

# NOVA SCOTIA'S AEROSPACE & DEFENCE INDUSTRY

BY PETER DIEKMEYER



**N**ova Scotia's rich maritime history, beauty and quality of life make it an ideal place to live.

But there are also solid business reasons why top defence companies are choosing to locate in Nova Scotia.

The province's capital hosts Canada's eastern naval fleet. The country's only shipyard for building combat vessels is located there, and a slew of sector contractors have set up local facilities. Simply

put, there is a lot going on in Nova Scotia's defence industry.

"One of Nova Scotia's key advantages is its size," says Laurel Broten, President and CEO of the province's business development agency, Nova Scotia Business Inc. "We are close-knit, relationships are important, and key decision makers are accessible. We find that our clients recognize and value this advantage and feel the alignment."

Attracted by this collaborative business climate, 12 of the world's top defence companies including General Dynamics Canada, Lockheed Martin, Babcock, Ultra Electronics Maritime Systems and CAE have chosen Nova Scotia as an integral component of their global strategies.

About 10,000 military and civilian personnel work on the Maritime Forces Atlantic defence team alone. There is also a substantial Canadian Army and





Royal Canadian Air Force presence in the area.

According to Harvey Doane, an investment attraction lead at Nova Scotia Business Inc., these factors make Nova Scotia an ideal locale for defence companies to thrive. "The province also has compelling technology and human capital resources, as well as a history of fostering partnerships and cooperation," Doane told CDR. "These combine to form a compelling value proposition for potential investors."

### TEEMING WITH OPPORTUNITIES

Nova Scotia is also teeming with potential opportunities. "We have a strong industrial base centred here," says Doane. "This, coupled with the industry's diverse supply chains and variety of complementary sub-sectors, have made it an ideal location." Nova Scotia's defence sector has established capabilities in sonar and sensing, in-service support, training and simulation and cyber-security.

At the centre of it all is Irving Shipbuilding, which has been selected to build Canada's new fleet of combat vessels for the Royal Canadian Navy.

"It is an exciting time," says Kevin McCoy, the company's president. "Today, our more

---

**The Centre for Ocean Ventures & Entrepreneurship (COVE) helps industry, government and academia collaborate across a variety of initiatives.**

**Photo credit: TJ Maguire**





"Today, more than 1,800 shipbuilders are hard at work completing Canada's first three Arctic Offshore Patrol Ships (AOPS)" says Kevin McCoy, Irving Shipbuilding president.

than 1,800 shipbuilders, are hard at work completing Canada's first three Arctic Offshore Patrol Ships (AOPS) and docking work periods for (several) Halifax-class frigates. This fall we will begin to cut steel on the fourth AOPS, the future HMCS William Hall."

Irving Shipbuilding is also a huge driver of ancillary economic activity in the region. This includes nearly \$1 billion of sub-contract work and other funds that have been distributed to more than 100 Nova Scotia suppliers and organizations, ranging from ABCO Industries, to Bluedrop Training & Simulation, Nova Scotia Community College, and the Centre for Ocean Ventures & Entrepreneurship (COVE).

"This is just the beginning," says McCoy. "We are getting closer to selecting the design for the Canadian Surface Combatant. Over the next few decades, we will construct 15 Surface Combatants (CSC), which in turn will create huge further added benefits."

### THALES WINS BIG WITH AJISS CONTRACT

One major beneficiary of this ancillary work is Thales Canada, which last year was awarded a contract to provide in-service support (ISS) to the AOPS and forthcoming Joint Support Ship (JSS) vessels. That contract included an option to extend services up to 35 years, which would bring its total value to \$5.2 billion making it the largest ISS contract in Canadian history.

Defence, which implies the ability to maintain an edge over one's potential

adversaries, is by definition an innovation and technology-driven field. Nova Scotia's strong base in this area gives Doane a perfect selling point when he pitches the region's assets to defence contractors. "Built on this foundation of technology, we have seen significant investments in the areas of analytics, blockchain, complex systems integration, and cyber security."

Perhaps as a result of these capabilities, defence contractors like Lockheed Martin are having no problem building capable workforces. According to Glenn Copeland,



"Nova Scotia has compelling technology and human capital resources, as well as a history of fostering partnerships and cooperation," Doane tells CDR.

director of business development for Lockheed Martin Canada, "Halifax has been a tremendous resource for us when it comes to finding top talent in the engineering and combat systems design field."

What gives Nova Scotia a competitive edge is how closely academic institutions work with industry. This collaborative approach ensures the workforce of tomorrow's defence industry are well-versed in the latest trends.

One example: enrollments in Dalhousie University's computer science program have nearly doubled from 661 in 2012 to 1,251 in 2017. The university expects it to hit 1,800 in the coming years. Innovations which take place at the university level can flow naturally into defence applications says Kevin Dunn, executive director of Dalhousie's DeepSense project, which provides students, professors and technicians with access to sophisticated computing time powered by IBM, to conduct industry and government-related research that could eventually lead to full employment.

### A SOLID ACADEMIC ENVIRONMENT

Earlier this year DeepSense received \$5.9 million from the Atlantic Canada Opportunities Agency to fund ocean-related big data analytics projects in collaboration with industry, about a third of which will be focused in defence. One intriguing possibility: studying how to leverage ocean sensor data



gathered from civilian applications for use by the Royal Canadian Navy.

However, Dalhousie isn't the only research-driven university. Nova Scotia has 10 universities, a community college system with a strong applied research focus and multiple leading research institutions. Experts say that the province's tax credit system makes it one of the best Canadian locales in which to conduct research operations. As a result, it is also a great place to address the offset obligations often associated with selling to DND. As much as half of all qualified scientific research and experimental development expenditures made in Nova Scotia could qualify for R&D tax credits.

### **PRATT & WHITNEY CANADA INVESTS IN NOVA SCOTIA**

One of the most important characteristics of Nova Scotia's technology leaders relates to the degree to which they are willing to invest in and implement new capabilities. One example is Pratt & Whitney Canada's advanced manufacturing facility where 325 employees produce complex light alloy castings and turbine blades for aircraft engines that can be used in aircraft that have both civilian and military applications.

During 2014 the company invested \$67 million in the facility, which is located adjacent to Halifax Stanfield International Airport. This included the construction of two advanced manufacturing cells, which made it a centre of excellence within the Pratt & Whitney family. "The number of employees will remain constant," says Stephane Turbide, the facility's general manager. "But, output will increase as productivity ramps up."

According to a Pratt & Whitney spokesperson, the recent investments in the Halifax manufacturing facility were related to the PW800 family of engines. One key opportunity relates to future parts for the PW815 engine, which General Atomics is proposing to use on the US Navy's MQ-25 Stingray unmanned carrier aviation air system program (UCASS).

### **QRA TACKLES THE CYBER THREAT**

Jordan Kyriakidis, president of QRA, which builds tools that validate and verify software systems and programs, is another local technology player that is leveraging the region's defence sector, notably its cyber ecosystem. This would include the military's East Coast intelligence centre, which is located in Nova Scotia, coupled with a range of sector players actively engaged in the field



"One of Nova Scotia's key advantages is its size," says Laurel Broten, President & CEO of Nova Scotia Business Inc.

such as BeyondTrust, Bulletproof Solutions, and Secure State Cyber.

"I see tremendous opportunity to build long-term expertise in the integration of software and autonomy into almost all areas that were once considered mechanical domains," said Kyriakidis. "But robustness is crucial as is the physical security of assets from cyber intrusion. We have strong verification and validation at the testing stage for prototypes, but we need to move this capability to later stages of development as well."

Atlantic Canada's aerospace sector, which has deep roots in the region, has also been going strong. For example, last year IMP Group, which according to a company spokesperson provides in-service support work on several RCAF aircraft, celebrated its 50th anniversary.

According to Mike Greenley, MDA's group president, the company's Dartmouth site, which employs 60 people, has also grown considerably this year. Part of the growth stemmed from a contract that the company landed late last year to replace NATO's maritime command and control system. MDA, which is a world leader in space, ISR and communications technology, expects to further expand the Nova Scotia site, if projected work on the Canadian Surface Combatant program pans out as expected.

### **COVE DRIVES INNOVATION IN OCEAN SECTOR**

However, Nova Scotia's defence industry's biggest strength, by far, is the degree to which industry, government and academia are able to collaborate across a wide variety

of initiatives. That's particularly true in research and development efforts such as the DeepSense project referenced above, but also in the Centre for Ocean Ventures & Entrepreneurship (COVE).

With a focus on driving commercialization in the ocean sector, this collaborative facility currently has 31 tenants, according to Jim Hanlon, the facility's CEO. These tenants include Lockheed Martin Canada, Kraken Robotics and several others which hail from the defence sector. "The first tenants will be opening at the end of July," says Hanlon. "But we should start seeing results quickly. When you put that many brains under one roof, it acts like an incubator, in which they all begin building connections, forming supply chains and adding to each other's ideas."

COVE isn't the only initiative driving innovation in the region. Largely led by industry in Atlantic Canada, the Ocean Supercluster is supported federally and will transform Canada's ocean economy, including defence activities, into a digitally-powered, technology driven, knowledge economy. According to the strategy document, the ambition of the Ocean Supercluster is to grow Canada's ocean economy from \$20B to over \$30B by 2050, signalling considerable investments to be made.

### **ACADA PROMOTES ENTIRE REGION**

Another key regional collaboration initiative is the Atlantic Canada Aerospace and Defence Association (ACADA), through which defence organizations in the four Atlantic provinces have pooled their efforts to boost the region as a whole.

Working with partners, Doane remains focused on future initiatives, one of which is DEFSEC Atlantic. One of the industry's biggest trade shows, DEFSEC takes place in Halifax from October 2-4, 2018.

"The event is the perfect opportunity to meet key industry players who all gather under one roof," says Doane. "It's also a great opportunity for participants to experience Halifax and Nova Scotia for themselves."

It all adds up to Nova Scotia being a great place to do business in the defence sector and with major projects like CSC coming online in the coming years we don't expect that prospect to change anytime soon. ■

---

*Peter Diekmeyeris CDR's Quebec Bureau Chief*

---