

Ottawa Chapter Newsletter

February 2025 sreottawainfo@gmail.com
SREOttawa.com



SRE OTTAWA CHAPTER

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POINT OF VIEW

I recently watched a [simulation](#) of the components of the Lunar Excursion Module showing how the various subsystems, like the rover, were stowed, unfolded and used. Most parts were only designed to work once, so reliability was a critical feature, accomplished with the technology in use 60 years ago. What's even more amazing is that human 'computers', often women of colour, calculated the trajectories for the spacecraft. Yet even now with AI and robotics, and Elon Musk and other billionaires privatizing space launches, there are still modern day luddites who don't believe the moon landings were real. Where once the word of scientists was accepted as gospel we are now in a post-truth era where facts don't matter, except in engineering of complex systems that more and more seems like magic.

- James Menard

SPRING 2025 OTTAWA SRE TECHNICAL PROGRAM

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

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

All presentations for the 2025 Spring season will be delivered in person in the Edge Room at General Dynamics mission Systems Canada,

1941 Robertson Rd, and on-line via Zoom. The link will be sent with the meeting notices.

26 Feb. Telesat Lightspeed – the LEO network designed for a highly reliable and resilient service offering; Michele Beck & Sunil Chavda, Telesat;

26 March. Reliability Considerations for Online Wear Debris Monitoring; Oleg Sosnovski, Gastops;

30 April. AI; it works! Now what? Gordon Larose, Consultant.

CHAPTER NEWS

- We learned just after the September newsletter went out that Ahmed Bashir, our most recent President, passed away suddenly over the summer. I've known Ahmed for 20 some years, when he started at DND after working at Paramax on the frigate project. Always unfailingly polite and gracious, our chapter has lost a stalwart member.

- On Nov. 27, 2024 Dr. Mike Ivanovic of UBAMIP Consulting provided SREOttawa with a customized virtual course, educational document, lecture and question and answer session on heat pumps for the home. Facilitated by Epic Training Group, highly subsidized and sponsored by SREOttawa, 10 participants received a condensed overview of thermodynamics, compressor design, geographic region constraints and parameters, maintenance troubleshooting and reliability. A bonus was being able to claim the educational course time as well as seminar time towards continuing professional development units required by PEO with no extra overhead incurred by SREOttawa.

Although 3 of the participants were existing SREOttawa members, the 7 other participants were subscribed from PEO sustainability seminars attendees. SREOttawa welcomes these recent education course participants to join and contribute as well as learn from others.

In 2025 it is expected that a much simpler and less costly educational workshop/ social will be held. The goal is share knowledge about SRE Ottawa operations, for sustainability going forward as an active and vibrant chapter of SRE.org which can address stakeholder and member interests.

- Members are reminded that May 31st is the deadline for renewing membership dues, after which a list of paid-up members is sent to SRE, along with payment. Dues are \$50 and payment can be made in cash or by cheque at chapter meetings, or by e-transfer to sreotreasurer@gmail.com.

RELIABILITY IN THE NEWS

When does a series of failures become a crisis? For Toyota, 2024 was *annus horribilis* as described in [The Drive](#): To wit, just this year alone, Toyota had to replace the engines in over 100,000 Tundra pickups and Lexus LXs because a manufacturing issue was causing them to seize up. It recalled over 380,000 last-gen Tacomas because the rear axle wasn't screwed together correctly, and transmissions are now failing in the new truck. Botched traction control software in the Corolla Cross hybrid is causing power brake assist to fail. Meanwhile the GR86 is still blowing engines due to oil starvation, and now a couple GR Corollas have randomly caught fire under mysterious circumstances.

RIGHT TO REPAIR

There is a worldwide movement as part of the effort to reduce waste to promote the Right to Repair, as documented in this [Wikipedia article](#). Here is ChatGPT's summary of the issue: "The Right to Repair debate centers on whether consumers and independent repair businesses should have access to the tools, parts, and information needed to repair products, as opposed to being forced to rely solely on manufacturers. Here's a breakdown of the key issues:

Supporters of Right to Repair

- **Consumer Freedom:** Advocates argue that people should have the right to repair their own devices without voiding warranties or facing restrictions.
- **Cost Savings:** Independent repairs and DIY fixes can be significantly cheaper than using manufacturer-provided services.
- **Environmental Benefits:** Repairing products instead of discarding them reduces electronic waste and promotes sustainability.
- **Competition:** Allowing independent repair shops access to tools and parts fosters market competition, potentially driving down prices.

Opponents of Right to Repair

- **Intellectual Property (IP) Concerns:** Manufacturers claim that sharing repair manuals or tools might expose trade secrets.

- **Safety and Quality:** Opponents argue that unauthorized repairs could lead to safety risks or subpar performance.
- **Revenue Loss:** Companies depend on repair services as a revenue stream and fear losing profits to third-party repair businesses.
- **Complexity of Modern Products:** Some manufacturers assert that modern products are too complex or delicate for non-specialist repairs.

Legislative Landscape

- **Pro-R2R Legislation:** Laws supporting Right to Repair have been passed or proposed in regions like the EU and some U.S. states, requiring manufacturers to provide parts and repair information.
- **Manufacturer Resistance:** Some companies, particularly in the tech and agricultural industries, have lobbied against these laws.

Industries Affected

- **Electronics:** Smartphones, laptops, and appliances are central to the debate.
- **Automotive:** Many argue that car owners should have access to diagnostic tools and software.
- **Agriculture:** Farmers seek to repair their own equipment, such as tractors, without needing manufacturer approval.

The debate reflects broader issues of consumer rights, sustainability, and corporate control, with growing momentum in favour of Right to Repair in response to environmental and economic pressures."

You can see that the above, while comprehensive in scope, is very general in content. This [article](#) from Policy Options describes the current situation in Canada, including this insight: "Planned obsolescence is purposely shortening the useful life of goods through various means. This can include using poor quality, non-durable materials or flooding the market with updated products that don't work with existing models. No longer offering support through software updates or replacement parts is another tactic."

MORE AI - HPWHs

From MS Chat Bing:

"Heat pump water heaters (HPWHs) are generally considered reliable and efficient. Here are some key points:

Energy Efficiency: HPWHs are highly energy-efficient, using up to 63% less energy than traditional electric water heaters. This can lead to significant cost savings over time.

Longevity: These units typically last around 13 to 15 years, compared to 8 to 12 years for conventional electric water heaters.

Maintenance: While HPWHs can have higher upfront costs, they may require more maintenance, such as cleaning the coils. However, many users find this manageable and worth the savings.

Performance: Users report that HPWHs perform well even in colder climates and can handle high-demand situations by switching to electric resistance heating if needed.

Noise: Some models, particularly older ones, can be noisier than traditional heaters. It's important to check reviews and possibly test units in person if noise is a concern.

Overall, HPWHs offer improved energy efficiency, term long term cost savings and a longer lifespan, making it a reliable choice for many homeowners. Would you like more detailed information on any specific aspect?"

BOOK REVIEW- HOW BIG THINGS GET DONE

Reference: Flyvbjerg, Bent and Dan Gardner. [How Big Things get Done](#): The surprising factors that determine the fate of every project, from home renovations to space exploration and everything in between, McClelland & Stewart Canada. 2023.

From the book flap:

Nothing is more inspiring than a big vision that becomes a triumphant reality. Think of how the Empire State Building went from a sketch to the jewel of New York's skyline in twenty-one months, or how Apple's iPod went from a project with a single employee to a product launch in eleven months.

These are wonderful stories. Most of the time, however, big visions turn into nightmares. Remember Boston's "Big Dig" Almost every city has such a fiasco in its backyard. In fact, a staggering 92 percent of mega projects come in over budget or over schedule, or both. The cost of the California High-Speed Rail project soared from \$33 Billion to \$100 billion. Even modest endeavours, such as launching a small side business, commonly fail. Why?.

Understanding what distinguishes the rare triumphs amid so much failure has been the life's work of Oxford professor Bent Flyvbjerg. In 'How Big Things get Done', he identifies the errors in judgement and biased decision-making that lead projects, both big and small, to fail. And he shows

how your own projects have a better chance of succeeding if you apply his research-based principles:

-Understanding your odds. If you don't know them, you won't win.

-Think slow, act fast. Acting now feels right. But it's wrong.

-Find your Lego. Big is best built from small: modularity.

-Think right to left. Start with your goal, then plan backwards.

Packed with vivid examples ranging from the building of the Sydney Opera House and the making of Pixar blockbusters to a home renovation in Brooklyn gone awry. 'How Big Things Get Done' is an indispensable resource for anyone planning ambitious projects.

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 Jun 30, 2025