



Engineering team examines evolving nature of engineering work

sible. "We wouldn't even try," said Armstrong. "We have engineers moving back and forth between facilities. And in fact the line blurs the longer you're out in the marketplace, particularly in the new technologies like optics. Who undertakes engineering work at Celestica? Whoever has the appropriate skills required."

John Mann, P.Eng., director of engineering for DaimlerChrysler's Canadian operations, stressed that his employer values education and experience above a P.Eng. licence. "When I go abroad, they don't care if I'm an engineer registered in Ontario. What they care about are the demonstrated skills I have and my ability to deliver in the jobs I perform," he said.

But at Rogers AT&T Wireless, a licensed engineer is worth more than a graduate one, according to its director of radio operations, Arnold Abramowitz, P.Eng. Although the mechanical and structural engineering of its sites is outsourced, the radio safety of its 2000 base stations across Canada is maintained by professional engineers. It's for that reason that about half the engineers in the radio engineering side hold a P.Eng. licence, he said.

Next on the forum's agenda was a look at the Ontario government's proposal to allow colleges of applied arts and technology to grant four-year applied technical

degrees. Over the next three years, up to 24 programs are expected to be approved that respond to demonstrated demand from students and employers and don't duplicate programs normally offered at Ontario universities. The government's Quality Assessment Board will assess and approve applications for applied degree programs.

Speaking about the perceived need for the applied degrees, Janet Hope, director, Colleges Branch, Ministry of Training, Colleges and Universities, said: "Particularly in the emerging fields that require education beyond the diploma level, the feedback from industry is that there aren't programs that are quite right." As a result, students are going outside Ontario to get a technical education, she said.

One thing that no one at the forum questioned is the need for both engineers and technologists to have a strong grounding in both the theory and practice of applied science. "I had to go abroad to find the people with the skills we [DaimlerChrysler] needed to be globally competitive," said John Mann. "I think it's imperative to find a way to bridge the gap between college programs and universities. In other parts of the world, industrial experience is systemically included in both educational streams. Academics work in industry and industry teaches."

by Dwight Hamilton

The engineering team in Ontario was the topic of discussion at the Engineering and Technology Forum 2000, held last November in Toronto. Sponsored by PEO and the Ontario Association of Certified Engineering Technicians and Technologists (OACETT), and attended by representatives of professional associations, industry and education, the event examined the roles of engineering team members and the need for applied technology degrees that will soon be offered at some Ontario colleges.

According to the results of an Internet-based survey on trends in engineering work prepared by John O'Grady Consulting Ltd. and KPMG, work previously done by engineers is being reallocated to engineering technologists due to the introduction of software programs like CAD. Technologists also seem to be picking up business from skilled trades, as production equipment becomes more computerized. The lines around engineering work are becoming blurred said O'Grady at the forum, because there's been a "radical re-layering" of the engineering team, which now features a mix of different disciplines.

The intensely competitive nature of the global marketplace has forced companies to offer seamless service, and this tends to shape how firms view professional engineers in Canada, said Gerry Armstrong, P.Eng., vice-president, quality and customer satisfaction for Celestica, an outsourcer to the IT and telecom industries. Because Celestica has sites all over the map, he said, enforcing a policy that specifies a job must be done by an engineer as opposed to a technologist is next to impos-



“Engineers are Everyday Heroes” 2001 campaign to focus on space

by Alison Piper

Year two of the multi-faceted “Engineers are Everyday Heroes” educational program will be launched during National Engineering Week (NEW), March 3-11. By telling the stories of engineering heroes of the past, present and future, the campaign aims to build awareness of the contribution engineers make to our daily lives, and inspire students about careers in science and engineering.

The theme of the 2001 activities will be “Canadian engineering achievements in space.” A new series of “Engineers are Everyday Heroes” educational shorts will be produced this year for airing over a three-year period on *TVO Kids*, TVOntario’s popular daytime children’s programming block. Four of the shorts will focus on space.

The *TVO Kids* hosts will emcee the “Engineering Blast-Off” show, to be staged simultaneously at the Ontario Science Centre in Toronto, Canada Science and Technology Museum in Ottawa and Science North in Sudbury on Saturday, March 3 at 2 p.m. The show will debut the four *TVO Kids* space theme shorts and feature live demonstrations of space technology. The honorary chair of National Engineering Week 2001, engineer-astronaut Julie Payette, ing., will make an appearance on video during the show. It will be webcast live from www.tvokids.org and www.heroes.peo.on.ca.

March 3 will also signal the start of two, month-long, space-themed children’s contests on TVO. One will run on *TVO Kids*, and another on *The Underground*, a new block of programs for teens and ‘tweens.

This year, a space-themed, curriculum-related Heroes Teachers’ Kit, featuring custom-designed, hands-on engineering challenges for Grade 6 students, will be made available to all Ontario elementary schools and distributed in February 2001. To order the kit, teachers can contact the Canadian Space Resource Centre at (416) 396-2421 or (877) 449-2772.

The partners in Heroes 2001 include PEO, Ontario Ministry of Energy, Science

and Technology, Ontario Power Generation, Nortel Networks, Canada Science and Technology Museum, Canadian Space Resource Centre, *National Post*, National Research Council of Canada, Ontario Science Centre, Science North and TVOntario.

Calling all engineers, engineering interns and engineering students!

Here are three ways you can get involved in the excitement of National Engineering Week 2001:

1. Facilitate fun K’NEX workshops

Take a few hours during NEW or spring break to help enthusiastic kids build fantastic structures using K’NEX, the versatile building medium. Workshops will run

from March 3 to March 18 at three Ontario science centres, including the Ontario Science Centre where workshops will continue weekends until June 3 as part of K’NEXhibition. (Volunteers need no previous K’NEX experience to facilitate a workshop—a short training session will be provided.)

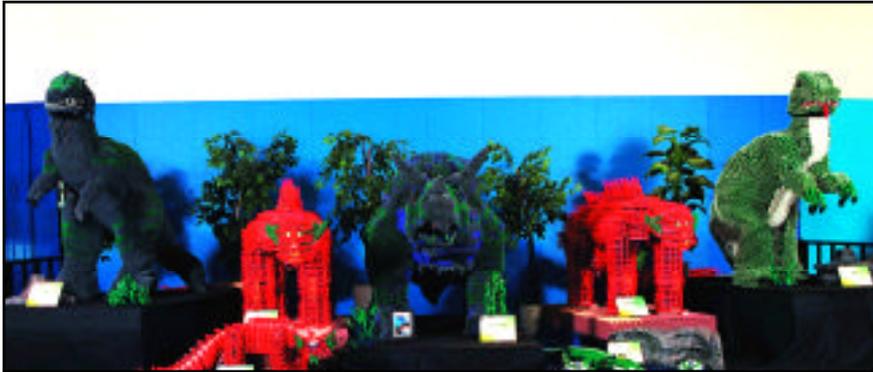
2. Make a classroom visit

Visit a class (or two or three) and facilitate hands-on learning at your local school. Order the *NEW 2001 Engineering in the Classroom Guide* to help you get started.

3. Organize an event

Contact your PEO chapter chair and volunteer to help organize a local event. Or get a copy of the *NEW Partner Planning Guide* and organize your own activity.

PEO K'NEX again with Ontario Science Centre



These K'NEX dinosaurs are just one of the displays you might find at K'NEXhibition, which will run from March 3 to June 3 at the Ontario Science Centre.

This year, PEO will continue its long association with the Ontario Science Centre (OSC) by working with it to present a new exhibition that makes it fun and easy for kids to learn about the dynamics of engineering and fundamentals of physics and geometry. The new exhibition will

launch during National Engineering Week, to be held March 3-11.

Over 275,000 visitors are expected to drop by K'NEXhibition, a travelling road show featuring the popular children's toy K'NEX, which will run from March 3 to June 3, 2001, at the OSC. An educational

construction system for kids ages five and up, K'NEX comprises colour-coded, interlocking plastic rods and connectors that form to make objects ranging from a simple picture frame, to complex machines with motors.

As the sponsor of programming for K'NEXhibition, PEO will have opportunities to enhance awareness of the association and its role in regulating the engineering profession.

The exhibition will feature models of an alligator, a turtle, Big Ben, motorized dinosaurs and sharks, along with a spinning ferris wheel standing seven feet high. Workstations will also be available where kids will have the opportunity to create their own K'NEX invention.

PEO is looking for volunteers to facilitate weekend workshops being held as part of K'NEXhibition (see article on p. 11 for more details).

Susanne Frame

PEO chapter leaders explore myriad issues

by Dwight Hamilton

"We [chapter leaders] are the leadership base of the engineering profession in Ontario," PEO Councillor George Comrie, P.Eng., said in his opening remarks as chair of the Chapter Leaders Conference 2000, held November 4 in Toronto. "The future of the engineering profession is in our hands. We need to develop a shared vision of where we are going."

Comrie defined the conference's purpose as discussion of the chapter system's role in furthering the objectives of the profession and ways to make "our grassroots organization more inclusive and effective," strengthen links between PEO members and Council, and help strengthen the profession's leadership. Seventy chapter executive members, Councillors and staff members attended.

An update on what's occurred in the past year from the viewpoint of Council and the Regional Councillors Committee (RCC) was provided by Ken McMartin, P.Eng., chair of the RCC.

Councillor Tony Cecutti, P.Eng., spoke to delegates on the activities of the START II Subcommittee, which he chairs. The first START (Chapter Structure and Revitalization Team) group was created following the inaugural Chapter Leaders Conference in February 1999, to develop a discussion paper outlining a renewed chapter system's objectives, organizational structure and funding. Cecutti explained that the new committee was formed last September, with a view to developing the organizational structure and funding needed to sustain a chapter function within PEO and OSPE, based on findings and recommendations of the START white paper.

PEO Registrar and CEO Roger Barker, P.Eng., informed delegates about the divestiture of PEO's non-regulatory duties to the Ontario Society of Professional Engineers (OSPE), while Jeremy Cook P.Eng., chair of OSPE's Interim Board led a question and answer session on OSPE developments. (See In Council on pp. 18-19 for an update on OSPE.)

Breakout sessions

Following introductory remarks, delegates broke out into simultaneous discussion

groups covering a range of issues, including what role the chapters should play in the profession and how OSPE will affect chapter operations, given its role as the advocacy/member services organization for Ontario engineers. Several delegates said that chapters provide "social capital" for the profession, by providing a venue for networking at the community level, education outreach to kids, professional development of members and generating ideas, which are brought forward to Council.

"I think we should step back and look at the role chapters should play in the context of changes in the profession and external environment," said the Oakville Chapter's Nick Marketos, P.Eng. He suggested that chapters could serve on local industry/education councils and provide a mechanism for engineers to share best practices. Andre Rudnicky, P.Eng., of the Toronto-Dufferin Chapter, pointed out that, particularly in the Northern Region, chapters provide members with a local connection to the profession. Without them, members would feel "cut off," he said.

Delegates also raised the issue of the lack of a clear understanding of what PEO and OSPE need and want from the chapters, with some suggesting that the chap-

ter system's role in the two organizations needs clarification.

Another session examined whether a committee of chapter chairs should be reestablished as a standing committee of PEO Council. The potential role and function of the committee was discussed and how it would fit into the existing PEO structure and interact with OSPE.

Reward and recognition of chapter volunteers was also explored—an issue that poses a major challenge to PEO and OSPE, as members must weigh the competing demands of work and family against time spent volunteering. Other topics discussed at breakout sessions were: chapter websites and the next steps in the evolution of PEO's web-based offerings; how chapters can improve their ability to obtain member input and cooperate with other organizations, such as academic institutions and technical societies; and how PEO can be more inclusive by providing experience, employment opportunities and professional development to members.

As a result of issues raised during the breakout sessions, motions were passed at the closing plenary session calling on PEO to:

(continued on p. 14)

(continued from p. 13)

- ◆ continue to operate and fund the chapter system and encourage chapters to organize and provide services for both PEO and OSPE;
 - ◆ develop a concrete strategy for monitoring volunteers and a policy to ensure members are informed of potential volunteer roles and development opportunities provided by each;
 - ◆ strengthen student and EIT programs to provide mentorship via chapter involvement;
 - ◆ make the conference an annual event
- and look at chapter needs and responsibilities with respect to PEO and OSPE; and
 - ◆ embrace the continued development and application of computer and Internet technologies, to improve communications within the organization and with the public.

Delegates also passed motions that would see:

- ◆ chapters be proactive in providing opportunities for senior PEO and OSPE representatives to meet regularly with local members; and

- ◆ if a Chapter Chairs Committee were reconstituted as a standing committee, individual members be appointed to organize and chair the annual Chapter Leaders Conference, organize and chair the chapter session at PEO's annual meeting, attend Council and RCC meetings as observers, and organize and chair Regional Congress meetings.

The RCC will review the motions passed at the conference to determine the feasibility of their implementation, and then make recommendations to Council later this year.

New guideline helps keep Canadian trains on track

by Dwight Hamilton

Transport Canada has adopted and published a new guideline that outlines the responsibilities and roles of all parties involved in railway work that falls under section 11 of the Railway Safety Act.

The Canadian Council of Professional Engineers (CCPE) formed a stakeholder group last year to develop the interpretive guideline, and Transport Canada has published it virtually unchanged. Definitions of what constitutes "engineering work," "railway works" and other relevant terms complement the job descriptions and duties of anyone who is accountable for, or who may affect, railway works.

"It was a chance to help [Transport Canada] understand that [the engineering associations are] working in the public interest and regulating the profession," says stakeholder group member Begonia Lojk, P.Eng., ing., manager, qualifications for CCPE.

The guideline requires railway companies, utilities and road authorities to "ensure that resources are made available for the prudent implementation of engineering work related to railway work in accordance with sound engineering principles, safety and environmental principles." As well, it recognizes the regulatory authority of CCPE's 12 constituent members and the need to retain professional engineers to comply with Section 11.

The Railway Safety Act was amended in late 1999, based partly on recommendations from a Railway Safety Act Working Group formed by PEO. In late 1997, the federal transport minister asked

that the wording of section 11 be reviewed due to a series of railway accidents. Largely because of the PEO working group's recommendations and their endorsement by CCPE, the act now states that "all engineering work relating to railway works, including design, construction, evaluation or alteration, shall be done in accordance with sound engineering principles. A professional engineer shall take responsibility for the engineering work."

Following the government's approval of section 11 amendments in 1999, Transport Canada requested CCPE and other stakeholders to develop an interpretive guide to clarify the intent of the

section and allow it to be implemented consistently across Canada.

According to Jovite Grondin, ing., chief of infrastructure, engineering branch, for Transport Canada and a member of the guideline's stakeholder group, involvement of engineers in writing the guideline was imperative. "We couldn't have done this without them. For us it's very important to have [the guideline's definitions], so that it's understood by everybody in the community," he says.

The guideline's full text can be found on Transport Canada's website at www.tc.gc.ca/railway/RSA/RSA_Section_11_english.htm.

Updated Schedule of Suggested Fees to be released soon!

Fee Schedule Committee to survey members for future editions

by Connie Mucklestone

PEO's Fee Schedule Committee expects to release a revised PEO Schedule of Suggested Fees in the coming months. The 2001 edition will include updates to the tables to reflect the latest PEO salary survey information.

In order to prepare for future editions and be responsive to PEO members, the committee is looking for your input. Plans are underway to survey PEO members from various disciplines early this year to obtain a good picture of the level of service that engineering firms provide and the fee structure required to support that service. Toward the goal of broadening the Fee Schedule's coverage, the committee is particularly inter-

ested in receiving input relating to compensation practices in emerging areas. (Look for more information on the survey and the committee's work in the March/April 2001 issue of *Engineering Dimensions*.)

The committee is responsible under Section 76 of Regulation 941/90 for preparing and recommending to Council for publication a schedule of suggested fees for professional engineering services. The regulation also empowers the committee "to receive and consider recommendations submitted to it by members and by the public."

Under the leadership of chair Catherine Karakatsanis, P.Eng., the committee aims to enhance the relevance of PEO's future Fee Schedule guidelines for both purchasers and providers of engineering services, by including fee recom-

mendations for non-construction projects. The committee also intends to promote awareness and use of the Fee Schedule and alternatives to the selection of engineering services based only on price.

Members who have comments and ideas about the issue of fees and quality selection processes can submit their comments directly to the Fee Schedule Committee using the designated PEO email address. Buyers and sellers of engineering services are invited to email their comments about compensation or selection practices in any field of engineering to the Fee Schedule Committee at feeschedule@peo.on.ca. (Submissions can also be sent c/o Bernard Ennis, P.Eng, manager, professional practice, tel: (416) 224-9528, ext. 499, or (800) 339-3716; fax: (416) 224-8168 or (800) 268-0496.)

