

Professional Engineer



December, 1990

“The Greening of the Profession”

By: W.B. Mackenzie, P. Eng.

The above-noted title was the overall theme of this year's Annual General Meeting.

An important and interesting component of the Annual General Meeting Program was a Workshop with the intriguing title:

“Sustainable Development – Delusion or Deliverance?”

Canadians, in overwhelming numbers, are concerned about the environment. In nearly every public opinion poll, the environment is the first area of concern. Walter Harrison, the Workshop Moderator, pointed out that “the only profession that has a reasonable chance of addressing and alleviating the serious consequences of environmental pollution is the engineering profession.” But, he pointed out, “many engineers answer to employers and to clients who do not share the engineer's ethical views and responsibilities relating to the protection and preservation of environmental resources.”

“...the prognosis for Mother Earth is not good.”

– Carson Templeton

It was hoped that the Workshop might lead to a better understanding of, and possibly provide some guidance to, resolving the ethical problems we engineers encounter: in attempting to achieve an acceptable degree of sustainable development in our work; in our decisions; and in our attempts to point our employers or our clients in the right direction when negative impacts on environmental resources are a factor in our work.

Three eminently qualified Speakers were scheduled to address the Workshop – each reflecting a different viewpoint. They were:

- Roy Aitken, P. Eng., Executive Vice-President of INCO Ltd. He is responsible for, among other things, the environmental affairs functions of INCO. INCO is committed to the concept of sustainable development, which requires balancing the need for economic health with good stewardship in the protection of human health and the national environment.
- Carson Templeton, P. Eng., a dedicated environmentalist and the recipient of the prestigious Canadian Council of Professional Engineers Gold Medal Award. Through more than forty years of engineering work, he has generated and fostered within the profession an awareness of



Roy Aitken, P. Eng.,
Executive Vice-President of Inco Ltd.



Walter Harrison, P. Eng.,
Workshop Chairman.



Dr. Arthur Schafer, Director of the Centre for Professional and Applied Ethics, University of Manitoba

environmental issues which has placed him at the forefront of the move to achieve ecologically sustainable development in Canada.

- Dr. Arthur Schafer, Director of the Centre for Professional and Applied Ethics at the University of Manitoba. He is a Professor in the Department of Philosophy and Head of the Bio-Medical Ethics Section of the Faculty of Medicine. His many media contributions, papers and articles have resulted in his becoming a nationally recognized authority on the ethical and moral issues facing today's society.

The first speaker, Roy Aitken, emphasized the fact that the preservation of our environmental resources will probably not happen if the economy does not grow and if the use of non-renewable resources is rejected. He pointed out that the Third World, which has 80% of the world's population, must exploit its resources in order that its people may survive. The developed world, on the other hand, has an obligation to help the Third World in its efforts to sustain environmental resources.

“Past engineers have been part of the problem. Now we must be part of the solution.”

– Roy Aitken

He pointed out that if the world's non-renewable resources, such as the minerals produced by INCO, were not used, no positive result would be achieved, and the negative result would be that the wealth produced could not be used to help alleviate and sustain renewable resources. He outlined some initiatives taken by INCO, acting in the role of a responsible corporate citizen, to reduce pollution. He stated that INCO has spent up to \$500 million dollars of its own money to develop a smelting process that will eliminate sulphur dioxide emissions which are a major contributor to acid rain.

“The solution may be more regulation by governments”

– Arthur Schafer

He emphasized the need for engineers to work toward the creation of technologies that will allow greater efficiency and less polluting waste. He also stated that over-regulation by governments would have a negative, rather than a positive, effect in the battle against pollution and the depletion of renewable resources.

He recommended that today's professional engineers improve their performance through self-policing rather than through enforced government regulation. He felt that Professional Associations such as APEM should take an active part in the setting and enforcement of standards of engineering work where the environment is involved.

Continued on page 8

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Engineer Retires As Commanding Officer of Militia Unit

By: *B.L. Gengalo,*
Major for Commanding Officer

Lieutenant-Colonel (LCol) David M. Stones, P. Eng., CD retired as Commanding Officer of the Fort Garry Horse (FGH) during a ceremony at McGregor Armoury 2 October 90. In civilian life David Stones is a civil engineer who graduated from the University of Manitoba in 1972. He has since worked in a number of professional positions, including 13 years for Etienne Gaboury Architects. While there he supervised the construction of the

Canadian Embassy in Mexico City, 1979-81. He is currently Senior Project Manager with the North Portage Development Corporation and Chairman of the Manitoba Building Envelope Council. He and his wife, Mireille, have a three year old son, Colin.

David Stones joined the FGH as a Second-lieutenant in 1968. Since then he has served as a troop leader, battle captain, staff officer, squadron commander and deputy commanding officer, becoming commanding officer (CO) in 1987. In his time as CO, LCol Stones has improved training and administration within the unit to the point where the Fort Garry Horse was acknowledged as the best armour unit in Western Canada in 1990. He has also worked hard and successfully to improve pay and accident protection for soldiers in the Militia. □



Lieutenant-Colonel David M. Stones (L) outgoing Commanding Officer of the Fort Garry Horse watches Honourary Colonel of the unit J. McKeag, CD (C) sign the change of command certificate to Lieutenant Colonel L.J. Gwiazda (R). LCol Stones is the Senior Project Manager with North Portage Development Corporation. Col McKeag is a former Lieutenant Governor of Manitoba and owns his own real estate firm. LCol L.J. Gwiazda is the deputy head of the Manitoba Emergency Measures Organization. The Fort Garry Horse is a Militia unit stationed at McGregor Armoury in Winnipeg's North End.

LICENCES ISSUED IN OCTOBER, 1990

H. Balodis (Ont.)	B.L. Coates (Alta.)
R.J. Frehlich (Alta.)	J.E.A. Hofman (Alta.)
G.A. Kroening (Alta.)	R.E. McCallum (Alta.)
E. Pasiecznik (Ont.)	C.J. Payne (B.C.)
D.C. Pollock (Alta.)	G.G. Powell (Ont.)
I.E. Robson (Que.)	L.M. Sargent (Iowa)
J.T. Scarlett (Alta.)	P.K. Sood (Alta.)
J.M. Taves (Alta)	E.F. Vickers (Ont.)
F.L. Villanueva (Ont.)	

WE HAVE LOST CONTACT. CAN WE HAVE AN ADDRESS?

G.S. Brar	B. Breuer
D. Breuer	W.H. Dickins
N.I. Faruqui	J.J.H.P. Gagne
A.T. Kaita	M.C. Lai
F.H. Lefebvre	A.R. MacLean
A.M. Osman	G.K. Turnbull
J.S. Williams	L.B. Winnicki
J.W. Yee	E.S. Younan

WITH DEEP REGRET THE ASSOCIATION RECORDS THE PASSING OF:

V.H. Wickberg

Building Code Experts Seeking Financial Support

The Department of Civil Engineering of the University of Manitoba and the Plan Examination Branch of the City of Winnipeg intend to pursue jointly the development of an Expert System for Part 3, Use and Occupancy, of the National Building Code.

The research and development of this Expert System will be under the direction of Dr. R.B. Pinkney, Associate Professor and Head of the Department of Civil Engineering at the University of Manitoba, and Dr. M.J. Frye, Superintendent of Plan Examination for the City of Winnipeg.

The research will be undertaken by Mr. D. Olynick, a Canadian graduate student, in partial fulfillment of the requirements for the degree of Master of Science in Civil Engineering.

Initial development of the prototype Expert System has already taken place. It was demonstrated at the recent International Conference on Municipal Code Administration: Building, Safety and the Computer held in Winnipeg, September 28, 1989.

The Directors of this project are currently soliciting financial support for this project. If you are interested in participating financially in the development of the Expert System, or if you require further information, please do not hesitate to call Bruce Pinkney (474-9816) or John Frye (986-5200).

President's Message

Wm. McDonald,
P. Eng.



I would like first to take this opportunity to thank you for re-electing me to Council. Then, on behalf of the APEM membership, I would like to thank those councillors who are leaving Council and have served us so well. We will miss our Past Past President Garland Laliberte, Executive Member Bill McGilvery and Councillor Kelly Kjartanson.

Council welcomes newly elected councillors Carl Anderson, Pat Feschuk and Vishno Gupta.

In looking forward to the coming year, we should reflect on the accomplishments of Council over the last year, make an assessment of unfinished business, and then look ahead to identify those objectives and initiatives that we plan to accomplish over the next 12 months.

The highlights of the last year include the development of a Mission Statement for the Association, along with a Focus Document and a long-range Development Plan. It is intended that the long-range Development Plan will be reviewed and updated each year by successive Councils.

Additional work and review was undertaken on the sector-specific guidelines for the practice of engineering, and it is hoped that some of these will be issued shortly.

The last year saw significant staff changes in the Association, with Dave Ennis becoming Executive Director in January and Shirley Matile being appointed Director of Admissions in May. The Association is fortunate that Bill Mackenzie has agreed to continue on a temporary basis to facilitate a smooth changeover.

As is always the case, while much has been done, there still remains lots to do. Among the many items that will require Council's consideration in the short term are the following:

- continuation of the development of revised Admission Standards and the development of Policy relative to the enactment of these Standards;
- consideration of the proposal to convert the historic James Avenue Pumping Station into an interpretive engineering museum. (Details of this project appeared in the cover story of the April, 1990 issue of the Manitoba Professional Engineer;
- resolution of the proposed By-Law changes ballot and, if passed, the publication of these changes;
- consultation on and finalization of the revised Code of Ethics and the integration of this revised Code with the proposed National Code;
- changes to the Discipline By-Law, which will be forthcoming from a review presently underway by the Practice and Ethics Committee. The

present By-Law restricts actions by the Practice and Ethics Committee, when there is a recommendation not to proceed to a formal hearing, by limiting action to one of three possible categories of conclusion. It is hoped that these changes will provide the Committee with more latitude in dealing with some of the complaints which have, in the past, tended to fall between what might be categorized as Engineering Ethics and Business Ethics.

In the longer term, some of the issues requiring consideration and/or action are the following:

- ongoing discussions with the Government and/or MANSCETT relative to MANSCETT'S proposed Engineering Technology Act;
- possible changes to the Engineering Profession Act relative to a review presently being carried out by the Legislation Committee to accommodate Group Practice Licensing in Manitoba;
- re-organization of APEM's committee structure and the integration of committee reporting through Executive Committee and Senior staff. At present the Association has 18 Standing Committees and five Ad Hoc Committees that report to Council. Keeping up with the activities of this many committees is almost a full-time job for Council, and little time remains for policy development and longer-range planning;
- development and adoption of a comprehensive professional practice exam consistent with those required in other provinces;
- discussions on the possible registration of engineers and geoscientists under a common Act.

Initiatives have been taken in the last year or so relative to the image of the Engineering Profession, and programs have been examined and initiated to encourage more women to enter the profession. Work in these areas will need to continue.

In conclusion, quite apart from the many Council action items previously mentioned, the members of the Association can look forward to the continued excellent support work of its many Committees. Their work is essential to the well-being of the Association, and is directly related to the past successes of the Association. □

- Notice -

Payment of Your 1991 Annual Fees

Membership fee invoices have been mailed to all members. Please be reminded that, according to the by-laws, MEMBERS SHALL PAY THE ANNUAL FEE IN ADVANCE, ON OR BEFORE JANUARY 1. If you have not received your invoice, please contact the APEM office.

For those members no longer practising in Manitoba, and wishing to resign in good standing, letters of RESIGNATION of membership must be received in the Association office before DECEMBER 31.

Applications to enter the NON-PRACTISING or NON-RESIDENT category must be received in the Association office by JANUARY 15.

The penalties for late payment and the procedure necessary for reinstatement are matters covered in our Act, our By-Laws and our regulations.

Please note that membership cards will not be issued this year. □

October Issue

Further to several letters and phone calls regarding the late delivery of the October issue of Manitoba Professional Engineer, an explanation may be in order.

The Publication Committee and A.P.E.M. staff were all aware of the deadline dates for the October issue as it carries the Annual General Meeting information. Accordingly, on September 20 the publication was delivered to the computer service for formatting, and by September 27 the final copy was proofed ready for transfer to the printers. By October 11 the printed edition was delivered to our mailing service. They were to stuff it in addressed envelopes and deliver it to the post office. Unfortunately, it was not delivered to the post office until October 18th.

We regret the inconvenience and shall strive for an improved service, particularly where the issue is time sensitive to coming events.

W.G. McKay
Chairman, Publication Committee



Season's Greetings from the Staff of the Manitoba Professional Engineer

The Annual General Meeting and Awards Luncheon: Friday, October 26, 1990

By: L.Y. Ganetsky, P. Eng.

ANNUAL GENERAL MEETING

President Ken Buhr opened the 71st Annual General Meeting at 10:10 a.m. at the Holiday Inn Downtown in Winnipeg. He confirmed that a quorum was present and a moment of silence was observed for the members who had passed on during the previous year. It seemed an unusually large list this year: more than ten members had passed on in the previous 12 months.

Dave Ennis, Secretary, read the notice of the meeting. Following this, Ken introduced the head table and welcomed visiting guests from other provincial associations, C.C.P.E., and the North Dakota Engineering Society.

The minutes from the last Annual General Meeting were adopted.

Ken announced that C.E. Anderson, N.P. Feschuk, V.D. Gupta, W.C. Harrison, and W.M.A. McDonald had been elected as Councillors for a two-year term. He also thanked the unsuccessful candidates for accepting the nomination. Mr. McDonald was announced as the new President for the coming year. 775 ballots were returned from a total of 3335 sent out. This represents a 23.2% response: about average for the Association. Twelve ballots were spoiled.

The auditors' report was received, and Sill, Streuber, Fiske & Co. were appointed auditors again for the coming year.

The annual budget and fee schedule was received without comment from the assembly, and three members were nominated to the nominating committee.

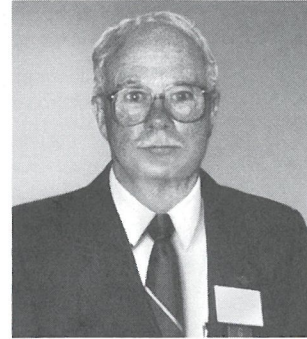
The proposed By-law amendments were discussed, and they were approved for a ballot to the membership. Two committee chairmen gave verbal reports on their committees, and the committee reports were accepted as published in this publication.

The appointed councillors Jack McDougall and Barbara Cape will be commencing the second year of their two-year terms.

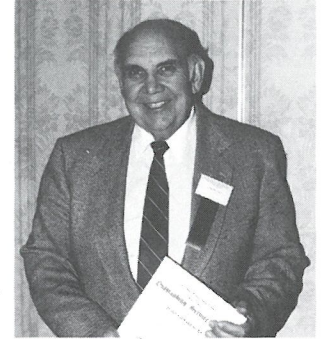
Mr. John McDougall, President of C.C.P.E., brought greetings from C.C.P.E. As well, guests from five other associations brought greetings from their respective associations and commented on the activities taking place across the country. The format this year differed slightly from previous years in that the association greetings were inter-



*E. Bridges -
Outstanding Service Award*



*T.W. Algeo -
Honorary Life Membership*



*J.S. Hicks -
Outstanding Service Award*

mingled throughout the business meeting. It was a nice touch and added variety to the proceedings.

Attendance at the meeting was good, and it adjourned at about 12:00 noon.

AWARDS LUNCHEON

Past-president Ken Buhr greeted everyone as we gathered for the luncheon session. President Bill McDonald said grace, and Garland Labiberte toasted the Queen.

The meal served was quite good and immediately following it, the awards ceremony began. The head table was introduced and Darren Praznik, Minister of Labour, responsible for the Engineering Act, brought greetings from the government.



*Hon. Darren Praznik,
Minister of Labour*



*Lloyd McGinnis, Chairman of the
Board, International Institute for
Sustainable Development*

Ed Lach presented the following awards: William Ernest Muir - Merit Award, Daniel Charles Holmes Prowse - Merit Award, James Stewart Hicks - Outstanding Service Award, Ernest Bridges - Outstanding Service Award, Terence William Algeo - Honorary Life Membership, and Atomic Energy of Canada Limited - Certificate of Engineering Achievement.

Following the awards presentations, Lloyd McGinnis, Chairman of the Board of the International Institute for Sustainable Development, spoke.

He explained the institute as being a non-profit organization to promote sustainable development throughout the world. This is done through networking and training. He sees environmental cleanup is going to have to be done by the business sector and monitored by governments. This, of course, won't be easy, but he was optimistic, and referred to an African custom: "discuss until we agree".

The awards luncheon concluded with the traditional passing of the gavel. This year, the gavel was passed from past-president Ken Buhr to president Bill McDonald. □

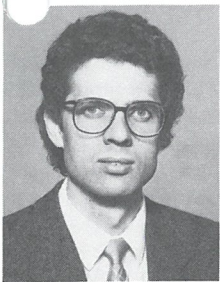


*W.E. Muir - Merit Award
Receiving his award from E. Lach*



*D.C.H. Prowse - Merit Award
Receiving his award from E. Lach*

COMMITTEE REPORTS COMMITTEE REPORTS COMMITTEE REPORTS COMMITTEE REPORTS



Members:
 V.L. Dutton
 E.J. Klein
 P.E.A. Lagasse
 A. Permut
 S.S. Rihal
 S.L. Ursel

J.G. Hildebrandt, Chairman

The Professional Development Committee is working to assist APEM members in their professional development.

This year's efforts have focussed on:

- providing forums which focus on issues related to professional development;
- surveying APEM members regarding their professional development activities; and
- monitoring professional development activities of other organizations.

The Committee's activities are summarized as follows:

1. Concepts in Professionalism Seminar

A one-day seminar was held on February 16, 1990. APEM President Ken Buhr opened the session with a discussion on the Role of the Association. The program proceeded as follows:

Professional Development Committee

- The Engineering Profession Act - Bill Mackenzie
- Appropriate use of the Seal - William Newton
- APEM Code of Ethics - Fred Jost
- Professionalism - Dave Ennis
- Fiduciary Responsibilities - Walter Harrison
- Truesteel Affair - Dave Ennis

Seventy-two engineers attended this seminar. The fifty-seven evaluation forms collected provided positive responses and excellent feedback. The workshop format was highly praised as were the superb speakers. I would like to thank all speakers and participants for their time and thoughtfulness.

2. Breakfast Meetings

- Six Breakfast meetings were held. The topics and speakers were:
- The Next Generating Project in Manitoba - Ed Wojczynski
 - Engineering Ethics and the Environment - Carson Templeton
 - Engineering and the Media - Dwight MacAulay
 - Stress Management - R. Sawchuk
 - Burnaby Shopping Centre Collapse - Peter Jones
 - Professional Engineering In the U.S.S.R. - Arkady Tsisserev

On average, 62 engineers attended each meeting. We continue to receive positive feedback on the topics, speakers and format of these meetings.

3. Monitoring other Professional Development Activities

The committee reviews news from other organizations regarding professional development. This information is put to use in our own activities. For example, the Concepts in Professionalism Seminar was inspired by a series of seminars organized by the Association of Professional Engineers, Geologists and Geophysicists of Alberta.

Thank you to the Committee members for your competence and professionalism. □

Editor's Note:

Due to an oversight by the Publication Committee, the report of the Professional Development Committee was not included with the Committee Reports in the October issue of the MPE.

Your Committee extends its most sincere apologies to the membership, and most particularly to the members of the Professional Development Committee.

COMMITTEE REPORTS COMMITTEE REPORTS COMMITTEE REPORTS COMMITTEE REPORTS

Taking Stock of Your RRSP

By: J.A.E. Belagus, P. Eng.
 Reprinted from "RRSP Investor", January 1990
 by permission of the Bank of Montreal

Here's an RRSP Personal Check-Up you can complete at home that will help you **calculate the funds necessary to reach your retirement goals**. All you need is a pencil, a calculator and an idea of what you expect of your retirement.

Your RRSP Personal Check-Up

Use this personal planner to see how you can build for the life you want to lead.

How much monthly income will you need from your RRSP?

For example, if you were to retire **today**, you might require \$1,500 a month from your RRSP to supplement your other sources of retirement income.
\$1,500(a)

How much will you need to have in your RRSP to provide your retirement income?

First, select the appropriate income factor (given your years to retirement) from the table below (Our example uses 25 years).

Years	5	10	15	20	25	30	35
Factor	127.63	162.9	207.9	265.3	338.6	432.2	551.6

338.6(b)

These income factors are based on two important assumptions: inflation between now and the time you retire averages 5% annually; and the "rule of thumb" that each dollar of monthly retirement income will require \$100 of capital.

Now multiply your monthly income requirement (line a) by the income factor (line b) to determine the amount you'll need in your RRSP to generate your retirement income.
\$507,900(c)

How much will your existing RRSP contribute to your retirement savings?

To see how much your current RRSP will be worth start by entering the current value of your RRSP. (Our example assumes that there is \$20,000.)
\$20,000(d)

Then select the appropriate compounding factor from the table below:

Years	5	10	15	20	25	30	35
Factor	1.610	2.594	4.177	6.727	10.834	17.449	28.102

0.834(e)

Now multiply the current value of your RRSP (line d) by the compounding factor (line e) to get the "future value" of your holdings. (Here the factors assume a 10% annual rate of return compounded annually.)
\$216,700(f)

How much will you need to accumulate within your RRSP between now and the time you retire?

This is just a matter of subtracting the "future value" of your current RRSP holdings (line f) from the total amount of savings you'll need at retirement (line c):
\$291,200(g)

What annual contributions should you make in order to reach your retirement income goal?

To see how much your annual contributions should be (from now until retirement, based on a 10% annual compound return), select the appropriate contribution factor from the table below:

Years	5	10	15	20	25	30	35
Factor	0.1638	0.0627	0.0315	0.0175	0.0102	0.0061	0.0037

0.0102(h)

Now multiply the amount you need to accumulate in your RRSP (line g) by the contribution factor (line h) to determine the amount you should put into your RRSP each year. (Remember, the secret of success is regular contributions!)
\$2,970(i)

Keep in mind that the required annual RRSP contribution you've calculated here is just a guide. How much you actually need to contribute in order to achieve your retirement goals may vary, depending on whether the RRSP option you choose provides a return higher or lower than 10% annually. □

Professional Development

Chernobyl and its Effects

By: J. Lucas, P. Eng.

The September 11, 1990 APEM Breakfast Meeting was an eye-opener into the tremendous power and tragedy of technology gone wrong.

The early morning presentation of Professor Ostap Hawaleshka, P. Eng., of the University of Manitoba, gave the approximately 50 - member audience some feeling of visiting the site of the World's greatest nuclear plant disaster (to date).



Ostap Hawaleshka

In October, 1989 Professor Hawaleshka had the great opportunity of visiting the Ukraine for the first time. As this is Ostap's Father (Mother) land, this was a true "Voyage of Discovery" into his past.

Once in Kiev, the chance to visit Chernobyl presented itself, and Ostap, four other Canadians and two KGB types travelled the one-and-a-half-hour drive north to the site of the damaged reactor.

With a series of reversed slides and a thumbnail sketch of Graphite Modulated Reactors, Professor Hawaleshka provided a description of the events of April 28, 1986, when unloaded Reactor #4 went "up in flames".

The slide presentation attempted to define the extent of the disaster which followed, but the full scope cannot yet be measured.

A Lapland reindeer herd wiped out, radioactive hot spots found in Scotland, a 30-Km radius around the reactor with no population, and a health data bank of 560,000 people started (and subsequently stolen and erased) are some of the low points of this disaster, which is far from over.

The "official" death count has been set at 31, with all subsequent deaths labelled natural causes.

A 10-km "Hot" zone has been created around the site, and all topsoil is collected on layers of protective plastic. These soil "graves" are now found to be leaching into the groundwater and river systems which serve the several million citizens of Kiev.

Over five billion dollars has been spent on the cleanup to date.

The damaged reactor has been contained in reinforced concrete, and is still being cooled, to prevent another explosion.

Construction work has stopped on every reactor of this type in the Ukraine, and all active plant control systems have been upgraded to North American standards.

Professor Hawaleshka's impressions on visiting Chernobyl:

- a tremendous mistake on the part of the Operators and Administration;

- an impressive marshalling of people and resources to contain the problem;
- massive engineering logistics involved in handling the problem.

In summation, Professor Hawaleshka expressed his belief, and everyone's wish, that this tragedy has marked a turning point in the World's attitude toward the problems and dangers of nuclear power.

Editor's Note: Four days after his presentation, Mr. Hawaleshka spotted the following article in the Globe and Mail:

"CHERNOBYL TAPES - MOSCOW

- Teen-aged thieves stole computer tapes containing vital information on the 1986 Chernobyl nuclear plant disaster and erased data before officials could catch them, the Tass news agency said yesterday. Health data on 500,000 residents of the region surrounding Chernobyl and information on radioactive contamination of 20,000 towns and villages were blanked out of the tapes stolen from a research institute in Minsk, the capital of Byelorussia, Tass reported." □

The Jordan/Egypt Electrical Interconnection

By: B.R. King, P. Eng

The 1990 Annual Meeting of the Association commenced at 08:00 hrs with breakfast and a presentation by Mr. David Fletcher, P. Eng. of Teshmont Consultants Inc.

Mr. Fletcher has been involved in many enigmatic and challenging projects during his past 20 years with Teshmont. This present undertaking of the interconnection of electrical networks between Jordan and Egypt has involved him directly with international events in a very unstable area of the world.

An overview of the project was presented, in which Mr. Fletcher identified some of the problems and concerns that have made this venture as "unique" as it is. The electrical transmission scheme, which will connect Jordan and Egypt, will be 310 km in length. The scheme will consist of overhead transmission lines from a substation near Cairo to the Suez Canal, cable across the Suez Canal, overhead transmission lines across the Sinai Peninsula, a 500 KV/400KV substation at Taba, submarine cable across the Gulf of Aqaba and will terminate at a power station near the town of Aqaba, Jordan. The system will be designed to transmit about 800 MW at 500KV in the Suez area and 600 MW at 400KV in the Aqaba area.

Teshmont also has two companies acting in sub-consultancy roles: B.C. Hydro International, providing assistance with the submarine cables; and Gulf Interstate, based in Houston, providing expertise on the marine surveying aspects.

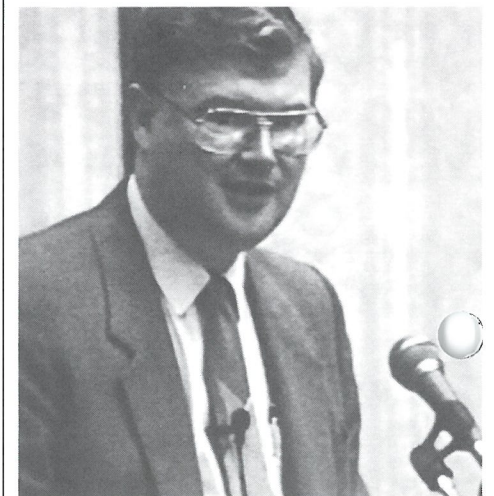
Of particular interest were the modifications required with the design, equipment and material used to address some of the distinctive problems in that part of the world. The insulator strings had to be increased in length due to the high pollution and corrosive level of the salt in the sand. Also, to protect against pollution, gas insulated bus was used wherever possible. Special design of the EHV power cables will also be required as the Gulf of Aqaba is about 850 m deep at the point where the

cables will be laid. Operating EHV cables have not previously been laid at that depth. The deepest existing power cable is about 600 m.

Similarities were also drawn between this 500-kV cable installed by B.C. Hydro between the mainland and Vancouver Island, including the methods of laying and trenching the cable. Although the methods may be similar, it was pointed out that the physical surroundings of the two areas differ quite significantly.

Conflict and political unrest is nothing new to the Middle East. The project was proceeding as planned up to the beginning of August, when the contract for the surveying of the Gulf of Aqaba was about to be awarded. The project is now awaiting the unfolding of events in the Middle East Gulf Crisis.

It is of particular note that Manitoba engineers are, once again, making significant contributions to engineering projects throughout the world. □



David Fletcher

Recognition, Appreciation and Libations

B.R. St. Amant, P. Eng.

Spearheading our Annual General Meeting activities again this year was the Thursday night President's reception. This is also known as the Annual Wine & Cheese Reception and was hosted this year by President Ken and Lou-Anne Buhr. This yearly gathering affords the president an opportunity to express his appreciation to the volunteers who serve on council and on the many committees for their time and effort during the year.

This year we were joined by visiting guests from national and provincial associations, and from one USA association. They were:

- John and Susan McDougall (President, CCPE)
- Don and Cecile Laplante (Executive Director, CCPE)
- Robert and Alli Ross (Executive Director, APEGGA)
- Bob and Mary Affleck (President, APEBC)
- Harry and Julie Gray (Executive Director, APEBC)
- Bill, Wendy and Cale Thompson (Vice-President, APEO)
- Jean-Pierre Brunet and Helene Thibault (Vice-President, IOQ)

Taras Cheberiak (General Manager & Registrar, APES)

Wayne and Anita Clifton (President, APES)
Dr. Lawrence Woodbury (President, North Dakota Society of Prof. Engineers)

The formal part of the evening began with the presentation of the APEM scholarship awards to Mr. R.E. Miller (1st Year); Mr. E.D.J. Toupin (2nd Year); Mr. K.W. Ising, Mr. B.A. Kapalka, Mr. D.Y.C. Chung, Mr. D.I. Auch, Mr. D.R. Bernhardt (3rd Year). University of Manitoba engineering students, followed by the presentation of a gift to Lou-Anne Buhr by Vice-President Bill McDonald in appreciation of Lou-Anne's support to Ken during his term as president.

In a special presentation by Bill Newton, the avuncular¹ Mr. Bill Mackenzie was recognized for his many years of service to the Association. Capping off an interesting and

mostly jocose speech about Bill's life history, including reference to his kinship to the Mackenzie clan, a complete Scottish kilt outfit from the Argyle jacket down to the ghillie brogues² was unveiled. One could tell that Bill was indeed surprised and very pleased to receive such a gift from the Association, since even he admitted that he was at a loss for words. A very rare experience for Bill.

All in all it was an enjoyable evening at which the many volunteers, guests, award winners and spouses took the opportunity to socialize with old friends and acquaint themselves with new ones. □

1 uncle-like 2 shoes



The Mackenzie Clan: Son John, Daughter Barbara, Joyce and "Bill". Not of the Clan: Bill Newton.



The avuncular Bill Mackenzie - speechless at last!



Lou-Anne Buhr, Garland Laliberte, President Ken Buhr and Joan McKinley.



Bob McKibbon and Jack McDougall discussing the evening's events.

Standards, Trade and the Europe of 1992

The European Community's program to achieve a single internal market by 1992 is based on a series of measures which, when implemented, should remove all internal barriers to trade between the EC Member States. One of these measures concerns the harmonization of standards.

Order to be competitive in Europe, Canadian businesses must have access to information on the standards-writing, testing and certification activities taking place within the framework of the Single European Market.

In cooperation with the European Committee for Standardization (CEN) and the European Committee for Electrotechnical Standardization

(CENELEC), the Standards Council of Canada has developed procedures for obtaining and distributing draft European standards to interested businesses in Canada. To keep the Canadian business community informed about these draft standards and other standards-related issues emerging from the Single Market, the Standards Council has begun publication of the newsletter "Europe '92 Trade Winds". The first issue was published in July, 1990, and the Council plans to publish ten times a year.

If you would like to receive this newsletter, free of charge, please send your name, company name and address, and your language preference (English or French) to:

Europe '92 Trade Winds
Standards Council of Canada
350 Sparks Street
Ottawa, Ontario K1P 6N7
FAX: (613) 995-4564

New Staff Member

Those of us who have had occasion to visit the Association office in the last year will have had the pleasure of meeting Heather Kitchen, who - if you will pardon the expression - "man's" the front desk.



Cheerful, knowledgeable, efficient - Heather projects a truly professional image of the Association to all who cross the threshold. □

Reprimand of a Member for Negligence

By: R.A. Johnson, P. Eng.
Chairman, Practice and Ethics Committee

The Association received a complaint from the joint owners of a single-family dwelling building, alleging unprofessional conduct by a member.

The Practice and Ethics Committee investigated the complaint in accordance with its procedures and concluded that since the member, having undertaken a pre-purchase inspection and preparation of a report on a single-family dwelling, did not undertake an inspection of the attic and roof structure nor did he advise his clients of the significance of the structural assessment of not looking at and assessing the roof members, he had not provided the level of care to be expected of a Professional Engineer.

The Committee reported its opinion to Council and requested that, subject to the member's admitting guilt and waiving his right to a formal hearing, Council, under Section 9(2) of the Engineering Profession Act, empower the Practice and Ethics Committee to reprimand the member accordingly, so advise the complainants, cause the reprimand to be recorded in the member's file and have the fact of the reprimand publicized without disclosing the member's identity. Council so authorized.

Having been fully informed of the conditions and consequences of so doing, the member formally admitted to being guilty of negligence and waived his right to a hearing.

In accordance with Council's authorization, the Committee is hereby requesting that the fact that such a reprimand has been issued be publicized by the inclusion of this report in The Manitoba Professional Engineer. □

Greening of the Profession

Cont'd from pg. 1

Unfortunately, due to health problems, Carson Templeton was unable to attend and address the meeting. His presentation was made by Bill Mackenzie. Mr. Templeton painted a bleak picture of the sorry state of the world's natural resources. He referred to the cutting and burning of the world's rain forests, the greenhouse effect, the holes in the ozone layer and the fact that family planning as a means to cut down on the world's population explosion was not being seriously addressed anywhere in the world.

He feels that the prognosis for Planet Earth is not good. In Canada, as an example, he detailed the sorry record of various governments in approving major, environmentally-sensitive projects without any public input. He stated that Canadian governments cannot be expected to manage the natural environment of Canada any better than they have managed the financial affairs of the nation.

He urged individual engineers to become more involved as individuals and to urge various engineering organizations to take group action to address these problems. He thinks that it should be an ethical requirement that engineers give equal consideration to environmental protection that they now give to safety, timing, adequacy and cost in their various designs and work. He felt that if engineers failed to do so they should be called before their peers to explain their reasons. His recommendation was that the Professional Engineers' Code of Ethics should include a canon relating to the preservation of the environment.

The final Speaker in the workshop was Dr. Arthur Schafer. He addressed the dilemmas faced by professional engineers when their employers or clients do not support their recommendations relating to the preservation of the environment. In these situations, he said, engineers have an ethical responsibility to blow the whistle if necessary, even if it puts their jobs and careers at risk.

He also stated that the only way he believes that the environmental resources of the country can be preserved and maintained is through more government regulation. He felt that if governments do not regulate and then enforce the regulations, the responsible and scrupulous corporate citizens will be put out of business by unscrupulous competitors who are more concerned with immediate profits than they are with the long-term preservation of environmental resources.

During the question period that followed, some of those attending took exception to the recommendation from Dr. Schafer that more government regulation is needed. It was pointed out that when regulations are put in place to set minimum standards, in a competitive world they become maximum standards. Some members felt that this was counter-productive and that self-regulation and self-policing by engineers and by engineering organizations was a much better approach to the question.

In his summing up, Walter Harrison stated that "the Greening of the Profession" must continue, and professional engineers must strive to provide leadership in the fight to achieve an acceptable level of sustainable development.

Comments following the Workshop by those who attended were unanimous in the opinion that the Workshop had been very worthwhile and had provided much food for thought relating to the ethical problems and dilemmas facing engineers when their work involves the environment. □

Attention Curlers!

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

Mark your calendars **now!**

Solution to "Mindbender #1"

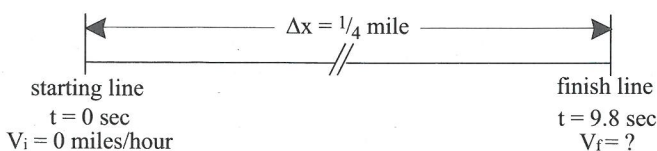
(October issue)

Using straight-line motion equations:

$$\Delta x = V_i \Delta t + \frac{1}{2} a \Delta t^2 \quad \dots(1) \quad \text{where: } \Delta x = \text{change in distance}$$

$$V_f^2 = V_i^2 + 2a \Delta x \quad \dots(2) \quad \begin{array}{l} V_i = \text{initial velocity} \\ V_f = \text{final velocity} \end{array}$$

$$V_f = V_i + a \Delta t \quad \dots(3) \quad \begin{array}{l} a = \text{acceleration} \\ \Delta t = \text{change in time} \end{array}$$



To solve for Billy Bob's winning speed (V_f), we must determine (a).

Using (1):

$$\Delta x = V_i \Delta t + \frac{1}{2} a \Delta t^2$$

$$\frac{1}{4} \text{ mile} = 0 \text{ miles/hour} \times \frac{9.8 \text{ sec}}{3,600 \text{ sec/hour}} + \frac{1}{2} a \left\{ \frac{9.8 \text{ sec}}{3,600 \text{ sec/hour}} \right\}^2$$

$$a = \frac{2 \times \frac{1}{4} \text{ miles}}{\left\{ \frac{9.8 \text{ sec}}{3,600 \text{ sec/hour}} \right\}^2} = \frac{\frac{1}{2} \text{ miles}}{\left\{ \frac{9.8 \text{ Hour}}{3,600} \right\}^2} = \frac{\frac{1}{2} \times (3,600)^2 \text{ miles}}{(9.8 \text{ hours})^2}$$

Substituting (a) into (2):

$$V_f = \sqrt{V_i + 2a \Delta x}$$

$$V_f = \sqrt{0^2 + 2 \left[\frac{\frac{1}{2} \times (3,600)^2 \text{ miles}}{(9.8 \text{ hours})^2} \right] \times \frac{1}{4} \text{ miles}}$$

$$V_f = \sqrt{\frac{\frac{1}{4} \times (3,600)^2 \text{ miles}^2}{(9.8 \text{ hours})^2}}$$

$$V_f = \sqrt{\frac{1}{4}} \times 3,600 \text{ miles} / 9.8 \text{ hours}$$

$$V_f = \frac{\frac{1}{2} \times 3,600 \text{ miles}}{9.8 \text{ hours}} = \frac{1,800 \text{ miles}}{9.8 \text{ hours}}$$

$$V_f = 183.7 \text{ miles/hour} = \text{Billy Bob's winning speed}$$

Check:

Substituting (a) into (3):

$$V_f = V_i + a \Delta t$$

$$V_f = 0 = \left\{ \frac{\frac{1}{2} \times (3,600)^2 \text{ miles}}{(9.8 \text{ hours})^2} \right\} \times \left\{ \frac{9.8 \text{ sec}}{3,600 \text{ sec/hour}} \right\}$$

$$V_f = \left\{ \frac{\frac{1}{2} \times 9.8 \times (3,600)^2 \text{ miles} \times \text{hours}}{(9.8)^2 \times 3,600 \text{ hours}^2} \right\}$$

$$V_f = \left\{ \frac{\frac{1}{2} \times 3,600 \text{ miles}}{9.8 \text{ hours}} \right\}$$

$$V_f = \frac{1,800 \text{ miles}}{9.8 \text{ hours}}$$

$$V_f = 183.7 \text{ miles/hour} = \text{winning speed} \quad \square$$

Research and Development Committee

Energy in the Economy of Manitoba

By: B.G. Lawlor, P. Eng

During the Science and Technology Week 1990, October 11-18, in Winnipeg, the Association sponsored a Panel Discussion on subjects pertaining to Energy in the Economy of Manitoba, held at the CIIT building on Tuesday, October 16, 1990.

Mr. Ted Glass, P. Eng., on behalf of the Research and Development Committee, introduced the members of the panel - The Chair - Mr. Cam Osler, President, InterGroup Consultants, Winnipeg. Speakers were - Mr. Metro Dmytriw, Marketing Director, AECL, Saskatoon; Mr. Paul Thompson, P. Eng., Vice-president Facilities Planning, Manitoba Hydro; Mr. Murray Brown, Senior Consultant, Sypher, Muller, International Inc., Winnipeg; and Mr. Ted Speers, P. Eng., Edward A. Speers and Associates, Consulting Engineers, Winnipeg.

Mr. Cam Osler, in his introductory overview of the discussion theme, noted that energy is the driver of the Province. In comparison with neighbours to the west of us, Manitoba does not have large energy resources outside of hydro electricity. It does not have large quantities of oil, no natural gas, no coal or oil sands deposits.

To ensure that energy needs for industry in the Province are met in the Province, it is necessary to look at the opportunities now. Developments can include:

- AECL's atomic Slow Poke reactor for hot water heating purposes.
- hydro electric power generation (for internal use and export)
- promoting propane as an internal combustion engine fuel
- new engine fuel technologies

It is to be noted that all these opportunities must be in tune with Sustainable Development.

There is a demand to sell the products or the skills. It is necessary that growth from smaller businesses be looked at rather than from larger international companies.

Mr. Metro Dmytriw emphasized AECL's Slow Poke reactor as a driver for large hot water heating systems. Advantages include:

- ready available source of uranium from Saskatchewan
- not dependent on fossil fuels, where price demands could fluctuate
- quality of energy source - little impact on the environment, easily managed, in tune with sustainable development.

Disadvantages include:

- not economical to replace fossil driven heating plants using steam as the piping distributions would have to be replaced by larger lines for water (versus steam).

Marketing challenges at present:

- need for consulting engineers to propose atomic hot water heating power plants
- need for governments or others to provide training for operators of these plants/distribution systems.
- need for sustainable development leaders to

recognize and promote this "clean" source of heating.

Mr. Paul Thompson over-viewed Hydro 2000 and the major Capital Projects Report to the Public Utility Board. He discussed planning decisions that must be made by Manitoba Hydro now to ensure economic viability ten years hence, due to the long lead times required to construct large hydro electrical power plants, particularly on the Nelson River - Limestone, to come on stream shortly with the need for Conawapa to be decided upon now.

He expanded on the main reasons for Conawapa:

- projected revenue from Ontario
- diversification and exchange with Minnesota
- to provide customers with the most economical choice of electrical energy
- to provide better reliability.

In parallel with the above hydro schemes, improvements are being planned for the coal fired steam/electricity generation plants at Brandon and Selkirk.

Present needs and restraints include:

- contract with Ontario must be signed by December 1990
- Environmental Board Review still to come
- location of new transmission line to be decided: west or east sides of Lake Winnipeg.

Other benefits to Manitoba:

- provides employment for construction workers, equipment manufacturers, consulting engineers, to name a few.

Mr. Murray Brown reviewed methanol as an alternative energy source for Manitoba.

Common sources for methanol production include natural gas, coal, wood and crop residues.

As a heating fuel, thermal efficiencies and capital costs of process plants were compared.

As a fuel for internal combustion engines, positive and negative effects were listed. For the positive: higher octane ratings and high heat of vaporization. For the negative: lower energy density, poor lubrication characteristics, incompatibility with some materials eg. aluminium, lower vapour pressure giving poor cold weather starting and no - flame luminosity.

Other points mentioned were improved air quality, energy self-sufficiency, sustainable development aspects.

To promote methanol as a fuel for internal combustion engines, particularly in automobiles and trucks, various demonstrations and field trials have been in effect; including: methanol marathon by universities, World of Wheels, Project Mile.

Commercial availability is witnessed in Ford's Tarus and Chevrolet's Lumina and in Detroit's diesels.

To improve and enhance methanol as an internal combustion engine fuel, various major goals have to be achieved including:

- distribution systems, public perception starting with government initiatives to support transition, direction intervention - retail outlets, competitive pricing and incentives - fuel tax benefits, embracing three level legislation.

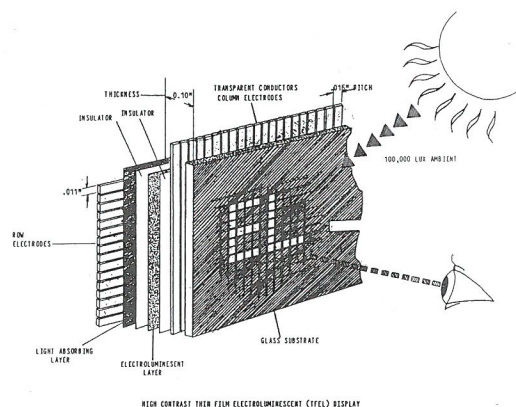
To promote the production of methanol at a high level and its use in Manitoba using the provinces' resources - agriculture research, biomass, requires involvement by:

- Institute for Sustainable Development
- Transport Institute
- Manitoba Research Council
- Biomass Energy Institute
- Canadian Institute of Industrial Technology
- APEM

In closing, there is a future in Science and Technology in the production of methanol.

Mr. Ted Speers spoke about TFEL: Thin film electro-luminescence. This is a relative new technology used for instrument visual displays. Although not an energy source per se, they could be used in energy developments where ruggedness and extreme temperatures will be encountered and where cathode, liquid crystal and light-emitting diodes may not be operable.

The following gives features of the TFEL displays and some current uses. Also shown below is how a TFEL display is fabricated.



High Contrast Thin Film Electroluminescent (TFEL) Display

Flat plate EL displays are rugged featuring high resolution and contrast with wide-angle viewing. These characteristics make the displays eminently suited for military applications. The displays constitute solid state monochrome (amber) A.C. devices which operate reliably in a wide range of environments. MIL Specs call for operation at ground level from -60 C to 100 C.

For avionic use the panels must withstand high g-forces and low atmospheric pressures at altitudes up to 55,000 ft.

The solid thin film has a depth of 2000 to 5000 Angstroms. The whole display is about 2.5 mm thick with the electronic components adding another 25-30 mm.

The typical EL panel has 640 x 400 pixel display resolution; 30-L display brightness; 100:1 contrast

Continued on page 12

Council Report

October 9, 1990 By: R.A. Kane, P. Eng.

AT WHICH COUNCIL MAKES SOMETHING FROM NOTHING

Your reporter arrived on the scene just in time to see the last bit of lunch disappear and the meeting begin. To say that I was not prepared for what was about to happen would be an over simplification. First of all, when this assignment was made, I was absent. The notification came when I read the minutes of the meeting, which was confirmed with a phone call the morning of the meeting. The agenda and other documents were only given to me as I walked in the door. Armed with this limited preparation the first part of the meeting for me was spent getting oriented.

Having been a member once of the "Inner Circle" I am quite familiar with the general routine. The real issues of approving Licences, Engineering Graduates, New Members, Transfers and such tend to slip by easily and quickly. Presumably, and quite correctly, the focus of the permanent staff at APEM is to screen each application so the Council is generally dealing with a pretty clean slate and thus most of its work is already done.

The issues that take up the substantive amount of time are other matters which are not part of the specific mandate but nonetheless form part of council's work. Council did deal with most issues quickly and expeditiously.

What they did was to approve the recommendation of Executive to submit a list of four names versus three as requested by the Minister of Labour from which a member of APEM would be selected to sit on the Fire and Public Safety Advisory Board. The rationale is that one of APEM's top choices would likely already be chosen from another group so Council accepted this as solid ground for this unilateral decision to expand the slate by one.

There was a great deal of discussion about what to do about a member in good standing who was fined following a disciplinary hearing. Further complicating this issue is that this member is (as far as is known) unemployed so can't pay the fine anyway. Instead of fighting, this engineer has chosen to ignore APEM and Council just didn't know what to do. They decided to seek legal counsel to advise of their options.

Council then approved submitting the names of Ken Buhr and Shirley Matile to sit on the Faculty Council of Engineering at the U of M. There were lots of side stories as to why these two would be good additions, along with an explanation of the reporting mechanism into the APEM system. All this led

to unanimous approval.

Another appointment was discussed for the Resource Recovery Institute. Ted Speers had gone, on APEM's behalf, to the first meeting, and he reported a fledgling group struggling for a place in this world with some success and failures. There is lots to do so the recommendation was to appoint a young involved member. Two names were brought forward with a further recommendation that if one of these would not serve the Research and Development Committee should be approached for a name.

This led to a recommendation to expand the current "Old Boys" method. Staff is to review the whole process, including what these appointees' roles are, what their mandate is, and ways of recruiting from a broader base including advertising in the MPE.

Now Council talked of the Building Code Education Committee with a four page report being received from the Executive Director outlining the run up from June 1988 to date. In the end the Executive Director asked for and got permission to select the most suitable candidate from a list of five given.

Even though I have gone on at some length the bulk of the meeting was spent discussing a "thing" because in this reporter's estimation it had no form as given by the Practice and Ethics Committee. They asked Council to read (or maybe re-read) an article written by this reporter earlier titled "Tilting at Windmills". With this limited direction, you can see the conversation going all over the place - and it did! A few suggested receiving the Practice and Ethics Committee's request as information. This got limited support. Another Councillor thought this reporter should get a commendation. This got even less support. In the end, Council agreed to chastise this reporter for suggesting that matters of ethics are "swept under the rug" and that this article may provide assistance to accelerate certain plans of change already in the works.

The President is to write a letter which I'm sure will make my day.

It is clear to this reporter that many "editorial" comments are made under numerous headings. Most of these are ignored except when the Practice and Ethics Committee comes under scrutiny. They should note that the reporter's name is clearly shown at the top of the article and the comments say what they mean.

As a reporter who hears Council demand input from its system of committees, I am baffled by the special privilege accorded to Practice and Ethics who say nothing yet expect others to do their dirty work. In the matter of ethics, I guess it is better to attack from behind.

Council finished off by assigning Council Members and other to take personal charge of our-of-town guests coming in for the Annual Meeting. The meeting concluded with farewells to departing Members. □

When You are Asked to Provide a Reference...

By: S.M. Matile, P. Eng., Director of Admissions

The engineering profession in Manitoba was granted the privilege of self-regulation in 1920. At that time, the Engineering Profession Act became law, and the APEM was established to administer that Act, for the protection of the public.

To qualify for registration, an applicant must fulfill two basic requirements: he must be academically qualified; and he must have completed a minimum of two years' acceptable engineering work experience. Once registered, the Professional Engineer is entitled to practise engineering without supervision, and with only his conscience and the Code of Ethics as his guide.

With the Canadian Engineering Accreditation Board at its disposal, and with the expertise of the members of its Board of Examiners, APEM is able to assess an applicant's academic credentials.

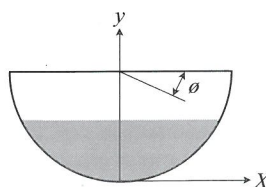
Determining the acceptability of an applicant's work experience, however, requires first-hand knowledge of that experience. The Association relies heavily on the opinions of those members who are familiar with the applicant's work.

So, when you are asked to provide a reference for an applicant for registration, please remember that the Association is relying upon you to assist in determining whether the applicant's work experience requirement has been fulfilled. This is a major responsibility which should not be taken lightly. The information you provide will be kept in the strictest confidence; and it is expected that you will fill out your reference form **honestly, objectively, professionally and promptly.**

Mindbender #2

by J.A.E. Belagus, P. Eng.

Soup is poured into a semiglobal shaped bowl of radius 5 inches to a depth of 3 inches. The bowl is made from glass of negligible thickness. If the bowl is tipped from its level position, at what angle (θ) will the soup begin to spill out?



(Diagram is not to scale.)

Answer: $\theta = 23.6$ Degrees

Danger! Danger! Exterior Balconies

The Safety in Engineering Practice Committee brings to your attention the potentially dangerous condition of some exterior balconies.

Last summer, a precast concrete balcony slab in the city collapsed. Since that time, the Buildings Inspection Department of the City of Winnipeg has identified a number of buildings where there is an imminent danger of balconies collapsing due to spalling of concrete, insufficient bearing or a combination of both.

In one case, where open web steel joists and steel decking were used, it was discovered that 75% of the top chord of one joist and all the steel deck had seriously disintegrated due to corrosion.

Any member who becomes aware of an exterior balcony that appears to be unsafe should report W.S. Boyaniwsky, P. Eng., Superintendent of Building Trades Inspection, City of Winnipeg (Tel. 986-5001) or, if it is outside the city limits, to J.E. Reimer, P. Eng., at the Manitoba Department of Labour (Tel. 945-3328).

M.J. Frye, P. Eng.
Safety in Engineering Practice Committee

News From Across Canada

By: B.A.K. Danielson, P. Eng.,
H.S. Zbigniewicz, P. Eng.

British Columbia

B.C. joins Alberta, Newfoundland, and Northwest Territories in the licensing of geoscientists. APEBC is now known as the Association of Professional Engineers and Geoscientists of the Province of British Columbia, (APEGBC).

Fees and dues have increased by five dollars to \$180 for regular members, \$200 for Canadian non-residents, and \$330 for foreign non-residents. This increase is, in part, due to the budget requirements for the Station Square Recommendations Special Review Committee.

The Association has approached the B.C. provincial government for funding assistance for continuing education and technology transfer via technical sessions or seminars.

The provincial government in B.C. is adopting NAD83, a new earth-centered geodetic reference system. The new system is expected to provide greater accuracy and compatibility with emerging satellite-based survey techniques, increased potential in mapping, charting, navigation and remote sensing applications, and a common exchange format with other ministries and the federal government.

Alberta

A new \$18 million facility was recently opened by the Centre for Frontier Engineering Research (CFER) in the Edmonton Research Park. The new laboratories, which include a cold chamber for large-scale testing, two state-of-the-art universal testing machines, and a fully-contained special environments facility, will provide realistic simulation of the arctic environment and petroleum drilling.

Nova Scotia

APENS has formed an Environment Committee. The Committee's four main objectives will be:

- 1) to make members of the Association aware of the need for environmental protection and control;
- 2) to respond to environmental concerns expressed by association members;
- 3) to develop association policy with respect to environmental issues; and
- 4) to demonstrate to other professionals and the public that professional engineers as a group care about the environment.

One of the committee's first acts will be to write an environmental code of ethics for Nova Scotia engineers.

The Technical University of Nova Scotia is planning to make Mount Saint Vincent University for women one of its associate program schools. Mount will offer its students two years of engineering before they enter the TUNS engineering program. The objective of the program is to encourage women to enter the engineering field, as well as deal with the potential engineering shortage in Canada. □

West-Man News

By: R. Menon, P. Eng.

Ken Buhr, in his penultimate act as President of the APEM, graced us with his presence at the supper meeting of the Chapter on October 18, 1990. Ken was accompanied by APEM Executive Director, Dave Ennis, who gave a brief account of the Association activities before inviting everyone to the Annual General Meeting.

The supper meeting kicked off the third year of the Chapter, now under the able chairmanship of Don Solkoski. Don and his executive hope to continue to hold about three supper meetings each year, with speakers who will appeal to all fields of engineering.

The guest speaker at this supper meeting was

Frank Render from the Water Resources Branch, who gave an excellent account of the Assiniboine Delta Aquifer. The presentation was well received by the group of about 25 West-Man Engineers. Frank Render's presentation was preceded by a brief description of the West-Lake Water Supply Proposal by Dick Menon.

The West-Man Chapter Executive for the next two years is:

- Don Solkoski - Chairman
- Stella Fedeniuk - Secretary-Treasurer
- Ian Christiansen - Member at Large
- Ken Colcomb - Member at Large
- Doug Delgatty - Member at Large
- David Ford - Member at Large
- Capt. Rob Riesz - Member at Large
- Peter Sparanese - Member at Large
- Collin Walker - Member at Large
- Dick Menon - Past Chairman □



From left: Ken Buhr, Frank Render, Don Solkoski & Doug Delgatty.



Frank Render, Speaker.

Thompson News

By: R. Cotterill, P. Eng.

The opinions in the next few lines are definitely the opinions of the author; but I would be surprised if other northerners didn't agree.

After returning from my mail box, at the end of the street, I was delighted to find my copy of "The Manitoba Professional Engineer". Along with the magazine there were copies of notices for three meetings, and the magazine itself contained the 71st annual general meeting agenda, reports and other notices of meetings. What bothered me, though, enough to get off my duff to write another article, was that I received my APEM mail on October 29. While I was in Winnipeg in October, I was unable to co-ordinate my trip with any of these events, other than the annual meeting, due to lack of notice. I know that the mail is slow, but it can't be that slow. If we want northern input or even input from beyond the perimeter, we must make sure that proper notice is given. While some may argue that we have known the meeting date for some time, some of the other information we didn't know about.

In another vein, while house construction is on the decline in the province, three of our Thompson engineers will be moving into new homes soon. I met with a developer in the spring and he expressed concern that any engineer would want to design his or her own home. According to the

developer, we are very poor at such small design projects. I have inspected the three Thompson homes and they rival many architecturally designed homes of a similar size or quality.

Gaston Fagerstrom has a very interesting two-storey house that incorporates a great deal of cedar siding. It is a beautiful home that will need a full-time caretaker just to keep clean. The house has an excellent hideaway area for Gaston and his wife, a sauna, jacuzzi and many other excellent features.

Next we come to Blake Rooks' home, situated on the prestigious Hillside Drive. While construction is slow, the house certainly fits the bill as a dream home. The edifice is a two-storey building built along the treeline, and my fiancée and I had the pleasure of being given a tour by the designer. Blake's wife must be a good cook since the design incorporates an excellent kitchen and dining area.

The final design was designed by yours truly. In my case, the house is a single-storey, 1940 square foot home that has a four-foot wooden crawl space.

While I specifically haven't asked Blake and Gaston whether it was worth it, I'm sure that they would agree that at times you just wished that it would finally end. Any Engineer who finds himself or herself in the business of contract administration should try administering the construction of a home. It makes me appreciate the woes of contractors when they talk about supply problems. If it's not on time, it is either lost, sold to someone else, out of stock, broken or the wrong colour.

We haven't had a meeting of our northern

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Thompson News

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chapter for a number of months, but many of us are anxiously awaiting the deliberations of the executive. It appears as if our executive has been very busy over the summer, but none of their work is associated with the chapter. Rumour has it that they now have a chairperson so we will expect to have a meeting in late November.

Well, that is all from the cold white north. We had a foot of snow last week so if any of our southern members would like some good skiing, the Mystery Mountain Ski Club will be open by the time you get your newsletter. Also, if you have the time, stop in and say hello at City Hall.

So long until the next issue.

Athlone - Vanier Engineering Fellowships Call for Applications - 1991-1992

The Athlone-Vanier Engineering Fellowships Corporation is calling for applications for three Fellowships for 1991-1992.

Canadian engineers who have graduated from recognized Canadian engineering schools are eligible. Applicants must be under 30 years of age on the December 31 prior to their departure for the U.K.

The Fellowships have a maximum value of \$24,000, and are applicable to training in a British university or industry over a one-year period, generally from October to the following September.

Applications must be submitted prior to December 15, 1990 to the Secretariat of the Corporation.

For more information, please contact:
 Remy G. Dussault, Ing.
 Chairman of the Board
 c/o DESSAU INC.
 1080 Beaver Hall Hill, #300
 Montreal (Quebec) H2Z 1S8
 Telephone: (514) 876-3646
 Fax: (514) 876-1617

Energy in the Economy

Cont'd from pg. 9

brightness; 100 g shock/ 3 g vibration, and 95% relative humidity operating characteristics. The mean time to failure is 45,000 hours. The standard input is 12 to 15 volts.

A new ground-level use is the Etak Navigator featuring automobile viewing screens with cassette maps. The navigator provides a continuous and automatic pin-pointing of one's current location wherever one drives. The driver's position on the screen remains constant and the map moves accordingly, showing the sign posts as the vehicle moves by them. The navigator features zoom in-zoom out with the widest zoom level at the national interstate system. The destination appears as a small flashing star.

Coming Events

National Research Council Associate Committee on Shorelines WORKSHOP ON WAVE GROUPS

Their role in coastal dynamics and engineering design.

December 13-14, 1990
 National Research Council Building M 55 Ottawa

Contact: Dr. E. Mansard, NRC
 Hydraulics Laboratory, M-32
 Ottawa, Ontario

Phone: (613) 993-6653
 Fax: (613) 952-7679

SEMINAR ON C.E. CODE PART 1 Sponsored by Canadian Standards Association (CSA)

January 29 & 30, 1990

Winnipeg Delta Hotel

For further information:

Contact: Caroline Boyle, CSA Toronto
 Phone: (416) 747-2483
 Fax: (416) 747-2473

WATERSCAPES '91

June 4-9, 1991

Saskatoon, Saskatchewan

International Conference on Water Management for the Sustainable Environment.

Co-sponsored by Canadian Water Resources Association

International Exposition will be held in conjunction.

Contact: M.D. Osborn,
 General Manager, Waterscapes
 3-3002 Louise Street
 Saskatoon, Saskatchewan
 S7J 3L8

Phone: (306) 373-9089

Use of 1990 APEM Membership Roster

The APEM office has recently received a number of complaints regarding the use of the Roster as a mailing list by certain companies.

You are reminded of your obligation, as a

Calls for Papers

The Canadian Committee for Women in Engineering invites papers for presentation at a national conference

Women in Engineering: More Than Just Numbers -

May 21-23, 1991, Fredericton, New Brunswick. Those interested in participating should submit 200-word abstracts that focus on one of the following areas:

- The Early Years: Primary And Secondary Education
- The Environment Of Engineering Schools
- The Working Woman Engineer
- Attracting And Retaining Women In Engineering

The submission deadline is December 15, 1990. (This deadline may be extended)

Please submit abstracts to:

Dr. Monique Frize, P. Eng.,
 c/o Faculty of Engineering
 University of New Brunswick
 Fredericton, New Brunswick E3B 5A3

Phone: (506) 453-4515
 Fax: (506) 453-4516

Second Canadian Symposium on Cement and Concrete

To be held - July 24-26, 1991 - Vancouver

Abstracts: 1 page in length

Submitted by December 1, 1990

Contact: Dr. S. Mindess
 Dept. of Civil Engineering
 2034 Main Hall, UBC
 Vancouver, B.C. V6T 1W5

(Note: Notice of this call received APEM office October 30, 1990)

Professional Engineer, to abide by the Code of Ethics; and your attention is directed to the first paragraph on Page 3 of the Roster, which states that:

"The Membership Roster is published for the use of the Association's members. Its use as a medium for advertising or sale of commercial products or for any other similar purpose is strictly prohibited."

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