

Pre-Testers: The Latest Addition to CAS Exams

By Steve Armstrong, Examination Committee Chair, Guest Writer and Elie Bochner, ACAS, Candidate Liaison Committee

hroughout your educational career, you've no doubt come across exam items that seemed faulty, had unclear wording, referenced off-syllabus material—you name it! At the CAS, we continually strive to improve the quality of our exams with new initiatives. The latest of these initiatives is the addition of "pre-testers" to the exam creation process. Who are these mysterious pre-testers? How are they selected? What do they do? How can I become one? These are some of the questions we will explore in this article.

Pre-testing is a relatively new enhancement to the CAS examination construction process, one with which few candidates are familiar. The purpose of pre-testing is to refine and polish the draft version of an exam, bringing it to its administration-ready form. This initiative, which first launched three years ago for a single CAS upper-level exam, has since expanded and now encompasses all upper-level exams. Although pre-testing exists in some capacity across all upper-level exams, the CAS is continually working to enhance and streamline the program.

Who are pre-testers, you wonder? They represent the "uber-passers" of each upper-level exam who have achieved the highest scores out of all candidates across recent sittings. While a particular exam is being constructed, the CAS office provides each part chair with a list of the highest-scoring recent candidates for that exam. The part chairs then recruit their pre-testers from this list. Because these young FCASs

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Survey Says...

By Adina Erdfarb, ACAS, Candidate Liaison Committee

The provide the post-exam survey. The provided the post-exam survey.

Offered in a convenient online format, post-exam surveys give candidates the chance to reflect on all aspects of an exam. Consisting of both multiple choice and open-ended questions, the surveys solicit feedback onsite-specific incidents; the exam's length, clarity, and syllabus coverage; and the overall quality of syllabus readings. (If you suspect that your exam contained a defective question, you may note that in the survey, but please also contact the CAS directly as soon as possible.) Candidates are given about two weeks after their exam to complete the questionnaire.

Soon after the response window has closed, survey results are compiled and distributed to the vice president-admissions, as well as members of the Exam, Syllabus, Education Policy, and Candidate Liaison Committees. The 100+ pages of feedback are carefully reviewed by each

POLL QUESTIONS

Future Fellow, we want to hear from you!

Please share with us! Are you able to incorporate exercise into your life while juggling exams? If so, what type of exercise do you enjoy? Answers may be included in an upcoming issue of Future Fellows!

Do you have a question on the CAS admissions process you want

answered? If so, here's your chance. Submit your questions. We will have the Examination Committee leadership answer some of the common questions in an upcoming issue of *Future Fellows*.

Visit the Future Fellows section of the CAS website or scan the QR code below to submit your response.



CAS SEMINARS AND MEETINGS

Casualty Loss Reserve Seminar San Diego, CA September 15-17, 2014

CAS ANNUAL MEETING New York, New York November 9-12, 2014

The Next Evolution of Basic Education

By Jeanne Crowell, Chair of Education Structure Implementation Task Force

The first goal of the CAS Strategic Plan (the Strategic Plan) is to "provide a basic education system that reflects contemporary and relevant analytical techniques and business skills utilizing new technologies for delivery and validation." Last year the Education Structure Task Force (the Task Force) was asked to evaluate and make recommendations on the CAS Admissions process to reflect the long-term objectives specified in the Strategic Plan.

The Task Force concluded that, while our exam system continues to meet the needs of employers in educating propertycasualty actuaries, there are opportunities for improvements.

In particular, the Task Force noted that several changes made in 2011 were viewed positively:

- The current overall coverage of the ACAS syllabus is appropriate to qualify an entrant into the profession.
- The two online courses provide an excellent introduction of important property-casualty insurance topics.
- The new Exam 5, which combines basic ratemaking and reserving into a single exam, has been well received.
- The commissioned textbooks on ratemaking and reserving

have eased the burden on both candidates and the exam committee.

However, in light of emerging views that casualty actuarial practice will continue to evolve toward more specialized work assignments that require a stronger statistical background from our members, the Task Force identified opportunities to evolve CAS basic education to meet those future needs.

In May 2013, the CAS Board accepted the Task Force report and directed the Executive Council to develop an implementation plan. The Education Structure Implementation Task Force (ESITF) was formed to execute that directive.

The ESITF and others within the CAS Admissions area, are now working to address the primary recommendations from the Task Force as described in the table below.

The CAS is committed to providing a basic education system that reflects contemporary and relevant analytical techniques. These potential changes represent opportunities for the CAS to refine our admissions criteria and improve the education of our future members. **f**

Recommendations	Actions
Research additional sources for education on the preliminary exams (1, 2, 3F) beyond other actuarial societies.	Under review by the Education Policy Committee.
Statistics	The ESITF has a Statistics Subgroup dedicated to these recommendations.
Provide more depth of coverage of statistics.Create a statistical exam sequence to potentially	They have created a list of knowledge statements that future candidates should know based on a job analysis of the responsibilities of current and future CAS members.
replace Exams ST, LC, 4 and VEE-Applied Statistical Methods.	They are working on an appropriate sequence of exams, while striving to avoid unnecessary disruptions to our candidates.
 De-emphasize life insurance mathematics and incorporate these concepts as applications of broader probability and statistics concepts rather 	Some additional statistics material may be placed at the Associateship and/or Fellowship levels.
than including it as a stand-alone subject.	They expect that the new exams would be first offered around 2016 or 2017.
• Create a single text with examples from a broad range of traditional and non-traditional applications.	The work toward developing a text will be considered after any changes in exam structure are determined.
Add some basic material on other risk-transfer mechanisms, such as health insurance, life insurance, and annuities, to our online courses.	The ESITF has a subgroup that produced a follow-up report on these suggestions, which the Executive Council will consider.
Consider the optimal placement of law and regulation material within the basic education process.	
Remove non-basic ERM material from Exams 7 & 9, leaving only basic concepts that all CAS Fellows should know.	This was implemented with the Spring 2014 exams.
Increase depth of coverage of predictive modeling.	The Syllabus Committee is reviewing this recommendation and will coordinate its plans with the ESITF Statistics Subgroup.
Consider developing textbooks for advanced reserving and ratemaking that are consistent in presentation with texts on earlier exams.	This will be considered after any new statistics texts have been developed.
Create a CAS CERA exam as an alternative to The Institute and Faculty of Actuaries' ST9 Exam.	The ESITF has a subgroup dedicated to this. They have created a list of knowledge statements and are working to produce a syllabus and sample exam. Any new exam will need to be approved by the CERA Global Treaty Board. It is expected that both the ST9 and the CAS CERA exams would be available as options for earning the CAS CERA designation.

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scored well above the MQC (minimally qualified candidate), they are best suited to proofread the draft exams. They have not only demonstrated mastery of the entire syllabus, but, as recent candidates of that exam, they are likely to have a keen eye for the issues future candidates might have with particular questions.

What, specifically, do pre-testers do? Here is an outline of a typical pre-tester's participation in the program:

- 1. **Preparation**—Yes, even the most successful candidates need to brush up on material they haven't seen for a year or more. Pre-testers prepare for the examination over the course of several weeks, around the same time candidates start studying for the same exam.
- 2. **Examination review**—Pre-testers receive a draft copy of the exam and are given instructions to complete it under simulated conditions. While completing the exam, the pre-testers keep an eye out for issues such as question clarity, question difficulty, question length, syllabus coverage and potential errors. Their responses are not graded. This isn't really possible since the items are still being rephrased and reworked and the scoring rubrics have not yet been completely finalized.
- 3. Solutions review—Pre-testers review the draft sample

solutions for similar issues. They pay particular attention to the level of complexity the solution requires and whether the item requires assumptions that are not clearly laid out. They may also offer input on the cognitive level required, comment on the partial credit breakdown, or look to see if there may be alternative answers that are not included in the draft solutions.

4. **Feedback**—After their reviews of the draft exam and solutions, pre-testers send detailed feedback to the part chair, who incorporates that feedback into the final versions of the exam. Additionally, pre-testers help establish the MQC score at the pass mark panel.

As you can imagine, pre-testing is a serious time commitment. When all is said and done, a typical pre-tester will have volunteered 20-30 hours of time to enhance a particular exam.

While the pre-testing process has expanded and improved since its inception three years ago, more work is being done to increase the program's effectiveness. If you have any ideas to further enhance the program, please send us a note by filling out the Candidate Liaison Committee feedback form. We always look forward to hearing from candidates on the admissions process or on any other topic.

Post-Exam Hoopla

By Elizabeth Demmon, Candidate Representative to the Candidate Liaison Committee

fter spending hundreds of hours poring over material for an exam, the moment finally comes when the proctor calls time and you are free. After six to eight weeks of ignorant bliss results are posted, and you learn you are done with that exam forever. Whether on exam day or after results come out, all actuarial students have their own method for celebrating the milestones in the exam process. We compiled the survey responses submitted by loyal readers who were asked to share their favorite or most unique postexam celebration. Some are very typical and others are all-out bold.

After walking out of the exam, some may sit in the car screaming with joy or frustration. Others take time to properly complain on the post-exam survey (and we thank you for your feedback). The most frequent methods of celebration often involve alcohol. There is the bar you always hit on the way home from the testing site or the bottle of wine waiting for you at home. The company may even throw "passer" parties with an open bar after results come out. One reader summed up his post-exam celebration as "too many beers when the exam process was determined to separate the best and the brightest."

You could provide yourself with a reward for all your hard work. You may grab your favorite meal at an expensive restaurant or go on a shopping spree. You could finally buy Grand Theft Auto V. One reader got a long-awaited tattoo after finally obtaining her ACAS. Taking the celebration one step further, you might plan vacations to escape after all the stress of the exams. One reader nailed an exam and "within one hour bought a ticket to Cuba and was on the beach by sundown." Throwing a massive party is also a great way to celebrate. Even better if your friends are awesome and throw a surprise party for you. Another reader attended a Halloween costume party after an October exam and met a scarecrow. Now she and that scarecrow have been happily married for ten years, and they have a seven-year-old son.

The greatest story of post-exam hoopla we received involves a pact made to host a bonfire after the actuarial student passed all her preliminary exams. She invited all her family and friends and brought out all her exam material, practice exams and notes. Each person received a section of the study material and stated how the exams affected them as they threw their portion into the fire. In one dedication her mother exclaimed, "This is for bringing study material to our mother-daughter vacation."

While most of us would choose never to repeat the exam process, it does provide opportunities in life to let loose and celebrate. Maybe next time you hit another milestone in the exam process, you will take time to make a memory that will last. YOLO. **f**

Survey Says...

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of these parties, with the responses evaluated in the context of the most recent sitting, as well with a lens toward the policies, procedures and content of future exams.

On a retrospective basis, surveys are used to identify and address any site-specific mishaps that may have impacted test takers. One such case arose at an exam site where a slow clock on the wall misinformed test takers on the amount of time remaining during the exam. After candidates took to the survey to explain the issue, the Exam Committee assessed the damage done by this faulty clock. Committee members identified the affected candidate numbers and used a subjective adjustment to determine whether the inaccurate clock had an adverse impact on the final results.

In another instance, surveys indicated that candidates at an exam site experienced an excessively noisy testing environment, disrupting them throughout the course of the exam. Using a similar methodology, the Exam Committee applied a subjective "distraction factor" to evaluate whether any candidates who were on the cusp of passing may have been unduly affected by the noise.

In addition to test site issues, other elements of the surveys are reviewed extensively by the Exam Committee. Responses on exam length and clarity are taken into consideration in assessing the pass mark, as well as in the development of future exams. Surveys have also played a part in other exam process changes. Both the pre-exam fifteen-minute reading period, implemented in 2006, and the elimination of triple true/false-style questions in recent years were partially motivated by survey responses.

Finally, the Exam Committee uses the survey results to pinpoint syllabus content that may have been inadequately covered by the exam, giving them guidance on improving future exam offerings. Responses also propel the

dad arts

feedback loop between the Exam Committee and the Syllabus Committee, which uses the surveys to evaluate the quality of the syllabus readings.

When reading responses to the surveys' "Which syllabus readings were of questionable quality/value?" question, Syllabus Committee members are looking for specificity on why a given paper is of questionable quality or value. Whether it is due to a paper's obsolescence within today's property-casualty industry or because of a convoluted presentation of ideas, the Syllabus Committee is eager to understand candidates' concerns and determine whether the criticism is being aimed at the exam questions that covered the reading or at the syllabus reading itself.

In the case of the latter, the Syllabus Committee may choose to remove a reading altogether. A recent such example is Exam 9, whose 2014 syllabus saw the removal of the two Basel Committee papers, as well as Todd Bault's "Discussion of Feldblum: 'Risk Load for Insurers'" paper, largely based on opinions expressed within the surveys. Upon removing these three papers, the committee also adjusted the syllabus weights for the corresponding sections. In other cases, the committee will look for an alternate paper than can better fulfill the desired learning objectives on the syllabus. Candidates' concerns about different terminology across multiple papers helped motivate the publication of the *Basic Ratemaking, Estimating Unpaid Claims* and *Financial Reporting* texts on Exams 5 and 6.

In addition to the Exam and Syllabus Committees, members of the Candidate Liaison Committee also receive copies of the surveys. While the Candidate Liaison Committee encourages candidates to submit questions or concerns throughout the year via the online feedback form, we especially value the opinions and insights reflected in the surveys. In our review, we generally focus on overall comments, including those on exam length, clarity and administration, and will communicate test takers' concerns to the Exam Committee on an ongoing basis.

> Post-exam surveys offer candidates a unique opportunity to express their views, and in the process, try to enhance current and future exam practices. Yet with less than one-third of all candidates responding, many test takers are missing out on the chance to offer feedback, be it positive or negative. So as ready as you might be to put the exam behind you, and as tired as you might be after four straight hours of answering questions, take the ten or fifteen minutes, and let your voice be heard.

Growing Up to be Just like Dad

By Kristen Schuck, Candidate Representative to the Candidate Liaison Committee

In honor of Father's Day.

t an early age, I can remember pretending to be a kindergarten teacher. The stuffed animals on my bed were the students; the bunny was the model student while the bear acted out quite a bit. Why was I a kindergarten teacher? Well, my mom is, and she was my first role model. My father was a police officer fighting crime, and while that sounded exciting, I knew that it was too demanding for me.

Now, all grown up, I am an insurance actuary who has to explain to her parents, family and friends exactly what an actuary does on a regular basis. In fact, I've been called an "actuarian" more than once. How great would it be to have someone guide you through the elusive actuarial career from a young age?

Gary Patrik, retired chief actuary of Swiss Re America, immersed his daughter, Lela, into the actuarial world at the

age of two. She would color and read in his office during weekends, and when international actuarial conferences would convene, Gary would bring his family and turn the trip into a vacation. While Gary attended the actuarial meetings, Lela and her mom would explore the cities and attend dinners with actuaries in the evening. According to Lela, "I got to know the rock stars of the international actuarial community when I was young and to me they were just friends of my family and their children were my playmates."

It wasn't until senior year of college though that Lela decided to become an actuary herself. "The more I thought about it, the more obvious of a choice it became—I liked that it was merit-based, and I knew that the profession demanded intelligence and creativity." Gary believes that Lela made the decision to be an actuary on her own. "Other than a few suggestions, I have never been able to steer Lela; she has been very independent since she was two years old." Having your father as a career mentor can be especially helpful when taking exams. According to Lela, "Something that can be very intimidating about math is how cumulative the knowledge is—you can get off track at any point and if you don't have the resources to catch up, it can be defeating. I was very lucky that I had my dad around to help answer questions when I got stuck." Although Gary believes Lela studied for the exams without much help from him, Lela credits her dad with helping her develop a deep understanding of topics like the application of trend and rate changes. It was his advice of drawing a picture to visualize your way through the problem that helped her grasp the concepts.

Perhaps the most valuable lessons that Gary was able to pass on to his daughter, though, involved applying actuarial topics in the business world.

> "I call my dad almost every other day when I walk home from work. He is one of my greatest supporters. He was chief actuary at Swiss Re America for many years and understands not only the mathematics, but most importantly the pressures of the business setting. I have always been proud of my dad, and I am thankful that he is my mentor. Because I took a different route from him by going into consulting, I have had the opportunity to carve my own path, while still having the strong connection to the overall career."

> > Of course, it's not the profession itself that a parent gives their child but the skills that make the child so good at their career. Lela learned from her father that actuarial science takes hard work and dedication, and it is her father's traits that she inherited which make her successful in her career.

Although I am not a police officer like my father, I know it is his strengths that will help me to become an invaluable actuary. His work ethic and his self-motivation are qualities that I admire and hope to embrace. Happy Father's Day!

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"If You're All Right, Then Say Something" Annals of Failure

By James Englezos, ACAS, Candidate Liaison Committee

Remember in *Pulp Fiction* when John Travolta stabs Uma Thurman with an Epinephrine pen directly into the Sharpied bullseye over her heart? During the seconds that follow, her system, overloaded with adrenaline, screams back to life. The camera zooms in on her white, sweat-covered face. Suddenly, her closed eyes open wide, revealing a soul overcome with confusion and terror. There is a brief moment of deafening silence before her torso lurches upright and she gasps for air.

That brief moment was exactly how I felt during the fall of 2011 after struggling for more than two torturous hours through my third sitting of Exam 4/C. I could hear my elevated heart beat loud and clear as I was acutely aware that if I had even a prayer of passing this exam I was going to need to ace the remainder of the questions. To my dismay, when I turned the page, I saw a continuous Bayesian credibility question with lognormal probability for both the prior and model distributions. Mechanical pencil down. Unqualified. Cue a cold sweat. Epinephrine to the heart. Panic.

I'm not exactly sure of the order, but I do know that all of the following thoughts crossed my mind:

- I am not smart enough or disciplined enough to become an actuary and it's just a matter of time before management finds out this truth and I lose my job.
- I am doomed to a life of failure in which I will be unable to support myself and eventually be forced to retreat back to New York to live under my parents' roof in the bedroom I grew up in.
- I am a fraud, unworthy of a woman's love and destined to spend my life alone.
- Every time I look in my father's eyes I will know I have failed him and in turn he will feel that he has failed me.

As irrational as these fears may have been or unbelievable as they may sound now, they were very real in the moment and the moments that followed. Fortunately, my post-exam ritual is to immediately jump into the pool of my apartment complex dressed head to toe in the clothing I wore to the test—a symbolic cleanse of the stress and anxiety associated with the exam process and a physical shock back into the world where fellow non-actuarial students reside.

Regaining composure, Uma Thurman flatly responds, "Something."

And so, I found myself at an impasse after the respite between the sitting and the day results were released. I had received a two, significantly lower than the four and the dreaded five I earned on my prior two attempts. I started to deliberate on quitting altogether. I knew what I had been doing was not working but what could I do differently? I began to meditate on my study habits and this quickly evolved into a brutally honest self-evaluation. I've always been well aware of my many strengths but it wasn't until this moment, humbled by repetitive failure, that I became well aware of my many weaknesses. With this new-found awareness in mind, I decided to give the exam one last chance.

Looking back, I equate the six months between putting my mechanical pencil down in the middle of my third attempt and earning a passing score of nine during the following sitting to the beginning of my understanding of how to succeed. Despite the best efforts from a variety of loved ones throughout my life, who have offered me advice and warned me about mistakes to avoid, I have inevitably "learned the hard way."

Of particular relevance is a conversation I had with a family friend, who became an exceptionally successful entrepreneur, shortly after moving cross-country post college graduation. He sat me down in his office and drew a two-by-two matrix on his white board with the words "competent" and "incompetent" across the top and "aware" and "unaware" down the left side. He told me I was currently at the intersection of competent and unaware. He urged me to begin analyzing the "how" and "why" of my successes so that I could repeat them, as well as the "how" and "why" of my failures so that I could overcome them.

In life, major changes can occur so gradually that they frequently go unnoticed. This January I received a phone call from an extremely bright, but very distraught, senior at Brown University. She was interested in becoming an actuary but had just failed exam 3/MLC. She was the daughter of my mother's coworker and I was happy to reassure her that the sky wasn't falling. We had a terrific conversation in which I shared some of my own failures, explained the harsh realities of the longterm commitment and sacrifice this career track demands, and reassured her of the benefits and daily reward that eventually becoming a member of the CAS provides. Ultimately, I left her with the following study blueprint I implemented on my final attempt at Exam 4/C and for each exam thereafter.

- 1. Print out all of the source material, one study guide and all applicable formula sheets posted on the actuarial outpost.
- 2. Create a daily study schedule that provides time to read all source material, work through the entire study guide,

"If You're All Right, Then Say Something"

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do all of the practice problems and allow two weeks prior to the exam to review difficult topics and take historical exams.

- 3. Create your own "cheat" sheet for each paper sourcing others' work, the readings and source materials, recording all errors you make on the back to reinforce the correct way to answer next time.
- 4. Spend the final day relaxing, sleeping, eating well and lightly reviewing your own cheat sheets.

In retrospect, the day I put my mechanical pencil down midexam is the day my arrow started upwards toward the intersection of competent and aware. The changes I made to my study habits in order to offset my weaknesses resonated deeply throughout all aspects of my life. So regardless of whether you decide to try a fourth time or choose to change paths, it is important to embrace failure as the lifeblood of progress. Often it is the shot of Epinephrine you need to wake up. **f**

Reminders

Use the CAS website for:

- CAS Syllabus of Basic Education and updates
- "Verify Candidate Exam Status" to confirm that joint exams and VEE credits are properly recorded
- "Looking at the Exam Process" series
- Feedback button to the Candidate Liaison Committee
- Feedback button to the Examination Committee
- CAS Regional Affiliates news

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FILLOWS

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