

Ottawa Chapter Newsletter

September 2026

SREOttawa.com



SRE OTTAWA CHAPTER

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POINT OF VIEW

There is a trend happening where maintenance is being contracted out rather than being conducted in-house. I think the main reason is lack of staff on complex systems to perform prescribed maintenance. Another factor is the inadequate training equipment operators receive. The tale of the ship *MSC Michigan VII* below is instructive in this regard. Even military systems, traditionally maintained in-house are now being serviced by contractors. Here is the AI-generated rationale why: Technical Complexity: Modern military hardware, like the F-35 Lightning II, operates more like flying supercomputers than traditional mechanical vehicles. Private manufacturers often hold the proprietary data, specialized tools, and software code required to keep these systems operational.

Cost Efficiency Myths and Realities: Governments originally turned to contractors in the 1990s and 2000s to cut down on permanent military personnel and reduce overhead costs. However, long-term sole-source contracts have sometimes led to cost overruns.

Focus on Core Mission: Outsourcing maintenance allows active-duty military personnel to focus directly on combat readiness, training, and operational deployment rather than logistics.

- James Menard

FALL 2026 OTTAWA SRE TECHNICAL PROGRAM

Mark your calendar! Here are the dates for presentations this Fall:

7:00 p.m. Greetings and Chapter Business
7:15 p.m. Presentation
8:15 - 9:00 Questions and Discussion

Sept. 30, Aercio Regis Alencar, A Reliability Culture of Success, Toronto Transit Commission

Oct.28, James Li, Weibull Revisited,

Nov. 25, Brian Keith, Approaches to Reliability Demonstration.

All presentations for the 2026 Fall season will be on-line via Zoom. The link will be sent with the meeting notices.

CHAPTER NEWS

Congratulations to Manoj Mittal, winner of the Colin Chabot Memorial Award for his presentation *RAMS 2025 Update*. Balloting was extremely close indicating a high level of professional expertise.

The Montreal SRE Chapter is sponsoring an event this October with following aims:

- Strengthen the RAMS community in Montreal by connecting Concordia, industry, professional societies, students, young engineers, and international experts.
- Position Concordia as a recognized academic hub for RAMS, strengthening the association between the university and reliability, availability, maintainability, and safety + asset management & AI.
- Publicly relaunch and revitalize the SRE Montreal Chapter, with future technical, educational, and professional activities offering real value to members.

Our Chapter has offered to support this initiative by contributing \$1500 to become an event sponsor.

A number of high-profile industry and academia experts, e.g. Ford, Hydro-Québec, Concordia, and Julio Pulido, President of the Society of Reliability Engineers are participating. A student competition is planned, with a financial prize or, preferably, a paid internship offered by a participating company.

ASQ Reliability and Risk Division Webinars: A link to a series on various reliability topics is available from member Ray Lee at: TC Consultants tctechcons@gmail.com. Topics include:

- ASQ RRD SAE 1025™ FMEA Standard – What It Is and Should You Adopt It;
- Reliability Meets AI: A Four-Part Introductory Series on Models, Maintenance, and Trust;
- 2025 Certified Reliability Engineer (CRE) Handbook, 4th Edition.

The 73rd **RAMS** will be held January 25 to 28th, 2027 at the Hilton Saint Petersburg Bayfront, Florida, USA. This year's theme is "Reliability, Maintainability and Safety in a Changing World: From Legacy Systems to AI-Enabled Futures".

LOCAL JOB OPPORTUNITIES

Inpho is a fast-growing startup developing cutting-edge optoelectronic solutions for next generation communications and photonic systems. **Inpho's** multidisciplinary team is pushing the boundaries of innovation in integrated photonics and semiconductor packaging. **Inpho** is seeking an experienced Optical Reliability Engineer to lead the end-to-end reliability characterization and qualification of InP-based photonic devices including EMLs, lasers, modulators, and photodetectors. This hands-on role combines deep understanding of device physics, degradation mechanisms, accelerated reliability testing, and failure analysis to improve product robustness throughout development and production.

You will work closely with Device Design, Epitaxy, Process Engineering, Packaging, Test, Failure Analysis, and external partners to understand failure mechanisms, define reliability strategies, and drive product improvements. For more information please contact Inpho Human Resources at hr@inpho.io

General Dynamics Mission Systems Canada - Ottawa (Bells Corners) is seeking a **Manager, Reliability, Maintainability, Testability & Safety (RMT&S)** to lead a team of approximately six engineering professionals responsible for delivering system safety and RMT&S engineering services across all engineering programs and product lines within the Business Area. Reporting to the Senior Manager, Engineering Support Services, the incumbent serves as the organization's designated Safety Authority and is accountable for building and sustaining a high-performing team, developing discipline capability, and ensuring consistent application of safety, reliability, maintainability and trainability engineering practices across the enterprise.

The successful candidate will balance resource planning, employee development, technical oversight, safety governance, proposal support, and hands-on engineering contributions.

The Manager will champion a proactive, data-driven safety culture and ensure that safety, reliability and maintainability considerations are embedded throughout all lifecycle phases, from concept development through production, sustainment and disposal.

SREO HISTORY- RELIABILITY SYMPOSIUMS IN OTTAWA

The Society of Reliability Engineers-Ottawa (SREO) has an interesting history of participating in the presentation of symposiums on Reliability and Maintainability, mostly in Ottawa. The first was held in 1975 and the last in 2003. There was an interesting string of symposiums from 1975 through to 1980, and they were published by Pergamon Press Ltd: An International Journal & World Abstracting Service, Oxford UK, Elmsford NY, and Toronto CA. The Assistant Chief Editor was the revered Hans Reiche, Canadian Department of Defence, who was instrumental in arranging for the publication of about 100 papers from the five early symposiums, with about 850 pages total.

To provide some idea of the influence of these symposiums together, they have been summarized cryptically below in the following order. Year; Date; Location; Vol./No.; Page range; Chair Person, Affiliation.

- 1975; 750510; Ottawa; Vol.4, No.2; p73-248; T.D. Kiang, Bell-Northern Research.
- 1976; 760605; Ottawa; Vol.15, Supplement; p3-125; Philip M. Thompson, University of Ottawa.
- 1977; 771013/14; Ottawa; Vol., No.1; p1-234; Diju Raha, Bell-Northern Research.
- 1978; 781019/20; Ottawa; Vol.18, Nos. 1/2; p1-168; Nicholas Balke, CA Supply and Services.
- 1980; 800516/18; Toronto; Vol.20, Nos. 1/2; p 1-168; Neville Lewis, Litton Systems Canada.

The Organizing Committee for the symposia were always heavily supported by the Canadian Department of National Defence, Bell-Northern Research (now Ciena) and Computing Devices of Canada (now General Dynamics).

The Canadian Reliability and Maintainability Symposium (CRMS), was held at the Lord Elgin Hotel, in Ottawa on October 16-17, 2003. There were about 100 attendees; presentations were given in three theatres while exhibitors were provided with a large dedicated room. There were

34 half-hour paper presentations and 12 one-hour tutorials delivered. Planning and conducting the symposium was a joint effort by SRE, IEEE and ASQ local Ottawa organizations and co-sponsored by many commercial organizations, including: Semiconductor Insights, Nortel, Ottawa Hydro, Reliability Analysis Center, Relex Inc, ARINC, and Reliasoft.

UNAUTHORIZED MAINTENANCE LEADS TO SHIP SPEED GOVERNOR FAILURE

in Charleston, South Carolina the **MSC Michigan VII** lost the ability to slow its main engine while departing Charleston Harbour on June 5, 2024. The 74,583-gross-ton Liberian-flagged containership accelerated to approximately 16 to 17 knots after a linkage rod connecting the main engine governor to the fuel rack became disconnected. With the engine unable to respond normally to commands from the bridge, the vessel continued outbound toward the Arthur Ravenel Jr. Bridge, which forced authorities to evacuate the eight-lane bridge amid fears of a collision. A harbour pilot ultimately guided the MSC Michigan VII safely beneath the bridge and out to sea. Local beaches were also cleared because of the vessel's large wake, which injured two people and damaged ships and piers along the waterway. The case was investigated by Coast Guard Sector Charleston, the Coast Guard Investigative Service and the NTSB. The investigation revealed that the incident was not simply an unexpected mechanical failure. During interviews Chief Engineer Fernando San Juan initially claimed the crew never adjusted the linkage rod and that only qualified technicians performed such work. MSC Shipmanagement Limited and San Juan later admitted that the ship's engineering crew had been manually adjusting the length of the governor linkage rod to make the main engine achieve the revolutions per minute ordered from the bridge. The governor regulates engine speed, and according to prosecutors, only trained technicians should have been making adjustments to the governor and linkage system. None of the engineering crew aboard the MSC Michigan VII were qualified to do so. Nevertheless, engineers had developed a practice of watching the bridge telegraph from the engine control room and manually turning the linkage rod when necessary until the engine reached the requested rpm.

San Juan admitted he knew the practice was hazardous because manually adjusting the linkage could cause it to fail, but allowed it to continue. Investigators found that nuts on both ends of the linkage rod had been loosened so engineers could turn the rod more easily. Locking washers

designed to prevent the nuts from backing out had also been removed. The dangerous arrangement failed during the June 5 departure after the crew made another manual adjustment. Once the linkage rod disconnected, the engine could no longer be slowed normally.

Court records revealed previous broader machinery problems aboard the containership. The engine governor issue was linked in part to problems with the vessel's fuel injection system when operating on lower-viscosity low-sulfur fuel. The vessel also experienced problems with its main air compressors and generators, several of which could not sustain a 75% power load, at times preventing use of the bow thruster while maneuvering in port.

MSC Shipmanagement Limited has been fined \$6 million and placed on four years of probation over the 'runaway ship' incident. The vessel's Chief Engineer was separately sentenced to pay a \$2,000 fine after pleading guilty to failing to report a hazardous condition and obstructing the subsequent federal investigation.

"The hazardous condition onboard this vessel, and MSC's failure to report it, could have ended in a fatal bridge strike as occurred months earlier in Baltimore," said Principal Deputy Assistant Attorney General Adam Gustafson of the Justice Department's Energy and Natural Resources Division. "Had the MSC Michigan VII been heading into port instead of out to sea, the result would likely have been catastrophic."

VOYAGERS' AMAZING 50 YEAR RELIABILITY

In late summer of 1977 NASA launched two Voyager spacecraft that travelled initially to train their instruments on various outer planets and to use gravitational boosts in speed to eventually leave the solar system. Voyager 1 is now one light-day from earth, operating on a few hundred watts of power from radioactive decay. Some instruments have had to be shut off to conserve power. Yet scientists and engineers continue to receive data that takes 24 hours to reach earth. Voyager 2, travelling slower, is 16 light-hours away but has retained a working plasma science instrument that measures the temperature, density and flow velocity of charged particles within and beyond the heliosphere, or edge of the solar system. This device had failed on Voyager 1 in 1980, so it is only now that accurate and detailed data on the nature of the heliosphere is being captured, contradicting earlier models and predictions.

Bravo to the team that built the Voyagers and kept them operating for 50 years!

R&M BOOK OF KNOWLEDGE 2025

The US military - now termed the Department of War (DoW), has recently updated the Reliability and Maintainability (R&M) Engineering Management **Body of Knowledge**. The document presents procedures for DoW program managers (PMs), project engineers, and R&M engineers to use to achieve and control R&M requirements for any DoW weapon system.

RELIABILITY IN THE NEWS

A series of **issues with fare readers** on OC Transpo buses meant many hundreds of thousands of dollars in fares were lost. Pat Scrimgeour, director of OC Transpo transit customer systems and planning, told councillors that the reliability issues were limited to a specific period during the Metro-linx Presto upgrade between February and April, when the reliability of the machines dipped to 93.5 per cent. The average reliability for the 18-month period was 98.1 per cent, and was at 98.9 per cent in the 15 months excluding the upgrade period.

"Those fare devices have all been repaired (and) reliability of those devices is quite high right now," Scrimgeour told the finance and corporate services committee.

Staff have been conducting field testing of the fare readers and found a 4.7 per cent failure rate before the software deployment, which has since improved to 2.6 per cent.

Staff pointed to several other factors that could impact the reliability of the readers, including the device hardware and cabling that runs through the bus to provide power and network connectivity, along with the 4G cellular connectivity that enables the readers to communicate with back-office systems.

SREO Newsletter

If you have something to share with the Ottawa SRE community, please send it to: James Menard jamespmenard@gmail.com. Deadline for the next Newsletter is Dec 31, 2026.



Jan 25—28, 2027
Hilton St. Petersburg
Bayfront,
St Petersburg,
Florida, USA

The 73rd Annual Reliability and Maintainability Symposium

***"Reliability, Maintainability and Safety in a Changing World:
From Legacy Systems to AI-Enabled Futures"***