



Institution of Engineering and Technology

# IET Ottawa

May 2007 Newsletter

Web Site: [www.iee-ottawa.org](http://www.iee-ottawa.org)

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Secretary: Martyn Delbridge,

## Annual General Meeting:

### **Ottawa Centre Annual General Meeting & Barbecue**

**The Britannia Yacht Club, Ottawa - 6:00 pm - 8:30 pm, Thursday, May 24th, 2007**

This year, in conjunction with our AGM, we are inviting members, their spouses and families to join us for a Barbeque at the Britannia Yacht Club. There will be a reasonably priced meal available.

6.00 - 7.00 Barbeque

7.00 - 7.30 Business Meeting

Reports on Activities from 2006/2007,

Election of Committee for 2007/2008,

Nominations for the committee welcomed. Please contact Eric Dodman at: 613 820-8894, email: [ericandsylvia@sympatico.ca](mailto:ericandsylvia@sympatico.ca). Edwin Morton at 613 837-3597, email [emorton@iee.org](mailto:emorton@iee.org) or David Boteler at 613 824-6474, email [boteler@iee.org](mailto:boteler@iee.org).

7.30 – 8:30 Replay of the 2007 Faraday Lecture –

“Winning Formula - Technology in the Fast Lane”: It's race day. Imagine the excitement, the thrill of the race and the roar of the engines as the cars or bikes power round the track at breakneck speeds to the final chequered flag. The winning driver steps on to the podium to celebrate the victory amid the cheers of the crowd.

But what is the real story that lies behind the champagne, the glory and the glamour?

Behind every racing car or bike and driver, there is a multidisciplinary team of expert engineers, technicians and scientists using cutting-edge technology.

Rewind to one year before the race. The team begin working on the challenge to improve every aspect of performance which can make the few seconds difference between winning and losing.

How to get there:

From the East: Proceed along Carling Avenue or Richmond Road to the point at which they meet. Take the first right on Carling Ave after the junction onto Britannia Road. Proceed north to Cassels Street. Turn left and carry on until you reach the Britannia Yacht Club entrance.

From the West: Take Pinecrest Road, Richmond Road or Carling Avenue to the junction of Richmond Road and Carling Avenue. Proceed on to Richmond Road and turn left on to Poulin, just before Britannia Plaza and continue north to Howe and then turn right on to Britannia Road.

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## Chairman's Column – Some Progress

This will be my last column. After two years as Chair. I have found the task as Chair quite hard work – especially so as the executive demanded more meetings in 06-07 than occurred in 05-06. I have supported various Exec members who wish to serve the IET at higher levels than the local Ottawa Branch. Let us hope that the new-management IET will restore the necessary regional representation. I have supported various plans to serve potential engineers from Ottawa's schools. I started some initiatives for a membership drive, following on from Dave Gibbon's success a few years ago, but we have a long way to go. It is an uphill battle: IET HQ do not even mention “volunteers” in the various documents we receive: the grass-roots of an organization should be the start of new initiatives and ideas. I am not enamoured with the “Local Networks” that IET-HQ have set up.

I have endeavoured to get the Exec more involved in the decision making process, and I hope that we have spent funds

wisely. The regular monthly technical meetings have had optional pub suppers beforehand - usually attended by over half those attending the presentation. The numbers at these meetings were higher than in previous years, partly due to increased publicity; I believe the topics and speakers selected were of a high standard. We had a few good field trips, too. You may wish to provide some feedback at the up-coming AGM.

The success of any organization is always “the sum of its parts”; I hope that the mathematics that I stage-managed over these past two years has served both IET members and the local engineering community alike. My thanks to the Executive; those who worked to serve your fellow engineers know who you are, so I'll not mention names.

- - - **Hugh Reekie** Chair

## Report on the Technical Meeting:

### Electronic Controls for Diesel Engines: Performance, Emissions and Economy by Brent Rubeli

prepared by Hugh Reekie & Hannu Jääskeläinen

If the number of questions and interruptions gave any indication of interest, the 2nd May IET Technical meeting was a great success. Brent Rubeli, of the NR-CAN Test Laboratories at Bells Corners had accepted an invitation to talk about New Developments in Diesel Engines.

To improve efficiency and to reduce emissions, the time-established method of using a high-pressure mechanical fuel pump attached to the camshaft - and fed to cylinder injectors some feet away - is fading into obsolescence. Several decades ago, these systems started to be replaced with unit-injectors (integrated "pump-injector" systems) in many applications. In the 1990s, "common rail" type systems started to appear - these systems continue to evolve and have become an essential feature on new diesel engines meeting tough emission standards.

New diesels are controlled by ECUs - fancy electronic boxes - in a similar manner to gasoline engines. One interesting anecdote that Brent mentioned was that the electronic control verification process used with heavy-duty diesel engines provided the ability to determine if they were operating at conditions normally encountered during the "Regulatory Test Procedure" used to determine compliance with diesel emission standards rather than the conditions more commonly encountered during actual service. Depending on the ECU-

detected applied conditions, the engine could be switched from "fuel economy" mode to "low emission" mode! This automatic defeat of the emission control system was utilized by many diesel engine manufacturers in the 1990s. When the authorities learned of this approach, they legislated a "hard timescale" for emissions improvement as punishment for this devious process; it was mentioned in the technical press at the time.

Other topics mentioned included:

- a trend toward bio-fuels (Brent does his own processing in his garage, making bio-diesel fuel from time-expired cooking oil!)
- a discussion on how today's sophisticated diesel engine control systems can react to changes in the fuel
- sophisticated methods for capturing and burning diesel particulates in exhaust "diesel particulate filters" to further reduce noxious emissions.

Twenty IET and IEEE members were in attendance: some were diesel experts; it was a joint IET and IEEE-VTS meeting. A few were so pleased with the talk that a small group visited the labs at Bells Corners for a short tour of the diesel engine test facility on 9th May.

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### "IET Connect", the IET Benevolent Fund

*Caroline Hobden, the Welfare Manager of "IET Connect", part of the IET Benevolent Fund, sent out the following information item earlier this year. If anyone wishes to be a contact person, as noted near the end of this item, please contact Chair Hugh Reekie.*

I am writing to ask for your help in raising awareness of IET Connect and how it can help members and their families in your area. Many members of the Institution are still unaware of IET Connect and how it can help with financial support and confidential, practical advice.

Emergency grants can help people who are suddenly facing financial difficulties (perhaps through the unexpected death of a partner). Regular grants are available to help with essential day-to-day living costs. We can also give money for respite care, home adaptations and disability and other special equipment.

To be eligible to apply, the person must be an IET member, or a former IEE member, and have paid a subscription for 2 consecutive years. (Previous membership of the IEE or IIE counts towards the two years' membership.) We can also help immediate families of deceased members.

Here are two examples of how IET Connect has helped:

\* **Muttiah**, a **Sri Lankan** member in his eighties, was totally paralysed following a stroke. While he was cared for his elderly wife, extra nursing support was needed at home and IET Connect helped with the cost. Sadly Muttiah died a year ago, but IET continues to help his widow with a monthly grant.

\* **Sarah** lives in **Zimbabwe** with her five school aged children. Her husband, an IET member, died unexpectedly in his 40's. Although Sarah works as a nurse, her income is not enough to support her young family. IET Connect also gives a monthly grant to help with living costs.

We need the help of Local Branches and International Membership Advisors to spread the word about IET Connect at events and in newsletters so that members are aware of how we can help. We are also always looking for volunteer visitors who form a point of contact between IET Connect and local members. Good listening skills, empathy and impartiality are all essential as the role involves visiting members in their own homes.

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**IEEE AESS & Retired/Life-Members meeting – IEE members invited**

**The Northwest Passage: Is Canada's Sovereignty over its Waters at Risk?**

**The Crowsnest, Naval Officer Mess - 78 Lisgar St. –**

**Presentation 1:00 pm - 2:00 pm, Wednesday, May 30th, 2007, Sandwich lunch - noon**

Gerard Kenney, or Gerry, as he likes to be called, is a Graduate of McGill University of Montreal in Communications Engineering. Gerry's work as a telecoms engineer has taken him to many countries of the world for the Canadian International Development Agency, as well as to the northern reaches of his native land while with Bell Canada in the 60s and 70s. For Bell, Gerry was responsible for the engineering management aspects of the telephone system based on short wave radio that served the eastern half of the Northwest Territories, Labrador and Nouveau Quebec.

In the late 60s while he was traveling on Ellesmere Island, Gerry was shown the horizontal member of a wooden burial cross, which had been found near Grise Fiord. The cross was in memory of a Norwegian sailor, Ove Braskerud, who had left his bones in the frigid waters of nearby Harbour Fiord in 1899. That chance encounter with Braskerud's cross eventually led to some research and finally three books on the Arctic. Dangerous Passage, published last year, is Gerry's

third book about the North. His previous books are: Arctic Smoke & Mirrors, published in 1994, and Ships of Wood and Men of Iron, published in 2004.

Gerry is now retired which gives him more time to pursue his interest in writing about - and exploring - things northern. Last September, he traveled to Gjoa Haven on Prince William Island, Nunavut where he met with the grandchildren of Roald Amundsen, the Norwegian sailor who was the first captain ever to take a ship through the Northwest Passage in 1903 to 1906. Gerry lives in Ottawa and has two daughters, Amanda in Montreal and Jessica in Ottawa.

luncheon: \$5 IEEE members, \$10 others with advance reservation, \$15 with no reservation - all welcome - meeting no charge

reserve by 27 May to get the \$5/\$10 rate! - 613-728-5343 - h.reekie@ieee.org.

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**The 2006/2007 Ottawa Branch Committee consists of:**

<b>NAME</b>	<b>ROLE</b>	<b>TEL NO(H)</b>	<b>TEL NO.(W)</b>	<b>EMAIL</b>
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