

## RECORD OF SOCIETY OF ACTUARIES 1989 VOL. 15 NO. 2

### THE ACTUARY OF THE FUTURE/ THE FUTURE OF THE ACTUARY

Moderator: GARY CORBETT  
Panelists: JAMES J. MURPHY  
ROBERT T. SMITH  
Recorder: JACK Z. REICHMAN

- o The panel will discuss the report of the Task Force and its implications. Considerable time will be allocated for questions and comments from the floor.

MR. GARY CORBETT: As President Elect, I established the original Task Force on the Actuary of the Future. This subject was the primary theme of my Presidency and I am the current Chairman of the Society's Task Force on The Actuary of the Future/The Future of the Actuary, which has a number of charges:

- a. Working with Society committees and Task Forces to develop action plans to carry out the original Task Force recommendations.
- b. Coordinating our work with the other actuarial bodies.
- c. Finally, to initiate discussions on issues related to the Future of the Actuary within the Society membership.

As early as 1982, the Society's Career Encouragement Committee, based on a survey of actuarial employers, concluded that: "Employers are not focusing on numbers alone; they appear to be looking for actuaries with a broader bent, going well beyond the additional technical skills." A few years later, a Committee on Planning characterized the problem this way: "In a world of increased change, actuaries as a group need to increase their abilities to deal with change. We need greater competence in such skills as problem identification, dealing with unstructured situations, applying interdisciplinary approaches, communications and conceptualization." Employers were described as wanting people who could sort through a mass of information to identify key problems and who are willing and able to operate in an ambiguous, unstructured situation. Management and communication skills were deemed important if an actuary were to advance past a technical level.

Actuaries in other countries have been coming to similar conclusions. Last year the Education Working Party of the Futures Committee of the Institute of Actuaries of Great Britain produced a Report. In this Report it was stated that "barely a third of all actuaries covered by a Survey were involved predominantly in analytical work. Almost a quarter were involved in jobs where the predominant skill is communicating to others, and more than a third were in jobs where managerial skills are paramount. This raises the question as to whether it is realistic to expect all actuaries to be trained to a high level in analytical skills when only a small proportion will make their career in jobs which require this emphasis."

Two years ago, the Society's Committee on Planning widened the Society's focus from what had previously been an inward look at the actuary of today, to an outward look at the actuary of tomorrow -- the actuary of the 21st century -- a century in which our current members will spend most of their collective careers. Since the Committee on Planning had been discussing this question, along with many others, for a few years, it was decided it would be best to set up a Task Force to undertake an in-depth study of The Future of the Actuary/The Actuary of the Future. Jim Murphy was named as Chairman of this Task Force, and the Report that many of you have read and that he will present is the primary work product of the Task Force.

Following Jim's and Bob's presentation, we do want to hear from you -- not only as to the concepts presented in the Report, but also whether you agree with the Task Force and the leadership of the Society and the other North American actuarial organizations that a problem does exist in the

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actuarial profession and, in particular, the Society of Actuaries needs to change the manner in which we select, educate and train future actuaries.

Obviously, "if it ain't broke you shouldn't fix it," and we do know that there are some of our members who feel that way. As Jim will mention in his talk, this was one of the assignments for his Task Force, i.e., to determine whether any problem did indeed exist. They concluded that there is indeed a problem. Last October, the Society's Board endorsed this answer and the Task Force's suggestions and approaches to solving it.

**MR. JAMES J. MURPHY:** When the Task Force was set up, we were charged, "to study and make recommendations concerning the future roles of the actuary and the professional activities necessary to prepare and to support actuaries for those roles." That is what we set about to do. In order to come up with some facts to substitute for impressions, we undertook a number of activities.

First, we reviewed the discussions that had been held by the Planning Committees of several years past regarding this issue and similar issues for input and insights as to their thinking that would help lead us down the path of knowledge.

Second, with input from that and other sources described later here, we developed a vision matrix that was the picture of our potential future for the actuary in terms of the role the actuary could play.

We put together a very simple questionnaire that was sent to all the readers of *The Actuary* and the responses to that were summarized and I'll show you those. In the spring of 1988 we did open forums at each of the Society of Actuaries spring meetings to talk about our process and discuss the issue with the members present, again obtaining input to lead to conclusions for our report.

We also interviewed a number of executives and other types, regulators, etc., not actuaries, who used the services or worked closely with actuaries to get their opinions about actuaries in general and about the future for the profession. And finally, we discussed the issue with a number of Society of Actuaries committees and also committees of other professional organizations to see what their thinking was relative to their particular work assignment for the profession and the actuary of the future.

First, here is the result of the survey of actuaries. We received a total of almost 400 responses, which we felt was a very high response rate for the type of questionnaire which was quite open ended that we had provided. On balance, the respondents felt pretty good about the prospects for themselves in the future with 68% seeing their own prospects as being good. But on the other hand, 59% of the respondents did feel that the actuary's role was declining in at least some segment of actuarial practice. The three most common areas of practice in which decline was felt to exist were pensions, number crunching or technical actuarial work, and upper management. Interestingly, the latter two are two ends of the spectrum of actuarial practice in general.

They were asked "Who was invading actuarial turf? What was the outside influence that might be affecting the future roles for the actuary?" The four most common responses, were accountants, economist/legislators, MBAs, and investment specialists.

In the case of legislators, I don't think they were responding so much in terms of direct invasion as rather indirect invasion by developing a regulatory/climate, at least in the U.S., that makes the need for thoughtful actuarial work almost unnecessary.

MBAs were seen by many as encroaching on actuarial activity, particularly in the insurance company environment. And one that surprised me a little bit was investment specialists, but certainly a lot of the products that actuaries deal with are highly investment-oriented and so it may not be that much of a surprise.

We asked what they felt were the needs for actuaries in order to be better prepared for the future. These were the four most common responses to that question:

1. communication skills,
2. management skills,

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3. familiarity if not regular practical ability with the computer, and
4. more knowledge of the area of investments.

Also, through this questionnaire, a number of ideas were presented that would help individuals and the profession be better prepared for the future. These ideas are being passed on through our new Task Force to various committees of the Society of Actuaries and other actuarial organizations to review and consider for possible action.

Now a look at the views we received from our interviews with outsiders. They saw actuaries' typical traits on the positive side as being skilled and bright; however, they were also perceived as narrow, defensive, arrogant and rigid. They felt that the traits that were often lacking in the actuaries they dealt with were financial acumen, communication skills, management skills and good use of management information. On the positive side, a predominant strength of actuaries was an ability to solve problems. They felt that we should clearly build upon that strength for the future, but in doing so we should avoid our tendency to make things too complicated, at least when we communicate to others about them. They felt there were actuaries who escaped the stereotypical view of actuaries and these are the actuaries they tended to see in upper management positions and major consulting roles.

They made some suggestions to us. Don't diminish the emphasis on key actuarial skills as we look to the future and how to be better prepared for it. That is an important trait of the profession not to be ignored. We should recognize that the profession is little known and fix this as we recommend more activities in the public relations area. I believe these interviews took place even after the article on the actuary being the number one job, so they didn't necessarily feel that was enough. I don't think so either.

They felt very strongly about the reputation of the actuary as a professional with ethics above reproach and that whatever happens, don't lose that trait and reputation. Another interesting thing that came out was the feeling that actuaries were perhaps the best equipped professionals to dovetail the money side and the risk side of the various financial enterprises that actuaries might deal with. They felt that it was easier to take the actuaries' analytical skills and train them in the market place of investments rather than take MBAs and investment analysts and train them in analytical skills. There was a strong feeling that we need both of those complex environments that we have and continually see getting more complex in the future.

Another interesting trait or concept is that the future is going to be an environment of teamwork, multi-disciplinary approaches to problem solving. The actuary's education tends to produce an individual performer by its very nature, and that if we were going to be able to work better in this future of teamwork, we had better look at how we can better prepare actuaries for that kind of environment.

With our input, our primary recommendation and the basis for our vision of the future was that the Society of Actuaries, and indeed, the profession as a whole, embrace a statement of mission and a statement of intellectual core which could underlay activities to support and prepare the actuary for the future. Our statement of mission was to be and is to be perceived as being the financial architect and potential managers of enterprises both private and public that are built on the intellectual core of the actuarial profession.

Our statement of intellectual core was the application of experience analysis and risk evaluation to measure, communicate and respond to the current financial implications of future contingent events.

With these two statements in place, we set about to develop a vision of the future and the vision matrix which I mentioned earlier. There were three underlying assumptions as we analyzed the potential future roles of the actuary. First, we felt that the actuary of the future will deal with a variety of new contingencies and new businesses through an expanded perspective. We felt that the actuary of the future will strengthen his or her role in areas where actuaries are or should be uniquely qualified. But in addition, the actuary of the future will seek to identify and address areas where they are or can be qualified, not necessarily uniquely, but where they will bring something special to the table that other professionals do not.

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With these assumptions in our mission, we looked at a matrix of activities and users of the actuary. This is just the first quadrant of our matrix. Our matrix had users along the left hand margin and activities or functions across the top. This quadrant, the first quadrant, shows our traditional users (life insurance companies, property and casualty companies, private industry concerned with employee benefits, and government) performing traditional actuarial functions (pricing and funding, product and benefit design, valuation of liabilities, solvency, legal/regulatory compliance, and tax strategy). In analyzing the future prospects in this area, we certainly saw that the need for actuaries would continue in most areas and with the exception, however, of some property casualty areas, and government, the needs are well met now and therefore do not present a lot of opportunity for expansion in the future.

In terms of expanding in the future, one direction that you can go leads us to the second quadrant, which is to continue to provide services to our traditional users but expand those services. The areas we identified for potential expansion were valuation of assets, strategic planning, product management, underwriting, risk management, corporate finance, investment management, investment analysis and information management. In almost all areas, we not only saw a need existing, but also that the need was not being well met, at least by actuaries and probably not in general today. And so, with the possible exception of government, there is certainly an opportunity for expansion and growth of the profession and the actuary.

Alternatively, the actuary who is expert in one particular function could apply that expertise in new areas. We saw the potential new uses of actuaries being the health care industry, other financial service organizations beyond the insurance industry, and private industry viewing itself as a business, not looking at employee benefits only. When we analyzed these potential cells, we felt that there was certainly both need and opportunity in terms of the need not being met, particularly in the health care industry and financial services industry, but not as much in private industry.

Finally, for the actuary who is well prepared, and ready to expand into the future, you can apply new functions to concerns and problems of new users and this provides potential opportunity as well. So our charge, as Gary said, was to determine whether or not there was a problem. Our view was that there was clearly an opportunity and that the actuary and the actuarial profession could see a lot of growth and expansion in the future, but, and the but's very important, only if the actuary is going to be well prepared to meet those needs with the right skills, and the right background and the right perspective to do so.

We first considered the implications of this vision, the needs, and the individual actuary, and identified a number of activities/skills/characteristics actuaries would need beyond their traditional characteristics and skills. They need to become managers as well as technicians. They need to be advisors as well as calculators, conceptualizers as well as mechanics, persuaders as well as analysts, futurists as well as extrapolators, and perhaps most important, communicators as well as mathematicians.

That's all very well and good, but in order to be prepared to better meet the future -- and our focus has been on the actuary and his role in the future and being prepared -- we think the profession is going to have to play a major role in helping to prepare us for those roles. So what are the implications for the profession? We identified a number of areas where we felt there were strong implications. In the area of basic education, certainly continuing education in our basic skills, but also some of the new skills that may be needed by the actuary in the future. Also, an education system that would instill a broader perspective on the role of the actuary, building on the Flexible Education System/Future Education Methods (FES/FEM) structure to better test and educate in the new skills that we feel are necessary for success in the future. And finally, the basic education area is very important in its relationship to recruiting actuaries in the future, which I'll come back to, but that relationship should be kept in mind as the education system is developed and expanded in the future.

In the area of continuing education, certainly existing actuaries could give us some help in better developing the new skills we've identified. Also with the continuing and greater pace of change, more and more actuaries are going to be changing career direction throughout their lifetime and some form of retooling capabilities through the continuing education system is necessary and desirable.

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In those areas where the profession is not necessarily skilled and adept at providing training in various skills, it at least should provide information about alternative sources for obtaining that education and training. Perhaps the question of public recognition of continuing education will play a role in the future, but that's a question that will have to be studied and debated for some time yet. The area of research is going to be important. It is new ideas that keep the profession alive. Not only do we need those new ideas, but we need to communicate them, and not just to ourselves, but to the outside world as well. It is the reality of research that will provide a basis behind an image of what the profession is and can be. And then there is public relations -- the outsiders told us we need to do something about our image. We have a number of audiences, potential actuaries, potential employers, current actuaries and public policy makers. Image making will be important, but it has to be an image based on fact, not on fantasy.

You've all been reading and perhaps attending sessions about the Council of Presidents Task Force on Strengthening the Actuarial Profession. Our Task Force on the Actuary of the Future felt that the direction in which that Task Force was going was also very important for the Actuary of the Future, particularly with the public interface role of the profession, and we endorsed the direction and goals of that Report.

And finally, perhaps most important in terms of providing the Actuary of the Future, is our recruiting and selection process and direction. And that can best be looked at in terms of our thinking by looking at Chart 1. Essentially we are saying that people can be broken down into having various relative strengths from a point of view of skills and career orientation that relate to either math (as a representation of a broad technical background) or business (as a representation for all those skills including communication, management, interpersonal skills, conceptualization, unstructured problem solving, etc.).

We believe that our direction in recruiting today and in the past has been geared primarily to people who have predominant math skills and math orientation and less of the business skills. We believe that for the future we must expand our target and our approach to attract a broader spectrum of people that would include not only more of the people who still have adequate math skills and orientation to deal with the analytical side of our business, but also have more business skills and can move into the expanded world of the actuary that we envision for the future.

How do we get there? Well that is the business of this Task Force and a number of committees, and input from you in the audience and others as we look at the specific ways in which all of these directions can be brought about. As Gary alluded to, our Task Force this year is meeting with committees and meeting with members of the profession talking about the Report and helping develop plans of action that will help us better prepare today's actuary and tomorrow's actuary for the future.

MR. CORBETT: That was a very clear and concise summary of the Report. I think Jim and his Task Force did a tremendous job on getting their arms around a very difficult subject and I think this Report and its follow-up is going to stand the profession in excellent stead for a number of years.

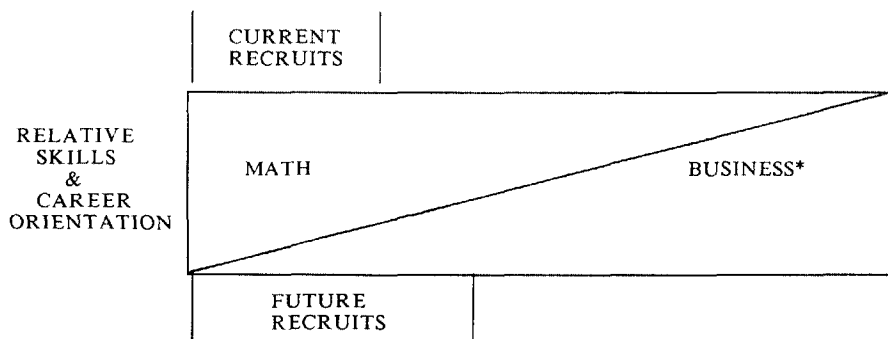
MR. ROBERT T. SMITH: As Gary indicated, I currently have the pleasure of working with Mr. Dick Crawford, the Immediate Past President of the Canadian Institute of Actuaries on a Task Force to explore The Future of the CIA. This Task Force is researching a variety of topics similar to those identified in the Society Report and intends to present a report to the Council of the Canadian Institute in November of this year. My comments this afternoon will be directed at providing a Canadian perspective on "The Actuary of the Future" Report. I'll be making references to the work of the Crawford Committee where appropriate. I will also be making references to the Task Force Report on the strengthening of the profession which I found, as a Canadian actuary, interesting and encouraging.

I think that it is fair to say that both the Report on the Future of the Actuary and the Strengthening of the Profession were written out of concern for a narrowing and fragmentation of the profession, respectively.

There were a number of concerns expressed by the original Planning Committee Report which preceded the Task Force Report on the Future of the Actuary. Specifically, this Report discussed the erosion of the role of the chief actuary in large insurance companies, implying that in many

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CHART 1



\* By this term we mean such skills as: problem identification, dealing with unstructured situations, applying interdisciplinary approaches, conceptualization, organization, interpersonal skills, communications.

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cases the role of the chief actuary has been supplemented or even replaced by that of the chief financial officer. I believe that a similar trend has been averted in Canada as a result of the maturing of the concept of the valuation actuary. The valuation actuary, which is defined by statute in Canada, has been around for about ten years. At the present time, a committee of the Canadian Institute is exploring the workability of an expanded role for the valuation actuary which is similar in some ways to the appointed actuary in the United Kingdom. This would mean that the valuation actuary would have a direct reporting relationship to the board, which certainly does not imply a decline in his or her influence.

In addition, the recognition of the valuation actuary in Canada has had also, a number of beneficial effects on the profession:

- o The valuation actuary is required to use professional judgement in the setting of assumptions and margins for adverse deviations. With the growing complexity of products, particularly in respect to the credited interest rate, the actuary has been required to take a much broader view of the company than was previously the case.
- o The focus of the profession has shifted markedly from valuation to financial reporting with the Canadian Institute of Actuaries becoming more involved in financial matters that are not strictly actuarial.
- o The Canadian Institute of Actuaries has worked with other professional bodies such as the Canadian Institute of Chartered Accountants (CICA) to achieve a mutual recognition between the auditor and the valuation actuary in a life insurance company.
- o The Institute is very closely involved with the Canadian Institute of Chartered Accountants and the Office of Superintendent of Financial Institutions in Canada in respect of the implementation of GAAP for life insurance companies.

So I believe that the concept of the valuation actuary has elevated the profession in Canada and there is every indication that this trend will continue.

The Report that we're discussing today on the Future of the Actuary predicted this effect in the United States, specifically stating -- "The valuation actuary concept will provide a key for an expanded role for the actuary in one of our primary current areas of activity. The way we deal with this issue may also provide a basis for the way the actuary of the future and his professional support deal with expanding roles for the actuary. This can be a significant element in the definition of our profession for the future." I would suggest that the Canadian experience supports this statement 100%.

The Planning Committee also observed, and this was as recently as 1987, that the role of the actuary has diminished in the area of pension fund consulting due to the increased importance attached to asset management. The role of the actuary in investment management is a topic which is being specifically considered by the Crawford Committee in Canada. There are indeed increasing signs of actuarial involvement in the investment area, particularly in areas such as performance measurement and immunization, and I have a sense that this is beginning to happen in the United States as well. I attribute this impression to attendance at a recent Society investment meeting in New York.

Another area offering tremendous opportunity at the present time in Canada is in the area of non-life actuarial work. A recent statutory requirement that all non-life actuarial reserves be certified has created a very serious shortage of casualty actuaries in Canada.

Hence, although I share the view of the Task Force that the profession must expand into nontraditional areas, I think that in Canada, to a large degree, the roles of the actuary in the areas of valuation, investment management and non-life actuarial work are already causing this to happen. I am clearly not in the 59% group that Jim referred to who were surveyed and have viewed the actuary's role as declining. To what extent further advances are possible is to a large extent a resource issue in Canada, and a scarcity of actuaries in many areas already makes me wonder about this. I'll be coming back to this concern later in my remarks.

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One of the areas in the Task Force Report that is being seriously considered by the Crawford Committee is education, both basic education and continuing education. In the area of basic education, the issues cited in the Task Force Report, i.e., breadth and relevance, are somewhat overwhelmed in Canada by the more basic issue of whether or not there should be a separate actuarial exam system. Certainly, the Task Force Report on the Strengthening of the Profession implied that the CIA would continue to be a public interface body, the Canadian equivalent of the Academy, if you like, and that educational services would continue to be provided to Canadian actuaries by the SOA and CAS.

This point notwithstanding, there is a task force in Canada exploring the feasibility of a separate exam system. The task force of which I am a member is also looking at the subject of a separate exam system, but more from the point of view of desirability than feasibility. There are many compelling reasons for a separate Canadian exam system, mostly in the areas of content and relevance. The practical problem, however, of administering a separate exam system from a base of 1,400 qualified members is of significant concern. Also, I agreed with the Task Force Report regarding the unifying force of the shared exam experience and I think that a separate Canadian system would ultimately mean less contact between the CIA and other North American actuarial bodies -- which could be unfortunate.

In Canada, we continue to struggle in the area of education with the timeless question of the alternate route. That is, the obtaining of credit for at least the preliminary exams through recognized universities. The subject is discussed from time to time within the Canadian Institute. I think it's fair to say that there are still concerns regarding educational standards and the very practical problem of evaluating and accrediting universities.

We are also seriously considering the issue of continuing education -- another item that Jim mentioned in his prepared remarks. At the present time the Canadian Institute of Actuaries does little if anything to promote or require the continuing education of its members. Continuing education is, however, becoming a hot topic with other professions in Canada at the present time. The most active profession in this regard seems to be the accounting profession.

The Canadian Institute of Chartered Accountants has a specific annual and tri-annual requirement for hours of continuing education. This requirement is, however, only imposed on those accountants in public practice, that is those accountants who work for the public accounting firms. This raises a very big question in respect of continuing education of actuaries -- that is, should a continuing education requirement be imposed on all actuaries, only those actuaries performing actuarial tasks, or the even smaller subgroup of only those actuaries who are required to sign actuarial certificates? At the present time in Canada, this latter group includes only valuation actuaries of life companies and actuaries of pension funds.

A closely related issue in Canada is the subject of peer or practice review. This subject is being discussed at the present time alongside continuing education -- both being viewed as ways of strengthening compliance with our professional standards. As in the case of continuing education, however, a very difficult question in respect to peer review is defining the group of reviewers. We are also seriously considering the role of the Canadian Institute of Actuaries in emerging public policy issues. I personally was very encouraged to read the Council of Presidents Task Force Report. The comments regarding the current role of the Canadian Institute as a public interface organization were indeed heartening. I still think, however, that we have a long way to go. Although the opinion of the Canadian Institute of Actuaries is sought on most financial reporting for life company issues, and most pension issues, the Institute would still perceive that it has a broader role to serve in this regard.

In contrast to the United States situation, however, when we address an issue, we address it as a common voice and the Institute even goes so far as to have fairly specific standards on when a member may or may not speak on behalf of the Canadian Institute of Actuaries.

Of course, we can only achieve credibility and an image of integrity with our various publics if we have high professional standards and a sound mechanism for monitoring the compliance with our standards. I was intrigued to see this item addressed so specifically by the SOA Task Force and I was pleased to see Jim raise it at the point of having -- I think he used the word "ethics above reproach" in his remarks. It's a very high profile subject in Canada at the present time.



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A Committee on Standards of Practice was formed about a year and a half ago under the able chairmanship of Mr. Ken Clarke, Past President of the CIA. At the present time, the Committee is working very hard to develop a policy on due process for adoption of standards and another policy on the form and content of standards, as well as performing an ad hoc operational role of approving new standards within the Institute. The Committee on Standards of Practice presented its preliminary view on these subjects at a meeting this year in Whistler, B.C. They've done some fine work but there is still a long way to go.

Let me try and summarize some of the foregoing into a Canadian perspective on the Task Force Report.

I would first like to say that I found the Report stimulating, and in most cases soundly in agreement with my view of what we should be attempting to achieve as a profession. At the present time in Canada, practicing members, however, are overwhelmed by the increasing emergence of new issues in all areas of specialization. These issues are being dealt with by a voluntary resource drawn from a membership of only 1400 practicing members. In addition, many items that would be considered a fundamental aspect of a public profession are still evolving within the CIA. These items include a consistent approach to standards of practice, a means of ensuring compliance with standards of practice, a continuing and possibly basic education program for actuaries, and an increased public awareness of the role of the actuary in society.

I believe it is imperative that these items be resolved before the actuary's role is expanded. However, I have every confidence that this is happening, and therefore, strongly support the vision of the Actuary of the Future as described in the Task Force Report. My only caveat is that it might take a little longer to achieve this in Canada than the report implies.

You may well ask me then, where will the actuary of Canada be in the year 2010? Those of you who have read the report will note there was a long section given to a description of the actuary of the year 2010, so I'm going to close my remarks by giving a Canadian version of this report.

Suppose we are now in the year 2010 looking back over the last decades of change in the Canadian financial services industry. The last 20 years have seen significant changes in the Canadian financial services industry. Financial deregulation and the 1988 Canada/U.S. Free Trade Agreement have added newer, larger players to what is now a multiline, multiservice industry. Actuaries have enjoyed large increases in opportunities within these firms, particularly in the areas of asset management, tax planning and expense analysis. This performance of old tasks in a new environment and a predisposition to technical tasks, rather than marketing and management, have made it less typical to see an actuary in the CEO's chair than was the case in the insurance companies of the 1960s and 1970s. There is some resentment on the part of Canadians to the incursion of the large U.S.-based financial services firm. Indeed, a suggestion has been made that the government set up a crown corporation under the name Canadian Express to combat the now largest multiservice financial company operating in Canada.

Unfortunately, the government is not in a position to finance anything in the way of new ventures. The national debt now stands at an alarming 80% of GNP. Attempted control of annual deficits has forced the abandonment of many social programs. The assumption of these programs by the private sector has created new opportunities for actuaries in private practice. However, they still tend to be dealing with technical issues such as future funding rates.

The government debt has been defined as an unsolvable problem and the current administration has taken the only realistic course of action -- which is to attempt to inflate its way out of the debt. This has created a hyperinflationary environment and the Canadian dollar currently trades at 39 cents U.S. An economy characterized by Argentinean inflation rates has caused a number of insolvencies -- two in the life insurance industry: one, a medium size company specializing in inflation-linked structured settlements and two, a smaller company with a mismatched deferred annuity portfolio. The effects of financial instability have been felt in other financial sectors and the large accounting firms now typically employ an actuary in their bankruptcy division. Actuaries have enjoyed increased opportunities in the investment area where they have proven to be capable architects in technical areas such as asset-backed securities. They have been somewhat less successful in the area of economic forecasting where the typical use of a rolling 50-year average has significantly understated current interest rates and rates of inflation.

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At the current time there is a serious shortage of practicing actuaries in Canada. The current economic instability and high marginal tax rates have created an actuarial brain drain in Canada as many actuaries have moved to the United States, attracted by the open door immigration policy and stable economy spawned by the eight year Quayle administration of 1997 to 2004. So maybe our problems aren't so bad.

MR. CORBETT: I can't say I hope your predictions come true -- maybe they can in Canada. I have some predictions for the future also that have a lot more behind them than his. Because these are actuarial predictions, they're not just individual subjective comments.

How many of you completed the first round delphi project questionnaire that came out from the Futurism Section? Remember that one that asked what health care would be? -- A very small number, I gather, three or four. I think that those of you who've done that have got your second round now and the results of the first round have been reported. And let me just mention some of those that touch on our subject today.

One of the questions was: "professionals, including actuaries, will find their public accountability for their professional actions in 2000 compared to now has increased a lot, increased a little, remained the same, decreased a little, decreased a lot." And the answer to that was basically mid-way between increased a lot and increased a little, which, in this type of thing, is a fairly definite answer. So I would say that among the 400-plus people there was substantial agreement that the level of public accountability was going to increase somewhat. The next one: In 1988, approximately 5% of the actuaries employed in Canada and the U.S. worked other than for insurance companies or consulting firms and in the year 2000 that percentage will be; and the average was 9%.

So that's almost doubling, which again supports some of the things that Jim mentioned in broader opportunities for the actuary that the respondents here thought would indeed occur. In 1988 approximately 35% of the actuaries in Canada and the U.S. were in consulting. The prediction for the year 2000 is up to 44%, which is a considerable growth. It's about 20% more growth on that expected to continue to move into consulting. Most interesting ones, I think, were questions that you could answer strongly agree, mildly agree, mildly disagree or strongly disagree. The first one was "valuation actuaries will have a mandated role," and that basically came out as mildly agree, but definitely on the yes side. "The public will be much better informed about the actuarial profession: ". . . somewhere between mildly agree and mildly disagree. So there's not a lot of confidence that we'd do a better job there. I think the most important one for what we are discussing is: "actuarial training will remain much the same," and it was almost in the middle between mildly agree and mildly disagree, which I'm perhaps a little surprised at; obviously, my vote was for somewhere between strongly agree and mildly agree there. People are not convinced that our actuarial training is going to have to change. But I just thought you might be interested to know this because I think they touch upon the subjects we're talking about today.

Now before throwing this open to the floor, I just want to ask one question to Jim because I think the audience might be interested in what we intend to do at the Centennial. Is the Future of the Actuary going to be a subject there, a panel on it, or what are we going to do?

MR. MURPHY: The Future of the Actuary will probably come up in two ways. Actually, the Centennial theme in total, "Challenge from Within and Challenge from Without," and the responses that all of the Centennial panelists are providing are future-oriented, but in specific areas, both working within and without. There will be a specific panel on "Tomorrow's Actuary" in which I'll be taking part and presenting some views on, as well as some other people looking at different views. In addition, we are planning a news conference at the Centennial to highlight this concept of the Actuary of the Future and where the profession might be going and lead into a focus on some of the more newsworthy papers and presentations and discussions that will be presented at the Centennial. We hope to give some recognition to the profession, some recognition to its 100th year celebration, some recognition to its focus on the future, and educate the public a little bit more about what actuaries have to say about public issues. So I think the Centennial will do a lot to help us in getting public awareness, as well as perhaps broader internal awareness about some of these issues.

MR. CORBETT: Is it still our intention to prepare a revised Report that might be available to the media?

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MR. MURPHY: Yes. There will be something included in press kits that go along with that news conference that will talk about The Actuary of the Future Report, probably summarizing some of the key points made in the Report which you all received today.

MR. CORBETT: Well, we've now reached the stage where we want you to discuss the Report. Whether you've got questions, comments, criticisms, basic concepts of the Report, what you think we should be doing more to carry out, as I say, anything you want to say about it.

MR. JAMES A. ROBINSON: I want to make a couple of comments, especially in the area of recruiting. The impression I get looking at the diagram is that maybe we think that we're not already recruiting the best and the brightest. I think we are. I think we're recruiting people whose intelligence quotient is typically two standard deviations above the norm. I think our education process has a way, however, of beating those very intelligent individuals down. They will devote seven to ten years studying what's on the syllabus, -- sometimes I wonder who is in charge of the educational process that served on the E&E Committee and I'm not sure that there is anybody at the top deciding what the pass rate should be. I know other organizations such as Chartered Financial Analysts (CFA), who have a very tough three part exam series, and their average pass rate is about 70%, and they have a very bright group of individuals, I think, comparable to that of actuaries. So when we want our actuaries to acquire business skills, we're not really giving them any time, they're so busy learning the basics. So I think one way to get our current actuaries to become the actuaries of future is to have an education process that clearly defines the hurdles we want them to jump over, so while they still have confidence and motivation, they can get over them quickly and on to other hurdles. Those are some of the weaknesses I see with the profession, and I hope we'll focus on improving our basic education process, so then it could evolve into a continuing education approach.

MR. CORBETT: I'd just like to say something briefly on the recruiting and then turn it over to you on the educational part. Yes, I agree we're still recruiting, if you would, the best and the brightest, but we tend to measure that in terms of mathematical ability, still, when we're saying we're getting the best and brightest. The brightest would be measured by how well they do on mathematical exams. And I think it's not just the skills, and I'll let Jim talk about that -- I happen to agree with most of your comments on the education area, but I think there is an orientation to business and the way we're recruiting now, and how we're presenting the profession to university people, tends to overemphasize the mathematics. If we give any sample examinations from our booklets to the students, they'd think all you ever study in actuarial work is mathematics. None of us ever realized what message you are giving when you put out a preliminary or a career booklet that's covered with square root signs, integration, differentiation. And then we ask why are we getting only mathematicians? So I think there is a lot we can do on the recruiting to appeal to people who have an interest in business, if you would, an orientation to it. Yes their skills can be developed, but I think there are certain people we get that are pure mathematicians who don't really have the interest in developing the business skills, even if we gave them that opportunity. The idea is to attract a broader group of people who have more of an interest in business, and then, we are going to have to do a much better job of education.

MR. MURPHY: I generally agree with the direction of your comments about education. I don't think the chart was intended to say that we are not attracting the brightest to the profession. It's a matter of which best and brightest we want to attract and that we want to broaden the base of those kinds of people -- best and bright, but maybe best and bright at other things. Having been the person at the top of the E&E Committee once myself, I want to assure you there are people at the top and they do indeed give a great deal of concern to studying pass rates and pass marks that will be appropriate within the education system they are dealing with and do give thought, as we have in the past, to improving our math system and making it better for the future, as witness the development of FES and FEM, which still have a long way to go. But one of the key elements of FEM that will be coming on board soon is something called the Fellowship Admission Course which is designed very much to move in the direction of the kind of education and development that I think our Actuary of the Future Report is looking to see for the actuary. I can't deal directly with the question of whether we put people through too many hoops for too long a time and they don't have time to focus on some of these other skills. I think we need to be careful not to weaken the standards of the profession, but at the same time build into the development of the professional some training and education on those skills, and perhaps lessen a little bit of the emphasis on those skills that we tend to think may be keeping people from developing that broader perspective.

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We have a long way to go, and one of the jobs of our Task Force this year is to work with the various Committees of the Society of Actuaries and other organizations. We have met with the E&E Committee and the Society of Actuaries Education Policy Committee and they have recently decided to establish a Task Force to develop a profile of what the FSA should be when that person completes the exam system. When they develop that profile, and we will be working with them on that from our Task Force, they will then sort of test the education system against that profile and then see what might be appropriate changes to enhance the ability to have the FSA be what we think he or she should be and the education system do a better job of bringing that about.

So it's going to be an evolutionary process that's going to take some time but we are looking at it and I think there are a lot of people who tend to agree with the direction of your comments.

MR. CORBETT: We had lunch just before this and Jack, who is in the middle of writing his exams, commented why do we emphasize so much the factual knowledge to be replayed back on examinations? I mean some of us would be good at it, but we recognize when we start to practice as actuaries, we don't memorize all these things, we go to where we learned to look them up, and then the test should be in really applying them.

We discussed that ideally, you really want to test understanding concepts and the ability to apply things in a business environment. That is extremely difficult to test and I think a lot of the problem is not just education, it's examination. We've got this volunteer system that takes a tremendous amount of time and some of the changes that have been made to that system in past years which might be negative from this point of view, emphasizing fact rather than application, have frankly been made to make the examination system somewhat easier to handle. For instance, there is the increased use of multiple choice. It's a very difficult and time expensive system that has to be taken into account, and I think clearly, if that wasn't the constraint, we could do a better job, particularly on examining.

MR. PAUL J. DONAHUE: I came to actuarial work from a career in college teaching and I'm particularly attuned to some of the recent discussion of educational methods, and I think that building on your last remark, it has to be recognized that the system of education has form and content and one of the things you said in your last remark, Gary, is that the examination system dictates, to some extent, the form of the examination. But I think it has to be recognized that it has implications beyond even examination form, because I think the whole method of solitary study on top of a work career, that was also alluded to, that whole system may already preclude appealing to the kind of person you would like to appeal to.

And in terms of a person even looking ahead to the experience of becoming an actuary, there is a difference between case study approaches and classrooms that build a cooperative approach and that have a much closer relevance to the actual experience of solving business problems than solitary study which rewards memorization. I've been very concerned by the depth of the reaction, even to the modest proposals already made, in terms of the extent to which there really could be meaningful reform. I think that any reform that would really permit a broad expansion of the actuary's activities would require some basic level, some degreed-type program that would shorten the post-degree work-related activities and appeal to people with a greater interest in collaborative, cooperative activity (and less to the solitary hero pursuing his traits of endeavorism) than this fellowship of those who have survived at the end.

MR. MURPHY: The so-called unifying force is a key thing that we all live with and cherish, I guess. I think in some respects it would have been better if The Actuary of the Future Report could have preceded the development of FES and FEM. Perhaps the understanding of the "Whys" that were behind so much of the process and system that we're trying to create with FES and FEM would have helped better the reaction to some of the, as you say, modest recommendations in that area. I'm hopeful that through this kind of process today, and beyond, we will see an expansion of those concepts through the education system and will be able to move in the direction you're talking about. I think it's very necessary to do that if we're going to be a viable profession in the future. We can't keep tied to the way we've done it in the past just because it's been good, and we can't be afraid that doing it differently is going to be bad. Times are changing and I think we have to change with those times if we're going to be an effective profession.

MR. CORBETT: I agree with you strongly that the areas in which our education is deficient from a management point of view can really not be taught by self study, exactly as you are saying. I

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*think just of dealing with unstructured problems. I don't know how you educate and examine in a self-study, written, single examination -- non-oral examination, how to deal with unstructured problems. I mean, an examination almost has to structure a problem and you've got to propose an answer to it. I don't know of any good way of doing that other than through case studies being presented with a lot of garbage about a company environment, and you've got to separate out the wheat from the chaff. This is the real world out there. Usually, once you get by a fairly elementary level of actuarial work, the problem is not that clear and the job is to really determine what that problem is, and I don't know how you teach that in our current environment.*

MR. ALLAN R. IRELAND: A number of the remarks of the panel have stimulated several thoughts in my mind, though I didn't know that I would get up and speak today. Areas that I'd like to just touch on briefly: recruiting, this issue of our management and communication skills, the examination system, and lastly, the point that Gary just brought up on unstructured problems.

Perhaps I'll deal with the last one first. I suspect that it's impossible for our examination system to really respond to the need to have actuarial people deal with unstructured problems. I'd like to suggest that one area that might be fruitful to look at is how actuarial recruits are managed in the early part of their careers. I suspect that how they are handled, and the extent to which they are encouraged to use their judgement in attacking their tasks may make quite a bit of a difference. That's an area I think in which actuarial management needs further training: How do you manage a technical resource? Certainly in my own experience over the years, the quality of management of actuarial students varies from very, very good to very, very bad.

On management and communication skills, I think that it's extremely important for potential actuarial managers to acquire skills. However, I don't see the point in trying to get this into our current examination system. I think that there are other organizations, other facilities that probably would do a much better job of teaching management and communication skills. So I think, in terms of what we will examine in 2010, it may not be the same technical material but it still will be technical material. I think I'm in favor of sticking to our knitting when it comes to what topics we examine. So I would be one of the surprising responses in your view, Gary.

Another aspect under management and communication skills -- I wondered if the Task Force had considered looking at the many excellent role models there are in the profession generally. The meetings that we have, both in the Institute and the Society, demonstrate over and over again that we have many, many members with excellent communication skills. The fact that they are able to make very good presentations indicates they must have good management skills to manage their time and their careers plus be able to put together good presentations for the meetings and also to support the profession as well as they do. So my suggestion would be for the Task Force to look at these exemplary members of the profession. How did they go about acquiring their management skills and communication skills? Somehow they picked it up and they have been very, very successful at it.

On the exams, what I would like to see happen is that we move towards making it much easier for the students to write their examinations and provide excellent responses, and at the same time demand a higher standard on those responses. That's one reason why I'm very, very pleased about the restructuring of the examination into several smaller segments. Because I think that over time, that's exactly what will have to happen, assuming that you want to have the same percentage of students getting through. I suspect that the standard of response will have to go up. I think with a smaller amount of material to cover, it should be easier to provide a superior response. Another change I would like to see in the examination system would be to get rid of the time problem in responding to exams. A student was just working for me. She had written one of these horrendous one hour exams where she had 15 multiple choice questions and I think that's a terrible way to examine people. I just disagree with selecting students on their ability to get enough down within a very tight time frame. The other aspect I would like to see in the exam system is the element of choice. In other activities that I've gone into personally -- I won't go into what it is -- but in any case, in the essay examinations, the examiner would state "answer any three out of the following five questions." And I would like to see that principle adopted in the Society examinations, again, with a view to demanding better response but giving the students a choice on what they respond to.

On recruitment: I was surprised to hear the comment from the panelists that they feel that we are emphasizing students who are too math-oriented. In our own organization in Canada, we certainly

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have been looking for students who have communication skills who seem to have, as best as we can determine it, some sense of business generally and I just can't believe that Aetna Canada is uniquely enlightened in this respect. I just have to believe that most organizations have the sense to do just what we're doing. One technique we used that perhaps not everyone is using is that when we're getting to the stage of second-round interviews, we have the students come into the company and we have them interview a number of people, and at that point the majority are non-actuarial management -- that's partly to try to sell the students, also to give the student a better flavor for what the organization is all about. But in that process, we are able to get a much better feel for the student by seeing how other, and in particular, non-actuarial managers react to the student.

MR. SMITH: Responding to your last point first. My company, like yours, Allan, is also looking for students with problem-solving skills, potential management skills, but the point is, the place we're looking is in the current pool of UBC math graduates. I mean it's nice if you can get these other things but it still comes down to ability to get through those first two or three exams. I wasn't quite sure what you were saying on the issue of the feasibility of examining people on the ability to solve problems. On this sort of thing you are aware that in Canada from time to time, we have this very, very contentious discussion on the alternate route -- the first five exams could be replaced by university MBA type courses which would school people in finance, accounting, organizational behavior and these types of things, as well as the actuarial mathematics, and wouldn't that be a way in which you could examine people in some of those areas?

MR. MURPHY: In the area of communications and management, at least within our professional system, I think I agree with Bob that the use of an alternate route would certainly allow a way to provide education in some of these areas. But, within the professional system that we have, management skills would be difficult to educate and test. I think communication skills can be tested indirectly through a better examination system that asks more probing types of questions, questions that require some thought and organization of your ideas, that, in order to grade well, you've got to present a good argument, a good case for your answer and you'd get a better result that way. People would be screened not only for the knowledge of the technical but their ability to communicate that knowledge to the examiner.

That suggests such things as open book tests where you're not really dealing with the detail, you're dealing with the application; or more open-ended, as you suggest, time frames. The choice of questions is not a bad idea. I think we should pass some of these things on to the E&E Committee, if they haven't already thought of looking at them. We certainly have practical problems with these, but I think there are ways to use the system to test and screen for the better communicator. Perhaps even oral exams or the communication and teamwork that might come from the Fellowship Admission Course concept will help with this, at least if not screening for communications, emphasizing its importance to the individual as he is coming out of the system.

On role models I would just let you know that a recent version of a recruiting booklet that has come out of the Society of Actuaries office -- it's quite colorful, I don't know if any of you have seen it -- but it actually has gone in a new direction in using actual actuaries as role models to give a better picture of what it is actuaries do. That's using the role model to help in the recruiting process. Your suggestion is worth a look in terms of studying role models to see how they've achieved what they've achieved, and I think both are valid.

In recruiting, I agree with you. I think the employers who are recognizing the needs for the future are certainly looking to select those people with the potential to be good communicators, good managers. With my former employer, we certainly did that, and we also installed programs for our own management and communication training of those people while they were going through the exam process. Unfortunately, I think it's difficult to select for those skills with fresh young college students in what is usually a very fast-paced interview process. We do the best job we can, but you don't necessarily do a good job. Using outsiders and nonactuaries helps, and that we used to do. What we're focusing on here certainly would be good to encourage more employers to do that, but what is the profession doing to recruit -- and Bob's comment there again -- the recruits who come to you are the people who were the math majors or the whatevers, and what is the profession doing to make the group that comes in a broader base from which the employers can select as well? So, we still think it's important, I think, to focus on recruiting and try to do a better job as a profession, and maybe we can learn a lesson from what some of the employers are doing.

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The time problem on exams has always been a frustration to me, the whole exam system, in the sense that the exam-wise student is the successful student and some students are very adept at dealing with fast-paced exam situations and a multiple choice environment and others are not, and yet they could both be very good actuaries. Although, certainly it's important to be quick on your feet in today's communicating environment when you're getting tough questions from the boss, but I think there is some need to look at that question of the timed exams. It's probably a practical matter. You can't hold people there all day. You can't hold administrators of exams there all day. You do have to have some time limit but conceivably we wouldn't have to have an hour time limit for a ten credit exam. We could have a two hour time. No reason the credit shouldn't relate to the content and it's importance to the professional education and development, not necessarily the amount of hours you spend writing the exam, and if we did that, we probably could do a better job of indirectly improving communications. And this is something I know the E&E Committee is going to be considering. Whether it will do anything with it is not clear but it is going to look at these ideas.

MR. CORBETT: I'll just try to pick up, and not repeat, on areas that Bob and Jim covered. This concern about supervision of actuarial students is a very major one at The Equitable. We have some good supervisors and we have some poor ones, and it's difficult to do a lot about that because in our environment we don't have these hierarchical actuarial structures like we used to, so you have your actuarial students spread out in a wide group of areas, sometimes even reporting to nonactuaries, although not very likely. And sometimes we're just looking around for spots for them, so it's hard to say we've not put somebody there because that person is not doing a good supervisory job. Because if we don't put them there, there is no slot for them. But it is a problem that we do try to address.

On the subject related to that -- the unstructured problems -- how do you teach somebody to deal with the unstructured problems if they are not really taught that way and so few people can do it? Management and communication skills: I'm not optimistic that people will learn this necessarily in their job in the company. I don't think the Society can educate in it. So I think it's very necessary and we're going to start a program at The Equitable -- setting up a course for actuarial students. We'll give them time to attend that course in which we will actually teach communication skills.

And I'm not so much concerned about the oral communication skills here -- everybody is not going to become a good speaker -- I'm more concerned about written skills. I just don't see how anybody can go anyplace on the interface between technical and management people today, which all actuaries are faced with because of the spreading up in the business units. As soon as you get past the student stage, you're probably going to have to deal with nonactuaries. We have to teach people to write better, to write more clearly. Universities are not doing a good job of this. High schools are not doing a good job of this. So it's not just actuaries who have weak expository skills. I think it's just something we've got to commit to as a company and teach this, and I think we're going to do something in the unstructured problem area by bringing groups of students together -- maybe bringing in Harvard professors or whatever and presenting case studies. I'm no expert on this, but I think we're going to see the computer program presentation of case studies being developed -- the management games, if you will. I think there is one being played right now, and I've not actually participated in one of those in years, but it seems to me it would be very possible to develop very good insurance -- life insurance, real world simulations. So I think there is a lot we can do and we're going to have to do it as employers outside the mainline education system.

The excellent role models: This comes out sounding a little egotistical, but I do reflect back to the early days of the Planning Committee when this first was discussed, and I'd have to say that the thinking was that these guys today aren't as good as us in some way or another. We have a lot of people emerging to CEOs in companies today, the Bob Winters, the Ian Rollands and so on. But we don't see the same potential coming up in the younger actuaries and the major reason for this, and it would be almost impossible to be otherwise, is there is so much more competition for the math-capable business oriented graduate today than there was in the 1950s when all of us graduated from university. In the 1950s, when I graduated, if you had that sort of bias -- you're good at math but you really liked business more than the sciences, there was hardly another field to go into. Accounting at that time was really regarded more as bookkeeping; computers were in their infancy. I mean they were around but it wasn't something a lot of people were making a career of. The whole quantitatively oriented MBA programs just weren't there. So I think it's the competition that we are losing a lot of these people to at the entry level. To come back to our

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examination system again: Why sign up for six years of study when instead you can take an MBA which might take two years, and you're going to be making as much money with your MBA as you will with a Fellowship in many cases? So I think we're competing in a different marketplace today, and I think we're tending to attract a lot of the people who are really good at math and can pass our exams, but perhaps don't qualify otherwise or the other professions aren't hiring them.

We have our standards and we've quite a selective program at The Equitable. We have to go through a lot of people to get those business oriented people, and we cannot fill our slots generally, and we sometimes may relax the standards a little, and more often leave slots unfilled. These people are generally getting jobs some other place, so I have to assume there are a lot of employers who do not have that same standard as far as business is concerned.

MR. DONAHUE: Again, in terms of the supervision of actuarial students: I was fortunate, though I didn't realize how fortunate until a little later, that my first supervisor took actuarial education seriously. He thought actuarial student meant actuarial teacher. Unfortunately, I think that's a connection that not too many supervisors of actuarial students make. My second supervisor told me to my face that he preferred to spend as little time with me as possible. I think that when you talk about role models, after all, in some sense people who are already actuaries are interviewing the people who want to be actuaries generally. Allowing marketing and other types of people to participate in making hiring decisions may help lessen the bias toward quantitative candidates. But also, we're not screening out people with communication skills. Some of the people with the quantitative skills happen to bring their communication skills along with them. Then they can rise to be people who speak at meetings. But that isn't to say that most of the people who are admitted to programs have that potential and I take the brunt of your remark to be that: 1) we'd like to make sure that all candidates have more of it and, 2) that candidates for whom that is the greater part of their balance are more attracted to our profession in competition with these others.

MR. MURPHY: Your comment reminded me of something else I wanted to say in response to the previous one. I think this concept of managing the technical resource is something that perhaps would be worthwhile picking up on in our continuing education program with seminars and so forth. Actuarial managers could come and learn more about how to develop actuaries. I think that's a very good point which would probably be a good way to proceed as opposed to working through the basic education system. There's an awful lot of things we can do in our continuing education system to not only help today's actuary be better prepared for the future but to help today's actuaries better prepare tomorrow's actuaries for the future. That's really what it's all about.

In the whole profession, as you say, actuaries hire actuaries usually. If we're going to better prepare our actuaries for the future and have more appropriate people in the pipeline, I think it's up to us to help make that happen, and the continuing education program will be able to help do that.

MR. CORBETT: If there are no more questions, temporarily, from the audience, I've got a few comments that were posed by an Associate who wrote to the members of the Task Force. It's an excellently written letter and poses some very excellent questions.

His first comments relate to the Mission and Intellectual Core. He says, "I agree with these statements, except I think focusing exclusively on financial matters limits our mission unnecessarily." What he is referring to here is, in the Intellectual Core we talk about the application of experience and risk evaluation to measure, communicate and respond to the current financial implications of future contingent events. He says this limits our mission unnecessarily. If actuaries are to aspire to positions of leadership, they must also contend with issues which are not strictly financial in nature. An example of this would be the social implications of the financial securities programs we design. By limiting our point of view to that of our employers, we will do a disservice to society at large and will not gain the confidence from the general public that we want and need. Jim or Bob, would you like to respond to that comment?

MR. MURPHY: I could comment that the original Task Force actually was more broadly based in its thinking than the Board was in adopting our Report, because we did not have the word "financial" exclusively in that statement. We had a couple of other words in there such as economic and, I think, even social. But the feeling of the Board was, I think to some extent



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rightly so, that as we move toward the future we have to be practical and we're only going to move certain steps at a time. The final Task Force Report agreed with that, recognizing that these statements of Mission and Intellectual Core were intended to be dynamic statements that would be modified over time, and as we grow to do a better job with the financial implications, we can then look to see if we are becoming better prepared to deal with the social and economic implications as well, and so in response to that letter, I think that long term, that's where we're headed. We just didn't identify that as a statement of mission or core for today.

MR. CORBETT: Of course, I remembered that meeting, which became the Star Wars meeting, because if you just say the application and so on to measure, communicate and respond to the current implications of future contingent events, what is left out? The big thing became, should actuaries be judging the success or the probable success of the U.S. Star Wars program? If you technically look at it, it's the implications of future contingent events. So I think we thought we had to put some limits there. In fact, I guess that about 80% of the Board discussion of the Report -- was whether that should be limited -- and that was a close one. You know, the Board of Governors rarely has 15-13 votes or something like that. Often they are unanimous, often 26-2 or something but this was, I think, 15-13 or something in favor of putting financial in.

MR. SMITH: I think you have to be a little bit careful with what is proposed. The actuarial profession in Canada is going through somewhat of an identity crisis right now in respect of the FCIA designation. Is it simply an educational degree? Is it a job ticket? Is it a license to practice a profession? There are all kinds of considerations in respect to that question. But right at the core of it, of course, is if we want to hold ourselves out as a practicing profession with integrity, we need a few things -- professional standards and a means of insuring compliance with those standards. To what extent, if you then extend the role of your members to prognosticate on any issue they feel like -- financial or otherwise, how do you keep this thing under control and how do you keep it within the bounds of professional practice?

MR. CORBETT: One other thought that occurs to me as we're talking about this issue is our companion report, if you will, that another task force just recently put out, The Task Force on Strengthening the Profession. It very much focused on an element of this question, which is the importance of the profession to play a role in public interface and speak with its expertise on public issues. I think the fact that effort is moving forward perhaps allowed this effort to be somewhat more limiting. We do, as a profession, have to certainly look beyond the financial if we're going to meet our obligation to the public to use our expertise to their advantage, and at least bring our expertise to the table of social and public issues and try and provide information, albeit many times financial information, to help public policymakers make decisions. I think if we're going to be a success as a profession we will move in that direction as well, and that will help a number of avenues to increase visibility, increase the interest of individuals to be part of this profession and increase the interest of employers in various areas to look to actuaries for help and support. So that is an important part of what we are about, even though we did not specify it directly in our Mission statement or Core statement.

MR. DONAHUE: Your last comment brings to mind what I regard as another implication of the structure of the education system, namely that self-study in addition to work responsibility is, as we all remember, a tremendous time drain, and regardless of how well designed the syllabus is, most of what *has* happened is not on it and all of what is happening is not on it. And I think that for a very long period of time, it really takes either, as in my case, a very long ingrained habit which one cannot break, or a pretty determined effort to remain aware of larger social economic issues -- simply what is going on in the world. And I think that kind of perspective and awareness is a prerequisite for the kind of broader activity that you're talking about in the Actuary of the Future and is one of the early casualties of the education system.

MR. MURPHY: You've given me a great opportunity to provide a plug for something the Academy is doing. So I just have to. You may have heard about a new magazine that's going to be coming out, which all of you will be receiving, called *Contingencies*. It is a very nice four color, slick magazine that has a lot of polish to it and a lot of pizzazz. Speaking about various public issues from a public and actuarial perspective, it is targeted also to public policy makers and decision makers in industry. It will be available both in the U.S. and Canada and the reason I'm bringing it up is to speak specifically to your comment. One of the mailing lists that we have put together for receiving this magazine as a benefit from the Academy are those students of the Society of Actuaries who have attained at least 100 credits within the system and are either

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writing or have passed the old Part IV, I think it's Course 150 -- who have reached a certain level but not Associates yet -- but they're starting to get involved with real actuarial things. And we think that this magazine is a benefit to them to start getting a feel for the environment in which they're going to be operating and the broad issues that affect actuaries and I think that's an education. We don't have to test on it and they don't have to read the magazine.

MR. DONAHUE: Too bad they will not have time.

MR. MURPHY: Yes, that's a problem certainly, but perhaps the E&E Committee will take care of that by picking up on it as a current events source. I don't know but it's fairly easy reading for them and I think that once in a while they'll like to see something a little less difficult. I think that will help a little bit with what you're concerned about.

MR. CORBETT: Jim -- putting in the requirement doesn't give them the time. Let me mention this on basic education from the same letter. It says:

I think our exams need to be revamped in order to better achieve the goals of the exam process. For instance, much of the Associateship exams dwell on the theory and development of topics which are of little value to the practicing actuary. Perhaps the exams could focus more on the understanding and application of important concepts. While I don't think we should ignore the theoretical dimensions of the Associateship topics, I believe many of these would best be left as electives for those who aspire to developing new theoretical frameworks for actuaries to use. In addition, the fundamentals of accounting, microeconomics, insurance and investments should be part of the Associateship curriculum. This would have the following advantages. It would make the Associateship designation more meaningful and it would give potential recruits a better picture of what knowledge and skills are required of the practicing actuary and then in regard to the Fellowship exams, they need to be broader and less detailed. Fellowship exams still emphasize regurgitation as a rule. In addition, there is little if any emphasis on such important practical skills as being able to look at data critically and knowing how to ask the right questions. Perhaps we should integrate more of the case study approach into our curriculum to make it more interesting and applicable.

MR. MURPHY: I agree and I'm glad you've read it into the *Record*. It will be difficult to do some of the things he suggests but it doesn't mean that we shouldn't try.

MR. CORBETT: There are parts I do disagree with here. I just don't see that unless we're to raise the level of Associateship considerably that we can put the fundamentals of accounting, microeconomics, insurance and investments really into the Associateship curriculum. I mean there is just so much room there. I'm very responsive to his comments on the Fellowship exam and on the Associateship of not carrying the mathematics further than what most actuaries need. I think we all have this frustration that we learn a lot more mathematics on those Associateship examinations than 80% of us ever use in our actuarial careers. Remember at the earlier part of the meeting I quoted from the English -- the Futures party there -- that's what they're concerned about -- that they're insisting on a high degree of mathematical ability which the profession needs. Certainly we probably need even more mathematical skills to develop the frontiers of actuarial science, but it need not say that every practicing actuary needs that same degree of mathematical knowledge. Ability, yes, but not necessarily all the knowledge that is taught on the early examinations.

MR. MURPHY: Keying off your own ideas Gary, it might be possible to do what he wants by, for example, taking Part I and II or Courses 101 and 110 and turning those into prerequisite topics rather than exams, and since most students who come into the profession cover those topics at the college level anyway and they are tested indirectly if not directly in the other examinations, we aren't going to lose some of our standards if we would increase the "time" in which to cover some other materials. Another thing we could do is make more of the math courses elective rather than requirements or perhaps have math electives as part of the Fellowship as well as the Associateship, reducing the requirements in Associateship -- moving a couple of them up into Fellowship and thereby bringing down some of these economic, finance and broad based courses into the Associateship examinations, and producing an Associate who has a better handle on the total profession than just what is provided through the mathematical exams today.

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MR. CORBETT: He talks about research, that there is some good research being done with the emphasis on theoretical work, sometimes at the expense of research that would improve our abilities to apply good assumptions for our existing models. In addition we need to acknowledge more honestly the limitations of our models.

I really believe the Society has finally got its act together with respect to research. It's been something we've been trying to do for years and I think there is a tremendous amount of practical research being initiated within the Society right now, whether it's in the investment field or whatever and it's -- you've haven't seen a lot of the results yet because we've really just got this thing moving in the last year or so, but I don't know whether any of you have any comments. But I'm optimistic that finally we're going to become an education and research society. I think in the last many years it's been 90% education and 10% real research. I'm not talking just about experience studies and things that can help the practicing actuary. And all of our research really has to pass that screen before it gets funding, before it gets dedication of resources that will help the practicing actuary.

Potential demands for the actuary: This gets into some of the broader areas of how we serve society and he brings up a couple of examples in which the Associate is critical of the Society. Maybe, Jim, you might want to put on your Academy hat to answer some of these? The letter goes on: "*I feel that there is potential demand for the actuary. I feel the primary way we'll gain entry into new areas is by having pioneers doing good work in new areas and getting recognized for their achievement. Sometimes I get frustrated when others get recognition for things that actuaries could have accomplished without batting an eye. I'm at a loss for why this happens. Two recent examples are: the CDC's original estimate for the population infected with HIV has been increasingly suspect. Why have other researchers pointed this out while actuaries have suspended their normal healthy skepticism?*"

MR. MURPHY: You're asking me to answer the last question or the general question?

MR. CORBETT: I guess specifically the last question. I think it's not that we've done nothing. Our Task Force has done a lot -- the two papers that are being presented to the Board tomorrow and will be released soon are excellent examples. But I do think he's got a valid point here that the profession and the industry certainly have not spoken out and applied our somewhat unique ability to question whether statistics being developed, say by government and organizations or by others are really valid. I'm not conscious of a lot of speaking out.

MR. MURPHY: *I will not speak on the AIDS issue per se. I do think we're doing a fairly good job there other than to say I think the profession and the Academy and ASB are looking at AIDS from an actuarial standards point of view currently, and that is certainly one of our goals, to do a more responsive job in that area so that the profession can be viewed as ahead of the regulators, not behind them, and we will be looking at that issue as the U.K. and the CIA have already, and that deals with AIDS, indirectly at least. I think too that perhaps as we get a better handle on what's going on in government and get more people involved with Academy affairs, the Academy can be in a position to identify areas where some good healthy skepticism would be useful.*

One area I thought might be interesting for the profession to get involved with is the revenue estimates that are put out by some of our good friends in Washington, D.C. I don't know if you have similar problems in Canada, or not, when it comes to tax legislation. Certainly, in the U.S. those revenue estimates become gospel and I don't think that they have ever had a good actuarial analysis, and that's something that the Academy might want to get interested in, or perhaps suggest that committees of other organizations help us with. One thing we want to do at the Academy is try and identify high profile areas of public interface where professional research could be helpful, and then come to a well organized research facility like the Society is trying to develop, and making big steps in, with suggested priorities and suggested projects that could help us do a better job in the public interface role. So I think it's a matter of working together within the profession and with more involvement from members of the Academy in the U.S., members of the CIA in Canada, being aware of the issues, and then finding ways to answer them. It's information and awareness that we need right now.

MR. SMITH: I'd like to comment on that if I may, Gary. I think in Canada we made, as I believe I indicated in my prepared remarks, a lot of progress in this area, and a lot of that has come about through the communications with other professions -- the most obvious example being the

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accounting profession. They have control over a lot of issues in Canada and a very, very good communication has developed between the CIA and the CICA in Canada and that has led to actuaries having a larger voice in a broader range of issues. Before I got involved with this panel today, though, I read the 56 page Report, the major Report on the Actuary of the Future, and I can't recall where it is in the Report, but I think it was at public perception of actuaries and they are accused, with some justification I believe, of defending their own turf by making it more complicated, and if any progress is going to be made in this regard we at all costs have to avoid that. There is a very, very good example right now in Canada in the area Jim mentioned, in the tax area. The proposal is to tax the investment income of life insurance companies. I think the original intent was to tax 15% of the investment income on life policies. The actuaries, indirectly through the industry association in Canada, got involved in making sure that this formula treated everybody fairly and at last count what I heard we have is some 56 pages of draft Regulations which is just all "i"s and "q"s and "deltas," and you know if we continue to do things like this, I think progress is going to be slow.

MR. CORBETT: In the concluding remarks in this letter, the writer says, "Finally, I would go further to recommend we may need to occasionally suspend our motto. Our motto reflects an antiquated notion of science and really pertains only to those aspects of work related to the study of the past and the present. It undermines any claim we can make to being futurists."

I think that's really true. I think you've got to have it -- when you're dealing with the future there is a lot of impression and that's very hard -- there is an implication I think in the motto of single point type of a thing and I think maybe we've got to keep to our demonstrations. I think we can do a very good job but what we've got to do is propose many demonstrations, many possible outcomes. I think we're better equipped than most to take a number of possible outcomes, play them out and show the implications of many possible outcomes but certainly -- our educational system now is moving away from educating and in point estimates, but certainly that has been a problem in the past -- come up with the answer, the projections or something.

MR. MURPHY: In fact, our Report -- I don't know if the published Report has it -- it has a statement in there -- at some point in the future, actuaries may in some instances have to substitute impressions for facts in order to be successful in dealing with certain audiences. I don't know if you want to put this in the *Record*, Jack, but I'm reminded of something I saw on a movie not too long ago. I don't know how many of you saw the movie "Star Trek IV." But there is one line in there where Spock is thinking about a real problem and he doesn't have all the facts available and he's going to have to make a guess, and Kirk says something to him -- but anyway, he's somewhat puzzled and he talks to the doctor about it and the doctor says, "Well I think what Jim was saying to you is, he's much more confident of your guesses than most people's facts."

Actually, there is some truth in that in the sense that an educated guesstimate from an actuary can be very valuable in dealing with some issues, as opposed to some of the facts the uneducated and uninitiated people might come up with, or supposed facts about issues. That's one of the things I think we have to do in dealing with public interface issues. We have an expertise and base of knowledge which sometimes leads to perceptions of problems and solutions that we ought to speak out and say something about because that knowledge has value. Even if we have not yet been able to fully demonstrate it, probably at some statement along those lines, it's still better than, as I say, some of the facts that we get out of the Government Accounting Office, etc. So I think we as a profession have to be willing to recognize that our expertise is valuable and worthwhile to bring to problems even though you can't always do the detailed caveat of studies that we're used to doing and test it out on our examination process.

MR. CORBETT: As long as we're not arrogant in doing that, Jim.

MR. JAMES R. SENN: I've listened to a lot of speakers today talk about the lack of communication skills and managerial skills being developed currently in actuaries. In my present position, I have a reporting staff of both actuaries and nonactuaries. I, in fact, have an equal number of both. Let me assure you it's my personal experience that we have no corner at all on lack of managerial skills. So that the point I want to make is I think one of the mistakes the actuarial profession has made in the past is that we tend to consider certain types of problems uniquely our own and we look for our own solutions rather than looking for solutions in a broader company context. And I think that's one of the reasons that these actuaries are not currently ending up in some positions where they used to, and it's been discussed before, the fact that there are other

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people invading our turf, and one of the reasons is because we have looked internally too much and protected our turf and not expanded our vision. So in leaving this room I think we should all consider the fact that what we need to do is go out there and develop better communication skills, and better managerial skills in all the employees in whatever organizations we work in, and do that in the context of the total organization. The answer isn't necessarily to send all your actuaries on a time management course or a management course, or something like that. The answer is to make sure that all the employees in your organization have the opportunity to do that, and if you integrate the education and training of your actuaries into the integration and training of your entire organization, you're going to come up with a much better result.

MR. STEPHEN J. SULLIVAN: I wonder if as actuaries we're trying to do too much. I've heard a lot of talk about trying to avoid being hyphenated actuaries. Yet we're all so reluctant to say drop Course 100 and 110 from the syllabus, because maybe that's always the way it was done and we want to be good at the little picture and we complain we're not good enough at the big picture. Maybe we're just trying to be everything at once, and you know we really can't succeed at that, and we have to make some hard decisions about where we want to go, and maybe that means significant change.

MR. CORBETT: I think that speaks to not thinking that Fellowship gives that person the ability *per se* to practice in any really specialized area and I know the British are certainly talking more about trying to specialize post-fellowship, if you will, because that's really where we end up specializing today, as post-fellowship, and I'm expecting that the Fellowship only gives you the means to go on into some of these other specializations, recognizing a tremendous amount of specialized continuing education after that.

MR. MURPHY: I think one of the advantages that we need to build on, in the new education system in the Society of Actuaries which has FES and FEM, is maybe more use of electives and a little less use of requirements, judiciously done, so that the individuals can sort of select those topics that will help them in their chosen career. Perhaps this should be more at the Fellowship level, than at the Associateship level, and the system is there to do that. As the world becomes more complex and the areas of practice that actuaries are involved in become broader, we're going to need to do that, I think more and more, and recognize that just like other professions, we have a common basic knowledge. We also practice in a lot of different areas and we can't expect to educate every new actuary in every single area of practice. Use the continuing education for re-tooling when we need to move on and recognize such things as qualification standards and standards of practice when we do practice in various areas. So I think we have some potential to deal with that concern and I do agree that we have probably tried to do too much. We've got to start recognizing that.

