

SOCIETY of MANUFACTURING ENGINEERS

TORONTO CHAPTER 26

JANUARY 2001



<http://www.sme-toronto-26.org>

The Potential of Mechatronics:

ROBOTICS: Plant Tour of ABB: Asea Brown Boveri

Wednesday January 17, 2001

*TOUR: ABB Brampton Facility, 1 ABB Court (Formerly Farmhouse), Brampton
Light supper at 6:00 pm, tour at 7:00 pm*

ABB: A global technology group

“The ABB Group serves customers in power transmission and distribution; automation; oil, gas, and petrochemicals; building technologies; and in financial services. With novel IT applications, tailored software solutions, growing eBusiness and a fast-expanding knowledge and service base, ABB is building links to the new economy. The ABB Group employs about 160,000 people in more than 100 countries.

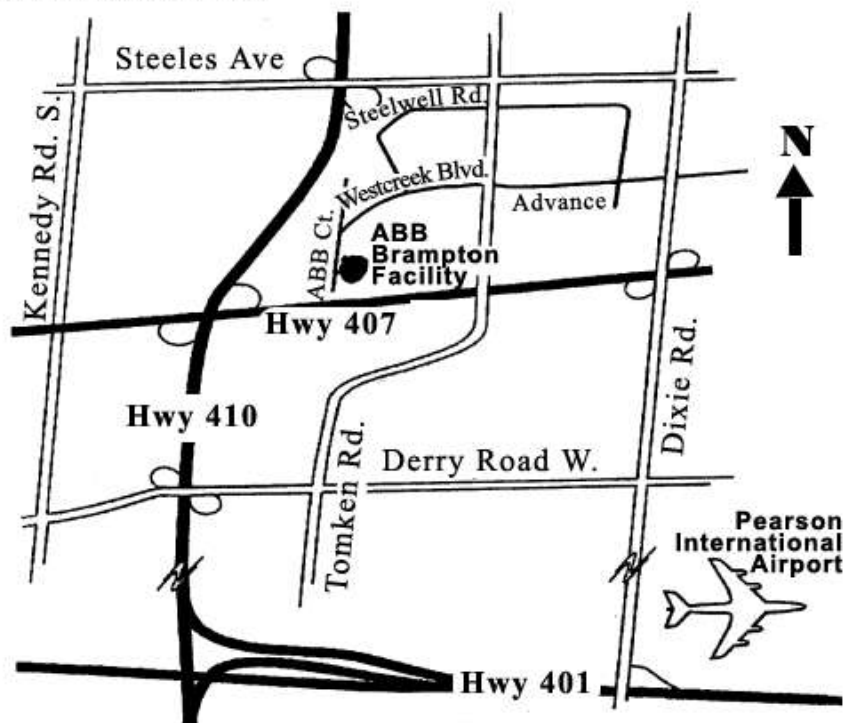
Real-Time Operational Excellence

A recent survey by Industry Week magazine revealed Operational Excellence as the top challenge facing CEO’s as they steer their companies into a new millennium.

The information needs produced by this thinking are rapidly narrowing the space between systems that serve the plant floor, the control room, and the board room. The advent of eBusiness is stretching the need for real-time information and automation all the way from mass marketing, to manufacturing, to delivery of highly customized products. Managers who are unaware of the incremental cost of production - and its incremental value at any given moment - will be at the mercy of the fiercely competitive, wide-open markets.”

From the ABB web site at <http://www.abb.com/>

ABB Brampton Facility
1 ABB Court (formerly Farmhouse)
Brampton, Ont., L6T 5S6



The Chapter 26 web site, www.sme-toronto-26.org, and monthly Bulletins from the Chapter will give details of the talks and tours in this Mechatronics series. LOCATION: see above for this month’s tour.

Application Form See page 4.

To Apply:

To apply, fill out the Application Form, p 4, and mail to: Pierre Perron, 80 St. Clair Ave. E, Apt 1706, Toronto, Ont., M4T 1N6, with your cheque. More information at the SME website at <http://www.sme-toronto-26.org/>

Location and Times

The course will be held at the ABB Brampton facility, 1 ABB Court (formerly Farmhouse), Brampton. A light supper will be offered at 6:00 pm and the session will start at 7:00 pm. We will usually finish by 10:00 pm. February: plant tour to OMRON, March, back to Rm T216, 87 Gerrard East, Eric Palin Hall, Ryerson University in downtown Toronto.

PLEASE CHECK OUR WEB SITE FOR LAST MINUTE CHANGES! An email will be sent to all those who have already signed up. www.sme-toronto-26.org/

Executive Meetings

NEXT MEETING 2001: at 6:30 pm

January 4 - Thursday

At: **AFV Multimedia**

233 Evans Avenue

Phone: 416-239-2811

Interested parties are welcome and encouraged to join executive members at these meetings. For additional information on next meeting phone 416-467-8298 or e-mail: heintzg@attglobal.net or Ken-Dante@msn.com.

Upcoming Schedule 2001:

PLEASE NOTE: All Executive meetings are **Thursdays** at 6:30 pm

February 1

March 1

April 5

May 3

Sign Ups Still Accepted!

For information on books and links related to Mechatronics please see our Web site <http://www.sme-toronto-26.org/>

NOTE: Bulletin copy deadline:

February Issue: January 10, 2001

March Issue: February 10, 2001

April Issue : March 8, 2001

If you need more information about this series, please call Pierre Perron at 416-763-4689 or email to pierre_perron@yahoo.com. Please do not phone after 10 pm EDT.

Mechatronics Topics & Schedule

5. Wednesday January 17. **Plant Tour:** Robotics, Asea Robots: Analysis of a robot as a Mechatronics device and building block.
6. Wednesday, February 7 **Plant Tour: Omron** Demonstration of working products, design problems and solutions..
7. Wednesday, March 7. Control Systems Control Systems - Controllers, Computers and Networking.
8. Wednesday, April 4. Implementation Team Work, Project Management, Goal Setting. Pierre Perron, Team building and project planning implementation Consultant.
9. Wednesday, May 9. TBA
10. Wednesday, June 6. Summary - Panel Discussion: The Future.

Material from previous sessions is on the Chapter website at <http://www.sme-toronto-26.org>

SME Region 4 Niagara-St. Lawrence

Region 4, to which Chapter 26 belongs, has been active assembling a new Executive who will be announced soon. Many of their members visited regional meetings in other parts of the country. Overall, many chapters across the continent are experiencing similar problems to Chapter 26 - slowly falling membership and terrible time pressure making it difficult for many people to participate in chapter activities. You may wish to visit the Region 4 web site where these minutes are posted. They are interesting. The address is:

<http://chapters.sme.org/04>

Hamilton SME Chapter 42

Allan Spence, Chair of Hamilton Chapter 42, sent the following note: "I put a link on our SME Chapter 42 - Hamilton District homepage to Toronto 26 in case some of our members want to attend Toronto events. Your members are welcome to ours too. We list them online. See <http://chapters.sme.org/042/homepage.htm>." For more information, schedules, etc., please check this web site.

EXECUTIVE LIST

Office	Name	Company	Phone	E-mail
Chair	George C. Heintzman	Systems Consultant	416-467-8298	heintzg@attglobal.net
Chair Elect	Ken Kogej	Houghton Canada Inc.	416-402-3146	Ken-Dante@msn.com
2nd Vice-Chair	John Wagner	Hamond Industries	905-761-9094	dovmargiewagner@home.com
Secretary	Paul Ellis	Compact Mould	905-851-7724	paulellis7@hotmail.com
Treasurer	Robert Tecson	Applied Physics Specialties	416-445-1870	robtec@chalktv.com
Past Chair/Education	Peter J. Morgan	MURO North America Inc.	905-451-7667 X233	pmorgan@muro.com
Executive Advisor	Joe Benedetto	JRB Enterprises	416-267-2102	jrbene@attglobal.net
Programs	Bruce Keeling	AFV Multimedia	416-239-2811	bandi@sympatico.ca
Program Advisor	Robert Hope	R. B. Hope Industrial Ltd.		rbhope@idirect.com
Tours	Loris Giuricich	Celestica Inc.	416-448-2225	loris@sympatico.ca
Phone Ctte/Membership	Tim Lucas	Bobrick Washroom Equip	416-298-1066 X 156	tdlucas@idirect.com
RP Liaison	Vesna Cota	Tyco Electronics Canada Ltd.	905-474-5541	vcota@amp.com
Bulletin & Web Editor	Jenny Ono Suttaby	Jentek Company	416-761-1810	jono@jentekcompany.com
George Brown Stu Advisor	Franz Aschwanden	Professor	905-775-3759	sfasch@netcom.ca
U of Toronto Stu Advisor	Ron Venter	Professor	416-978-1904	
Ryerson U Stu Advisor	Farrokh Sharifi	Professor	416-979-5265	fsharifi@acs.ryerson.ca

Our continuing thanks to Professor Mark Fox, U of T, for hosting the Chapter's web site on his server at <http://www.novator.cm>

MECHATRONICS COMMITTEE

Mechatronics Subscription	Pierre Perron	Consultant	416-763-4689	pierre_perron@yahoo.com
Ryerson Advisor	John Hicks	Ryerson University	416-979-5000 X6672	jhicks@acs.ryerson.ca
Programs	Bruce Keeling	AFV Multimedia	416-239-2811	bandi@sympatico.ca
Advisor	Joe Benedetto	JRB Enterprises	416-267-2102	jrbene@attglobal.net

Sign Up Now!

Mechatronics Series Content: Check our Web site for material from past seminars. We will be adding more through out the year. But we will probably remove it next year. So if it's of interest take a copy now. Even though the machine tool industry in North America is on the decline you might check out some of the ideas that came out of the first session in terms of making a modern lathe. Links to Mechatronic program content is at <http://www.sme-toronto-26.org/pages/MechatronicsTOC.htm> (case-sensitive - watch your typing!)

Review: Sensors by Jim Pierson, 6th December, 2000

(See our Web page for complete presentations given at these sessions: <http://www.sme-toronto-26.org/>)

An outstanding presentation. Jim's key message was that the capability of a system is limited by the information on which it acts. This information comes from sensors. However, all too often designers of Mechatronic systems are not aware of the sources of error. For example, a strain gauge may be extremely sensitive to heat. Some are sensitive to light. Electrical and magnetic fields may introduce errors into the measuring system. Mechanical noise may introduce errors into pressure, temperature, and positional sensors. If a sensor is sensitive to one stimulus it is often sensitive to others also. Be sure you are measuring what you want to measure.

But the real value of this session was Jim's experience. Every 3 or 4 slides he would set his presentation aside and tell stories. He told us how NASA had a problem that all the strain gauges on a rocket-stabilized facility under test in a hanger went crazy every day at 3 pm. Jim noticed that UPS delivered at 3 pm. He scotch-taped cotton balls over half of the sensors. They worked fine when 3 o'clock rolled around, while the UPS delivery screwed up the rest of the sensors.

The problem was that opening the hangar door for the delivery man to throw in some packages flooded the hanger with cold air.

On another occasion, a long correspondence resulted in a trip to Japan to address a noisy load cell. The cell was fine. The biggest source of noise was the engineers talking in the same room as the test rig. The next biggest source of noise was the power supply. Jim proved this by taking a 9v battery out of his pocket and substituting it for the cheap power supply they were using. The final source of error was a 55 cycle mechanical noise from a compressor that was 3 offices away. The engineers were not aware of its presence but it was mounted on the same slab of concrete as the load cell. The sensors were just fine. It was the environment that was noisy.

Jim's experience and stories of problems and what you can do to track them to their source was extremely interesting and valuable. Thanks Jim!

George Heintzman

Many Thanks to our BULLETIN PUBLICATION and WEB SITE SPONSORS:



Information and links at: <http://www.sme-toronto-26.org/>



NOTE: FEBRUARY 7 AT OMRON

Please note that the plant tour scheduled for February 7, 2001, will be at OMRON, 885 Milner Avenue, in the Milner - Morningside area of the city.

DESIGN ENGINEERING REPORTS SME ACHIEVEMENTS AWARD TO SURFWARE INC.

The November/December issue of Design Engineering magazine reports the Society of Manufacturing Engineers Award for Distinguished Contributions to the Manufacturing and Engineering Communities. This award was given to Surfware Inc., developers of SURF-CAD CAD/CAM software. "Designers, engineers, and machinists worldwide use it for 2-D and 3-D mechanical design, surface modeling, solid modeling, reverse engineering, prototyping, mold-making, pattern-making and production machining," reports Design Engineering.

Detach the form below and send with cheque or money order made out to **SME Toronto Chapter 26 Mechatronics**, to: Pierre Perron, 80 St. Clair Avenue East, Apt 1706, Toronto, Ontario, M4T 1N6 * Membership enquiries please phone 416-402-3146.



REGISTRATION FORM - MECHATRONICS SERIES 2000-2001

Please keep a copy for your records. Please photocopy for additional registrations.

DATE: _____
NAME: _____
TITLE: _____
COMPANY: _____
ADDRESS: _____
CITY: _____
PHONE, HOME: _____ OFFICE: _____
FAX: _____ E-MAIL: _____
 SME Member \$450* Non-member \$550* * Student Members \$95 Amount Enclosed: \$ _____

*Fee is prorated for late signups - for example, remaining six sessions: members \$270, Non members \$370, Students \$72. The price for guests for one evening is 65\$.

Detach and send with cheque or money order made out to **SME Toronto Chapter 26 Mechatronics**, to: Pierre Perron, 80 St. Clair Avenue East, Apt 1706, Toronto, Ontario, M4T 1N6

* Membership enquiries please phone 416-402-3146.