thought has been put into the content of these exams, how they flow, etc. There isn't enough space in #3 for my answer, so I am putting it here. If by nation-specific we mean regulatory and legal issues, then I think the exams should cover all countries' rules in proportion to their importance to an actuary practicing in the US (i.e. mostly US, some UK/Lloyds, not much else). As for Accounting issues, I think the exams should focus on US GAAP and US Stat primarily, but also include some discussion of evolving global standards.
- 7 We need to come up with a good way to handle nation-specific material.
- 8 1. we have too much diverse material on 3 CAS exams. Either go to 4 CAS exams, or make going to 3 CAS exams dependent on finding syllabus study materials that better address these learning objectives (all of which I think should remain) in a way that won't overwhelm students. I'm really concerned companies will pay for 4 joint exams, VEE, and 2 online courses, and then candidates won't be able to pass any CAS exams. 2. I don't like candidates having a choice of seminars--either material is required for our basic education, or it is not (it's continuing ed). 3. add back the professionalism course (did we intend to eliminate it?) 4. Specifically note in our documentation that getting buy-in from employers of candidates is very important; if the board decides to move forward with this plan, one of the task forces formed to implement it should be focused on communicating with employers and trying to make adjustments to fit their needs.
- 9 I would prefer to see the Stochastic Modeling course as a requirement with a pick one option between DFA and Tax, Acctng., Reg.
- 10 We mention 7 exams of which 2 are online courses, 3 are exams, and 1 is a seminar. My problem is 2+3+1=6. Did we mean 2 seminars? I would strongly support that.

- 11 First, I believe that exam 7 needs to be "Risk and Financial Management", with focus on (1) risk modeling techniques, (2) risk measurement and economic capital, (3) valuation, and (4) corporate finance and financial economics. Some of the pricing material would therefore need to be moved to Part 5. Second, I believe that the regulatory stuff should come off of Exam 6 and 7, and instead should be handled via an online course.
- 12 Does the proposed syllabus meet the IAA education guidelines (particularly for assets)?

3. Which of the following best describes your opinion on how nation-specific material should be taught in the CAS education process:		Number of Responses	Response Ratio
Nation-specific material should not be required. This should be learned from other sources.		1	7%
Nation-specific material should be covered in an intensive seminar.		3	20%
Nation-specific material should be covered in an online course.		2	13%
Nation-specific material should be tested on one nation-specific exam.		4	27%
Each of Exams 5, 6, and 7 should be nation specific.		0	0%
<a href="#">VIEW</a> Other, Please share your idea:		5	33%
<b>Total</b>		15	100%



- 1 Not enough space here -- send me an e-mail (arlie)
- 2 combination of on-line course and exam.
- 3 NOT ENOUGH SPACE
- 4 5-7 shd contain core material + a nat. spec. sectn
- 5 Nation-specific exam and/or intensive seminar ok

4. What is your level of agreement with the following statement: "Although nation-specific material may appear as examples in syllabus and background readings, it is not appropriate to require that candidates learn nation-specific material, i.e., nation-specific laws, regulations, and accounting practices should not be included in Learning Objectives"		Number of Responses	Response Ratio
Strongly Disagree		5	33%
Somewhat Disagree		4	27%
Neutral		0	0%
Somewhat Agree		5	33%
Strongly Agree		1	7%
<b>Total</b>		15	100%

The third SAM goal related to the CAS Centennial Goal is "At least 20% of the CAS curriculum and 20% of CAS continuing education programs will focus on strategic, financial or operational risk, or the intergration of hazard risk with these risks." How well does the proposal in the "Outline for 7 Exams" accomplish this SAM goal in the curriculum?		Number of Responses	Response Ratio
Not at all		5	33%
Somewhat		6	40%
Accomplished SAM Goal		4	27%
<b>Total</b>		15	100%

Referring again to the third SAM goal mentioned in the prior question, what is your opinion of the following statement: "The work of the Task Force on FCAS Education indicates that the third SAM goal cited above should be revised."		Number of Responses	Response Ratio
Strongly Disagree		3	20%
Somewhat Disagree		2	13%
Neutral		4	27%
Somewhat Agree		3	20%
Strongly Agree		3	20%
<b>Total</b>		15	100%

The proposal allows the candidate to select one of three intensive seminars to meet the education requirement. What is your level of agreement with the following statement: "These three intensive seminars are appropriate choices."		Number of Responses	Response Ratio
Strongly Disagree		0	0%
Somewhat Disagree		6	40%

Neutral		0	0%
Somewhat Agree		3	20%
Strongly Agree		6	40%
<b>Total</b>		15	100%

8. If your response was not "5=Strongly support" in Question 7, please list some changes or topics that would increase your level of support.

- 1 I strongly agree, but would like us to think through the candidates that will want to take more than one.
- 2 Ah! forcing support "5" if one doesn't want to do any writing here! The intensive seminars listed are good but not the only seminars that could be offered. If the CAS is truly moving toward ERM, there should be a seminar developed on ERM and Financial Risk Management techniques. This seminar would include hedging techniques, securitizations and use of derivatives to protect a portfolio of assets/liabilities.
- 3 Option 3 might be a good continuing ed course, but seems inappropriate for integrating other stuff.
- 4 I don't understand why taxation and accounting is included here. I think the statistical analysis course would be appropriate, but not if it is just intended to cover data mining and GLM. It should cover a variety of advanced data analysis topics related to pricing, reserving, etc. The DFA seminar is fine, but I question whether there is really that much that can be covered in a short course.
- 5 I think we should pick one. I don't think we should allow candidates to choose among several seminars--if any of them aren't important enough to be basic education, then they should be continuing education.
- 6 See response to no. 1
- 7 Reinsurance/Excess of Loss pricing and reserving techniques
- 8 I like the DFA and Stochastic Modeling ideas. Less enthusiastic about the Tax etc. idea. How does this differ from the nation-specific issues that will probably be covered elsewhere in the sequence? The SAO on Reserves is more of an American Academy issue.
- 9 The third seminar does not seem to fit the objectives for an intensive seminar. I'm also not confident that intensive modeling seminars will be successful educationally. Perhaps final exam should be just be nation-specific content -- "The practicing actuary in [country] context."
- 10 Does the TF expect that many FCAS's will then go on to take one or both of the other options?

<p>9. What is your level of agreement with the following statement:</p> <p>"Online courses covering insurance company operations and insurance coverages should be waived for candidates who have passed the appropriate CPCU exams."</p>	<b>Number of Responses</b>	<b>Response Ratio</b>
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Strongly Disagree		2	13%
Somewhat Disagree		1	7%
Neutral		2	13%
Somewhat Agree		0	0%
Strongly Agree		10	67%

<b>Total</b>	15	100%
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<p>What is your level of agreement with the following statement:</p> <p>"Actuarial exams should focus on actuarial topics. Other topics not specific to actuarial science such as law, coverages, and company operations can be learned by other means such as online courses, CPCU courses, and on-the-job training."</p>		
	<b>Number of Responses</b>	<b>Response Ratio</b>

Strongly Disagree	3	20%
Somewhat Disagree	5	33%
Neutral	2	13%
Somewhat Agree	2	13%
Strongly Agree	3	20%

<b>Total</b>	15	100%
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ATTACHMENT 5  
COURSES OFFERED BY THE AICPCU

The American Institute for CPCU (AICPCU) offers two programs on the basics of the P-C industry, a more ambitious INS series and a simple introductory series. From their website:

*Program in General Insurance (INS) What You Will Learn:* INS 21: What Insurance Is, Who Provides Insurance, How Insurance Is Regulated, Measuring the Financial Performance of Insurers, Marketing, Underwriting, Claims, Insurance Contracts, Property Loss Exposures and Policy Provisions, Liability Loss Exposures and Policy Provisions, and Risk Management.

INS 22: Automobile Insurance and Society, Personal Auto Policy, Homeowners Insurance, Other Residential Insurance, Other Personal Property and Liability Insurance, Personal Loss Exposures and Financial Planning, Life Insurance, and Health and Disability Insurance.

INS 23: Commercial Property Insurance, Business Income, Commercial Crime and Equipment Breakdown, Inland and Ocean Marine, Commercial General Liability, Commercial Automobile, Businessowners Policies and Farm, Workers' Compensation and Employers' Liability, and Miscellaneous Coverages.

Learn insurance principles, practices, and policies in depth, and gain a solid, practical foundation on which to build your career.

*Introductory Courses offered by the AICPCU What You Will Learn:*

*Introduction to Property and Liability Insurance:* What Insurance Is, How Insurance Is Sold, What Underwriting Is, How Insurance Service Is Provided, How Claims Are Handled, What Is in an Insurance Policy, What Commercial Insurance Is, How Premiums Are Determined, and Insurance in a Changing World.

*Introduction to Claims:* Insurance Basics, The Claim Function, Factors Affecting the Claim Environment, The Claim Process, Automobile First-Party Claims, First-Party Property Claims, Liability Claims, and Workers' Compensation Claims.

*Introduction to Risk Management:* Losses and Loss Exposures, the Risk Management Process, Risk Financing, Risk Control Techniques, the Risk Manager's Role, Risk Management in an Organization, Pre- and Post-Loss Goals, Disaster Planning, and Personnel Exposure.

*Introduction to Underwriting:* Underwriting as Decision Making, Underwriting Commercial Insurance, Personal Insurance, General Liability, Commercial Property, and the Underwriter-Producer Relationship.

These are ideal courses to start with if you are new to insurance or to insurance education.

ATTACHMENT 6  
EXAMPLE OF CHANGING THE REQUIRED LEVEL OF MASTERY

Today's Exam 5 seemed to be the easiest to change by creating less demanding levels of mastery. Assuming that today the Examination Committee is relatively free to expect mastery of the subject, Table 2 suggests that much of the reading could be handled by courses that would validate that the candidate has exposure to the subject and is able to follow the points in a discussion.

<b>Hypothetical Examples of Changing the Level of Mastery: Today's Exam 5</b>	
<b>TOPIC and Proposed Level of Mastery</b>	<b>REASONING</b>
<b>Exposure to the Subject:</b> Principles of Accrual-Based Accounting Coinsurance Catastrophes Individually Rated Risks and Loss-Sensitive Prices	Mastery is not needed until later in the exam process.
<b>Able to Follow Most of a Discussion among FCAS's:</b> Diversity of property and casualty lines including specialized lines of business Policies and forms Background law re solvency & competition Forms of regulation of P-C insurance Financial instruments Financial markets	Students have now been screened for math aptitude. Employers need to get practical training into their employees. Business knowledge is actually important to reserving and ratemaking.
<b>Able to Work Productively under the Direction of an Expert:</b> Introduction to P/C Insurance Insurance Company Operations Premiums as estimates of costs Premiums as part of product design Premiums as the result of rate regulation Expenses Persistency Loss development: Popular U.S. and European methods Risk classification: purposes and methods of estimating loss costs and expenses based on rating variables	Candidates who want to take a technical test to move ahead may attend the Seminar on Stochastic Models of Casualty Data after passing Part 5.
<b>Able to Serve as an Expert:</b> Exposure bases	Fundamental to all further technical work. No pre-requisites.

ATTACHMENT 7

WRITING TEAM 7'S LIST OF NEW LEARNING OBJECTIVES FOR HAZARD RISK

New Learning Objectives on the topic of Risk Management: Gross, Assumed, Ceded, and Net Exposures

- i. (Pricing) Assess the risk embedded in the Unearned Premium Reserve
  - a. Understand the risk management aspects of pricing
  - b. Understand the weaknesses associated with the pro-rata determination of the UPR
  - c. Develop premium deficiency reserves

Mastery Level 2

Assessing the UPR from an adequacy viewpoint is not covered in the syllabus; there is significant parameter risk embedded in this balance sheet liability.

- ii. (Pricing) Parameter Risk and Price monitoring
  - a. How to know what to fix in book: differentiating between process risk and parameter risk
  - b. How do you know that what you've done achieved the results you expected; i.e., do the results fall within the confidence interval of expected outcomes?

Mastery Level 2

The group believes that the single greatest source of risk to a P/C company is parameter risk. The current actuary's responsibility's does require working knowledge in this domain, and it is not an area well covered by the syllabus.

- iii. (Reinsurance) Reinsurance as a core risk management tool for insurance companies
  - a. Ability to assess alternative reinsurance strategies
    - i. Measuring the risk that is being ceded, and the cost of ceding that risk
    - ii. Making the case for retaining or transferring risk
    - iii. Determining the impact that the reinsurance purchase has on shareholder value
  - b. Utilizing reinsurance as a risk management tool

Mastery Level 3

The candidate should be very comfortable with how reinsurance is used by insurance companies in managing its net risk and enhancing shareholder value. This may be appropriately taught in a seminar.

- iv. (Valuation) Understand value-creating decision-making of an insurance company
  - a. How value is created
  - b. The drivers of value creation for an insurance company
  - c. The chief drivers of risk in an insurance company operation
  - d. The impact of risk management on firm value

**Mastery Level 3**

The candidate should develop a strong understanding of the risk-return decisions underlying a company's strategic plan and how they integrate to determine shareholder value

- v. (Reserving) Assessment of Reserve Volatility
  - a. Identifying sources of volatility
  - b. Developing reserve ranges based upon identified sources of volatility
  - c. Coping with reserve volatility.

**Mastery Level 1**

The candidate will need to learn methodologies for measuring the risk of understated or overstated reserves.

- vi. (Nation-Specific Financial Reporting and Taxation) Assessing the Financial Strength of an Insurance Company (could be an extension of 7D1)
  - a. From the multiple perspectives of SAP, GAAP, rating agency views, forecasting, etc.

**Mastery Level 3**

The actuary has the best skill set to quantify and communicate a company's financial strength and the overall risk to surplus.



















