THE MANITOBA

Professional Engineer

OF THE PROVINCE OF MANITOBA

October, 1990

"Greening of the Profession"

By: K.A. Buhr, P. Eng.

Never before have Canadians been so aware of their environment. Never before have engineers been reminded so often of their responsibility in terms of protecting the environment. The buzz word of the '90s is "sustainable development". But what does it all mean for the professional engineer?

Premier Gary Filmon, P. Eng., in his message promoting the World Environment, Energy and Economic Conference in Winnipeg this October, challenges everyone with the statement "...it is becoming exceedingly important that groups and individuals from all sectors come together to discuss and take action which will ensure that further economic growth goes hand in hand with sound environmental practice".

Hans F. Schweinsberg, President of H.F.S. Support Services Ltd., Toronto, in the May/June 1990 issue of the Canadian Consulting Engineer, states that "...environmental protection is everybody's business, and that no one, least of all engineers, can morally afford to remain uninvolved."

Brian Stimpson, P. Eng., in the June issue of The Manitoba Professional Engineer, "Stewardship of the Earth – The Future Role of the Engineer?", states that "recognition that our small planet is under stress from environmental mistreatment should surely cause our profession to attempt some introspection about its purpose and its future".

APEM is in the process of changing its Code of Ethics. One of the recommended changes is the inclusion of the "protection of the environment" in the duties of the engineer. Some critics say that the "duty to protect the environment" is inherent in the duty to protect the public. Others ask why, if it is so self- evident, have the engineers not lived up to it? Lawyers tell us that they already have enough problems defending engineers against negligence in terms of the existing duties, without adding another.

Where does all this leave the members of this Association?

To assist the engineer in undertaking some "introspection" and facing the "challenge" of ensuring that economic growth goes hand in hand with good environmental practice, the Association has organized an Annual General Meeting around the theme "Greening of the Profession".

The day's activities will begin with a breakfast meeting and speaker. The talk will centre on the electrical transmission line between Egypt and Jordan. The geographic setting of the story could not be more topical today, given the political situation in that area. The potential environmental impact of a transmission line which passes under the Gulf of Aqaba, crosses the Sinai Peninsula and passes under the Suez Canal should interest most engineers today.

The breakfast will be followed by the business portion of the Annual General Meeting. Aside from the "normal" business, the Association is proposing a number of By-Law changes, most of which are basically "housekeeping". However, there is one proposed By-Law revision that will represent a significant change. It deals with the manner in which the Association elects its Vice-President and President.

Last, but not least, the Annual Meeting will bring in the new Council and the new President.

The Awards luncheon will follow immediately after the business meeting. The guest speaker at the luncheon will be Lloyd McGinnis, P. Eng., who is the newly appointed Chairman of the International Institute for Sustainable Development. Mr. McGinnis will speak on the initiatives of the Institute and the involvement of engineers in the various aspects of sustainable development.

The Association will be presenting a number of awards at the luncheon, to recognize the work of its

Continued on page 15

ASSOCIATION OF PROFESSIONAL ENGINEERS OF MANITOBA

71ST ANNUAL GENERAL MEETING

OCTOBER 26, 1990 - HOLIDAY INN DOWNTOWN WINNIPEG

AGENDA

8:00 a.m.	Breakfast Meeting
9:00 a.m.	Registration
10:00 a.m.	Official Opening by President
	Notice of Meeting
	Introduction of Head Table
	Introduction of Guests
	Minutes of Annual General Meeting of October 27, 1989
	Declaration of Councillors Elected
	Auditor's Report
	Appointment of Auditors
	1990-91 Budget
	Nominating Committee Appointments
	By-law Amendments
	Reports from Committee Chairmen (published herein)
	Greetings from C.C.P.E. and other Associations
12:00 noon	Pre-Luncheon Reception
12:30 p.m.	Awards Luncheon with Keynote Speaker - Lloyd R. McGinnis, P. Eng.
	Presentation of APEM Awards
2:00 p.m. to 4:00 p.m.	Workshop "Sustainable Development - Delusion or Deliverance?" Speakers: Carson Templeton, P. Eng., Roy Aitken, P. Eng., Dr. Art Schafer

(Bring this Agenda to the Meeting)

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LICENCES ISSUED IN AUGUST & SEPTEMBER 1990

R. Adhikary (Colorado)
K.G. Blakely (Que.)
T.C. Greenlaw (Wisc.)
E.L. Harris (New Jersey)
J.W. King (Missouri)
W.H.W. Leung (Ont.)
G. MacDowall (Ont.)
J.A. Mastrofini (Ont.)
S.B. Said (Ont.)
C.G.A. Straub (Sask.)
R.K. Wallster (Sask.)
D. Weinreb (Ont.)
G.S. Yamashita (Ont.)
E.V. Bacalzo (Penn.)
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D.K. Hall (Ont.)
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M. Thaker (Alta.)
A. Wasnea (Alta.)
C.N. Williams (Minn.)

WITH DEEP REGRET THE ASSOCIATION RECORDS THE PASSING OF:

W.E. Trann

Lieutenant-Governor Unveils CSCE Plaque

By: G. Plewes, P. Eng.

On July 14, Keith Bowers, President of CSCE, Ken Buhr, APEM President, and several members of CSCE executive joined a party of dignitaries on the Paddlewheel Queen for a river trip to Lockport.

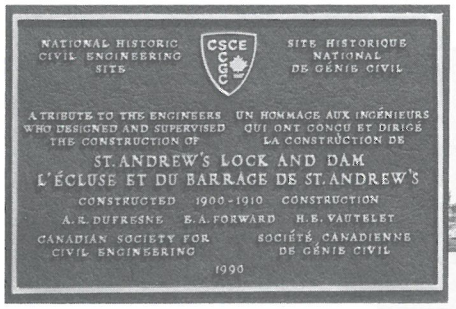
Following a luncheon at Captain Kennedy's Landing with Their Honours Lieutenant-Governor Dr. George Johnson and Mrs. Johnson, the boat proceeded down river, and entered the lock to the strains of a piper. While there, the Lock and Dam 80th Anniversary Committee performed a re-enactment of the original 1910 opening of the lock by Sir Wilfrid Laurier.

The party then disembarked, and a ceremony designating St. Andrew's Lock and Dam as a Historical Civil Engineering Site was conducted. President Keith Bowers spoke on behalf of the CSCE and described its aims. Gordon Plewes, Chairman of the Prairie Region History Committee, highlighted the history of the site and the engineering features of the lock and dam complex.

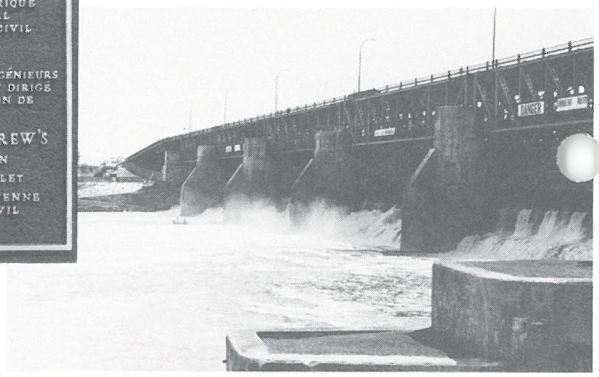


Lieutenant-Governor George Johnson and CSCE President Keith Bowers unveil plaque.

Anthony Kruysse, National CSCE History Chairman, also attended. His Honour, the Lieutenant-Governor, unveiled a CSCE plaque commemorating A.R. Dufresne, E.A. Forward and H.E. Vautelet, the designers and supervisors of the project. □



CSCE Commemmorative Plaque



St. Andrews Lock and Dam

NEW MEMBERS REGISTERED AUGUST & SEPTEMBER 1990

G.M. Allen
T.W. Broschuk
C.H.K. Chu
S.J. Crowther
C.E. Ewanchuk
R.A. Feeney
R.G. Fox
B. Fry
J.W. Hall
M.R. Jamieson
S.D. Koetke
K.J. Little
A.M. McDowall
R.K. Pandey
S.K. Ray
R.M. Sachowski
D.R. Simpson
D.S. Smith
D.R. St. George
D.R. Strang
M.O. Thieringer
J.A. Boyko
M.C. Caron
C.A.D. Courchaine
B.C. Evenson
J.A. Fedoruk
S.N. Ferguson
K.H. Frontain
M.E. Gubbels
S. Hops
S.C. Kaminski
S.A.M. Liebrecht
J.P. Lukashenko
J.G. More
M.J. Plett
C.S. Roberts
K.D. Shankowsky
N.P. Skulski
C.R. Sobchuk
J.M. Stacey
J. Tharayil

ENGINEERING GRADUATE MEMBERS AUGUST & SEPTEMBER 1990

R.L. Baker
R.W. Derksen
T. Gaudio
D.A.N. Jacobson
H.Q. Vu
B.P. Bettig
W.R. Fenton
R.D. Giesbrecht
L.G. Jonson
B.R. Ward

100% ON THE PROFESSIONAL PRACTICE EXAM

R.P. Kupchak
J.A. Fedoruk

DE-REGISTERED FOR NON-PAYMENT OF 1990 FEES

E.K. Zariffeh

WE HAVE LOST CONTACT. CAN WE HAVE AN ADDRESS?

G.S. Brar
E.C. Burford
D.C. Oliver
G.K. Turnbull
D. Breuer
G.P. Hughes
M.G. Stoner
A.J. Zaidi

President's Message

K.A. Buhr, P. Eng.



"Reflections"

In June of this year, I summarized the work that your Council had undertaken in the previous six months. I will not bore you with a rehash of that summary. However, I would like to highlight a few items and point out some other things that have happened since that time. For those interested in more detail, I refer you to the June, 1990 issue of The Manitoba Professional Engineer.

There have been significant staff changes at the Association this year. With the stepping down of Bill Mackenzie, P. Eng., Dave Ennis, P. Eng., assumed the role of Executive Director of APEM, and Council hired Shirley Matile, P. Eng., as Director of Admissions. Bill remained on staff to assist with the transfer of duties and to draft a new set of admission standards and admission procedures for our Association. In addition, Heather Kitchen joined us as receptionist. The above complements the capable and competent staff of Joan McKinley, Donna Bilodeau and Elaine Ryan. At the risk of repeating myself, I would like again to point out what a pleasure it has been working with the Association staff this past year.

"...Presidents and Councils come and go, but the staff provides the continuity..."

The duties of President of the Association are not rigidly defined. The job allows for an individual to test his or her limits with what could be considered a full-time job in addition to his or her "real" job. On the other hand, that individual could sit around and do little or nothing; the staff would still make sure that the work got done. Presidents and Councils come and go, but the staff provides the continuity. And although the staff may sometimes feel that their efforts are not taken seriously, or are undermined by a simple show of hands, I would like to say that their efforts do not go unnoticed. I think every Past President, all Council members and Committee Chairs would echo these sentiments.

"...Council has already approved a change to the By-Laws to accommodate a 'President-elect'..."

Work is proceeding on the implementation of issues contained in the Mission Statement, adopted last December. I have been working with administrative staff on a proposal to rearrange the committee structure. We still hope to have a draft for Council for discussion purposes later this fall. Council has already approved a change to the By-Laws to accommodate a "President-elect". The proposed By-Law revision will be presented to the membership at the Annual General Meeting this year.

Other issues adopted in the Mission Statement which have been, or are being, dealt with include the hiring of a Director of Admissions, the review of the admission standards and procedures, the recognizing of Chapters and the implementation of Group Practice. Presumably, Council will review the Mission Statement this winter, and modify it as necessary to facilitate the operation of the Association.

In addition, Council has adopted in principle the national model definition of the practice of engineering proposed by CCPE. Similarly, it is expected that Council will adopt in principle CCPE national models for a Code of Ethics, guidelines for a manual of professional practice and a position paper on continuing competence.

Issues that I see coming before our Association in the next few years include: the potential shortage of engineers; professional responsibility with respect to software copyrights; the "place" of the engineer's seal on CADD drawings, as clients start to demand copies of disks containing drawings; the plagiarizing of CADD drawings or objects on disks and the question as to who assumes responsibility; the re-definition of what constitutes engineering work; and self-interest groups for employee engineers.

"...this year's Council has dealt with a number of important, far-reaching issues..."

All in all, I feel that this year's Council has dealt with a number of important, far-reaching issues. We have dealt with a number of issues that we inherited from the previous Council, dealt with some new issues, and left still other issues for the new Council to deal with. There is, however, still a great deal of work to do. I would like to thank the Council members for the support that they have given me this past year. I would like to think that most Councillors had an opportunity to impact on all the decisions made, and not just "rubber stamp" decisions already made.

I would like to thank the appointed Councillors, Barbara Cape and Jack McDougall, for their contributions to the Association. This was Barbara's first year on Council, and although she seemed frustrated with us at times, we were always forced to think again when she asked "Why?" of issues that seemed obvious to us. Jack has been on Council for a number of years, and has provided a steadying influence for Councillors. We also appreciate the assistance provided by Jack in terms of investing the Association's funds. I think the appointed Councillors, none of whom have been engineers, have been a valuable asset to our Association. Hopefully, their presence promotes our accountability to the public, whom we are mandated to serve.

Finally, I hope that I have lived up to the expectations of the membership who re-elected me, and to the Council who elected me President. I have enjoyed the work immensely. I have had opportunities to meet people here and across Canada. My wife and I have established many new friendships, which we intend to maintain. I have always believed that to be a part of any organization means involvement. My term of presidency has only confirmed that. So I look forward to my year as your immediate past president. To ensure that I don't become bored, Council has appointed me as the Association's Director to CCPE for the next two years.

Thank you for a wonderful year. □

Sustainable Development - A World Bank Economist's View

By: B. Stimpson, P. Eng.

Last year, Professor H. Daly, a senior economist with the World Bank in Washington D.C., visited the University of Manitoba and gave a public lecture on Sustainable Development. For the interest of readers of The Manitoba Professional Engineer, I have summarized some of his most thought-provoking comments below.

- The economy has long been treated as if it were analogous to an animal's circulatory system; that it to say, there is simply a circulation or flow of exchange values. This is too simplistic, for the animal also has a digestive system which takes in matter, rearranges it, manufactures new products, and produces waste that must be discarded.
- With this more complex model, it is clear that there are limits to growth, so the problem of economics is not only one of the optimum allocation of resources but also one of scale. What is needed is the equivalent of the Plimsoll Line for merchant ships that will indicate the optimum loading of economic activity beyond which the system is in increasing danger of collapse. The question of scale will be important in applying the concept of sustainable development.
- In micro-economics, the question of optimal scale (of a business) has always been considered paramount; yet, in macro-economics, the question of scale is never treated!
- It is still difficult to convince ourselves that there must be limits to growth, because this has not been the teaching of schools of economics throughout this century. The concept of growth has been a useful one politically for dealing with poverty. The argument has been that poverty can be overcome by economic growth, rather than by sharing or recognizing limits to living standards. Because of the laws of matter-energy, growth eventually becomes destructive. Since natural capital is limited, so must man-made capital be.
- In the last 36 years, population has doubled, while the use of fossil fuels has quadrupled. 25% of the sun's energy is used by humans. The People's Republic of China's current energy consumption amounts to only 7% of that of the U.S.A. If it were to increase consumption to only 14%,

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Nikola Tesla, Engineer of the Future

By: L. Ganetsky, P. Eng.

The man who was largely responsible for the practical utilization of electricity, probably more effective than Thomas Edison, remains relatively unknown to the engineers, scientists, and technical society in general.



Nikola Tesla was a native of Serbia (now Yugoslavia). He was born on July 9, 1856, to Reverend Milutin Tesla and his wife Duka Mandic. Tesla's father, who was a clergyman of the Serbian Orthodox Church, wanted his son to follow in his footsteps, but Nikola had a flair for scientific subjects, and at the age of 17 enrolled in Polytechnic Institute of Gratz, Austria.

His parents recognized from early childhood that Tesla had a near flawless memory, as well as an uncanny ability to conceptualize and mentally resolve problems without committing them to paper. He became proficient in French, German, and Italian, and he taught himself English as well. While studying at Gratz he became interested in constructing a motor without a commutator. He completed his studies at Gratz in 1877 and entered The University of Prague, graduating in 1881. While Tesla was still a student at Gratz, Alexander Graham Bell invented the telephone and Edison the electric lamp.

After graduation, Tesla began working as an electrician for the new phonee company in Budapest (Hungary). While there, he invented the telephone repeater, or amplifier, which in principle remains in use today. In 1883 the concept of a rotating magnetic field had been born, and in 1882 Tesla built the first induction motor. It performed exactly as he had seen it in his imagination. He then went to Paris to present his idea to the Continental Edison Company, but was told that they were strictly into DC and had no interest in AC. Charles Bachelor, the plant manager and a close friend of Edison, sympathized with Tesla and told him to go to the U.S. and see Edison personally. Tesla went to the U.S. in 1884 and immediately proceeded to see Edison. After explaining his invention to Edison, he was told that it would not work because people wanted DC; however, Edison gave him a job in his plant.

Tesla contributed many improvements to the design of the DC dynamos and motors. He redesigned the Edison dynamo and improved its efficiency 100% by the application of a short core. Edison had promised him $50,000.00 if he could do it, but reneged on the deal after the fact, and Tesla quit in disgust. Edison continued to ridicule Tesla about his AC ideas.

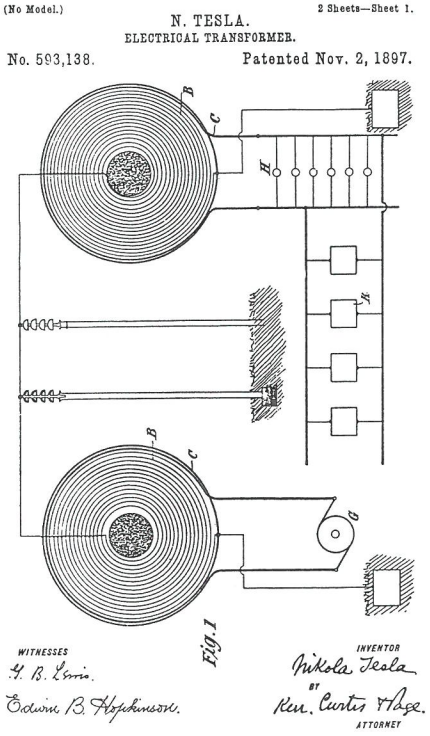
In 1885 Tesla was introduced to George Westinghouse by Adam Brown, manager of the Western Union. Westinghouse already knew of Tesla's 40 AC equipment patents, and hired him to develop an AC system. Westinghouse offered him one million dollars for his patent rights and a dollar per horsepower on all motors and generators sold.

In quick succession, Tesla designed many significant electrical devices, 26 of them being patented in 1888-89 alone. By the end of his career he had obtained 700 patents world-wide. 112 of these were in the U.S. Although Marconi is commonly credited with the creation of the radio, the U.S. Supreme Court, in a 1943 decision, stripped Marconi of the invention and instead gave it to Tesla, stating that Tesla's oscillator patent in 1900 had priority over Marconi's patent of 1904.

In 1893, Westinghouse won the contract to harness Niagara Falls in competition against Edison. Tesla designed and supervised the installation of the AC generators. The plant, called Edward Dean Adams Hydro Electric Power Station #1, was inaugurated by the Niagara Falls Power Co. in 1895. It featured ten 5000HP turbine/generators of 3.7 MW each, for a total of 37 MW.

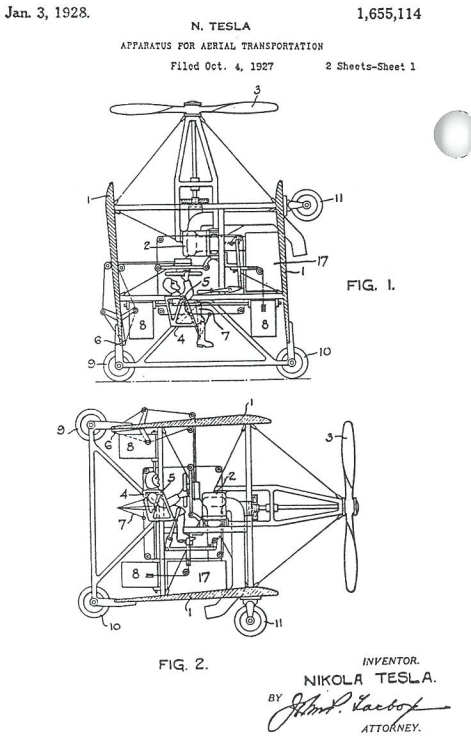
In 1898, Tesla invented and displayed a remote-controlled boat. This demonstration actually included two inventions: radio telemetry and robotics. His research work at the time was generously underwritten by J. Piermont Morgan, Westinghouse and John Jacob Aster among others, while Edison enjoyed the backing of Henry Ford, Harvey Firestone and the emerging General Electric giant.

In 1899 Tesla needed a large, more isolated laboratory to investigate some advanced concepts that he had been thinking of. With the backing of J.J. Astor, the owner of the Waldorf-Astoria Hotel, he built this monstrous lab in Colorado Springs. He was concentrating on the concept of wireless transmission of energy.



By 1900 Tesla was nearly broke, but he naively assumed that he would have limitless backing in recognition of his demonstrated accomplishments. Eventually, Tesla was stopped by total removal of research funds and was openly charged with being a madman and charlatan. The last thirty years of Tesla's life were spent in virtual seclusion and poverty. He did, however, continue to patent some concepts for aerial transportation, such as the vertical take off plane, flow meters, speed indicators, and frequency meters.

At the time of his death on January 7, 1942, he had many boxes containing study notes and reports in his cheap hotel room. The US government honored Tesla's request to ship all his belongings to Yugoslavia after his death. All the documentation was shipped to the Belgrade Museum after the war. Documents of his advanced concepts do not exist in the public domain, although the logical assumption is that they are closely held by the governments of the US and the eastern bloc countries by virtue of the potential weaponry applications.



At Tesla's funeral, President Franklin D. Roosevelt's wife, representing the president, said: "The president and I are deeply sorry at the passing of Dr. Nikola Tesla. We are extremely grateful for his contributions to science and his country." Telegrams poured in from all over the world. Three Nobel prize winners in physics paid tribute to Tesla as one of the outstanding intellects of the world who paved the way for many important technological developments of modern times. □

This article was prepared from a detailed presentation by F. Jost, P. Eng., to IEEE Winnipeg Branch.

Professional Affiliations and Achievements

In 1888, Tesla applied for membership in the AIEE (American Institute of Electrical Engineers) and was accepted. On May 16, 1888, he introduced his polyphase system of power generation and transmission together with associated induction motors in a paper before the AIEE, followed by a demonstration in his lab.

He was in popular demand as a lecturer at the most prestigious scientific societies in the US and England, well into the 1900's. His awards and medals were many. The AIEE gave him its most coveted honor, the Elliot - Cresson Medal. Lord Kelvin, in awarding it, declared that Tesla had contributed more to the electrical science than any other man.

Even after his prestige and popularity had begun to wane, he was selected for the 1912 Nobel Prize in Physics. However, he refused the award when he discovered that he would receive it jointly with Edison. Undoubtedly he could have used the $40,000 prize, but it would have been demeaning to him.

On November 17, 1916, Tesla applied for transfer to the grade of Fellow in the AIEE. Included in his record of some 20 important discoveries between 1886 and 1916 were: arc lighting, polyphase AC systems, high-frequency generators, mechanical and electrical oscillators, x-ray apparatus, superconductivity, reversible gas and steam turbines, pumps, telemetry, robotics, and transmission of energy without wires. When the AIEE sent out the confirmations to the distinguished scientists who were his references, the terse reply came back: "it's about time".

In 1917, he was awarded the Edison medal by the AIEE. Because of the name association, he initially refused, but later accepted the award. In 1934 he was awarded the John-Scott Medal by the AIEE.

He also received honorary degrees from many ranking universities, among which were: Sorbonne (Paris), Columbia, Yale, Nebraska, Grenoble, Vienna, Beograd, Bucharest, Sofia and others.

In 1975 Tesla was posthumously inducted into the National Inventors Hall of Fame.

In 1976, the bi-centennial birthday gift to the US, from Yugoslavia, was a large statue of Tesla. It was placed on Goat Island, overlooking the Niagara Falls.

The IEEE Nikola Tesla Award was established in 1975 through agreement between the IEEE Power Engineering Society and the Board of IEEE. It is awarded Yearly by the Board of Directors for outstanding contributions in the field of generation and utilization of electric power.

The Tesla, a relatively new unit of magnetic induction is named for him. One Tesla = one Weber/sq. meter. □

People Making A Difference

By: R.A. Kane, P. Eng.

As I write this article, members of the Aboriginal community are using various political wranglings, trying to secure a better future for their people. Their actions totally obscure a more quiet group, but one which probably is the real new beginning: the Access students at the University of Manitoba.

Historically, the white man has tried to hide native Canadians away on reserves, throw them some tokens and go on as if they didn't exist. Clearly this policy has not worked. Recently a new, and if you'll permit me to editorialize, a more enlightened, policy is saying "why don't we find some way of getting these Aboriginal people into the mainstream?"

In order to pull this off, years of neglect and unworkable programs have to be undone and overcome. The years have cause the general thinking of both groups to accept a certain stereotype, and this is the real challenge.

The Access program actually finds its roots in other disciplines and schools, but the school of Engineering at the University of Manitoba has had the ENGAP programme for five years. It has been described elsewhere, but just to review, what it does is to allow selected candidates to "access" engineering through a tailormade educational program bridging the academic shortcomings of the applicants into first year engineering.

While other faculties such as Medicine, Law, and Science have offered this, Engineering, with its heavy emphasis on the physical sciences and math, has proved to be extremely difficult. Further, what seemed like pretty good ideas in the beginning often failed miserably, causing wholesale changes of policy, virtually in midstream, by the University administration, ENGAP faculty and the students themselves.

As the APEM's representative from the beginning, I have seen a lot of anguish expressed by many parties. Happily and thankfully, the whole bunch, in spite of the idiosyncrasies and failures, has remained committed and there now looms on the horizon the very real possibility that the first ENGAP students will graduate in 1992.

It is inappropriate to single out an individual who has made this imminent success a realistic concept, so I won't name any names; but everyone associated with this program will know who I am talking about.

This student suffered greatly at the front end due to poor study skills, start up mistakes in ENGAP itself, personal turmoil, financial shortfalls, and more. Any one of these would be cause enough to not make it; but to have them all at once and to survive! This person has my attention.

At the present time this student is enjoying fairly healthy academic rewards – approximately a 3.5 average. This wasn't always the case. The other students look to him for leadership. In his jetstream, the other students are taking up the challenge and moving ahead.

The numbers are still somewhat iffy because, in the final analysis, it will be at least five to ten years before the first students graduate; but it is very likely that three to five students will graduate annually. Multiply this over 25 years then take into account the parallel access programs and the spin-offs from each graduate. Try to imagine what this will create.

It is possible that such programs will be rendered unnecessary. Wouldn't that be wonderful! And somewhere, lost in the passage of time, will be the personal triumphs of the few who showed the way. But I know that I won't forget.

For my part, I think the concept of the APEM adviser was to input advice from the Profession's perspective. In point of fact, I feel that the maturity and strength I see at the other side of the table has given me much more than I could ever have contributed. After all, they stuck with it when I thought things were lost.

If sport is analogous to life, then ENGAP's success is a close parallel. At work toward building a championship team are the players themselves, who rally around the natural team leader, the coach John Glanville, ENGAP Director, and his staff,

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Copying Software - How Can Something So Easy Be Wrong?

By: D.S. Jayas, P. Eng.

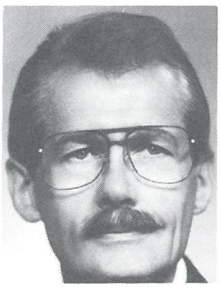
In the "olden days", everyone was expected to write programs before using a computer. Today, particularly in microcomputing, we normally buy rather than write our programs. These prepared programs are generally known as software and there seems to be a package for everyone and everything. The only problem is the price.

Computer software is nothing more than a program which was written and stored in some electronic form. No matter what final form it takes, it is the creative work of some individual, or group of individuals, and hence is protected by copyright law. Under the Canadian Copyright Act, a work is protected the moment it is created and there is no requirement to publish the work or to affix any special note thereto. Violation of the Copyright Act can result in financial penalty and/or a jail term. Commercial software usually involves some form of purchase contract; hence, the use of this software is also governed by contract law.

Restrictions on the method of software use vary from company to company. Normally these constraints are listed in the purchase contract. Most vendors allow the buyer to make working copies. Some vendors simply ask that you make certain that only one copy of their program can be used at any given time (the analogy to the use of a book).

Continued on page 12

Executive Director's Report



D.A. Ennis, P. Eng.

As Executive Director, I wear four hats in this Association: Registrar; Secretary-Treasurer; Office Manager; and Act Administration Officer. Because there are times when I have difficulty deciding which hat I am wearing in a given instance, it would not be surprising that the membership may at times be confused. Therefore, in the following, I report by category.

Firstly, however, let me emphasize that, were it not for the efficiency and dedication of the staff in the Association office, my ability to serve the public, Council and the membership would be noticeably diminished. To the staff therefore, I express my sincere appreciation.

Secondly, let me point out that approximately one-half of the period covered by this report involves the tenure of my predecessor, the former General Manager and Registrar, Bill Mackenzie. As you may know, Bill resigned from that position at the end of 1989, and continues to serve the Association as a staff member. His counsel is greatly appreciated.

Registrar

As Registrar, I can report that a small increase in the Association membership has taken place in the last year. The changes in membership are as follows:

Membership as of July 31, 1989			3,212
Plus	- registrations	164	
	- transfers-in	29	
	- reinstatements	21	
			214
Less	- resignations	53	
	- transfers-out	7	
	- written-off *(June 30)*	60	
	- deceased	16	
			136
Total Membership as of July 31, 1990			3,290

The breakdown of various categories of the total membership was as follows:

Full Members	2,723
Non-Practising and Non-Resident Members	544
Life Members	23
Total	3,290

In addition, 196 temporary licenses to practice engineering in this Province were issued to non-resident engineers. Many of those licenses were renewals, and 13 were issued to Professional Engineers resident in the U.S.A.

There is also another category of membership in this Association of which some may not be aware. It is the Engineering Graduate Member, or engineer-in-training category. This category is for persons who meet the educational requirements but who do not yet have sufficient acceptable engineering work experience to qualify for registration. The number of persons in this category fluctuates over the year as engineering graduates become registered. During the course of the year 61 persons became Engineering Graduate Members and on July 31, 1990, the count stood at 107.

There is some indication that with smaller graduating classes and declining enrollments, the number of first time members may decrease. This tendency may be offset, given recent political changes in Europe, by persons seeking entry to the Profession by the examination route. At the same time, recent initiatives to attract women into the profession may also help to offset the trend to lower enrollments.

I remind members that diligence by the Association in applying the requirements for admission to the profession is perhaps the most essential element in the effective protection of the public. As such, a very significant responsibility lies with those members who are called upon to provide references for applicants. Only those providers of references are in a position to know whether the applicant is ready to assume responsible charge. The significance of this responsibility may well increase, given the trend, developing in a number of Provinces, to increase the experience requirement to qualify for registration, both qualitatively and quantitatively. In keeping with the importance of this aspect of the Association's activities, I am pleased to report the hiring of Shirley M. Matile, P. Eng., to serve as Director of Admissions.

Secretary-Treasurer

As secretary, I can report that your Council has had a busy year. A mission statement and a long-range organizational plan were adopted in principle. Policies were adopted with respect to: disciplinary action against members and licensees by other Associations; the requirements for admission of geologists to the Association; and the distribution of information in the Association's regular mailings. Decisions were taken to develop sector-specific guidelines on the practice of engineering, and to provide for a chapter system for members residing outside of Winnipeg.

At the national level, the Association has, through your Director, Dr. Garland Laliberte, participated in initiatives by the Canadian Council of Professional Engineers (CCPE). CCPE continues to work toward the development of higher standards for the practice of engineering and the promotion of greater uniformity in standards applied across the nation for entry into the profession. Mutual recognition agreements with other nations are also being pursued.

As treasurer, I can report that the Association continues to operate on a sound financial basis. The reserves have been increased again this year in keeping with the policy adopted by Council.

A review of the membership statistics shows that the finances of the Association are largely sustained by a combined number of approximately 2900 full-dues-paying members and licensees.

Office Manager

The association office serves the needs of council and the various boards and committees of council, and maintains a liaison with the volunteers who sustain those committees. It also responds to inquiries from applicants, students, the general public and the membership. When one considers that: committee support involves some 200 meetings per year; approximately six hundred applications for changes in membership status and licensure are processed each year; annual dues are processed and membership records maintained on 3,200 members; and twenty-eight candidates are in active pursuit of academic qualification through the examination route, with another twenty in abeyance; one can understand that the level of activity is high.

This year in addition to the regular round of duties, the office has produced a membership roster for the first time in five years, and has assembled and provided statistical information to the Canadian Engineering Manpower Inventory. It is hoped that soon some of the time demands on staff will be reduced through increased office automation and computerization of the membership records.

Act Enforcement

Act Enforcement activities are directed at violations of the practice and title provisions of the Engineering Profession Act. Employment advertisements and general advertising continue to be monitored to identify probable violations. The parties are then approached and asked to comply voluntarily. No actions were taken over the year to prosecute violators.

Representation was made at the Law Amendments Committee of the Manitoba Legislature concerning proposed amendments to the Land Surveyors Act. Those amendments were considered to be in potential conflict with the practice provisions of the Engineering Profession Act. A satisfactory resolution was reached. □

IN LIGHTER VEIN

I'm on a committee
Oh give me your pity! I'm on a committee
Which means that from morning 'til night,
We attend and amend, and contend and defend,
Without a conclusion in sight.

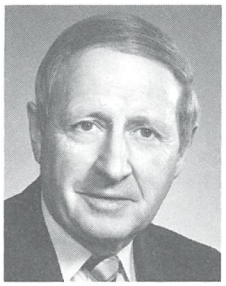
We confer and concur, we defer and demur,
And reiterate all of our thoughts,
We revise an agenda, with frequent addenda,
And consider a load of reports.

We compose and propose, we suppose and oppose,
And the points of procedure are fun;
But though various notions are brought up as motions,
There's terribly little get done.

We resolve and absolve, But we never dissolve
Since it's out of the question for us,
To bring our committee to end like this ditty
Which stops with a period...Thus.

Author Unknown
The B.C. Professional Engineer February 1990

Ad Hoc Committee On Technologists



Members:
W.D. Christie
E.W.J. Clarke
G.E. Laliberte
W. McGilvery

W.M.A. McDonald, *Chairman*

The Ad Hoc Committee on Technologists met four times during the year and, in addition, held one formal and two informal meetings with MANSCETT representatives.

Committee representatives have also met with two other Associations.

The present status of the legislation that has been proposed by MANSCETT is as follows:

- MANSCETT submitted its revised proposed Engineering Technology Act to the Manitoba Government (Hon. J. McCrae, Minister of Justice) on April 4, 1990.
- The Minister of Justice acknowledged receipt of the proposed Engineering Technology Act but indicated that the government would prefer to bring forward a bill that was agreeable to both MANSCETT and APEM. This intent was conveyed to both MANSCETT and APEM by letter on May 28, 1990.
- APEM arranged a meeting with MANSCETT on June 25, 1990 and at that meeting MANSCETT'S proposed Engineering Technology Act was discussed in detail. APEM outlined its concerns with the proposed act as it was presently written. MANSCETT asked that APEM formalize its concerns with the proposed Engineering Technology Act.
- APEM wrote to MANSCETT on July 13, 1990 and outlined its concerns. A copy of this letter was also sent to the Minister of Justice for information purposes.
- APEM has also sent copies of MANSCETT'S proposed Engineering Technology Act to all the other provincial engineering associations for comment.
- On September 4, 1990, APEM received a letter from MANSCETT; denying that the legislation constituted right to practice, declining the APEM offer to work together to draft a single piece of legislation which would accommodate the legitimate right to title for technicians and technologists, and providing notice that MANSCETT was proceeding with its request to have the Act presented to the Legislature as soon as possible.

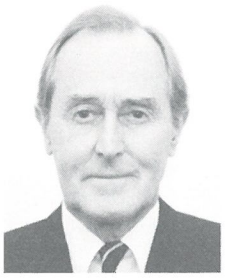
Very briefly, the concern that APEM has with the proposed Act is that although the Act states as follows: "This Act may be cited as The Engineering Technology Act and is intended to establish right to title only", the terms and clauses in the proposed act in substance provide for right to practice.

The enactment of the proposed legislation, as it is now written, would lead to confusion of the public with regard to both jurisdiction and responsibility.

In the opinion of APEM, the legitimate desire of MANSCETT for right to title should be accommodated in a revised and amended Engineering Profession Act that does not compromise APEM's right and responsibility to regulate the practice of engineering in Manitoba.

I would like to thank the members of the committee and the staff of APEM, especially Mr. Ennis, Mr. Mackenzie and our committee secretary, Ms. Heather Kitchen, for their assistance during the year. □

Consulting Engineers Committee



Members:
H. Haak
R.J. Johnson
R.C. Isaak
J.O. Klein
R.S. Morrison
A. Penman
B.J. Rossen
R.F. Taylor
E. Weiszmann
ACEM Non-voting
Liaison: T.L. Stratton

D.B. Whittaker,
Chairman

The committee held eight meetings in the past year. In addition, two sub-committees were active.

The committee's activities were concentrated on three major items. On two, our work has been completed.

Revisions to the Guide for the Engagement of Professional Engineering Services were completed by a sub-committee and the Committee. The revised version was approved by Council and printing is in progress.

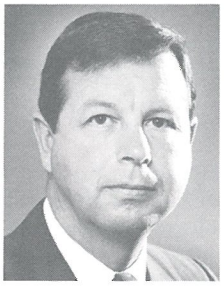
The Committee's work, in conjunction with the Manitoba Association of Architects, on methods to improve knowledge and application of building code requirements, (particularly Part 3, Use and Occupancy) was completed. A sub-committee also was active on this item. A report with recommendations was presented to, and largely accepted by, Council, which passed the matter to the Professional Development Committee for further implementation.

The third item, on which discussions started last year and are still in progress, concerns questions arising from the report on the inquiry into the roof collapse at the Station Square development in Burnaby, B.C. This matter also has been on the agenda of the Professional Development Committee.

Rudy Isaak resigned from the Committee in March because of an increasing workload on other committees. Several consulting engineering firms were invited to suggest names of staff willing to serve on the Committee, and Roy Houston was selected by the Committee as the new member. We were sorry to lose such an active and experienced member as Mr. Isaak, and welcome Mr. Houston.

As always, the Committee received excellent support from the Association's staff, and sincerely thanks them all, but especially Heather Kitchen and last, but by no means least, Dave Ennis for all his information and very lucid minutes of our not-always-quite-so-lucid meetings. □

Salary Research Committee



Members:
C.E. Anderson
B.G. Bettess
D.G. Chapman
L.R. Ferchoff
C.I. Ireland
B.F. Klaponski
E.G. Parker
H.M. Soliman

M. Symonds, *Chairman*

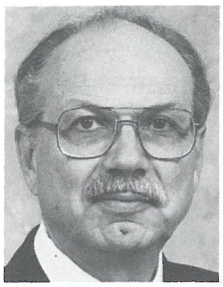
This was the first year of annual salary surveys for both the membership and engineering employers. The responses and results were consistent with previous years, and favorable comparisons have been made with other professional associations' surveys across Canada.

The results were published and distributed as an insert in the mailing of the Manitoba Professional Engineer in August of this year.

Minor changes continue to be made to the survey to reflect changing professional and social emphases, and to facilitate data reduction and analysis.

I would like to thank the members of the committee who responded extremely well to the large amount of delegated work thrown their way, I would also like to thank the APEM staff who, as always, provide superb support in the conduct of the meetings and the administration of the surveys; especially Joan McKinley. □

Practice and Ethics Committee



Members:
C.R. Bouskill
F.M. Fowler
D.R. Grimes
K. Hallson
R.C. Isaak
E.I. Lexier
I.H. McKay
W.R. McQuade
R.H. Russell
W. Saltzberg

R.A. Johnson,
Chairman

In addition to the increasing number of formal complaints, cases and enquiries from members and licensees (notably about ethics) and from Council (on principles and procedures) that it has had before it this past year, the Committee has also continued to work on several policies of long term importance.

It is now in the final stages of providing Council with a set of recommendations on principles to be used, if approved, for the detailed revision of By-law 45. This is the culmination of a lengthy review, in the light of shifting societal expectations and in the presence of an increasingly litigious environment, of better ways to undertake the responsibilities of Sections 24 through 26 of the Act while, at the same time, protecting the legitimate professional rights of members and licensees and, pragmatically, making the whole process more efficient. Relating to this, the Committee has also, at the request of the Ad Hoc Committee, reviewed its draft report on the Code of Ethics. With the approval of Council, members may expect more detailed presentations during the next year on these two important cornerstones of the profession.

Approval of Council has now been received of the Policy on Members Disciplined by Other Associations/Ordre recommended by the Committee. This policy provides for APEM action in the case where a member or licensee is disciplined by another engineering jurisdiction and also provides for publicity and, in the case of censure or reprimand, formal recording in the personal file of that fact. It further provides that notification of that action shall be given to all Canadian engineering jurisdictions, and any other where the member or licensee is known to have practised. Subject to a Member's right to provide just cause to Council as to why such action should not be taken, the thrust of the Policy is to make the APEM action automatic. Along similar lines, the Committee has recommended to Council that CCPE be advised "that measures be introduced to establish a National Registry and data base on disciplinary findings and penalties".

The Committee welcomed the news that the requested change to the City of Winnipeg Act has been approved, thereby empowering the "Supervisor of Building Inspections to report irregularities in building plans or specifications to the Association of Professional Engineers or the Manitoba Association of Architects". This has removed one legal impediment to related Committee enquiries.

The Committee continues to report regularly to Council:

- formally on its investigations and findings respecting complaints and its investigations thereon;
- on advice that it has tendered in response to enquiries by Members and Licensees;
- recommendations to improve existing policies and procedures or institute new ones; and
- advice on other matters that the Committee believes to be of importance to Council, e.g. the fact that the Employment Standards Act does not apply to Professional Engineers.

The files considered and findings reported to Council for which the committee's recommendation was that no formal hearing be held were:

- a complaint of negligence by a member in reporting on a pre-purchase inspection of a single family residential building. The complaint centered on matters involving the inspection of the crawl space of the building. The committee concluded that no prima facie case had been shown.
- an allegation of unprofessional conduct on the part of a member engaged in providing consulting services to an organization unconnected with the member's regular place of employment. The committee assessed the matter in accordance with the By-law and concluded that an investigation was not warranted.
- a complaint from a housing developer concerning an allegation of unprofessional conduct by a member in making extraneous and unsubstantiated comments about the homes built by the housing developer in reports provided to home owners. The complaint was investigated. On the basis of information provided by the member, the committee concluded that a satisfactory answer had been received and took no further action.
- an expression of concern from a member of the architectural profession, that a member may have assumed responsibility for the design of a building by an unqualified designer with the further possibility of placing the public at risk. The committee assessed whether or not an investigation was warranted, and in the process communicated with the Building Code authority having jurisdiction and concluded that an investigation was not warranted.
- a complaint alleging unprofessional conduct by a member based on extended delays in the payment of wages and expenses owing to the estate of a deceased professional engineer. The complaint was investigated. On the basis of the investigation and legal advice the committee took no further action.
- a complaint involving alleged unprofessional conduct by a member based on extended delays in the payment of wages and expenses and other allegations relative to the member's practice. The complaint and the allegations were investigated. On the basis of the information provided and legal advice, the committee took no further action.

In another complaint involving the report on the pre-purchase inspection of a single family residential building, the committee concluded that an investigation was warranted, investigated the matter and was of the opinion that there was an issue of negligence on the part of the member. The committee sought and received the delegation of authority from Council, as provided for in the Act, to issue a reprimand to the member, provided that the member first waived the right to a formal hearing and admitted to being guilty of negligence. The member has waived the right and admitted the guilt. The reprimand is in progress and it is expected that the matter will be reported to Council at its October meeting.

The committee has also reported on advice provided to members who have enquired on questions of proper professional conduct involving a conflict of interest, ethical advertising and duty to safeguard the health and safety interests of fellow employees in a workplace setting.

Files currently under active consideration include:

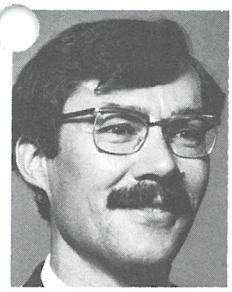
- a complaint against a member alleging unprofessional conduct in the preparation of a post-construction report, for the settlement of a legal proceeding, on the condition of a single-family residential building.
- a complaint of unprofessional conduct by a member in seeking to supplant another engineer after steps have been taken toward that engineer's employment.

As it did last year, the Committee requested that Council approve a levy of $10 per member for 1990-91 in order to further replenish the reserve for the Discipline By-Law. The levy last year did not provide a reserve sufficient to have paid the Committee's costs for the last hearing held before Council as a Tribunal. This year's is expected to do that.

This year there has been a substantial turn-over in membership of the Committee. Members E.F. Mackenzie, B.D. Norrie and F.A. Jost resigned last December following a total of 12 years of faithful, committed service; Chairman D.R. Grimes relinquished the Chair after two years of responsible and effective service in that position, and latterly, K. Hallson has tendered his resignation after eight years of service. To all these the Committee wishes to extend publicly its appreciation for jobs well done. New members are R.C. Isaak, E.I. Lexier, and I.H. McKay. As Chair I can give the assurance that the Committee members continue the long standing tradition of exercising an unflagging sense of fairness and responsibility in all their investigations, deliberations, decisions and actions.

Continued on page 9

Public Relations Committee



Members:
W.H. Brant
V.D. Gupta
K.J.T. Kjartanson
B.G. Lawlor
K.R. Drysdale
R.P. Hoemsen
S. Parent-Pulak

D.C.H. Prowse, *Chairman*

Most of the expenditures of the Public Relations Committee this year involved making school-age children more aware of engineering. Firstly, APEM awarded three registrations to Mini-University summer camp as prizes for projects at the Manitoba Schools Science Symposium. This camp provides exposure to engineering, along with other professions. Secondly, Project Magazine, the engineering students' magazine, was sent to ten high school libraries throughout the province. Thirdly, three $500 scholarships for entry level engineering students at the University of Manitoba were established by APEM. This was, I believe, instrumental in Manitoba Hydro's decision to also establish entrance scholarships to encourage talented students to study engineering in Manitoba. Fourthly, we are cooperating with the University of Manitoba Access Program for Women in Science and Engineering who intend to prepare posters and pamphlets to make both male and female students aware of career opportunities.

Also, with respect to engineering students, a list of names of willing professionals was provided to the University of Manitoba's Student Mentor Program. Finally, a videotape produced by APEBC which explains engineering to high school students was obtained and is available to members.

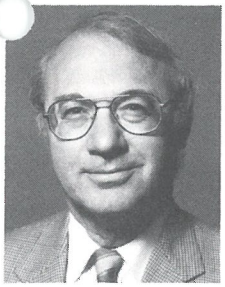
In other areas, the 70th anniversary, on April 19, 1990, of the first APEM council meeting was observed with the Premier's declaration of "Engineering Week". A CBC Radio interview with Garland Laliberte was arranged. This interview aired twice.

The Logo contest winner was A. Toews.

The most ambitious project has been undertaken by the Engineering Museum Task Force, co-chaired by George Lawlor and Bill Newton. This project, which received funding from the Core Area Initiative, involves the study of the potential conversion of the James Avenue Water Pumping Station into an "engineerium", or engineering museum. The "fast-track" schedule has been very demanding, and progress is being made in bringing engineering technology to the attention of the public in an exciting and interactive way.

Unfortunately, the media still portrays engineers as biased, unimaginative and crude. We require a comedy writer who will tell the real story in a way that will be printed by the offending publications and read. Please apply immediately to the Public Relations Committee. □

Ad Hoc Committee on Inspection and Supervision



Members:
F.M. Fowler
R.H. Russell
F. Nicholson
F.A. Roberts
D.B. Whittaker
D. Beacham
M.N. Sinha
W.M. McDonald
A.J. McFarland

R.L. Steele, *Chairman*

Concern had been expressed by members of the Association and the public that services provided by some engineers during construction review are sometimes not what normally would have been expected of a reasonable and prudent professional. In response, Council established this committee to examine engineers' duties and responsibilities during the construction process. The committee focussed on the typical case of the consulting structural engineer providing a construction review service to a building owner. Our conclusions and recommendations, however, have general application to other disciplines.

Based on terms of reference established by Council, the committee divided the discussions into five main areas:

- reviewing statutory and regulatory requirements
- reviewing the policies of other Associations
- establishing the need for guidelines
- determining the legal implications of construction review
- determining the adequacy of current education and training

The committee has now completed its work, and is preparing a final report, which will be presented to Council for consideration. We have concluded that there is significant variation in enforcement of Code provisions for construction review, particularly between rural and urban areas of the province. Additionally, standards vary among engineers as to what constitutes adequate review. The adoption of published guidelines to provide direction on the expected standard of practice is being considered by most Associations and has been carried out by some.

A number of recommendations has been presented, including: the establishment of undergraduate courses in construction-related topics; ongoing training programs for practising engineers in Code requirements and construction review; and, most importantly, the preparation of guidelines. The guidelines issued by APEGGA are suggested as a model.

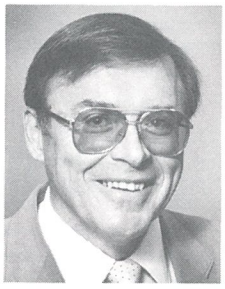
All members of the committee deserve thanks for their commitment during the past year. Their experience and counsel have been valuable in focussing and resolving our deliberations. The contributions of Dave Ennis and Bill Mackenzie, who kept us informed, organized and on-track, is gratefully acknowledged. □

Practice & Ethics (cont'd from pg. 8)

The hours are long; the pay is low; but the quality and energy laudable.

The Committee continues to be kept up to date with relevant developments in other jurisdictions: mostly through the energetic and committed efforts of Mr. Dave Ennis, at the beginning of the year as Act Administration Officer and latterly as Executive Director, who so ably supports the Committee in so many ways. □

Annual General Meeting Committee



Members:
T. Holden
B.R. St.Amant
E.A. Speers

R.R. McKibbin, *Chairman*

The Annual General Meeting Committee has worked very diligently with the President and Association staff to put together an exciting program with appeal to all Association members.

Mark Friday, October 26th, on your calendar and plan to attend one, or more, of the functions at the Holiday Inn Downtown.

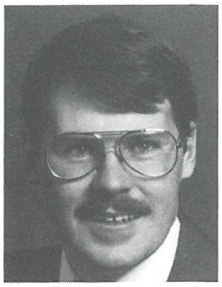
Once again, the day's agenda is to kick off with a breakfast meeting organized by the Professional Development Committee, followed by Registration and the Business Session.

Lloyd R. McGinnis, P. Eng., Chairman of the Board, International Institute for Sustainable Development, is the keynote speaker at the Awards Luncheon.

The afternoon workshop topic – "Sustainable Development - Delusion or Deliverance", will be introduced by three panel members, bringing us three perspectives on the subject: one from industry, one from an environmentalist, and one from the point of view of professional ethics.

On behalf of the Committee, I would like to express our sincere thanks to the APEM staff for their capable and invaluable assistance. □

Safety in Engineering Practice Committee



Members:
A.O. Dyregrov
Dr. M.J. Frye
R.E. Gottfred
B.W. Gulay
L.P. Williams
J.V. Weiszmann

F.A. Roberts, *Chairman*

The Safety in Engineering Practice Committee is grateful to have the willing and active participation of its members.

We are indebted to the members of sub-committees who have contributed their special knowledge. In addition we wish to thank many other members who have assisted the Committee in its deliberations.

The function of the Committee is to study safety-related problems in engineering practice and to pass on to members information which will help them avoid similar problems. The Committee, in cooperation with Council, makes recommendations on regulations and legislation which affect the safe practice of engineering.

The Committee has discussed the design and construction of apartment balcony slabs, an issue which recurs as a problem and is likely to be with us for many years to come. Problems range from inadequate bearing of precast slabs, which was a factor in problems reported several years ago on new construction, to the deterioration, with moisture, freezing and time, of slabs, anchorage, bearing and steel supports.

The sub-committee on precast concrete, which looked at this situation earlier, has been recalled to give further consideration to problems which are now being observed with balconies.

Obviously, designers should take immediate steps to ensure that the design and construction of balconies for new construction are such that they will overcome the deficiencies which have recently been identified. Designers should ensure that balconies will endure our severe climate.

The Safety Committee will be happy to make available information on this subject as it becomes available. We would appreciate the assistance of members who can pass on to the Committee their information or observations on related conditions. All engineers should watch for signs of balcony deterioration, and report any hazardous conditions to the appropriate building authority.

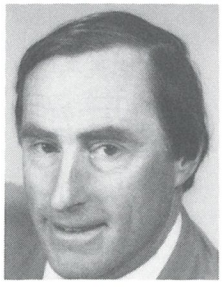
In a similar vein, engineers should be on the lookout for potentially hazardous conditions with brick veneer cladding systems in buildings. Recently-reported failures of cladding systems on both high-rise and low-rise buildings have occurred from combinations of moisture, freezing, corrosion and differential thermal movement. Engineers are requested to report hazardous conditions to the appropriate building authority.

The above problems are only a couple of examples of the deterioration of building structures over time. The Safety in Engineering Practice Committee, under the direction of Council, is advocating changes to legislation which will require that buildings receive a periodic re-inspection, and that occupancy certificates be given for a set time period only. The time period would depend on the type of occupancy or the conditions of the structure's use. For example, arenas and parkades for different reasons should require re-inspection more frequently than a single-storey office structure. The Committee would appreciate hearing members' views on this subject.

Members who may become aware of any potentially unsafe engineering practice should pass on such information to the Committee or the Registrar. Inquiries or submissions will be dealt with in confidence where requested.

Finally, on behalf of the Committee, I wish to thank Bill Mackenzie and Dave Ennis for their generous assistance during the year. □

Research and Development Committee



Members:
H. Dashevsky
G.R. Drummond
D.J. Fedirchuk
E.F. Glass
C. Katopodis
E.J. Klein
B.G. Lawlor
M. Paryniuk
E.A. Speers
J.B. Thorsteinsson

R.J. Hamlin, *Chairman*

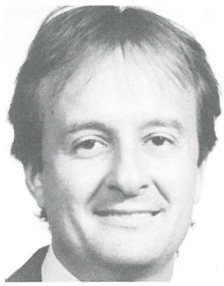
The Research and Development Committee participated, with the National Research Council (NRC) and the Canadian Institute of Industrial Technology, in High Technology Week, October 16 20, 1989. A half day session was set up, with Russ Hood as Moderator, and speakers Roy Van Koughnett, Director, NRC, Materials Research; Sami Rizkalla, Professor, Civil Engineering, University of Manitoba; Arvid Arvidson, Dow Corning; Norm Richards, Bristol Aerospace; Mike Hammond, Boeing of Canada Ltd.; and Jack Cahoon, Professor, Mechanical Engineering, University of Manitoba.

The remainder of the year has been spent trying to establish how the area of Sustainable Development can be best addressed by the Research and Development Committee. A difficult task has been to find a suitable definition. It was agreed that "Sustainable Development is development which meets the needs of the present without compromising the ability of future generations to meet their own needs."

In addition, the committee underwent some restructuring to properly address the issue of Sustainable Development. New members were added, and a separate sub committee, consisting of Don Osman and Ted Glass, became responsible to recommend and prepare luncheon meeting topics.

The committee reviewed the Institute of Engineers of Australia's Policy on Sustainable Development and their checklist as a possible candidate's list to be used by APEM as a guide for reaching Sustainable Development. □

Sports Committee



Members:
E. Garfinkel
J. Lavergne
K. Miller
H. Wilson

M. Vanderpont, *Chairman*

The Sports Committee held 6 meetings during the past year.

The Great Winter Spectacular known as the APEM curling bonspiel took place on January 16, 1990 at the traditional venue of the Granite Curling Club. Oh, how the mighty have fallen! The three-time defending champion Suzuki rink dropped three games straight. This year the glory went to the team of Ken Boyd, Larry Man, Karl Dern and Stan Hilderman. Thanks to Bill Saunders for again acting as Draw Master.

The APEM spring golf classic was held at the beautiful Carman Golf Club. As usual, we had a full slate of approximately 120 participants. Harold Wilson took top honours for Low Gross, while Lorne Holden made off with Low Net.

A special thanks is owed to the many members and their corporate affiliates for the unsolicited prizes they provided for use at the two events.

The Sports Committee is always looking for new ideas for events and suggestions to improve our current undertakings. Anyone wishing to contribute is encouraged to contact any member of the committee.

My personal appreciation is extended to all the committee members who cheerfully provide their time, energy and enthusiasm which make the events a continuing success. Thanks also to the invaluable assistance of the APEM staff, including Bill Mackenzie, Dave Ennis and Donna Bilodeau. □

Admissions Review Board



Members:
C.R. Bouskill
W.D. Christie
W. McGilvery
S.H. Rizkalla
D.I. Waldman

W.M.A. McDonald, *Chairman*

The Admissions Review Board again had a busy year considering all applications for admission to the Association referred to it by the Registrar and/or the Council.

Applicants who meet the educational requirements of the Engineering Profession Act, but about whose work experience there is some question as to the adequacy to meet the required standards, are referred to the Admissions Review Board.

The Board, after review, may interview the applicant to obtain more details of the applicant's work experience; may request additional references; or may request that the applicant resubmit an application after an additional period of adequate engineering work experience.

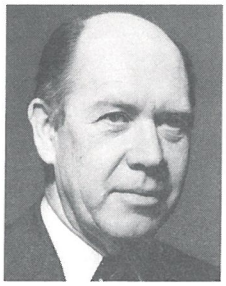
In the past year, the Board met nine times and considered 52 applications, requests and appeals. Of these, 27 were approved, while the remainder were requested to either supply additional references or reapply after additional adequate engineering work experience.

Again, the issues of new graduates going to work in organizations that have not in the past employed engineers, or not undertaking work of an engineering nature, have created problems for applicants to obtain "adequate engineering experience under the supervision of a Professional Engineer". This problem appears to be increasing, as the number of cases referred to the Admissions Review Board doubled in the last year.

I would like to thank the members of the Board along with other members of the Association who have assisted the Board while serving on various sub-committees set up by the Board.

A special thanks to the staff, Mr. Ennis, Mr. Mackenzie and Mrs. McKinley, and other staff members who provided excellent backup to assist the Board in its deliberations. □

Code of Ethics Ad Hoc Committee



Members:
W.R. McQuade
R.E. Scouten
F.A. Jost
J.S. Hicks
E.W.J. Clarke
F.M. Fowler

C.R. Bouskill, *Chairperson*

The Code of Ethics Ad Hoc Committee was established by Council, in the spring of 1987, on the recommendation of the Practice and Ethics Committee, to undertake an in-depth review of the Association's Code of Ethics. The Code was last reviewed twenty years ago, and the Code now in use was adopted on February 28, 1968.

In undertaking this review, the Committee has endeavoured to ensure that:

a) the Code contains standards of conduct for members designed for the protection of the public;

b) the Code does not include any clause(s) which may be in conflict with current human rights legislation;

c) the Code addresses matters relating to professional ethics, as opposed to personal and/or business ethics; and

d) the Code is presented in a clear, concise and easily comprehensible language to convey to each individual professional engineer those principles to which he or she must adhere.

The proposed revised Code of Ethics was submitted to APEM Council in mid-August, 1989. Council subsequently requested the Committee to review, and to make recommendations regarding, two matters relating to the proposed revised Code of Ethics. Following this review, the Committee's recommendations were considered by Council at its regular meeting in August 1990. Council endorsed the intent of the proposed Code, and expressed the intent to give it further consideration following the CCPE Board of Directors approval of a National Model of the Code of Ethics (a model which had been developed by the CCPE Professional Issues Committee independent of, but simultaneously with, the APEM revision of the Code of Ethics).

I welcome this opportunity to extend my personal thanks to each member of the Committee, each of whom has devoted considerable time, thought, effort and support on your behalf throughout this protracted review.

We all join in expressing our sincere thanks to Barbara Cape, for her willing and capable contribution as the designated liaison councillor for this Committee, and to Dave Ennis and Bill Mackenzie, for their considerable and capable assistance throughout the process.

Although the Committee's activity is essentially complete, the Committee members are prepared to assist in a review of the proposed Code at a general membership meeting, should one be convened, and to review any issues of substance relating to this Code which may be forwarded by the APEM members before the Code is adopted. □

Board of Examiners



Members:
C.D. Anderson
D.T. Anderson
S. Balakrishnan
E. Bridges
D.G. Chapman
A.D. Gerrard
I.C. Goulter
R.P.S. Han
D.S. Jayas
R.W. Menzies
D.W. Ruth
A.B. Sparling
M. Yunik

F.R. Kaita,
Chairman

The Board of Examiners assesses the academic qualifications of applicants who are graduates from programs not accredited by the Canadian Engineering Accreditation Board (CEAB) to determine the academic eligibility of such applicants for registration. The Board may require an applicant to pass assigned examinations in order to be considered academically qualified for acceptance into the profession.

The Board assessed thirty-seven new applicants, re-assessed twenty-three and administered eighteen examinations. Of the thirty-seven new applicants, thirty were assigned examinations (seven qualifying, twelve confirmatory and eleven programs) and seven were qualified. Of the twenty-three applicants re-assessed, nine were considered qualified based on successful completion of examinations, four were assessed additional examinations, and ten were reviewed for various requests including changes in examination schedules and course substitutions. Fifteen candidates registered for eighteen examinations and ten passes were recorded.

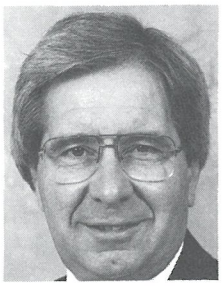
A special meeting of the Board was called on April 4, 1990 to meet with Dr. Garry Wacker, who represents Manitoba on the Canadian Engineering Qualification Board (CEQB), to review the proposed guidelines for the implementation of the 1992 Edition of the CCPE Examination Syllabus. One of the main issues facing CEQB is the degree to which the syllabus should be perceived as a method of defining the educational component. It should not be an education route parallel to a university program.

During the year we welcomed Ray Han, Digvir Jayas, Shirley Matile, Walter Pawlikewich and Doug Ruth to the Board and bid farewell to Andy Baracos and Dick Menon.

I wish to extend my personal thanks to each member of the Board for their dedicated efforts. We all join in expressing our sincere thanks to the APEM staff and in particular Dave Ennis, Bill Mackenzie, and Joan McKinley for their valuable and capable assistance. □

COMMITTEE REPORTS COMMITTEE REPORTS COMMITTEE REPORTS COMMITTEE REPORTS

Nominating Committee



Members:
W.D. Christie
J.G. Hildebrandt
R.P. Hoemsen
R.A. Johnson
F.R. Kaita
R. Menon
W. Pawlikewich
A. Permut
G.A. Pratt

G.E. Laliberte, *Chairman*

The Nominating Committee met twice during the year. The Committee's function is to prepare a slate of nominees willing to stand for election for positions becoming available on Council. This year there were five such positions. The Committee determined at the outset that it would nominate either six or seven candidates.

The Committee decided that it would first approach current Councillors whose terms were expiring. Out of these five Councillors, two indicated a willingness to stand for re-election. Three declined. The Committee then looked at the representation of the branches of engineering and employment sector among continuing Councillors. A number of other potential nominees was considered, taking into account the profiles of the continuing Councillors and of the potential nominees as well as the Committee experience of the potential nominees.

A total of 26 names was identified. Since Mr. R. Menon's name was one of the names identified, Mr. Menon immediately withdrew from further participation in the Committee's activities. Fifteen members were contacted, five accepted and ten declined. Eleven members, identified as potential candidates but not contacted because the Committee had reached its pre-determined number of nominees, are listed as available for consideration by next year's Committee. The names of seven candidates willing to stand for election were turned over in May to Ms Joan McKinley for processing of nomination papers, candidates' platforms and ballot papers.

The Committee owes a debt of gratitude to Ms McKinley who provided excellent support during and between meetings. □

Awards Committee



Members:
G.A. Pratt
F.R. Kaita
G.E. Laliberte
R.E. Scouten
F.A. Jost
K.M. Jardine
W.C. Harrison
W.L. Pawlikewich

E.E. Lach, *Chairman*

The Awards Committee is responsible for all matters relating to Awards of the Association or requiring participation by the Association such as the CCPE Awards. The Committee recommends candidates to Council.

The Committee solicited nominations for awards from the APEM membership by means of a Nomination Form which was mailed out at the end of February. The membership responded with eleven nominations which were considered along with names recommended from the list of last year's nominees by the 1989 Committee.

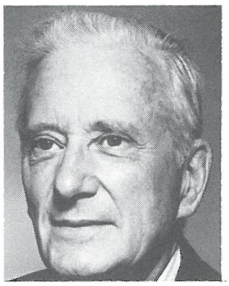
The Committee held four meetings in 1990 to assess the qualifications of all nominations for four APEM and four CCPE Awards.

The Committee put forward their recommendations regarding Candidates for Awards at Council Meetings on May 14th and June 11th, 1990.

The Committee also reviewed and recommended amendments to the Terms of Reference for the APEM Merit Award and the APEM Certificate of Engineering Achievement Award. The proposed amendments were approved by Council.

My sincere thanks to the members of the Committee for their interest and enthusiasm in undertaking assignments. The Committee wishes to express its gratitude to the Association Staff, with special thanks to Joan McKinley for attending all meetings and serving as Secretary. □

Publication Committee



Members:
L.Y. Ganetsky
J.E. Belagus
R.D. Kitson
R.A. Kane
V.L. Dutton
D.S. Jayas
J. Lucas
R. Menon
R. Cotterill

W.G. McKay, *Chairman*

The membership of the Committee saw several changes this year: the loss of Cyndi Kohuska and Jerry Bogan, both to out-of-Province job relocations; and the gain of Rick Kitson, of Portage CFB, and Jeff Belagus.

Six issues were produced: two issues of 12 pages and four issues of 16 pages. The Committee has continued the trend of seeking out articles on local engineers, presentations by local personnel and issues of general local interest, and has continued the policy of providing coverage of Association functions of both a professional and a social nature. The Committee thanks all non-committee members who assisted us by preparing articles covering some of these functions. T prompt submissions have been very effective in helping produce your publication.

It may be said that desk-top publication has been achieved internally. Donna Bilodeau, the Committee secretary, enters all material on disk, Committee members edit hard copy, and the final copy is computer-formatted for printing externally. The Committee has seen savings in terms of staff time, Committee members and printing costs.

The Committee appreciates the staff support of Executive Director D.A. Ennis, and, more recently, from Shirley Matile.

Members have continued to operate with good cooperation and work with enthusiasm on their assignments and toward the production of each issue. Our membership, however, is always open, and we would particularly like to have more representatives from women in engineering on our Committee. □

COMMITTEE REPORTS COMMITTEE REPORTS COMMITTEE REPORTS COMMITTEE REPORTS

Iron Ring Fall Ceremony

There will be an iron ring ceremony for Camp #8, on Tuesday, November 13, 1990 commencing at 8:00 p.m. in the Tartan Room, 2nd Floor of Pembina Hall - University of Manitoba Campus.

For additional information contact Dave Sexton, P. Eng., Camp Secretary at 945-7488. Those wishing to be obligated should contact Mr. Sexton as soon as possible. □

Copying Software

Cont'd from pg. 5

Persons with legal expertise have advised the author that you can meet this request if you have a copy of a program installed on your home computer and on your office computer because you are the only user of the machines. You cannot, however, have a copy of a single program installed on your office computer and a colleague's terminal, because you cannot be assured that the package is not being used at more than one location at any given time.

Given the cost of programs, the physical ease of copying and the relative isolation in which programs are used, it is often tempting to "make a copy for my own use". The low probability of being caught and prosecuted does not alter the fact that such action is THEFT. This sort of UNETHICAL and UNPROFESSIONAL co is liable to disciplinary action by APEM.

Think before you copy. Few of us would find the use of unauthorized copies of designs to be acceptable professional behaviour. Software copying is, for all intents and purposes, the same thing. □

Wait and See on the GST

By: D.A. Ennis, P. Eng.

The Association, like many other organizations, has had to make a decision as to what measures it should adopt in relation to the proposed Goods and Services Tax scheduled to become effective January 1, 1991.

Under the proposed legislation, there are two significant categories of transactions that will not attract the GST. The first is for "zero-rated" goods or services. Organizations in this category, such as schools and hospitals, do not collect the GST on the goods or services they provide, and are also entitled to rebates on the tax paid on purchases used to furnish the zero-rated goods or services. Professional Associations such as APEM do not fall into this category.

The second group is euphemistically called "tax-exempt". The legislation proposes that the supply of a membership, where the membership is required to maintain a professional status recognized by statute, be treated as tax-exempt. In this category, the dues and fees or services would not attract the GST, but neither would the organization be able to claim a rebate on the tax paid on purchases used to furnish the "tax-exempt" goods or services.

However, professional associations also have the option of making their membership dues and fees subject to tax. This opting in would allow the Association to obtain full credit for any GST paid on its inputs, which would otherwise be reflected in increased fees. Again, there are off-setting factors under this option.

Council has sought advice and consulted with other Associations in attempting to establish the best course of action in addressing this issue. The decision, at least for the 1990-91 fiscal year, was that the Association will not opt to have membership fees subjected to the GST, and will therefore have to bear the cost of the GST on the supplies and services needed to conduct the Association's business.

On first examination this might appear to be a questionable decision. However, the decision was made after considering the following factors:

- given that the Association's fiscal year ends on July 31, the GST would be applicable in only seven of the twelve months of the next fiscal year. During this period the GST payable on supplies (i.e. input tax) is estimated at between eleven and twelve thousand dollars;
- it is expected that there would be a significant cost to the Association in administering a system of tax collection and input tax credits;
- there is no clear information to indicate that members who do not have their dues paid by the employer or who are otherwise reimbursed for them would be able to claim a rebate on the GST paid;
- the Association would be liable to remit all tax payable on annual dues at the time the invoice for the dues was sent to the membership. This would mean that, in essence, the Association would be financing the tax on an amount somewhat over $300,000 for a period of up to six months;
- to recover the tax already paid on annual dues for members who fail to remit their fees and are deregistered after June 30, the Association would have to file a separate claim for rebate based on a bad debt;
- it is still not clear as to which services and supplies may attract GST.

After consideration of these factors, the budget and fee schedule approved by Council for the 1990-91 fiscal year at its July meeting was based on not applying the GST to the Association's dues, fees and other services, and therefore not receiving input tax credits for any GST paid.

The cost and other impacts of the GST will be monitored and the decision reviewed a year from now. □

Mindbender

By: J.A.E. Belagus, P. Eng.

Upon receiving the green light, a dragster driven by "Billy Bob" bolts from the starting line and goes on to win the 1/4 mile championship race with a time of 9.8 seconds. What was Billy Bob's winning speed?

ANSWER: 183.7 miles/hour

The Professional Engineers' Wives Association of Manitoba

Celebrating 50 Years

Program 1990-1991

September 06/90 **50TH ANNIVERSARY TEA**
Hosted by The Honourable Dr. George Johnson
Lieutenant Governor of Manitoba
Government House, 10 Kennedy Street

October 23/90 **WINE & CHEESE RECEPTION AND FASHION SHOW - PACKER'S LADIES WEAR**
In honour of our present and prospective new members, Winnipeg Winter Club, 200 River Avenue, 1:00 p.m., cash bar.
Membership dues will be accepted at this time.

November 24/90 **GALA CELEBRATION**
50TH ANNIVERSARY DINNER AND DANCE
Honouring all Past-Presidents
Winnipeg Winter Club, 200 River Avenue - Cocktails 6:30 p.m. Dinner 7:30 p.m.
All Professional Engineers and Spouses/Escorts Welcome
DOOR PRIZES

January 22/91 **WINNIPEG ART GALLERY**
300 Memorial Boulevard
Luncheon and Guided Tour

February 26/91 **LUNCHEON - WINNIPEG WINTER CLUB**
200 River Avenue,
Guest Speaker: Diane Bairstow, Osborne House

April 22/91 **ANNUAL MEETING AND LUNCHEON**
Winnipeg Winter Club, 200 River Avenue (Bridge at 10:00 a.m.)

TRANSPORTATION available to all events - contact Mary-Ann Dickson 253-1459

CHILD CARE available for Winter Club events (exception: November 24, 1990)

LUNCHEON RECEPTION 12:15 p.m. - Lunch 1:00 p.m. (exceptions: October reception - 1:00 p.m., November Gala Celebration - 6:30 p.m.)

A Special Year of Celebration – The Year for You to Join

Wine & Cheese Reception And Fashion Show
In Honour Of Our Present And Prospective New Members

DATE: Tuesday, Oct. 23, 1990
R.S.V.P., by October 18, 1990

TIME: 1:00 - 3:30 p.m.
Carol Klein
18 Clearwater Road
Winnipeg, Manitoba
R2J 2T2
256-6197

PLACE: Winnipeg Winter Club
Mary-Ann Dickson
39 Malmsbury Avenue
Winnipeg, Manitoba
R2N 2V2
253-1459

Name: _____

Address: _____

Telephone: _____ Child Care: Required: Yes ☐ No ☐

Transportation: Required: Yes ☐ No ☐

Council Reports

August 13, 1990 *By: W.G. McKay, P. Eng.*

AT WHICH COUNCIL WRANGLES WITH ROBERT'S RULES AND BESTOWS GREAT POWERS UPON THE PRACTICE AND ETHICS COMMITTEE

Having dispensed with lunch and the approval of the agenda, Council immediately became bogged down in the approval of the minutes of the previous meeting – principally over the issues of whether "in camera" discussion should be recorded, and whether minutes should be amended by motion or by agreement. After several motions, amendments and points of order, in which Councillor Cape displayed a knowledge of Robert's Rules of Order, the minutes were revised, and Council proceeded on to such routine items as financial statements and applications for licensure and registration, which, as usual, were dispensed without incident.

Next came the designation of an APEM representative to the Board of the Resource Recovery Institute (one Mr. Ted Speers, P. Eng.), the forthcoming replacement of CCPE Director Garland Laliberte with Ken Buhr (who promised to uphold his predecessor's tradition of preparing no reports!), and the By-Law revisions proposed for consideration at the Annual General Meeting.

The proposed By-Law revisions provide for the automatic promotion of the Vice-President to the Presidency, without having to be elected. These revisions, which Councillor Cape lauded for their lack of gender bias (but in which she was unable to have the word "chairman" revised to "chairperson" or "chair"), were approved in principle.

At 2:45 p.m., the meeting became interesting. Two highly contentious issues took an hour and a half to resolve.

The first concerned a representation by Practice and Ethics Committee Chairman Dick Johnson. The Practice and Ethics Committee had been experiencing problems with the current discipline practice as it related to a particular case under review, and Mr. Johnson was there to recommend that Council empower his committee to reprimand the member complained against (if he admitted guilt), rather than have Council hold a lengthy and costly formal hearing and possibly then issue a similar reprimand. Considerable discussion ensued, with the proponents attempting to expedite the process and save the Association's money, and the opponents expressing concerns regarding precedent - setting, the relinquishment of important powers, and the obstruction of "natural justice". Finally, Council granted the Practice and Ethics Committee the authority requested. The final comment on this issue was "let us all hang together".

The second contentious issue concerned the proposed revised Code of Ethics, which was presented to Council by Charlie Bouskill, Chairman of the Ad Hoc Committee on the Code of Ethics. The particular bone of contention was a specific clause which would allow a professional engineer to apply his seal to engineering work prepared by others and reviewed, in detail, by him. This clause, claimed Bill Mackenzie, was condoning the illegal practice of engineering, and was contrary to APEM's own guidelines on the Ethical Use of the Engineering Seal. Interestingly enough, Mr. Mackenzie's concerns seemed less important to Council than Barbara Cape's concern that by continuing to incorporate the gender bias, Council would be perpetuating the image of engineering as a profession for males. It was finally decided that the clause enabling engineers to seal the work of others would remain in the revised Code of Ethics, that the final Code would be gender-neutral, and that the Code would not be finalized until CCPE's national model for a Code of Ethics has been adopted. □

September 17, 1990 *By: W.G. McKay, P. Eng.*

AT WHICH COUNCIL BECOMES A CENSORSHIP BOARD

Having commenced the meeting on time, Council moved quickly through the routine matters of Minutes and Financial Statements, as well as Licences, Engineering Graduates, etc. An NSF payment for a reinstatement application caused some research of the By-laws, and it was finally ascertained that the person in reality was not reinstated until such time as a satisfactory payment had been received.

CCPE

CCPE has now proposed to provide a Model for a Manual on Professional Practice which should lead to more uniformity of practice on a national basis. APEM, as a member of CCPE, may utilize this Model to produce a guide for its own members.

Again from CCPE, Council reviewed a position paper on Continuing Competence or Education. Likewise, adoption by the member Associations would establish a basis for continuing education on a national level. While Council in general agreed with the recommendations of the Professional Development Committee, the suggested involvement of the government, other than as an employer, raised some concern. Moreover, while the Position Paper presents an ideal position for facilitating continuing education, it was resolved that maintaining competency or education is very much a matter of individual initiative. Despite the fact that APEM currently has a facility for recording each member's program of education, to date there has been little participation in this registration or recording.

From the Canadian Engineering Qualification Board, an organization of CCPE, a Guideline for uniform Standards of Admission on a national basis was also reviewed. This is an undertaking which, if implemented, would more closely relate Canada to the U.S. and to Europe, especially as the world moved closer to global economic programs. Considerable debate arose over the minimum number of years of experience after graduation that should be required before admission. Currently, it is two years, and four are being proposed. It was agreed that two years was borderline, and four years would be an improvement; however, the quality and maturity of that period of experience was really the key to admission.

On a note of goodwill, APEM will offer to host the Annual Meeting of CCPE, usually in May, in 1995. The last occasion was 1985, and by 1[illegible] APEM will have reached its senior citizen mark of 75 years young.

By-Laws

As a matter of good administration practice, the By-laws have been reviewed by the staff, and at the Annual General Meeting the membership will deal with the recommended changes. Council quickly approved all of the proposed changes, although some pros and cons were raised regarding the inclusion of the clause in By-law No. 38 relating to the upper limit of fees. The final result: it remains.

Geologists

As the Association is not empowered to register geologists, it was agreed that the licensing of geologists applying to do engineering work would no longer be undertaken.

Ecole Polytechnique Tragedy

The 1989 Canadian Engineering Memorial Foundation, which is a fund supporting scholarship awards for women in engineering and which commemorates the deaths of fourteen students at Ecole Polytechnique last December, has approached the Association re donations to this fund. Donations can be on an individual basis and/or by Associations. It was resolved that the members of the Association would be solicited at the time of the 1991 dues notice, and that the Association itself would consider its contribution at a later time.

Shortly after the Montreal incident, a poster, showing the male and female symbols in bullets with the caption "Never Again", was made available for distribution. (The poster was the cover of the spring edition of the APEO publication.) APEM had received a request from an Equal Opportunities group in Toronto, asking if it would act as a distribution centre for this poster. On a request from the Public Relations Committee for a policy relating to such matters, the Councillors decided that they would request that matters regarding the distribution of posters be referred to them. On the matter of this particular poster, Council, by a close vote, declined to distribute it; undoubtedly, each member having to evaluate the image the poster was projecting as well as the purpos[illegible] of the poster.

Logo

As the readers will recall, the Public Relations Committee held a Logo Contest, the results of which were published in the April 1990 issue of the MPE. Coming to the conclusion that engineers are not in general logo designers, Council

Continued on page 16

Greening of the Profession

Cont'd from pg. 1

members for service to the profession, the community and the field of engineering.

The afternoon session will consist of a panel discussion followed by a workshop. The focus of the workshop will be "Sustainable Development – Delusion or Deliverance?". The panel discussion will present three views on ethics and sustainable development. The speakers will be Mr. Carson Templeton, P. Eng., Mr. Roy Aitken, P. Eng., and Dr. Arthur Shafer.

Carson Templeton will present the view of the environmentalist. He is well qualified to speak on the issue. In 1984 and 1985 he organized workshops for the Canada West Foundation and the Banff Centre on submissions to the Inquiry on Federal Water Policy. From 1986 to 1989 he served as Chairman of the Environmental Input Review Board, which was set up to preserve Inuvialuit cultural identity. He has recently contributed significantly to the enhancement and preservation of quality of life for the Inuit people while working with the Inuvialuit Land Claims Settlement. He is currently a member of the management committee of the Canadian Northern Studies Trust.

Mr. Templeton is an Honourary Life Member of APEM. In 1975 he was awarded the Association's Merit Award, and in 1981 he was awarded the Association's Outstanding Service Award for his contributions to engineering, the community and profession. In 1989 he was awarded the CCPE Gold Medal Award in recognition of his exceptional achievements in the field of engineering and his involvement in community organizations and interests including the environment.

Roy Aitken, is the Executive Vice-President of INCO Ltd., responsible for corporate Public Affairs, Government Relations, Human Resources, Industrial Relations and Environmental Affairs. Mr. Aitken is a resident of Toronto, and a member of APEO. He will present an industry view of the environmental management issue. Inco has a stated policy that it "is committed to the concept of sustainable development, which requires balancing the need for economic growth with good stewardship in the protection of human health and the natural environment". This spring, Mr. Aitken was Honourary Chair of the 1990 Engineering Week held in Toronto. The theme of the event was "Environment: Our Common Future".

Arthur Shafer is the Director of the Centre for Professional and Applied Ethics at the University of Manitoba. He is also a full professor in the Department of Philosophy at the University. Dr. Shafer is a specialist in jurisprudence, bio-medical ethics and moral, social and political philosophy. He has received numerous awards for his work in his profession. He has been involved in a number of radio and television documentaries on ethics, and written numerous articles for Canadian newspapers on the same topic.

He will be presenting his view of the ethical approach to sustainable development and the role or responsibilities of professionals in protecting the environment.

The theme and focus of the Annual General Meeting should be of interest to all practising engineers who are making daily decisions that may impact on the environment. I suggest that all members of our Association consider this Annual General Meeting as an opportunity for continuing education, as well as an opportunity to participate in the guiding of the Association. □

Sustainable Development

Cont'd from pg. 3

largely through the burning of its large coal deposits, it would require the U.S.A. to stop burning fossil fuels in order to keep the atmospheric carbon dioxide at current levels.

- The best scale criterion appears to be sustainable development, a concept around which many gather but whose definition has not yet been universally agreed upon.
- A distinction must be made between two terms that are in circulation - sustainable growth and sustainable development. Growth means an increase in physical size; therefore, the concept of sustainable growth is self-contradictory (i.e. it cannot be sustained ad infinitum). Development implies expansion or realization of potential for improvement, and is qualitative.
- Possible criteria and rules for sustainable development include:
  (1) Limit human scale of economic activity to that which is sustainable by the economy (this raises questions of what is an appropriate standard of living).
  (2) Technology has to be efficiency-increasing rather than out-put increasing.
  (3) Renewable resources should be exploited on a sustained yield basis.
  (4) Non-renewable resources should be used at a rate at which they can be replaced with renewable substitutes.
- Some possible economic solutions include:
  (1) To prevent destruction of tropical rain forests and their unbridled exploitation, forgive or reduce national debts or pay rent on forests.
  (2) Tax paid by industry depending on amount of carbon dioxide produced, i.e. pollution tax.
  (3) Part of profits made by companies exploiting non-renewable resources parlayed by government for funding of research and development of renewable substitutes. □

How Green Can We Go?

Can we, as ethical engineers, involve ourselves in engineering projects that may harm the environment?

Is sustainable development in the public interest?

Where do we draw the line?

These difficult questions will be addressed at an afternoon forum during your Annual Meeting on October 26th, 1990.

Plan to attend and participate in the discussions.

Mark your calendar! □

Letter to the Editor

I would like to comment on a number of items in the August 1990 edition of the Professional Engineer.

1. The statement in the article on St. Andrew's Lock and Dam that it is the only lock west of Sault Ste. Marie is incorrect. There is a larger lock on the Columbia River at the Arrow Lakes Dam a few miles upstream of Castlegar B.C.
2. What does our President mean when he says in his Message that "The public is better informed today, and subsequently (sic) demands more from the professional engineer."?
3. The form to be filled in at the bottom of page 8 refers to "Our Present And Perspective New Members". What is a Perspective Member?
4. In his letter R.A. Johnson takes you to task for publishing the personal opinions of reporters you are privileged to send to cover council meetings. Are we to assume from the subsequent appallingly opinionated report of the meeting on July 9, 1990 that you do not agree with R.A. Johnson? I think you have a duty to explain your editorial policy in this regard.

With kindest regards,
Yours Sincerely,
Peter Steadman, P. Eng.

Editorial Comment

Mr. Steadman's letter to the editor was discussed at the September 7, 1990 meeting of the publication committee.

It was agreed that those issues raised by Mr. Steadman regarding articles contributed by other persons would be referred to the authors for their consideration.

The matter of editorial policy on Council reports was discussed at some length.

The publication committee, has for some time, used the principle of having a member of the publication committee in attendance during a Council meeting and having that member prepare a first-hand report on the matters arising from the meeting. The matters to be reported are those matters which, in the opinion of the reporter, would be of interest to the reader members.

All reports are reviewed, prior to publication, for comment on general conformance with the facts, by senior APEM staff. Opinions are reviewed by the chairman/editor and, in most instances, by the entire committee. Where appropriate, revisions and after discussion with the writers, are made.

All articles are proofread by committee members and/or staff. "Housekeeping" changes are made without consultation with the authors.

In summary, the policy is that the reporter presents a report to the committee which may contain opinions on council's actions; such report subject to editorial review by the committee.

W.G. McKay, P. Eng.
Chairman, Publication Committee

The Engineering Profession

Engineering as a profession is largely a milestone of the twentieth century, even though engineering as an activity has been practised since antiquity. Here in Canada, the 1871 census reports that there were 70 individuals who listed their occupation as being "engineer". Today, there are over 126,000 registered professional engineers. They are well integrated within the national economy; some 50 per cent work in industry, 20 per cent provide consulting services, 20 per cent are in the public sector, and the remaining 10 per cent are engaged in all walks of life. Some are also medical doctors, members of the clergy, accountants, and members of provincial legislatures or the federal Parliament. While the nature of engineering work tends to be very diverse, we know that 25 per cent of registered professional engineers are managers, 45 per cent supervise the production of material goods, 10 per cent are involved in research and development activities, and the balance have careers in many areas, including teaching, marketing and a host of other activities. Today, one in every one hundred individuals working in Canada is an engineer. □

Making a Difference

Cont'd from pg. 5

giving direction and leadership, fully aware of the talent they were working with, and the University and Government who endeavour to make available the resources necessary to get the job done-just like a good owner.

Those of you who know me know that I do not praise the way our tax dollars are spent. I could be cynical and say Engap is just the law of averages kicking in: spend enough dollars and a few have to accomplish some good - but I won't. Frankly, the program's success will be because a few very special people showed the way, and our Profession will be the lucky recipient of that success. □

Attention Curlers!

The next Annual APEM Curling Bonspiel will be held on Tuesday, January 15, 1991.

Details to follow.

Mark your calendars **now!** □

Council Meeting

Cont'd from pg. 14

resolved to put the contest-winning design to bed, and requested that the PR Committee bring in a report on the matter of a design by an outside source.

Board of Examiners

Dr. S. Balakrishnan, a member of the Board, will be absent on leave, and Council concurred with the appointment of J.R. Cahoon to fill the vacancy.

And so a Council Meeting of some twenty items ended by 5:30 p.m. It is perhaps interesting to observe that matters from national policy received relatively quick consent, while those of posters and logos were able to arouse detailed comment regarding purpose and image - matters not usually associated with engineering. □

Coming Events

NATIONAL SCIENCE AND TECHNOLOGY WEEK
October 12-21, 1990
Winnipeg, Manitoba
Contact: M. Cornell
Technology Branch
Industry, Trade & Tourism
Phone: 945-0126

ELECTRONICS TEST CENTRE
Sponsored by Alberta Research Centre present a seminar - Electromagnetic Compatibility and Interference.
October 22-26, 1990
Alberta Research Centre
Edmonton, Alberta
Contact: Ms. Tammy Novack
Phone: (403) 450-5370

CANADIAN TECHNICAL ASPHALT ASSOCIATION
Annual Convention
November 18-21, 1990
Winnipeg, Manitoba – Westin Hotel
Information: C.T.A.A.
Victoria, B.C.
Phone: (604) 361-9187
Fax: (604) 382-8149

PREVIEW 2000
6th Canadian Construction Congress 1990
Sponsored by Canadian Construction Research Board
Toronto - December 5-7, 1990
Contact: John Archer - CCRB Ottawa
Phone: (613) 993-3761
Fax: (613) 952-7671

4R CONFERENCE AND ROAD SHOW
December 5-7, 1990
San Antonio, Texas
Contact: 4R Conference and Road Show
380 East Northwest Highway
Des Plaines, Illinois
U.S.A. 60016

TECHNICAL UNIVERSITY OF NOVA SCOTIA - TUNS
Seminars to be held in Winnipeg in November/ December 1990
Computer Science - November
Electronic Communication - December

CALL FOR PAPERS FOR CSCE ANNUAL CONFERENCE
May 1991, Vancouver, B.C.
Deadline October 15, 1990
Contact: Dr. S.O. Russell
Dept. of Civil Engineering - University of B.C.
2324 Main Mall Vancouver
V6T 1W5
or
Dr. N.D. Nathan (same address)

8th INTERNATIONAL CONFERENCE ON WIND ENGINEERING
July 1991 - London, Ontario
Call for Papers
Contact: Boundary Layer Wind Tunnel
University of Western Ontario
London, Ontario
Phone: (519) 661-3338

TECHNICAL ASSOCIATIONS:
"Are you involved in Mining, Metallurgy or Petroleum?"
For further information send business card to:
Canadian Institute of Mining, Metallurgy, and Petroleum.
Xerox Tower
Suite 1210-3400 De Maisonneuve West
Montreal, Quebec
H3Z 3B8
Phone: (514) 939-2710
Fax: (514) 939-2714

Further information on the above items is available at the Association office.

ROSTER UPDATE/CHANGE OF ADDRESS NOTIFICATION

Full Name _____

New Address _____

City _____ Province _____

Postal Code _____ Country _____

Employer _____

Position/Title _____

Bus. Tel. _____ Date Effective _____

Mail to: A.P.E.M., 530-330 St. Mary Ave. Winnipeg, Manitoba R3C 3Z5 or FAX (204) 942-3718