



SOCIETY OF ACTUARIES

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*Reserves Controversy cont'd.*

Thus, the controversy over reserving method needs an early and workable solution to give a clear regulatory background allowing continued development of health insurance products.

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## Insurance Catastrophes Conference August 25-27

Practicing actuaries and academics will discuss the latest developments in the theory of insurance catastrophes at the 23rd Actuarial Research Conference August 25-27 at the University of Connecticut, Storrs. A particular emphasis of this conference is on the AIDS epidemic. A number of actuaries active in this area will join statisticians and medical researchers to explore the current state of knowledge. In addition, there will be sessions for contributed papers on other topics of interest in insurance catastrophes and various actuarial research work underway.

Individuals interested in presenting papers are invited to submit abstracts by July 1. Contributed talks are scheduled for 30 minutes. The registration fee is \$75. The Conference is sponsored by the Casualty Actuarial Society, Society of Actuaries, Hartford Actuaries Club and the University of Connecticut's Department of Mathematics and Actuarial Science Program.

For more information and registration forms contact the Conference Coordinator, Dr. Charles Vinsonhaler, at the University of Connecticut in Storrs, [(203) 486-3944 or 3923] or Mark G. Doherty, Director of Research for the Society of Actuaries [(312) 773-3010].

## Study Manuals for SOA Exams

Study manuals for Courses 110, 120, 130, 135, 140, 150, 151, 160, 162, 165, EA-1 and EA-2 are available from Actuarial Study Materials. For a complete list of manuals, write to A.S.M., P.O. Box 522, Merrick, NY 11566.

# Examination Grading Process

by Curtis E. Huntington

Now that the May examinations have been administered, candidates are waiting and wondering why it takes so long to get the results. To answer this perennial question, it might be helpful to follow the process from the time the candidate turns a paper in to the time the results are released.

After each exam, supervisors at each examination center forward multiple-choice answer sheets to a central computer grading facility in Iowa and essay examination papers to the Society office in Illinois. Because of the importance of these materials, either registered mail or courier services are used.

About seven days is needed for this collection procedure, because mail service is slow not only across the Canadian-U.S. border but also from examination centers in nearly 40 overseas countries.

### Multiple-Choice Papers

When each package of multiple-choice answer sheets is opened, the contents are checked — first against the candidate number attendance list created by the center supervisor and then against the computerized master file. Because candidates occasionally miscode their candidate numbers on answer sheets, this step must have a high quality control. Correcting errors later in the process takes a much longer time. Since we now administer more than 10,000 test papers at each administration, the schedule allows an additional 10 working days for this step.

Once checked in, the papers are graded by means of a high speed optical scanning machine. Preliminary results from a large initial sample are then statistically measured against the previously submitted answer key. If the statistical measures of difficulty and/or reliability indicate concern about the validity of a particular question, the chairperson of the Part Committee immediately and carefully reviews the results against the original question. Sometimes, the wrong answer key was submitted and only the new key needs to be input. Other times, in spite of quality controls in

place in setting the question, it may be decided that an ambiguity has entered the question. In these cases, either multiple answers will be allowed or the question may be excluded from the final result. The schedule allows for five working days to finalize the answer key.

With a finalized answer key, the papers now can be computer graded. Once the results are tabulated, a number of statistical reports are produced and forwarded to the Examination Committee volunteers who will review the results and recommend a pass mark. The production and distribution of these reports takes approximately five working days.

Initial pass mark determinations are made by Examination Committee volunteers using the material provided by the testing service. In jointly sponsored examinations, members of the Casualty Actuarial Society must also be involved in the process. Because of its iterative nature, we schedule five working days for this process.

[The development of pass marks for the Joint Board for the Enrollment of Actuaries examinations follows a different path and involves a formal meeting of the three sponsoring organizations and the Joint Board's Advisory Committee. Depending on the date set for such a meeting, the process could be either longer or shorter than that of the other examinations.]

After reviewing the tentative pass mark proposal, the General Officers of the Education and Examination Committee establish the final pass mark. Over the last several administrations of the Flexible Education System (FES) courses, a formal meeting has been called to evaluate the proposed pass marks and to evaluate the differences between the FES pass marks and those of the prior system. This process generally takes three working days.

Finally, the Society office staff input the pass mark into the computer, produce individual grades and grade slips, print up a list of passing candidates and stuff and mail the envelopes. In order to avoid errors,

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*Grading Process cont'd.*

a number of manual checks are also performed. Five additional working days are required to complete the processing of all the multiple-choice examinations.

Thus, the total elapsed time from date of the examination to release of the results for an all multiple-choice examination is scheduled for 40 working days. Wherever possible, we attempt to speed up the process, but never at the expense of quality control.

**Essay Papers**

For examinations that include both multiple-choice and essay questions, we follow the same steps as above except for determining the pass mark. Instead, the multiple-choice scores are combined with the essay scores before the pass mark steps are followed.

Once the essay papers are sorted in the Society office, they are mailed to members of the Examination Committee for grading. Each question is graded using a grading outline (with points allocated) previously accepted by all graders assigned to that question. After enough time has been allowed for all graders to finish their grading assignments at home, a central grading session is held.

[Canadian essay papers are first forwarded to a Canadian address to sort out French papers which are then translated into English by a special committee. Although papers close to the pass mark will be read by a bilingual actuary before final grading, many of the early readings have to be performed by actuaries who may not be fluent in French. A separate, parallel schedule is established to handle these additional procedures and insure that these answer sheets are available for the central grading session.]

At central grading, approximately 40% of the papers around the pass mark are assigned to other members of the grading team and are independently graded. If the results are the same, that result is used. If the scores are quite close, either the original score is retained or an average of the two scores is used. Whenever there are larger discrepancies, both graders must get together and reconcile their scores.

These central grading sessions last for two to three days, depending upon the size of the candidate population. Five to six days are allowed for

both conducting the central grading session and combining the scores with the multiple-choice scores.

Thus, in general, we would expect the results of an examination that included essay scores to take an extra week to 10 days to be released.

Finally, holidays must also be considered in establishing a schedule. A number of holidays follow the November examinations, and our planning schedule must account for them. The May examinations are followed by national holidays in both Canada and the U.S.

While time consuming, the processing of our papers is relatively much quicker than that of other insurance industry examinations. In addition, since the Society relies to a very great extent on a volunteer structure to maintain its examination system, some allowances have also been made for that in setting the schedule. Finally, quality controls take time, but the importance of the examination results makes them necessary.

While students are patiently (or impatiently) waiting for the results of their May examinations, it is hoped that this explanation will at least help them to understand why it is "taking so much time."

Curtis E. Huntington is Corporate Actuary with New England Mutual Life Insurance Company. A past General Chairperson of the E&E Committee, he is now a member of the Education Policy Committee, the Research Policy Committee and the Board of Governors.

## Academic Actuary Sought

An academic actuary is sought to fill a faculty position (rank open) in Actuarial Science beginning August 22. The position requires a commitment to excellence in teaching and research, as well as ability and willingness to participate in insurance industry activities. The candidate must have a Doctorate or be within one year of completion of a Doctorate for a tenure leading appointment. Membership in the Casualty Actuarial Society, Society of Actuaries or Canadian Institute of Actuaries is required.

Submit letter of application, vita and three letters of reference by July 1 to: Dr. Samuel H. Cox, Jr., University of Nebraska-Lincoln, Lincoln, Nebraska 68588-0307 (402-472-2698).

## Research Projects Under Review

by Irwin T. Vanderhoof

The following research projects from various sources have been submitted to the Research Policy Committee. The Committee has referred them to various bodies within the actuarial community and requested that feasibility studies be made. Review of these studies began in mid-May and action to launch high-priority projects will shortly follow.

If other projects you believe are important are not on the list, please submit them to Director of Research Mark G. Doherty at the Society office. Such proposals should include your best effort at estimating costs as well as describing benefits. Ideas on how the work should be done and by whom are also important. If you are working on one of these projects or know of someone who would be qualified, let Mark know.

If you or your company would be interested in funding one of these projects, our door is always open — call Mark quickly. An offer of funding is almost a guarantee that appropriate projects will be carried out under the auspices of the Society research program. Offers for co-funding with the Society also will get our attention. However, there are too many worthwhile projects on the following list to assure you that any particular project will be carried out without such offers of funding assistance.

Following is the list of potential research projects:

- Better early warning system to detect potential insolvency of insurance companies.
- Applications of cash flow analysis for reserving and determination of solvency made easier to use.
- Survey of actual practices of actuaries as they correspond to standards being written.
- Preparation of an Investment Track for Fellowship.
- Integration of theory of finance and investments with the traditional actuarial activities.
- Development of management/business issues to raise the consciousness of actuaries.

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