The Actuary

The Newsletter of the Society of Actuaries

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ACTUARIAL TRAINING IN SCOTLAND

by L. Blake Fewster

In Scotland there appears to be some activity in the actuarial field that has a familiar ring.

This concerns the establishment of the Chair of Actuarial Mathematics and Statistics—the first of its kind in any United Kingdom university — at Heriot-Watt University in Edinburgh. The Chair has been established through the generosity of life insurance companies whose head offices are in Edinburgh and with the support of the Faculty of Actuaries. At the same time, the Faculty is reviewing the educational syllabus, training methods and examinations.

Professor Gray, who occupies the new Chair at Heriot-Watt, delivered an eloquent inaugural lecture, "How Should Actuaries be Trained?" and this could be repeated, with only very minor editorial changes, and seem relevant to the continuing conversation on educational matters within the Society of Actuaries. The actuarial profession in North America owes much to the earlier development of actuarial ideas as well as actuarial organizations in the United Kingdom. Professor Gray's address leaves no doubt that, at least in educational matters, there continues to be a startling parallelism between developments in North America and the United Kingdom.

Professor Gray is hopeful that a pattern will emerge such that professional fellowship can be attained within two years of university graduation instead of the current four or more years. This would be accomplished by redesigning certain university mathematics and statistics degree courses to include actuarial subjects as options. Students would not lose other career possibilities and university staffs would be taking over more

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IMPORTANT

Manpower Study

Please forward information requested of employers in August for the Manpower Study. Every reply is important. Keep us off your back. For information or forms, get in touch with me.

Russell H. Smith, Jr.

ACTUARIES AND THE ACADEMY

by Jeanne Hooshagen

At the October meeting of the Actuaries Club of Indiana, Kentucky, and Ohio the after dinner speaker was Mr. E. J. Moorhead, Past President of the Society and President-Elect of the American Academy of Actuaries.

Using as his title "Honor & Toil," Mr. Moorhead spoke of the history, the present situation, and the road ahead of the Academy. He described the results of a survey that has been made to determine the present composition of Academy membership and the interests and occupational specialties of its members.

Quoting Humpty-Dumpty, "When I use a word it means just what I choose it to mean," the speaker predicted that the day is passing when the word "actuary" can be used by anybody to mean whatever that person chooses it to mean. Those who apply the word "actuary" to themselves when they are not qualified to do so will find themselves a laughing stock, he said.

Mr. Moorhead spoke enthusiastically about the potentialities of a new organization recently formed at the initiative of Academy President Morton D. Miller, consisting of the Presidents and the Presidents-Elect of the various actuarial organizations on this continent. He said that we are getting to know each other

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IN SEARCH OF CENTENARIANS: ON THE ROAD TO HUNZA

by Frederic Seltzer

It was dawn; black clouds hovered over the surrounding hills as our plane took off from Rawalpindi Airport. At last we were on the flight to Gilgit, often called the most dangerous in the world. Flying over green hills up the Kagan Valley, we approached the Karakoram Range. Clouds obscured the view below. Walled in by 20,000-foot mountains, there was no turning back in the narrow valley; the small plane could fly no higher. Like volcanic islands in the sea, the mountain peaks pierced the cloud barrier; we passed the flanks of Nanga Parbat, more than 26,600 feet tall.

Planning the trip had started seven months earlier in January with correspondence with those authorized to take visitors into the formerly forbidden Hunza, the submission of visa forms and applications for special permits, and the juggling of air schedules and hotel reservations. At the beginning of August, a 20-hour flight on Pakistan International Airlines had taken us to Karachi where connections via Lahore soon brought us to Rawalpindi at the height of the summer monsoon. Pakistan was then experiencing its worst floods in a quarter of a century.

We had arrived at Gilgit, gateway to Hunza, an area with many peaks over 23,000 feet high. Jeeps took us along the Gilgit River, over swaying suspension bridges and winding mountain roads, to meet the Raja of Punial. On our return, because of a shortage of rooms at the rest houses and the imminent arrival of Senator Percy with a party of 20, we were informed that we were to leave for Hunza the next morning.

After traveling several hours on precipitous roads strewn with boulders, past

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The Actuary

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MORE VERSATILE ACTUARIES

If we reflect on the growth of our profession over the past half century and consider how it has been affected by the form and content of actuarial education, we might well ask whether our current educational objectives and methods will suffice to produce actuaries able to function effectively in the years to come. For we are now under conflicting pressures to provide a broader grounding in fundamentals on the one hand and more intensive specialization on the other, as well as greater exposure to other disciplines and at least a minimum of experience in one's own area of specialization. The increasing complexity of our environment and the interdependence of technical skills make it necessary for actuaries to keep up with the rapid expansion of knowledge not only in insurance, pensions and related fields but also in many other disciplines, such as the theory and practice of investing.

The institutional setting in which most actuaries work and the information they rely on are undergoing radical change so that past experience is becoming less and less trustworthy as a guide to new developments. But actuaries are expected to design and price a variety of new financial arrangements; they must address themselves to new situations involving contingencies ranging from disability to catastrophe risks and demonstrate expertise with computers and advanced statistical techniques in solving new problems.

Such diverse actuarial services are currently in demand by institutions other than insurance companies as well as by governmental agencies, but most importantly by a more sophisticated public. Furthermore, actuaries are frequently called upon to perform on multidisciplinary teams that include other professions.

The training of actuaries should be adapted both to new knowledge and new roles. The postulates of some of the disciplines we have drawn on—for instance, economics and finance—are being questioned. To identify the most reliable resources on which a forward looking actuarial education can be built, we must periodically reexamine the facts and hypotheses that are blended and transformed into actuarial science.

The scope of these reviews will differ from one area to another, as we develop programs to fit the needs of actuaries engaged in different tasks. This will require gauging the extent to which individuals can be trained for more than one role, and how much time may reasonably be devoted to such educational bypaths. A more promising approach towards greater versatility would appear to lie in having several learning periols throughout an actuary's working life.

Our profession attracts men and women who seek a broadly conceived career. They can be influenced farther in that direction by reward and feedback systems that promote versatility. One obvious path to versatility is in continuing education. Its effectiveness depends, of course, on ready access to new information and new ideas, but even more on the attitudes and practices of one's colleagues. Continuing education will not thrive where new information and new ideas are regarded as impractical or theoretical, or where the admonition cited below is not taken to heart.

Cease not to learn until thou ceas't to live.
Think that day lost, whenever thou draw'st no letter,
Nor gain'st no lesson that new grace may give
To make thyself more learned, wiser, better.

E. A. Lew

TO BE CONTINUED

Editor's Note: This is another in the series of articles from the Committee on Continuing Education and Research. Comments will be welcomed by the Committee and by the Editor.

This review has been prepared by the Committee on Health Insurance.

Geographical Indices for Health Insurance

Members of the Society interested in health insurance will be well advised to obtain a copy of *Medicare: Health Insurance for the Aged, 1969: Geographic Indices of Reimbursement by State and County* recently published by the Office of Research and Statistics and by the Office of the Actuary, Social Security Administration, Washington, D.C. This document can be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.

This document may well contain the best information available anywhere as to the variation in health insurance claim costs by geographical areas within the United States. It displays two indices for each state and for each county, one representative of claim costs per enroll[illegible] under Hospital Insurance (Part A [illegible] Medicare), the second under Supplementary Medical Insurance (Part B of Medicare), for calendar year 1969. These indices are standardized for age-sex distributions within the 65 and over population to which the Medicare program applies.

The geographical variation shown by the county indices is large. For HI the indices for the highest cost counties are as much as 5 times that for the lowest cost counties; for SMI the variation is even wider. The indices reflect differences in utilization as well as differences in price, and give no information on either of these phenomena separately.

For purposes of determining geographical factors for group health insurance rate structures, the indices published have the obvious drawback that they are based entirely on 65 and above data. This is not as serious as it might otherwise be, because the indices measure relative costs (one geographical area to another) rather than absolutes. Many actuaries will be willing to assume, at least until evidence to the contrary tu[illegible] up, that areas with higher than average claim costs for the Medicare population would turn out to have similar character-

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Actuarial Meetings

Nov. 21, Seattle Actuarial Club
Nov. 28, Actuaries' Club of Des Moines
Nov. 29-30, Actuaries' Club of the Southwest; Fort Worth, Tex.
Dec. 11, Actuaries' Club of Hartford; Springfield, Mass.
Dec. 13, Baltimore Actuaries Club
Dec. 17, Chicago Actuarial Club
Dec. 19, Seattle Actuarial Club
Dec. 19, Actuaries' Club of Des Moines

To be Continued

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istics as to younger groups.

Otherwise the results should prove very useful to students of geographical differences. Some of the statistical strengths of these indices, particularly compared with other information available, are the following:

(1) In total there are more than 20 million life-years of exposure, for a comparatively recent time period.

(2) The two health insurance packages studied are uniform over all geographical areas, and not too atypical of hospital and physician packages in the private insurance area.

(3) The results should not be materially affected by varying degrees of insurance coverage, since essentially everybody over 65 is a Medicare enrollee, and neither program has particularly heavy cost-sharing.

(4) Both claims and exposure are classified by county of patient residence, rather than by the place where the service was rendered. This avoids the confounding which might otherwise result from persons crossing county lines to get medical attention.

(5) Although only one calendar year of experience has so far been published, results for 1970 can be expected soon. The county indices will be found to exhibit a good deal of time stability, at least over a one-year interval.

These indices throw considerable light on the facts of geographical variation of health insurance claims within the United States, but they are silent as to the causes of this variation. Those who believe that health claims are a function of climate, population density, average family income, number of physicians or hospital beds per thousand of population, or any other "explanatory variable" will find an opportunity to prove, or to disprove, their hypotheses. □

COMMITTEE ON PROFESSIONAL DEVELOPMENT

by Paul A. Campbell

This Committee of more than 20 members was created in 1970 as a Special Committee. Its charge: identify and explore opportunities for the Society to help its younger members gain professional and personal benefit from membership and contribute effectively to the actuarial profession and the Society.

The initial efforts of the Committee consisted of research into every phase of Society activities, supported by an excellent heritage of actuarial literature as well as discussions held in nearly every actuarial club. The result of these studies was a comprehensive set of observations about the professionalism of the Society and its relevance to younger actuaries.

Nearly 20 specific recommendations were made and their effect, either direct or indirect, can be seen in several aspects of today's Society: informative programs about the Society for its members, studies of the feasibility of an actuarial research foundation, liaison between the Society and local actuarial clubs, and increased attention to actuarial principles and a "living" code of ethics. Perhaps the most important outgrowth is the creation of a Standing Committee on Professional Development.

During the last year a successful transition to full committee status was accomplished. The scope of Committee activities was expanded to recognize its relevance to all Society members, and another function was added: examination of the adequacy and attractiveness of Society activities to the members.

Three areas of activity have therefore been created: (1) examination of Society activities; (2) professional development of Society members; (3) motivated channeling of skills to meet the needs of the Society and the profession.

In our "think tank" sessions we have recognized the elusiveness of the concept of "professionalism." It is impossible to define as a simple specific goal in itself. However, the Committee has identified what it feels are the components of professionalism and thus established a number of potential research programs. These include the following:

- Actuarial responsibilities today and tomorrow.
- Development of mature actuaries.
- Actuaries and public positions.
- Independence of actuaries.
- Future needs for actuaries.
- Professional development in other organizations.
- A handbook for Society members.

Undoubtedly the Committee will create additional research topics in the future. Among the above issues, however, priorities have been established and three projects are underway.

One subcommittee is conducting research into the development of the F.S.A. into a mature actuary. This project involves creation of an initial definition of professionalism, programs to involve younger actuaries in the Society organization, formats for discussions of current real-life problems and short-and-long term orientation programs for younger actuaries.

Another subcommittee is developing a catalog of acturial functions in order to identify present actuarial skills and establish the scope of our profession. This study could create a source of information for public relations and recruiting programs and serve as a base for identifying future actuarial skills. It is possible that research in this area could even contribute to the "supply and demand" issues of the future.

The third subcommittee is developing a handbook for members of the Society which would supplement the Year Book by providing descriptions of committees in some detail, guides to taking an active part in committees and meetings, public relations information about actuaries, and information about preparation and conduct of meetings.

Under the Committee procedure a number of members will retire at the end of this year. We would be glad to hear from any persons interested in serving on the Committee on Professional Development. Interested members should get in touch with the Executive Director, with H. Douglas Lee, or with the author.

Each of the above projects is an exciting program, and the list of subjects to be explored in the search for professionalism is endless. □

LETTERS

Professional Conduct

Sir:

Alexander Marshall's recent letter (*The Actuary*, September) on the actuary's responsibility to the policyholder is an indication of how much the insurer's obligations to the policyholder have been made subject to the demands of others.

It is a sorry circumstance when claim payments are made only after approval of taxing bodies. I recall when policy proceeds were paid as a matter of keeping faith to the insured, and State and Federal interference with the payment in full resisted; but now withholding of payment till releases are secured does not seem unusual.

This may be only a minor breach of the ramparts of the citadel of policyholder obligation, but the introduction of GAAP has not only widened the breach, but destroyed the ramparts entirely. Under GAAP there seems to be no interest in the safety of the policyholder beyond the catchy phrase "adverse deviation." As far as the policyholder is concerned it is almost as though one is saying "who cares?"

There remains still the fortress itself of statutory valuation. The attacks on it have started. Already there are discussions that possibly the statutory system cannot provide for modern products and that at least the statutory requirements should be revised if not replaced. The loss may well be the policyholders' safety. Mighty attacks will be launched as companies with delightful GAAP earnings become statutorially impaired. I wonder if the statutory basis will prevail for long. After all, the replacers of the statutory system with GAAP have been suggested by regulatory bodies as the proper persons to be required to audit all insurance companies. This even after their failure to bring to light several recent highly publicized instances of impropriety. Strange bedfellows indeed!

One wonders at the possibililties when the tax collector's covetous eye sees the GAAP earnings. Which assets will be left to protect the policyholder after his premium payment, securities or prepaid acquisition expenses?

Once on the GAAP treadmill pyramiding of production is required to avoid a slackening if not a decrease in the earnings. The pressures to produce at any cost may well not be containable.

From time immemorial the substantial reserves in a life insurance company's statement have been the target for acquisition. Actuaries have been the stoutest defenders of policyholders' surpluses but no longer do they assume responsibility for many financials. Their voices do not carry as before and one wonders if the policyholder's confidence in the business can survive.

The changes over the next decade or two can become quite startling.

John T. Gilchrist

* * * *

Sir:

Till a few months ago, I was one of those who was not familiar with the "Guides to Professional Conduct." After reading them I wasn't convinced I had missed much. Alexander Marshall's excellent letter should lead members of the profession to serious discussion and an interchange of ideas on the public responsibility of the actuary. Hopefully this will include the most knotty problems, such as the extent of the actuary's ethical obligation to speak out on practices thought to be misleading or detrimental to the current or prospective policyholder, even when these practices occur within the industry or within his own company.

Don J. Evans

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Pension Funding

Sir:

Some Thoughts on Pension Funding by Charles M. Larson in the September *Actuary* handles a specific pension problem splendidly. It is also a splendid particular instance of a more general consideration, relevant to perhaps all actuarial work.

Some actuaries may start with their own expertise and their own technicalities, and then proceed to "sell" these to a client.

Mr. Larson, on the other hand, is taking a decidedly different approach. He is starting with his client, and is *first* finding out the client's problem. Then, *afterwards*, he is developing a solution tailored to the specific problem of the client. This is "marketing" in its best sense—i.e. truly serving the client.

James L. Clare

* * * *

Sir:

Mr. Larson's article, *Some Thoughts on Pension Funding*, (*Sept.* 1973) will probably trigger a great debate on funding methods by many pension actuaries much more qualified than I. The article, however, like similar articles published by Alfred M. King in both the January 1973 issue of *Pension and Welfare News* and the July 1972 issue of *Financial Executive*, points out what I consider the greatest and most critical shortcomings of many pension actuaries.

Actuarial assumptions and cost methods play such a major role in determining pension contributions that actuaries are going way out on a limb when they make these decisions on their own without extensive consultation with client financial managers. Few actuaries have extensive knowledge or background on their clients' pension plan objectives as compared with their current and potential financial condition. Despite this fact, they seldom discuss or explain the major ramifications that assumptions and cost methods have on this major expense item with the person most knowledgeable and concerned—the financial manager. It seems mandatory to include him and a[illegible] others who have knowledge or intere[illegible] in the decision making process when it comes to pension contributions.

Calven K. Hansen

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Sir:

In the October issue, Paul H. Jackson commented on the possibility of using a unit credit valuation method under which the current contribution would be the unit credit normal cost increased by the actuarial cost of the current year salary increases. In particular, he stated: "Under a final average pay plan, an accountant might well shudder slightly if he understood that the actuarial pension cost for a current year included an expense created by service rendered 30 years in the past."

However, if the actuary uses a unit credit method that includes a salary scale, I wonder whether an accountant might not shudder more if he understood that the actuarial pension cost for a current year included an expense created by a conjectural salary increase granted 30 years in the future; especially if the [illegible]tuary used a realistic salary increase pr[illegible]jection of say 6%, and thus projected that a $10,000 a year 25-year-old em-

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Letters

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ployee might end up with a $10,000 salary at age 65.

Under a 2% per year final pay plan, the employer would then have to fund a pension credit of 20% of the current year salary.

I do not think a particular factor can be isolated from the other actuarial hypotheses used and from the circumstances in which it is utilized. There are various possible methods; it is the role of the professional actuary to advise his client and use his judgment in each particular case.

Jacques Hébert

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Youth

Sir:

The trend toward a younger Board of Governors has continued for the third year as the result of the 1973 elections.

The median year for attaining Fellowship is now 1956. It was 1946 three years ago, 1951 two years ago, and 1954 last year. If each median year is related to the corresponding year of election, the reductions of four years and two years are followed by one of one year.

The range of years of attaining Fellowship remains unchanged, extending from 1934 to 1967.

Robert H. Hoskins

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Fellowship Examinations

Sir:

In the October issue of *The Actuary*, John A. Fibiger discussed the new look of the Fellowship examinations of the Society. Since the implementation of the new exams has definitely been set for May 1976, I wonder if the E & E Committee can publish the transition arrangements now, even without their being finalized, unless this could be done within a few months.

This will enable students who are about to begin or continue their Fellowship exams to be able to decide which exams to take. For example, under the syllabus in effect prior to May 1963, the student who passed Part 6 was given credit for Parts 6A, 7B, 10EA or 6A, 7B, 9IA, 10IA, depending on whether the "E" or "I" branch were elected. The student who elected to take Part 6 last was, in my opinion, better off because he had fewer exams to pass in the required three-year period.

Although 18 months is the proposed minimum, I believe that the transition arrangements should be distributed now, even if they have not been set definitely. This will give the student much more time to plan his sequence of exams over the next three years.

Murray Cautin

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Arabic Transactions

Sir:

Dreading the day when I need to refer to volume XXXVIII of the *Transactions*, or even worse, should I live that long, to volume LXXXVIII, and out of concern for future generations of actuaries who may have to contend with CCCLXXXVIII, I would like to make a suggestion.

Upon its XXVth anniversary, let us have the Society step into the XXth century by adopting, thenceforth, arabic numerals to describe volume numbers of its *Transactions*. Let us start with volume 26, next year.

This will help us cut down on space, when writing articles (scholarly or otherwise) referring to the *Transactions*, thus helping conserve the writer's energy, ink and paper. Arabic numbers are easier to read too (whether one yet wears bifocals or not).

I would suggest we adopt the lawyers' system of citation in our publications where the volume number *precedes* the initials, and the page number follows, all without commas. Isn't it simpler to cite 38 *TASA* 56 than *TASA*, XXXVIII, 56?

For Reports numbers, we should put the year first, so as to have, for instance, 1971 TSAR 37.

Nobody has to put up with more books, I would think, than the legal profession which has a good, manageable and efficient citation system. Let's adopt it.

Claude Y. Paquin

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Social Security Note

Abraham Niessen, *New Actuarial Valuation of the Railroad Retirement System*, Actuarial Note 7-73, September 1973, U.S. Railroad Retirement Board, Chicago, Illinois, p. 6.

This actuarial note summarizes the actuarial balances presented in the Twelfth Valuation of the Assets and Liabilities of the Railroad Retirement System. The valuation results are based on the 1972 Social Security and Railroad Amendments with estimates of the experience under the 1973 Amendments to both programs. All temporary benefit increases are assumed to be permanent. The actuarial deficit of the Railroad Retirement System is more than 6 percent of payroll, with the deficit increasing to more than 8 percent of payroll if the 1973 Amendments are included.

Free copies of this Note may be obtained from the Office of the Chief Actuary, Railroad Retirement Board, Chicago, Ill. 60611. □

Actuaries and the Academy

(*Continued from page 1*)

better and to trust each other more thoroughly and to pool our ideas in solving the several organizational problems ahead for the actuarial profession.

"To assure the Academy of the strength it will need," said the speaker in conclusion, "you should become a member if you are not one and are qualified; you should stay a member even if you are sometimes annoyed or discouraged, or even if the dues go up; volunteer to help; read the NEWSLETTER and ask questions about what is going on; discuss the Academy at local Club meetings; be emotionally and intellectually prepared for difficult questions, such as the dilemma of actuarial independence of the actuary.

"Last and most important, go into a quiet place every so often and meditate on how you will deal with that exceedingly difficult question that only you can answer—how you will balance loyalty to the interests of your employer with your responsibility to the public and to the ethical requirements of your profession." "My worry," he said, "is not that you will arrive at the wrong answer, but that too many of you will allow basic questions of professional conduct to go unresolved by default." □

In Search of Centenarians

(*Continued from page 1*)

glacial waterfalls and streams from the flanks of mighty Rakaposhi, 25,500 feet high, through small villages and irrigated valleys, we reached Hunza, inspiration for "Lost Horizon" and other tales of Shangri-La. Up numerous switchbacks, we finally climbed to the Mir's Guest House at Karimabad. From the porch we looked out upon towering Rakaposhi and other snow-clad peaks, terraced grain fields, and rooftops of adobe-like houses covered with drying apricots and plums.

After a lunch of rice, unidentifiable meat, and a flat bread called *nan,* we set out to explore the nearby village. In the fields, families were driving bullocks in circles to thresh the recently harvested grain. There were no very elderly people to be seen, and though the valley was fabled as one without serious illness, Hunzukuts with sever goiters were clearly present. (Their illness was ascribed to a change in diet from natural to refined salt). My reveries were interrupted when a woman I had photographed began shrieking and bombarding me with stones. Yes, Hunza's isolation has ended but the changes to come are not yet readily apparent.

The following afternoon we drove to the Palace where an audience had been granted with the Mir and Rani, rulers of the Kingdom. After being served jasmine tea, cakes and sweet plums, we chatted with the Mir. Surrounded by family portraits and photos of friends such as Chou-en-Lai, we talked of the problems of keeping Hunza's virtues of hard work, no crime, and little disease as it opened its doors to the 20th century. The Mir was strongly opposed to permitting large-scale tourism in his Kingdom, but he could not prevent it and already an Intercontinental Hotel was under construction. When I raised the question of reports of unusually large numbers of centenarians, he replied that though there were many aged Hunzukuts, such statements were probably exaggerations. Other inquiries later disclosed that the language of the area, Burushaski, is unwritten and that there are no records to document extreme ages.

We returned to Gilgit in a rain shower followed directly by a sand storm blowing up from the river bed, only to learn that all flights had been cancelled since our arrival earlier that week. Two days later, still marooned in Gilgit, we decided to join a caravan of jeeps and proceeded down the Indus Valley. For 18 seemingly interminable hours of heat and dust, we careened over deteriorating roads along the raging Indus. We hardly ate, but greedily swallowed cups of water scooped from canals flowing through isolated villages in spite of the obvious dangers of dysentery and other diseases. At 2:00 in the morning the caravan straggled into Swat and we collapsed into bed, grateful for our safe arrival.

We had been to Shangri-La and returned. What was Hunza's secret? Was it the food—primarily vegetarian—of gruel, vegetables, and fruit, particularly apricots? Was it the water—from the snow glaciers, but with a grayish black colloidal suspension—that had a very disagreeable taste?

When I awoke the next morning, I knew the answer. My diet had been monotonous, the water abominable, and during my journeys in and out of Hunza I had easily aged 40 years. Obviously, anyone passing his lifetime in Hunza on the available food and water and hiking the steep hills and mountains daily must age even faster than I had, even if it does not show in physical appearance. All the robust farmers I had seen were actually centenarians and the school children were soon to celebrate their fiftieth birthdays! □

PRICE DISCLOSURE AND COST COMPARISON

by Martin S. Huey

Part of the late spring meeting in San Francisco was a concurrent session on the subject of "Price Disclosure and Cost Comparison." The topic was extremely timely (the NAIC having just concluded drafting its model legislation) and the entire audience participated (through a questionnaire-based opinion poll).

The official record appearing in the *Transactions* will prove to be most valuable reading, in that it contains a point by point historical record of the milestone events concerning Price Disclosure and Cost Comparison as recalled by Bart Munson, chairman of the Society's ad hoc committee on Price Disclosure and Cost Comparison. In addition, it contains a rather detailed description of the All-state price disclosure program as detailed by Paul Overberg, one of the panel members. These two features will be invaluable aids to the newly aware or anyone who has to make a speech on the subject.

While only 63 people completed the questionnaire (and Mr. Yankolovich might have had some problems with the wording of the particular questions), there were several items which lend themselves to comment.

(1) Responses to particular questions did not vary by Fellow/nonFellow, under or over age 35, or by type of affiliation (Mutual/Stock/Other). Is there really a danger that a particular interest group could sway the Society to take a public position to the disinterest of the common good? Are stock company actuaries really "all alike"?

(2) The interest-adjusted cost index has achieved widespread acceptance and almost half the group consider it a *minimum* requirement for adequate price disclosure. It may take time, but actuaries do accept change in the needs of the buying public!

(3) Three-quarters of the attendees rejected the "splitability" of an ordinary whole life plan of insurance. This perhaps explains the lack of acceptance of comparison methods based on treating an ordinary whole life plan as a combination of decreasing term insurance and increasing savings.

(4) There was a very high degree of awareness of the activities of the NAIC Task Force on Life Insurance Cost Comparisons and their model regulations regarding disclosure practices. Although this had received only very limited publicity, better than 40% of the group were acquainted well enough with the proposals to have made judgments on their potential impact on such things as product design, pricing, dividend scales, marketing approaches, and even the job of the life company actuary.

The questionnaire will be reproduced in the *Transaction.* Should anyone be interested in additional details of the results of the San Francisco concurrent session poll, for either comparison with other groups or for further research, I will be glad to share with them the detailed responses. □

Actuarial Training in Scotland

(Continued from page 1)

of the burden of examining the earlier parts of the professional examinations. In North America, we call this the alternate route.

While Professor Gray is hoping for a closer link between universities and the actuarial profession in Scotland "such as exists in . . . the United States," it may be that the so-called alternate route in Scotland would be more easily controlled than in North America. The article suggests that there may actually be a stronger joint commitment between universities and the actuarial profession in Scotland than we at present enjoy in North America. While we do have several good actuarial schools in North America, these schools could not currently maintain the full input to the actuarial profession on this continent. Our five-year debate about the alternate route in North America is sufficient evidence to judge this as a very complex problem. However, without intimate knowledge of both situations, it is dangerous to comment on the relevant development in the two areas.

In any event, there are similarities on both sides of the Atlantic. High school and university courses have been extensively revised and increased use is being made of computer techniques, making parts of actuarial mathematics obsolete. Professor Gray does note that less time is now spent on developing manipulative skills, so important in actuarial mathematics, and that the actuarial profession must expect a future intake with a less well developed aptitude for algebraic manipulation. There is an increased need for students to develop a deep and continuing interest in their career rather than studying for the sole purpose of passing examinations. There is a basic need for the examination syllabus to be continuously reviewed, pruned of old material and updated with new techniques. The experience of our own Education and Examination Committee has generally been that pruning of material is done as a practical necessity and that there are more requests to add new material than to delete old.

In North America we have been talking about a common core of actuarial knowledge which, among other things, would include both life and non-life considerations for solving problems. The advent of joint sponsorship of the examinations administered by the Casualty Actuarial Society and the Society of Actuaries by the six recognized professional actuarial organizations in Canada and the United States creates the framework for further development.

In Scotland the development of non-life actuaries appears to be non-existent, with the field of non-life insurance being largely in the hands of non-mathematicians. Professor Gray states that this is strangely anomalous because in non-life insurance the problems are more complicated and more interesting than those faced in life insurance. In North America we have a number of non-life actuaries and the problems which they face are of a widely varying nature. Members of the Society of Actuaries also continue to be challenged by new developments in life insurance, health insurance, and pensions requiring the exercise of actuarial skills.

The big lesson for North American actuaries to be drawn from Professor Gray's address is that almost exactly the same forces pushing toward revision of actuarial education in North America are also working in the United Kingdom. What is more, the responses being developed on both sides of the North Atlantic are almost identical. The simultaneous appearance of the same set of problems and the same proposed responses in two different countries should remove any suspicions that the forces are illusory and the proposals for reform worthy only of dismissal. □

BASICS OF COST COMPARISONS

by James C. Hickman

On Capitol Hill in Washington and in almost every academic, professional, or trade association meeting that relates to life insurance, sessions are being devoted to cost comparisons. It is clear that this intensive activity could have a significant impact on the marketing of life insurance.

The Society of Actuaries has a special committee considering cost comparisons. Each of the recent meetings of the Society has had at least one session directed at some aspect of the problem of how to summarize cost information about life insurance for prospective purchasers. Consequently even actuaries not involved in marketing problems for individual life insurance should by now be aware of the outlines of the problem.

This short essay contains no technical suggestions for insurance cost indices. Instead the objective is to state and support two basic propositions:

(1) A highly developed information system is essential for the efficient operation of a market. If one adopts the premise that an open market provides the best mechanism for consumers to maximize the utility derived from their purchases, he is forced to support efforts to develop cost comparisons in life insurance and to make this information freely available.

(2) Because life insurance involves a balance between a stream of premiums and benefits and services extending into the future, any cost summary depends on a model and a set of assumptions about the future. A rational consumer may formulate a view of the future which is consistent with his preferences and state of information. Yet there is no theoretical or practical reason to expect a consensus among potential purchasers on the assumptions by which streams of future premiums and benefits are converted into a present ranking.

In our imperfect world no one has ever observed a realization of the perfectly competitive market of classical economics. This beautiful abstraction is inhabited by hypothetical buyers and sellers supplied with unlimited and reliable market information and controlling the market. Nevertheless, the notion that informed consumers, armed with common sense and a reasonable fund of information, can operate through an open market to regulate and direct an economy, is a powerful one.

Vast information systems have been organized within both the private and public sectors to promote efficiency in securities trading. A major objective of the federal regulation of the securities markets in the United States is to enforce the availability of comparable information. Several agencies within the Department of Agriculture operate to produce and disseminate information concerning the supply and demand for agricultural commodities. Markets in which information is too expensive or unreliable often behave capriciously and fail to fulfill their intended function.

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Basis of Cost Comparisons

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Consequently, those of us who find it hard to conceive of a distribution system that is consistent with individual freedom and economic realities which does not involve a free market, find ourselves compelled to support efforts to summarize cost aspects of life insurance. Of course, it is equally important to develop a system to widely disseminate this information.

Nevertheless, one who values the precise use of the English language must view "truth in insurance" as no more than a slogan. Truth is a measure of the correspondence between a proposition and reality. The reality of a life insurance contract will be revealed only over an extended period of future time. Truth is a relevant concept when applied to past insurance results. Yet 20-year net cost, interest adjusted net cost, and the family of cost indices that also employ probabilities of death and withdrawal and which have occupied the attention of those working in this field, are prospective rather than retrospective in nature.

In addition, most of these indices have explicitly attached zero value to the set of auxiliary benefits and services that are part of many life insurance policies. Therefore, it is legitimate to speak of such prospective indices as being valid with respect to a set of assumptions by which the particular index is computed, but we may never know the truth before the event.

There is more involved here than a pedantic concern with the definitions of words. The main result of modern decision theory tells us that a decision maker who accepts a few plausible axioms for coherent behavior may formulate probability distributions about future events. In addition, a decision maker's preferences may be combined with his view of future uncertainty to arrive at an optimal decision for him. This elegant theory provides a superb framework for individual decision making. However, the theory is concerned with individual preferences and states of information. There is nothing that would lead one to hope for any degree of universality in preferences or in views of the future.

Thus a proponent of decision theory is forced to support complete disclosure of life insurance cost information and to encourage attempts to summarize this information in comprehensive indices. Yet he is also forced to admit an element of futility in this work. Summary indices may be helpful, but there is no reason for believing that any index can capture the essence of more than one individual's view of the future and his preferences. The subject of cost comparisons is important but no magic answer is hidden awaiting discovery. This hay stack is important, but it may not have a needle. □

BOSTON CLUB MEETING

by Charles A. Peirce

The 200 members of the Actuaries' Club of Boston who did not attend the Oct. 11 meeting missed an exciting program devoted to a discussion on the education of actuaries. The program notice, listing the speakers assembled by Michael J. Cowell and his program committee, did entice 102 members.

The program was moderated by John A. Fibiger, general chairman of the Education and Examination Committee. Panel members were George L. Hogeman, president of Paul Revere Life (the industry spokesman); Geoffrey Crofts, dean of the Graduate School of Actuarial Science at Northeastern University, Richard London, assistant professor at Northeastern (representing academia); Denis W. Loring, actuarial associate at John Hancock (representing the actuarial students); and two representatives from the Education and Examination Committee, Peter W. Plumley and Harold G. Ingraham, Jr. The frosting on the educational cake was in the form of an after-dinner speech by Andy Webster.

Mr. Hogeman started by expressing the feeling that insurance industry management was satisfied with the work of the actuary. He then went on to list a number of shortcomings of actuaries, including a reluctance to utilize new techniques and a lack of much needed communication skills. Dean Crofts felt that elder statesmen, not students, were the most qualified to guide the development of educational programs which would equip the actuary to face the problems of the 1980's. Mr. London felt the syllabus was not theoretical enough and made a plea for a less well defined syllabus. Both teachers found an unusual motivational level (*vive les* exam raises!) and this helped to make it rewarding professionally to teach actuarial students.

Mr. Loring, in a very articulate presentation, expressed the consensus he had reached with his fellow students. They felt that management development training and an awareness of EDP constraints and opportunities were missing from the syllabus. He stressed the need to gear exam preparation toward problem solving and felt that the actuary should be much more in the forefront in developing research techniques.

The E and E Committee members, rather than defending the existing educational system, added to the number of problem areas pointed out by prior speakers. Mr. Ingraham noted deficiences in the syllabus in underwriting, investment and finance, and marketing and advanced underwriting. He also felt that the effect of the insurance industry involvement in providing broader financial services should be considered in future syllabus changes. Mr. Plumley commented on the theoretical versus practical question. While a slight emphasis on the practical is necessary for the training of employees, Mr. Plumley suggested tha the current restructuring of the examinations will make them both more theoretical and more pertinent. The E and E members also stressed recent efforts at continuing education, such as specialized society meetings and articles in *The Actuary*.

The question and answer period elicited the following opinions:

(1) It is not getting easier to pass the exams.

(2) Students feel that dropping memory items from the exams is not a bad idea.

(3) If an exam question is too good, it tends to be ducked in favor of memory questions.

(4) The Society should consider the Casualty Society practice of including some questions on topics of current interest not covered by a defined reading list.

The cocktail hour-plus and the dinner were most enjoyable. Mr. Webster's after-dinner remarks, liberally spiced, is his style, with quotations (usually attributed to Scottish actuaries), were so spellbinding that the reporter neglected to take notes. □