

D R A F T

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TO

APEO CONFERENCE ON THE ENGINEER IN THE WORKPLACE

AT

GUILD INN, SCARBOROUGH, ONTARIO

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Good <sup>evening</sup> ~~morning~~ and welcome to this seminar. It has been an APEO tradition--sometimes more honoured in the breach than the observance--for each incoming president to undertake some new project or departure during his term of office.

In turn, Council and staff have indulged his whim in the fond hope that it will keep the president busy during the year and will not unduly disturb the smooth flow of daily Association business.

In choosing the engineer in the work place as my particular interest, I do not see myself as a man with a mission to produce a perfect product to whose door users of engineering services will beat a path, like Emerson's better mouse trap. But I do admit to riding a special hobby horse of mine in seeking ways of improving the present product to the mutual advantage of the user and provider of these services.

For this exercise to have any real benefit, the profession must look to the users of our product for input to enable us to see ourselves as others see us. It has been said that to really know a person, and what makes him tick, you have to wear his shoes for a while. We are not really asking those of you who are not professional engineers to put on our boots and iron rings--the Registrar might hesitate to issue you a licence to practise engineering--but from your experience of engineers in your employ to give us your views, among other things, about the quality and effectiveness of the work they do for you.

Does it meet your needs and expectations? Are you satisfied with the services you are getting? If not, why not? We are a tough-minded breed. Don't spare our feelings or don't take amiss anything we may have to say about you. You're paying the shot for our services.

This seminar is designed to elicit your opinions on a number of issues, some of which our chairman, Gordon McHenry, has outlined in the background paper which has been sent to you to stimulate discussion. There will, of course, be other issues that will present themselves during the seminar. Gordon's backgrounder is not intended to cover all bases. I want to thank him for the preliminary work he has done and for agreeing to act as chairman.

As he has stated, the profession has a responsibility to the employers who are in a real sense the major part of the public we are charged to serve and protect. Clearly there must be a greater exchange of information between the two.

The well-known Canadian writer, Harry Boyle, once said: "Without communication there is no society, whether it is a hive of bees, a troop of Boy Scouts, a bar association or a nation." Furthermore, communication has to be a two-way street and it has to be effective. The message has to come across.

The joint message I would like to see come from this conference is that the profession and the employers of our services are starting down a road together with a better understanding of each other's needs and expectations.

Naturally, we don't expect to arrive at definitive answers to all the questions that will be posed here, but by initiating a dialogue we can make a start. Perhaps, most important of all, we can decide whether it is useful to continue what we have begun and to set up some mechanism to carry on the dialogue.

I wouldn't go as far as to agree with Will Rogers when he said: "A conference is an admission that you want others to share your troubles," though there is an element of misery loves company about many of the meetings of minds today on current economic problems.

It is my view that engineers must play a central role in economic recovery. Engineering excellence is essential to achieving that goal. Our concern as a profession--and yours as employers--must be <sup>to see that</sup> that key requirement is maintained and, if possible, enhanced.

That entails continuous examination of the product we are putting on the market and an assessment of how relevant it is to the needs of that market. As employers, you are aware of how quickly market demand change. To stay in business, you continually ask yourself how up to date your manufacturing processes and policies are and what changes you must make to keep abreast and, preferably, ahead of competition.

One accommodates to change and spearheads it or one is overcome by it. As the body responsible for licensing engineers in this province, APEO must continually examine its admission procedures to ensure that those on whom we confer the stamp and seal of professional engineer have the necessary qualifications to meet the needs of society, particularly of employers.

An engineer's formal training is undergone at university, the usual route, or through a combination of work experience and completion of exams, set by APEO's Board of Examiners in this province. Though university programs are the responsibility of the universities themselves, the provincial associations do

retain an influence on the content through the Canadian Accreditation Board which on their behalf visits each of the engineering schools in the county at regular intervals to ensure they meet our criteria for admission of graduates to the profession.

Recently, APEO has instituted confirmatory exams for graduates, generally foreign students, where some doubt exists about the accreditation of their programs. This is to ensure that they are on the same footing as Canadian graduates.

However, there are other factors to be considered in the formation of professional engineers apart from their formal engineering education. And, indeed, there is some concern whether formal training itself in engineering, or any profession, is an adequate basis for registration. Again, recently, APEO has instituted an Admission Exam prior to registration in professional practice, ethics and legal liability.

These measures are designed to ensure uniformity in admission standards and inculcate some sense of professionalism. But they don't necessarily equip the budding engineer to face the reality of the world he is about to enter, especially in the industrial sector. Increasingly, engineers are being called on to undertake management roles at an early stage in their careers.

Management involves leadership. How do you teach that at school? Many engineers have successfully made the transition from employee to employer or manager and today head enterprises of considerable importance. Others have been less successful.

A study that I did in 1972 showed that while most engineering graduates start in non-supervisory, technical jobs, within 10 years over two-thirds move into supervisory, management or executive positions.

Many companies say they hire engineers for management and that a measure of success is based on the engineer's ability to achieve management status. Leadership is a basic requirement of management. The best method of acquiring it, unless it is an innate characteristic, is less certain.

I don't have to remind you of the rapid pace of technological change and how quickly obsolescence can overtake us. The lesson of the computer age is that though in our work we may at times be mutilated and spindled, we must not fold.

Despite other significant events around the world last year, Time settled on the computer as its front cover for its first issue of 1983 -- the machine of the year, not the man, not even one of the engineers or entrepreneurs who masterminded this technological revolution. The stark robotic figures on the cover present new challenges.

As knowledge or information industries keep expanding, the body of knowledge itself grows. As designers of products and processes, engineers are in the forefront of this new knowledge and wealth creating revolution. In our resource industries, the foundation of our economic strength hitherto, our technology must continue to be innovative.

Some questions arise. Is our training as engineers adequate to meet new technological demands? How diverse can it be without being superficial? Can we throw the main responsibility on our engineering schools? Or must the profession, through its governing bodies, play a larger role? What is the function of industry in this respect? Are employers making the most effective use of engineers and how can they do a better job?

These are some of the questions to which we are seeking answers at this seminar, as well as the larger one of meeting user needs. Often when we think we have found the answers, the questions change.

In exercising my presidential perk to undertake a project which I believe to be of benefit to the profession and the public, I am aware that solutions cannot be found in isolation. There has to be an exchange of information. We have to seek the views of others, especially our clients, those who use our services.

The largest percentage of our members work in industry, and industry is the life blood of our economy. Upon it depends the maintenance of Canada's position as a world trading nation. It is appropriate that we should get together, the profession and employers, and discuss our relationship--what you require of us and what we look to from you.

Thank you for attending this seminar. I look forward to some mutually beneficial results flowing from our discussions.