

REGIONAL REPORT



ONTARIO

An election that resolved little, a fourth wave of COVID-19 and another cancelled regional conference aren't stopping Canada's leading defence region.

BY PETER DIEKMEYER





Credit: NORAD, Paul Belanger

Many Canadians seemingly can't wait for this year to end. A questionable fall election dominated attention for weeks but resolved little. Businesses can't find workers amidst a fourth wave of the COVID-19 pandemic which is driving new lockdowns. Supply chains are broken. Travel restrictions, medical segregation, and event cancellations are making it increasingly challenging to meet and communicate.

These trends dig deepest in Ontario, Canada's largest province and economy, host to the nation's capital and the Department of National Defence. Yet few that we spoke to for this extensive report on Ontario's aerospace and defence industries are batting an eyelash. "It's year two of the pandemic," says Lee Obst, President and country lead of Collins Aerospace, as though he were swatting away an annoying fly. "By now we are all used to figuring out workarounds."

The seasoned Royal Canadian Air Force (RCAF) veteran isn't kidding. Collins Aerospace, which continues to seek out synergies following the 2020 merger that brought the company together with operating units in Raytheon Technologies'



Perry says military spending hard to justify during pandemic

Canadian businesses is having a dynamic year. This diverse grouping, which now also includes Pratt & Whitney Canada, Raytheon Canada and Raytheon ELCAN now comprises one of Canada's largest defence players, with 8500 workers, including 1800 in Ontario.

NORAD MODERNIZATION

The teaming of Raytheon Technologies and United Technologies could not have come at a better time for the RCAF, which is becoming increasingly reliant on the company's capabilities. The recent American pullout from Afghanistan, coupled with the release of two Canadian prisoners in China, and the 20th anniversary meeting of the Shanghai Cooperation Organization in September, provided reminders of a growing divide with Eurasian powers. The speed at which escalating tensions with China and Russia are occurring, is graphically illustrated in the fact that as recently as 2017 the Canadian government did not regard modernizing the North American Air Defence system as important enough to fund under the national defence policy, Strong, Secure, Engaged. Fast-forward four years and that has all changed with initial allocations to the program made during the most recent federal budget.

"We offer many capabilities that can be leveraged in continental defence," Obst told CDR. "Raytheon's sensors, electro-optics, and situational awareness capabilities mesh well with Collins

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GDLS-C held a virtual ceremony that celebrated the roll-out of the Armoured Combat Support Vehicle (ACSV)

Aerospace’s communications and networking technology.” Technologies such as HF surface wave radars, over the horizon radars, and networking and communications equipment are currently being developed in Ontario and will be on the front lines in the mission to protect Canadian borders.

That said, as David Perry, Vice President and senior analyst at the Canadian Global Affairs Institute notes, the recent federal election campaign suggests that finding resources to equip Canada’s defence sector to enable it to address future challenges won’t be easy. “There appears to be continuity among all the major political parties,” says Perry. “Other than NORAD modernization, strategic lift and possible construction of a dual use runway in Canada’s north, the topic of defence did not come up much at all during the campaign. Politicians are having a hard time justifying military spending during a time of considerable pandemic related deficit spending, when the federal budget is so far out of whack.”

ALLEN VANGUARD CONTINUES R&D

Steve Drover, director of business development at Allen-Vanguard acknowledges the constraints that the pandemic places on Canada’s defence sector but notes that his company has managed



COVID seems to have slowed momentum on larger procurement initiatives, Drover told CDR

to adjust. A key step included maintaining steady research and development efforts throughout the pandemic. “We are making considerable investments into EQUINOX NG, our next generation ECM [Electronic Countermeasure] capability,” say Drover. “We want our systems to protect soldiers from IED’s [Improvised Explosive Devices], but to also function as a C-UAS [Counter Unmanned

Aircraft System] solution and integrate into larger command and control tactical networks that can enable the commanders to better make critical decisions.”

While Allen-Vanguard has managed to keep staff busy, the company hasn’t been immune to macro developments. “COVID seems to have slowed momentum on larger procurement initiatives, almost all of which

are delayed to some extent,” Drover told CDR. “For example, we haven’t seen much progression in programs identified in Secure, Strong, Engaged (SSE)– Canada’s Defence Policy published back in 2017.

Allen-Vanguard’s challenge is that the “Anticipate, Adapt and Act” vision highlighted in SSE puts considerable pressure on industry. That’s particularly true of smaller companies which don’t have access to the cheap, unlimited financing that multinational defence contractors benefit from. Allen-Vanguard’s heavy R&D investments have generated successful collaborations with military personnel. However, the home country procurement commitments that Allen-Vanguard needs in order to generate the scale required to put its latest technology into full production, have been lacking.

“We are optimistic and hopeful coming out of COVID that the government will redirect funding into innovation, says Drover. “Small investments into technology-based SMEs like Allen-Vanguard can generate outsized results. The bad folks continue to find new ways to do harm to Canada and our allies, and we need to stay ahead of them. We are confident that our next generation systems will pay off. However, these cycles



Wollesen says supply chain disruptions are becoming a key issue in Canada

take time and, like it or not, are often driven by immediate needs.”

One area in which experts say that Canadian government officials could drive defence sector exports and help create jobs would be to speed the export permitting process. “We understand things have slowed during COVID,” says Drover. “But we are hearing of companies facing financial penalties because they are not getting

regulatory paperwork resolved in a timely manner. These are the kinds of irritants that are easily removed.”

Like many other defence players, Allen-Vanguard has been hit by supply chain challenges that are plaguing the global economy. “We are lucky to have a good logistics team because we have had to put extra effort into finding key system components,” Drover told CDR. “I worry that unless our government can work on anticipating requirements and lean forward in their purchases, they will have even longer delays getting their much needed equipment.”

SUPPLY CHAIN DISRUPTIONS

Victor Wollesen, the CEO of Per Vices, a Toronto-based company that builds Software Defined Radios for mission critical applications has also been having a busy quarter. U.S. and European customers have demonstrated growing interest in the company’s SDR capabilities in air and ground-based radar system integration, medical imaging, test and measurement and spectrum recording.


“Recent renewed government focus on high bandwidth products, which enable faster processing could not have come at a



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better time,” says Wollesen, who like most signals intelligence and electronic warfare experts could only provide general comments regarding the company’s more advanced solutions. “Given adversarial attention in this area Canada needs to keep up.”

Wollesen agrees that supply chain disruptions are becoming a key issue. “Chip shortages in a range of categories means longer lead times,” Wollesen told CDR. “It can take between 52-70 weeks to get certain RAM components. Semiconductor backlogs are a particular problem because the parts are quite specialized and there are few alternatives.” Experts say that power regulators, amplifiers, wideband radio switches are several other components are also increasingly difficult to find.

Wollesen, hasn’t let those challenges slow Per Vices which integrates casings, software, and other offerings into a range of defence and dual use applications. “Software Defined Radio capabilities have expanded considerably in recent years,” says the innovative entrepreneur who holds physics degree from the University of Waterloo.



Raytheon’s Terry Manion says it’s been a “tough year”

“They now integrate with radar, electronic warfare, GNSS, satellite, test & measurement, and facilitate spectrum monitoring and recording. Reliability, performance and power standards are thus particularly tough.”

BEST DEFENCE GOES VIRTUAL

Heather Pilot, president of Pilot Hill, which runs the Best Defence 2021 Conference is another seasoned executive that hasn’t let government lockdowns get her down. Pilot, who for the second year in a row worked tirelessly in the hope of scheduling a live event but was forced again at the last minute to shift to a virtual format, isn’t missing a beat. “We have got a great program with sessions in areas ranging from cyber to critical minerals,” says Pilot. “There is going to be something for everyone.”

The Aerospace Industries Association of Canada, which after extensive consultations regarding the feasibility of moving forward with its Canadian Aerospace Summit, which was to be held in November at the Shaw Centre in Ottawa, was forced to cancel the event outright. A spokesperson said that the decision was forced by continued uncertainty associated with the 4th wave of COVID-19.

The cancellation was a bitter blow as the AIAC (which Obst chairs) has been lobbying for the implementation of Canadian

Aerospace Strategy that will drive the strengths and advantages of this industry, a significant portion of which is concentrated in Ontario. The event's Ottawa locale would have provided the reeling sector with excellent visibility.

GDLS-CANADA'S MUTT

According to Jason Alejandro Monahan, Vice President and general manager at General Dynamics Land Systems, the London Ontario based manufacturer has been maintaining an aggressive production schedule, despite the pandemic. Key to those efforts is its steady output of Light Armored Vehicle Reconnaissance Surveillance Systems (LRSS), which provide the Canadian Army with cutting edge digital surveillance systems, as well detection, recognition, and identification capabilities.

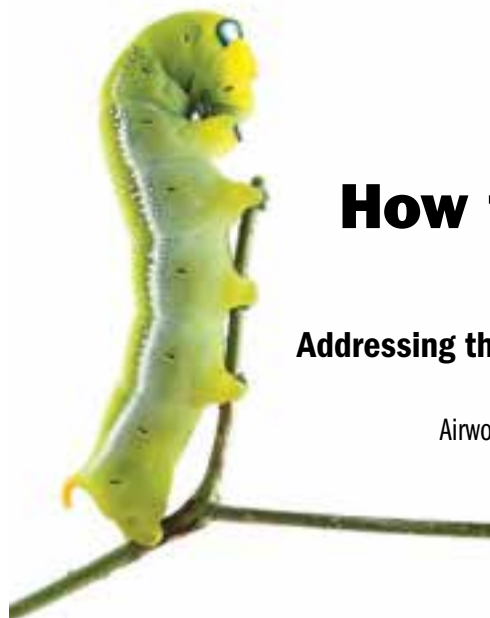
Monahan, who moved to Canada from Michigan in May to take over his new post, arrived amidst considerable momentum. General Dynamics Land Systems-Canada started the year with a bang, by rolling out the first of a projected eight vehicle variants in the Armoured Combat Support Vehicle (ACSV) program. Harjit Sajjan, Canada's Minister of National Defence attended the



Heather Pilot was forced to shift the Best Defence Conference to a virtual format



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EQUINOX Next Generation is the latest vehicle based Electronic Countermeasure (ECM) system from Allen-Vanguard

virtual launch of this new Troop Cargo Vehicle (TCV) which will be made for the Canadian Army. General Dynamics Land Systems also recently delivered the second variant in the program, an ambulance model. "I am proud of the resilience and remarkable capabilities that our employees have demonstrated," Monahan told CDR. "We also credit our supply chain of approximately 700 suppliers across Canada - many of whom have supported us for more than 15 years."

General Dynamics Land Systems' ability to evolve during tough times is key to both its success and that of Ontario's defence sector, where it plays a major role. One promising move is the company's entry into the unmanned ground vehicles robotics market. "The U.S. Army's Small Multipurpose Equipment Transport (S-MET) program is based on General Dynamics Land Systems' Multi-Utility Tactical Transport (MUTT) platform," Monahan told CDR. "The MUTT is a rugged, reliable small-unit force multiplier that provides dismounted soldiers with a versatile platform that can carry equipment and perform multiple other roles. These include transportation, casualty evacuation and as a weapons platform, which can evolve to accommodate new payloads, controllers and increased levels of autonomy."

General Dynamics Land Systems Canada takes the concept of corporate responsibility very seriously. "We recently reached another milestone in our longstanding commitment

to reduce our global environmental impact, decrease costs and remain competitive," says Monahan. "In January 2021, our main office building and central manufacturing facility in London, Ontario, became ISO 50001-certified." Key to this achievement is the fact that the ISO 50001 energy management systems standard meshes cleanly with General Dynamics Land Systems' existing environmental data and certifications infrastructure.

General Dynamics Land Systems Canada is also looking at ways to help integrate Indigenous businesses into the defence sector, and global supply chain, in the wake of the Government of Canada's recent requirement that 5% of the value of federal contracts across all departments be awarded to Indigenous businesses.

DEFENCE SPENDING

Terry Manion, Vice President and general manager at Raytheon Canada, agrees that prioritizing a social licence to operate is key to getting public buy-in for defence procurements, during times when immediate threats to Canadian security are not immediately apparent. Raytheon Technologies' Pratt & Whitney Canada division, which will develop and flight-demo a Hybrid-Electric Propulsion (HEP) system, provides an example of how defence contractors can take the lead.

The company will be partnering with De Havilland to integrate the HEP into a Dash

8-100 as part of a \$163 million public sector investment for which Collins Aerospace will supply an advanced electric motor and controller. Sustainable development will be a key focus in this new initiative which is backed in part by the Government of Canada's Strategic Innovation Fund as part of Canada's green recovery plan. A key program target will be a 30% fuel burn reduction compared to existing turboprop technology. The demo flight in this hybrid-electric technology program, which could have defence applications, is expected to take place in 2024.

Manion notes that Raytheon is also boosting its community involvement through a range of initiatives, which include sponsorships of STEM (Science, Technology, Engineering & Math), apprenticeships and scholarship programs. However, when pressed he admits that they mesh well with the company's long-term interests. "It's been a tough year and a half, but we are starting to see things open up a little bit," says the defence industry veteran. "This is creating an uptick in demand for a skilled workforce. Many people took early retirement during the crisis, and we recognize that we are in competition with other sectors for new talent. That's why we are acting now." ■

Peter Diekmeyer is CDR's Quebec Bureau Chief

ONTARIO'S DEFENCE INDUSTRY

Annual revenues: \$3.8 Billion

Contribution to GDP: \$2.35 Billion

Employees: 10,000+

Defence companies: 300+

Universities with engineering programs: 16

ONTARIO'S AEROSPACE INDUSTRY

Annual revenues: \$6 Billion+

Annual research and development: \$500 million

Employees: 44,000+

Aerospace companies: 200+

Related post secondary programs: 40