

# RCAF

CANADA'S AIR FORCE REVIEW

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- YEAR IN REVIEW
- RETURN TO THE "BIG 2"
- BAGOTVILLE'S 75<sup>TH</sup>
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The Royal Canadian Air Force appears to be headed for a period of significant renewal, with recent developments seeming to signal a restored commitment to military funding.

By Martin Shadwick

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Two 408 Tactical Helicopter Squadron CH-146 Griffons fly out of the Chocolate Mountain gunnery range near Camp Pendleton, located in Southern California, during the biennial RIMPAC Exercise in July 2011. **Skip Robinson Photo**

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### Facebook Photo Pick

A CH-149 Cormorant helicopter from 442 Transport and Rescue Squadron in Comox put on a spectacular demonstration at the 2016 Abbotsford International Airshow in British Columbia. Our thanks to photographer **John Chung** for sharing this photo!

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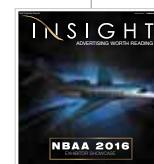
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# A TIME OF Renewed Interest?

BY MIKE REYNO



Publisher Mike Reyno was the only "bluebird" in a sea of red Snowbirds during a recent visit to 2017 spring training in Comox, B.C. **Heath Moffatt Photo**

As *RCAF Today* was going to press in mid-May, the Canadian Armed Forces was awaiting the much anticipated Defence Policy Review that will spell out how the government will address current military capability gaps so it can meet the challenges it faces over the next decade and beyond.

The government's review, which has been in the works since last summer, comes after a report was tabled by the Standing Senate Committee on National Security and Defence on May 8. The report addresses what the chair, Conservative Senator Daniel Lang, called "urgent capability gaps."

Among a slew of recommendations made by the committee, in particular pressing the government to increase defence spending from a mere 0.88 per cent of Canada's gross domestic product (GDP)—the lowest in NATO—to two per cent of GDP by 2028, the report identified a number of capability gaps that need to be urgently filled within the Royal Canadian Air Force (RCAF).

The laundry list of recommendations includes dumping the proposed acquisition of 18 Boeing F/A-18E/F Super Hornets that were slated to fill an interim capability gap, and instead moving forward with a competition to replace the RCAF's aging fleet of 76 CF-188 Hornets with up to 120 new fighters; acquiring a fleet of 24 AH-64 Apache attack helicopters; increasing the number of CH-147F Chinook medium-heavy lift helicopters in service from 15 to 36 helicopters; increasing the number of CH-149 Cormorant search and rescue helicopters in service from 14 aircraft to 21 through the modification of seven VH-71 airframes that were acquired from the United States in 2011; modernizing, or even replacing, 55 of the 85 Bell CH-146 Griffons in service with a proper military utility helicopter (especially one that can keep up with the fast-flying Chinook and perform better in hot and high conditions), like the Sikorsky UH-60 Black Hawk; replacing the CC-150T Polaris and CC-130H(T) Hercules with a new fleet of aerial refuelling tankers; increase the number of CP-140 Auroras being modernized from 14 to 18 aircraft; and acquiring a fleet of medium and long range unmanned aerial vehicles.

While the recommendations made in the report have merit, the committee report is non-binding on the government. In other words, it has no teeth.

However, if we are to believe that the government is going to make a serious investment in the Canadian military after decades of chronic underfunding, the report just might be a prelude to what Canadians can expect to hear when the Defence Policy Review is released prior to Prime Minister Justin Trudeau attending a NATO heads-of-government meeting on May 25.

In a speech made by Defence Minister Harjit Sajjan to the Conference of Defence Associations Institute on May 3 in Ottawa, it was clear that the status quo is no longer acceptable. It's a viewpoint that is only reinforced by U.S. President Donald Trump's assertion that NATO partners must start paying their fair share when it comes to defence spending.

"We are now in the troubling position where status quo spending on defence will not even maintain a status quo of capabilities," said Sajjan. "Current funding has us digging ourselves into a hole, a hole that gets deeper every year. As a percentage of our GDP, we are spending less on defence today than we were in 2005."

Sajjan singled out a number of RCAF-related programs in his speech, including the pressing need for Griffon and Cormorant midlife upgrades. He also made it clear that replacing the Air Force's fleet of 76 CF-188s with just 65 new fighters, and the \$9 billion that was allocated to it by the previous government, is simply not enough if Canada is going to simultaneously meet the sitting government's renewed NATO and NORAD commitments—commitments made by previous governments, but dumbed down over the years.

The RCAF, which maintains the highest percentage of personnel on a high level of readiness in the Canadian Armed Forces, thanks to the missions and roles assigned to it, seems to already be going through what author Martin Shadwick describes in his story on page 32 as a "renaissance." Examples of this include the selection of the Airbus Military C295W as Canada's new fixed-wing search and rescue aircraft; the now fully operational CH-147F Chinook flown by 450 Tactical Helicopter Squadron; the upgrade of all 16 CC-130J Hercules transports with improved navigation, communication and maintenance capabilities; the addition of a fifth CC-177 Globemaster III at 429 Transport Squadron; the major upgrades continuing to be made on 14 CP-140 Auroras to enhance their intelligence, surveillance and reconnaissance capabilities; and the expected deployment of two helicopter air detachments of CH-148 Cyclones by April 2018.

RCAF Commander LGen Michael Hood explained to the Senate committee: "[w]ith the speed of technological advancement of both our adversaries and our allies" it is imperative for the Air Force to strive for innovation, and as such, "[t]he RCAF is going through a time of great renewal."

Is there a renaissance underway in the RCAF? I'll call it a mini-renaissance. There is still a long way to go if the Air Force is going to be able to meet its obligations with a modern, well equipped force for the future. New aircraft, increased fleets, new missions, and new capabilities—this is all good for the RCAF. But just as much emphasis needs to be placed on recruitment and training if it is to meet those obligations.

Is this only the start of what is to come? Will the government finally begin to invest real dollars into the Canadian military to address shortfalls in capability? By the time you read this, we should know. A reasonable expectation is that the Defence Policy Review will be somewhere in between where the Canadian Armed Forces finds itself now, and the recommendations that were made by the Standing Senate Committee on National Security and Defence.



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## FUTURE FORWARD

DESPITE ITS MOST RECENT OPERATIONAL INTERRUPTION, TRAINING IS REPORTEDLY THE BIG CHALLENGE FACING 12 WING SHEARWATER AS IT WORKS TO BRING THE CH-148 CYCLONE ONLINE AS CANADA'S NEXT MARITIME HELICOPTER.

BY LISA GORDON

In spite of the fact that his pilots are currently grounded, the commander of 12 Wing Shearwater in Nova Scotia remains optimistic about the future of the CH-148 Cyclone as Canada's new maritime helicopter capability.

Col Peter Allan told *RCAF Today* recently that both Cyclone manufacturer Sikorsky and BAE, which built the helicopter's flight control system, are "fully engaged" in the ongoing investigation into a March 9 incident that saw a Cyclone experience a "momentary change in the descent rate" during a training mission.

While on the downwind approach to the Shearwater airfield, the 12 Wing crew experienced what the aircraft commander later described as "the feeling of

driving too fast over a very big speed bump."

At the same time, two advisory lights illuminated in the cockpit to indicate an issue with the flight control systems. Although the lights went out almost immediately and the helicopter landed with no damage or injuries, an investigation was launched.

"Normally you'd think you went through turbulence, but with the simultaneous illumination of the lights, we had to dig further," explained Allan.

Data downloaded from the helicopter indicated there had been some incident in the flight control system, prompting the commander of 1 Canadian Air Division to suspend flight operations for the fleet of CH-148 helicopters on March 12, pending

an investigation into the occurrence.

"We don't have a definitive answer yet. They were working in two separate labs trying to replicate the fault in the aircraft," continued Allan. "We've had a few technical updates in the last week and they are making progress on figuring out what the issue is and what it means to the aircraft. However, I don't have a timeline yet as to when they will have a resolution."

At press time on May 12, 2017, no findings had yet been released.

### MARCHING FORWARD

While awaiting the investigation conclusion, Allan said 12 Wing personnel remain focused



A CH-148 Cyclone from 12 Wing Shearwater flies over Nova Scotia's Eastern Passage. **John Clevett Photo**

on training enough aircrew and maintenance technicians to support the CH-148 when it officially takes over from the long-serving Sikorsky CH-124 Sea King, the last of which is set to retire by the end of 2018.

"We're marching forward. My pilots aren't flying, but that's the only impact it's having right now," commented Allan. "The schoolhouse is still going full bore. The technicians are all training. The back end crews are still training because they're in a phase where they are in groundschool and using simulators. We front-loaded groundschool and simulation for the pilots; we're making up where we can."

He confirmed the goal is still to reach initial

operational capability (IOC) with the Cyclone by the spring of 2018, although he acknowledged it's hard to predict how the current operational hiccup will shake out.

"The trick will always be how long it will take to implement the fix, once it has been identified."

Prior to the March 9 incident, Allan reported that the Cyclone program had been making good progress.

"Over the course of the last year at Shearwater, we flew 488 hours on the Cyclone from April 2016 through March 2017," he said. "We had steady growth in the flying rate. We culminated in February 2017 with 80 hours in the month. Those are largely test and evaluation hours but some training, too."

The Royal Canadian Air Force (RCAF) has now accepted a total of 11 CH-148 Cyclones. The first six Block 1.0 aircraft have all been returned to Sikorsky for upgrades, leaving five Block 1.1 helicopters at the base. Two of those were signed back to Sikorsky to support the training centre. The remaining three are operated by 12 Wing's Helicopter Operational Test and Evaluation Facility (HOTEF), which is responsible for operational testing of the new helicopter.

Over the last year, HOTEF has completed preliminary evaluation of the majority of sensors on the Cyclone.

"We have a good sense of what the sensor suites are capable of and how they will operate," affirmed Allan. "We've taken a couple of small deployments with the aircraft to prove all the connectivity and systems required to support the helicopter away from base—doing the mission planning, relying on connection to servers, etc.—and we've demonstrated some good success."

Earlier this year, Sikorsky completed another session of shipboard helicopter operational limitation (SHOL) testing with the Canadian navy, which saw the Cyclone operate in "ugly" Sea State 6 conditions featuring three-metre (9.9-foot) high waves.

"We've seen some photos of the Cyclone on the deck, holding on at what appears to be a 45-degree angle," said Allan. "I'm still awaiting all the final test reports; they will help us define Cyclone operating limits on ships."

Meanwhile, on the training side, 12 Wing's 406 Maritime Operational Training Squadron has now moved into the Sikorsky-owned training facility at

Shearwater, which is scheduled for an official naming ceremony on June 8. Allan said the building will be named in honour of former wartime service crews from 406 Squadron. Eventually, Sikorsky will transfer ownership of the "schoolhouse" to the RCAF.

"We've continued to build on the cadre of instructors to support the beginning of conversion training later this summer," said Allan.

Currently, there are nine HOTEF pilots qualified on the CH-148, along with eight air combat systems officers (ACSOs) and nine airborne electronic sensor operators (AES Ops). On the maintenance side, 45 aviation (AVN) and 36 avionics (AVS) technicians are qualified and more are expected to graduate at the end of April.

## RAPID TRANSITION

Allan said the big challenge for 12 Wing over the coming months will be "training, training and more training."

To facilitate the "fairly rapid transition" from Sea King to Cyclone, 12 Wing will need as many qualified aircrew and maintenance technicians as it can get.

"My first concern is always maintaining a maritime helicopter capability for Canada," noted the Wing commander. "As we make that transition, I'm very focused on making sure we get people trained on the Cyclone before we're out of the Sea King business. Our eyes are on the milestone of IOC in spring 2018, and then getting people out the door quickly on our first named deployment with the Royal Canadian Navy."

Allan added that a sense of excitement pervades the base these days.

"I would say that as we've had more and more success with the Cyclone, there has been a sense of momentum. The helicopter is handling extremely well and pilot feedback continues to be very positive."

He added that testing to date has so far proven the RCAF's initial concept that one pilot can easily manage flying-related duties, leaving the other free to assist with mission systems management.

"Despite today's status, I remain very optimistic about this program," concluded Allan. "We have made a lot of progress in the last year and a half. Everyone is on board and sees the value Cyclone is bringing and the fact that it is here, it is real, it is flying and it is our future."

Crewmembers onboard HMCS Montreal conduct vertical replenishment training with the CH-148 Cyclone helicopter in October 2016. **MCpl Jennifer Kusche Photo**





A new generation of airport surveillance radars has been installed at six primary RCAF airfields. Shown here is the equipment at 8 Wing Trenton, Ont. **Capt Rick Nicholls Photo**

# RCAF completes airport radar RENEWAL PROJECT

BY CHRIS THATCHER

The Royal Canadian Air Force (RCAF) has installed a new generation of airport surveillance radars (ASR) at its six primary airfields. The new primary and secondary radars will improve air traffic control of arrivals and departures as well as aircraft operating in the military ranges.

The radars are replacing a 1970s-era air traffic control system known as TRACS (Terminal Radar and Control System) that was installed between 1979 and 1981 at 3 Wing Bagotville, Que., 4 Wing Cold Lake, Alta., 5 Wing Goose Bay, N.L., 8 Wing Trenton, Ont., 14 Wing Greenwood, N.S., and 19 Wing Comox, B.C.

Though the four-decades-old technology was showing its age, availability of parts rather than radar performance was the primary reason for the \$96 million replacement program, said Capt Rick Nicholls, project director for airfield systems within the directorate of air domain development.

“The radars themselves were phenomenally built,” he said of the Raytheon system. “They were suffering in the latter years due to a deficiency of parts, but the radars themselves were well maintained by the telecommunication technicians.”

While primary radar has not changed significantly over the years, secondary surveillance radar has

improved dramatically, especially for military situational awareness and air traffic management. “With the previous TRACS radar system, it had basically just civilian modes,” said Nicholls.

The new monopulse secondary surveillance radar includes the standard A and C civilian modes, which provide a four-digit transponder code and altitude readout for each aircraft, as well as all five military modes, and Mode S with ADS-B (automatic dependent surveillance—broadcast), which is becoming mandatory in North American and European airspace.

Among other things, Mode S allows air traffic controllers to interrogate a single aircraft, rather than all aircraft in a beam pattern from the interrogating station.

The five military modes are comprised of Modes 1 and 2, which date back to the Second World War and assign two-digit transponder codes to packets of aircraft or aircraft types, such as bombers; Mode 3, similar to Mode C, which allows controllers to assign a specific four-digit number to an aircraft; Mode 4, which provides encrypted IFF (identification friend or foe) interrogation; and Mode 5, an encrypted variant of civilian Mode S, that includes not only call sign data but also fuel, weapon status, and other vital information.

The primary radar has a range of 103 kilometres and the secondary radar can cover 206 kilometres from the airport.

The new ASR next generation systems are being installed by Hensoldt, a subsidiary of Airbus Defence & Space formerly known as Cassidian. Though the company name has changed multiple times since the contract was signed with Cassidian in 2013, many of the key people involved in the project have remained the same, said Nicholls.

The installations, which take about eight months, have been completed in Trenton (August 2015), Comox (March 2016), Cold Lake (August 2016), Goose Bay (November 2016) and Bagotville (March 2017). Greenwood should be completed in June 2017.

A seventh system is being installed at the Aerospace and Telecommunication Engineering Support Squadron at 8 Wing Trenton, which provides the RCAF’s technician training and technical support for airfield equipment.

Nicholls said the new system would also integrate with Nav Canada’s radar network in a more comprehensive way than has previously been possible.

“What we have now is a seamless picture of Canadian radar that we share with each other,” he concluded.

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# REMEMBERING Vimy

A GROUP OF VOLUNTEER BUILDERS, FORMER MILITARY PILOTS AND ONE CURRENT RCAF CAPTAIN PLAYED AN ESSENTIAL ROLE IN HONOURING THOSE WHO FOUGHT AND DIED IN THE BATTLE OF VIMY RIDGE.

BY BEN FORREST

Allan Snowie flew over the Vimy memorial in France on April 9, 2017, as the pilot of a Royal Aircraft Factory S.E.5a replica biplane, part of a five-aircraft formation of Canadian pilots there to mark the 100<sup>th</sup> anniversary of the Battle of Vimy Ridge.

Tired and still processing the event a day later, he struggled at times to explain how it felt. But he admitted it produced an emotional high. As he flew by the monument, he tried not to be mesmerized by what he saw.

“[I was] sitting on the edge of my seat, because in the bumpy afternoon air—I know why they call them kites,” said Snowie, who flew as part of Vimy Flight, an organization of builders, former military pilots and one current Royal Canadian Air Force (RCAF) pilot who participated in the ceremony.

“They get tossed around a bit ... It was a good run, and we all felt very good about it when we got back to our base.”

Along with Snowie’s S.E.5a, the Vimy Flight formation included four Nieuport XI replica biplanes

flew by Dale Erhart, Peter Thornton, Larry Ricker and current RCAF Capt Brent Handy.

They were a key part of Canada’s contribution to the 100<sup>th</sup> anniversary ceremony, which reportedly drew as many as 25,000 people, including Prime Minister Justin Trudeau and Governor General David Johnston.

The Battle of Vimy Ridge is arguably the most celebrated military victory in Canada’s history, and a key moment in the nation’s formation. The four divisions of the Canadian Corps fought together for the first time at Vimy, attacking the ridge from April 9 to 12, 1917, and successfully capturing it from the German army. The toll was considerable: 3,598 Canadians died and 7,000 were injured.

“These ordinary and extraordinary men of the British dominion fought for the first time as citizens of one and the same country,” Trudeau said in French as he addressed the crowd, according to the Canadian Press.

Three Nieuport XI replica Scout aircraft take to the skies ahead of a ceremony in France marking the 100<sup>th</sup> anniversary of the Battle of Vimy Ridge. **Lyle Jansma Photo**

“Francophones and anglophones. New Canadians. Indigenous peoples. Side by side, united, here in Vimy, within the four divisions of the Canadian Corps.”

In 1922, the French government ceded Vimy Ridge and the land surrounding it to Canada in perpetuity. The striking Vimy Memorial was unveiled in 1936 and is a tribute to 11,285 Canadian soldiers killed in France throughout the First World War who have no known graves.

Johnston referenced two massive columns on the memorial in a speech at the 100<sup>th</sup> anniversary ceremony.

“Those spires stand for peace and for freedom,” he said. “They stand for justice and hope. And they remind us that one cannot exist without the other. Without freedom, there can be no peace. Because freedom without peace is agony, and peace without freedom is slavery.”

Vimy Flight was an ambitious effort to honour those who fought and died at Vimy, in a year that



The ceremony reportedly drew as many as 25,000 people, including Canadian Prime Minister Justin Trudeau and Governor General David Johnston. **MCpl Jennifer Kusche Photo**



Pilot Allan Snowie stands with Vimy Flight aircraft packed inside a CC-177 Globemaster III before they were transported to France. **RCAF Photo**

holds extreme significance to Canada as we know it today, marking both the 100<sup>th</sup> anniversary of the battle and the 150<sup>th</sup> anniversary of Confederation.

Along with the four Nieuport XI biplanes and one S.E.5a, the organization transported two Sopwith Pup replica biplanes to France for the ceremony. All seven aircraft were packed into the belly of a 429 Transport Squadron CC-177 Globemaster III and flown from 19 Wing Comox, B.C., to Gander, N.L., before carrying on to Lille, France.

The Nieuports were packed with their wings on but the remaining aircraft were packed with wings off—the only major disassembly required for the journey. Still, making them fit took effort. A post on the Vimy Flight Facebook page compared the packing process to the Tetris video game, in which pieces of various sizes and shapes are fit together into solid, even blocks.

“The Air Force loadmasters have done a great job,” said Snowie. “I think they took it as a personal challenge.”

While the two Sopwith Pups were also originally slated to fly over the Vimy Memorial in France during the 100<sup>th</sup> anniversary ceremony, a decision to change engines meant Vimy Flight was unable to test-fly the second Pup in time for the ceremony.

As a result, the Pups were to be on static display in France, then transported back to Canada with the other aircraft and test flown before a nationwide tour featuring all seven aircraft. The tour is aimed at raising awareness of the Battle of Vimy Ridge and its significance.

All seven aircraft are also expected to take part in Canada Day festivities in Ottawa on July 1.

“I tell people we’ve come to France to commemorate Vimy,” said Snowie. “We’re returning home to celebrate Canada’s 150<sup>th</sup> birthday.”

Vimy Flight grew out of a larger project called

*A Nation Soars: Commemorating Canada’s Great War Flyers*, which is anchored by a trilogy of one-hour documentaries. It also includes a suite of educational initiatives that explore how aviation changed the course of the First World War.

The project’s third documentary, *Flight Path of Heroes*, will focus on the Canadian Corps’ stunning victory at Vimy and is expected to feature footage from Vimy Flight’s visit to France.

Previous documentaries in the series—*Drawn to Victory* and *Wings of Courage*—also featured the Vimy Flight Nieuports in key flying sequences.

Vimy Flight thanked Veterans Affairs Canada, the Royal Canadian Air Force, Air Canada, the Air Canada Pilots Association, and EF Tours for making the journey to France possible.

As for Snowie, he hoped Vimy Flight’s involvement in the anniversary ceremony was a proper salute to those who fought in the battle. While the day was clear and sunny, he said soldiers faced blizzard conditions during the actual battle 100 years ago.

“Some of the pilots got airborne, but they couldn’t mark their targets because of the weather conditions,” he said.

“We arrived here with long johns and heavy flying clothing. We left our jackets down yesterday. We were just wearing flying suits.”

He reflected on how Canada became a nation in a sense through Vimy, with soldiers from many regions and walks of life bonded in war.

“Canada became a nation emotionally that day,” he said. “The guy from Edmonton doesn’t really know the fisherman from Nova Scotia. The Quebecois doesn’t really know who this West Coast character is.”

“But you put them all together in a situation like that, and they’re bonded—bonded by blood.”

The Nieuport XI (pictured) and Royal Aircraft Factory S.E.5a replicas were a key part of Canada’s contribution to the 100<sup>th</sup> anniversary ceremony. **MCpl Jennifer Kusche Photo**



“The striking Vimy Memorial was unveiled in 1936 and is a tribute to 11,285 Canadian soldiers killed in France throughout the First World War.

”



# 2017 Demo Hornet honours Canada 150

The Royal Canadian Air Force (RCAF) unveiled the 2017 CF-188 Demonstration Jet on April 4 at 4 Wing Cold Lake, Alta.

The jet features a striking design that celebrates the 150<sup>th</sup> anniversary of Canadian Confederation. Painting the 2017 demonstration jet was a team effort between 3 Wing Bagotville, Que., which provided the jet and technicians to bring the design concept to life, and 4 Wing, which provided hangar space and support during the painting.

"There will be no doubt during any of our stops

this airshow season that this jet represents Canada and the amazing year we are celebrating," said this year's demo pilot, Capt Matthew Kutryk. "I hope that this jet will inspire all Canadians to chase their dreams as I did because that is what Canada is all about."

The commander of 3 Wing, Col Darcy Molstad, added: "Our talented technicians have outdone themselves, taking what was once a graphic concept on paper and transforming it into an incredible final paint scheme for the CF-18. The teamwork required to get this jet painted is just one example

of how Canadians can come together to produce a spectacular product. We cannot thank 4 Wing enough for their support during this process."

Throughout the year, the Department of National Defence and the Canadian Armed Forces will support Canada's 150<sup>th</sup> anniversary celebrations, participating in many events across the nation.

The upcoming airshow season is a special opportunity for the RCAF and the demonstration team to join Canadians in celebrating shared values, achievements and Canada's place in the world.



The official Canada 150 logo is incorporated into the design of the 2017 Demo Hornet. The logo is composed of a series of diamonds, or "celebratory gems," arranged in the shape of the iconic maple leaf. Each gem symbolizes one of Canada's 13 provinces and territories. **Mike Reyno Photo**

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Mike Reyno Photo

## RCAF SEEKS EX-MILITARY MEMBERS

The Royal Canadian Air Force (RCAF) is actively seeking to re-enrol ex-military members of the Canadian Armed Forces (CAF) who were fully trained in an RCAF occupation, and meet the suitability requirements.

Due to manning shortages, personnel from RCAF occupations are being sought.

The Air Force Intake & Liaison Team (AFI&LT), which is based in Ottawa, works to identify and staff initiatives aimed at improving the re-enrolment of former skilled personnel into the RCAF. In an effort to reduce waiting times the AFI&LT is working closely with the Canadian Forces Recruiting Group and the career managers to expedite re-enrolment.

For more information or for re-enrolment, please contact the AFI&LT.

### OFFICERS:

Please contact the AFI&LT team:

Email: AFILT-EALFA@forces.gc.ca

Phone: 1 866-355-8195

### NON COMMISSIONED MEMBERS:

Please contact the AFI&LT team:

Email: AFILT-EALFA@forces.gc.ca

Phone: 1-877-877-2741

# TOM JENKINS appointed honorary colonel of 409 Squadron

Canadian innovator P. Thomas (Tom) Jenkins, OC, CD is the new honorary colonel of 409 Tactical Fighter Squadron, located at 4 Wing Cold Lake, Alta. Honorary Colonel Jenkins assumed the appointment from outgoing Honorary Colonel Stan Schwartz at a ceremony on April 7, 2017.

Jenkins is an author and a pioneer in information technology with applications in business, government and education; he has served the Government of Canada as chair of reports on innovation, procurement, and research and development; and he is the 10<sup>th</sup> chancellor of the University of Waterloo.

Jenkins is the board chair at OpenText Corporation, Canada's largest software company; chair of the National Research Council of Canada; and chair of the Ontario Global 100. He was invested as an Officer of the Order of Canada for his contributions to education and innovation in Canada.

"He's an excellent fit for 409 Squadron," said LCol William Radiff, commanding officer of 409 Squadron. "He has time in the military, through the ranks and as an officer, so he understands our experience from that perspective."

"From a leadership perspective, he has so much experience in business and politics. He has a wealth of information; he's very savvy. He travels

extensively; he has a broad network and broad experience around the globe. This will be helpful in his role advising me," continued Radiff.

Jenkins spent some time in uniform as an air cadet, as an Air Reserve non-commissioned officer and officer, and as a cadet instructor. He served as the honorary lieutenant-colonel and honorary colonel of the Royal Highland Fusiliers of Canada Infantry Regiment, located in Cambridge, Ont., from 2009 to 2015.

He is also a member of the advisory council of the Royal Canadian Air Force.

Jenkins has pioneered technologies that are used to manage digital information. He also co-wrote the book *Ingenious*, a history of innovation in Canada, with His Excellency David Johnston, Governor General and Commander-in-Chief of Canada.

Radiff said Jenkins is excited about his new appointment.

"He really wants to be the honorary colonel of a fighter squadron," he said. "His first beer was in Club 41 [the junior ranks mess at Cold Lake] when he was a private, so he's happy to come home to those Cold Lake roots."

Jenkins and his family live in Canmore, Alta.



Incoming 409 Squadron Honorary Colonel Tom Jenkins (right) reaches to shake hands with outgoing Honorary Colonel Stan Schwartz at the April 7, 2017, investiture ceremony presided over by LCol William Radiff, squadron commanding officer. Cpl Justin Roy Photo

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# RCAF marks 100<sup>th</sup> anniversary of military pilot training in Canada

BY JOANNA CALDER

In 2017, the Royal Canadian Air Force is marking the 100<sup>th</sup> anniversary of the first military pilot training in Canada.

The Royal Flying Corps Canada (RFCC) was established in late January 1917 to recruit and train Canadians for service in the RFC during the First World War. The first purpose-built and largest military aerodrome was constructed at Camp Borden, near Barrie, Ont., in little more than two months. The first cadets arrived there for training on March 28, 1917, and the first flight took place on March 30, 1917.

Commemoration of the RFCC will centre on 16 Wing Borden, Ont. Events will include a memorial service on April 7 at Dorchester, Ont., for the first cadet killed during training at Camp Borden and the rededication of a memorial cairn and an open house at Borden on June 2 to 3.

The RFCC provided the first military pilot training to take place in Canada. Previously, Canadians who wanted to join the RFC generally transferred from the army or obtained a basic flying certificate from a private company and then travelled to Great Britain in hopes of being selected. In the same manner, Canadians who wanted to join the Royal Naval Air Service had to qualify as a pilot before enlisting.

Although the program was run by military staff from Great Britain, by the time the Armistice was declared on Nov. 11, 1918, it was Canadian in all but name. An estimated 70 per cent of the instructors and a large percentage of the non-flying staff were Canadians. As well, the training program employed the Canadian-built JN-4 aircraft, built by Canadian Aeroplanes Limited with an engine manufactured in the United States.

Furthermore, the training program influenced the establishment of the British Commonwealth Air Training Plan (BCATP), arguably Canada's most important contribution to the Second World War. However, this organization, unlike its First World War counterpart, would be developed, administered and commanded entirely by Canadians.

"The Royal Flying Corps Canada, established only eight years after Canada's first controlled, powered, heavier-than-air flight took place in Baddeck, N.S., had a powerful effect on 'airmindedness' in Canada. Air and ground crew came from across Canada as our nation undertook, for the first time in its history, a complex aviation project that included both manufacturing and training," said LGen Mike Hood, the commander of the Royal Canadian Air Force.

"As we mark the 100<sup>th</sup> anniversary of the program, we honour the service and sacrifice of the Canadian

Members of the first graduating class of the Royal Flying Corps Canada at Camp Borden, Ont., in May 1917. LAC/DND Photo



pilots who took their skills to Europe and eventual victory, as well as the service of the men and women who worked as instructors, groundcrew and support staff during this ground-breaking program."

The RFCC, which became the Royal Air Force Canada (RAFC) on April 1, 1918, when the RFC and the Royal Naval Air Service amalgamated to form the Royal Air Force, was established in southern Ontario due to the relatively mild climate. Three flying wings conducted intermediate and advanced training: Camp Borden (the largest training facility and the only location that still exists as a military establishment); Deseronto (with two airfields at Camp Mohawk and Camp Rathbun); and North Toronto (with two airfields at Leaside and Armour Heights). Other locations included Toronto (Recruit Depot and School of Aeronautics), Long Branch (Cadet Wing), Hamilton (Armament School), and Beamsville (School of Aerial Fighting).

By the end of the war, 9,200 cadets had been enlisted and 3,135 had graduated. Of these, about 2,500 had gone overseas and another 300 were ready to depart when fighting ended. As well, 187 observers were trained, of whom 85 had been sent to Europe. More than 7,400 were trained as "mechanics" (groundcrew) to support the student pilots. More than 1,000 women had been employed. In addition, thousands were employed in the manufacture of the JN-4 training aircraft in Toronto.

The RFCC was a trail blazer in the employment of women, hiring more than 1,000 civilian women who worked chiefly as mechanics and drivers.

In addition to training Canadians, the RFCC trained approximately 400 pilots and an estimated 1,600 groundcrew for the American forces. In exchange, the RFCC conducted winter training at Fort Worth in Texas. Of more than 22,000 Canadians who served in the RFC, RAFC or RNAS during the First World War, more than two-thirds were graduates of the Canadian training program.

While two of the RFCC's wings were training in Texas during the winter of 1917 to 1918, the third wing, left behind in Canada, experimented with winter flying and the use of skis on the aircraft. These pioneers proved, for the first time, that it was possible to conduct training in Canadian cold weather conditions.

"[The pilots' and ground tradesmen's] exposure to aviation and their knowledge of it permeated the public consciousness in the interwar years and helped foster a climate sympathetic to the role of the aeroplane in Canadian development and communications," said S.F. Wise, historian and author of *Canadian Airmen and the First World War: The Official History of the Royal Canadian Air Force Volume I*.

"It is hardly too much to say that [the RFCC] was the single most powerful influence in bringing the air age to Canada."

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# 2016: MOMENTS & MILESTONES

THE RCAF MET ITS OPERATIONAL COMMITMENTS AND COMPLETED A NUMBER OF IMPORTANT FUNCTIONS, APPEARANCES AND HISTORICAL MILESTONES IN 2016. HERE, WE REVISIT JUST A FEW OF THE YEAR'S HAPPENINGS.

A CC-130 Hercules aircraft lands at CFB Alert, Nunavut, after a fuel run during Operation Boxtop on Oct. 4, 2016. **Cpl Ryan Moulton Photo**



The 2016 CF-18 Demo Hornet sported unique tail and body art to honour the British Commonwealth Air Training Plan, while the 11 Snowbird CT-114 aircraft each displayed a BCATP logo. **Mike Reyno Reyno**



If anyone thought the operational tempo in the Royal Canadian Air Force (RCAF) would slow down after Canada withdrew from Afghanistan in 2014, they were certainly mistaken.

Since then, the Canadian Armed Forces (CAF) has been involved in a wide variety of missions, both at home and abroad. Currently, Canada is participating in 30 military operations around the globe and a number of regular and recurring exercises. In addition to RCAF-heavy airpower missions, it's a sure bet that wherever our troops go, they'll need the logistical and operational assistance of the Air Force.

The year 2016 proved to be no different. The RCAF met its operational commitments and completed a number of important functions, appearances and historical milestones. Here, we revisit just a few of the happenings in 2016.

## **BRITISH COMMONWEALTH AIR TRAINING PLAN (BCATP) COMMEMORATION**

In 2016, the RCAF honoured Canada's greatest contribution to the victory of Allied forces during the Second World War—the British Commonwealth Air Training Plan (BCATP)—which ran from 1939 to 1945.

2016 was selected to celebrate the five-year-long effort because the first of the Canadian squadrons that were established as a result of the BCATP were formed 75 years ago, in 1941.

These "400-series" squadrons continue to form the Royal Canadian Air Force of today; in essence, the RCAF as we know it came into existence 75 years ago as a direct result of the air training plan.

The 400-series squadrons were established because of a brief

clause in the BCATP agreement known as "Article XV:" two vaguely worded but pivotal sentences in the history of the RCAF:

"The United Kingdom Government undertakes that pupils of Canada, Australia and New Zealand shall, after training is completed, be identified with their respective Dominions, either by the method of organizing Dominion units and formations or in some other way, such methods to be agreed upon with the respective Dominion Governments concerned. The United Kingdom Government will initiate inter-governmental discussions to this end."

The agreement was signed on Dec. 17, 1939, and training began in April 1940. Meanwhile, Canada and Great Britain entered negotiations to create at least 25 RCAF squadrons overseas, in addition to the three that had already been deployed. On Jan. 7, 1941, representatives of the two nations signed a supplementary agreement governing the formation of the squadrons, which began coming into existence on March 1, 1941.

During the First World War, Canadians flew as individual members of the British forces; a Canadian Air Force did not exist. This time, however, as a result of Article XV and the 1941 sub-agreement, a large percentage of RCAF aircrew overseas would fly in Canadian squadrons, under Canadian command.

The new squadrons were numbered from 400 to 449. On March 1, 1941, the squadrons that were already overseas—1, 110 and 112—were renumbered as 401, 400 and 402 Squadrons, respectively. The first new squadron—403 Squadron—was formed on March 1 and others soon began making their appearance.

Many of those squadrons, which began their service 75 years ago as a result of the BCATP, continue to fly to this day.

Collectively, the two RCAF demonstration teams appeared at more than 70 venues in Canada and the United States in 2016. **Mike Reyno Photo**



### RCAF DEMO TEAMS – 2016 SEASON

Throughout the show season, the RCAF recognized Canada's leadership of the British Commonwealth Air Training Plan (BCATP), which was critical to Allied success in the Second World War. The 2016 CF-18 Demo Hornet had unique tail and body art to illustrate this theme, and the 11 Snowbird CT-114 aircraft each displayed a BCATP logo.

Both teams represented Canada as ambassadors across North America, demonstrating the outstanding teamwork, excellence, discipline and dedication inherent in the women and men of the CAF.

The RCAF air demonstration teams concluded their programs for 2016 during the weekend of Oct. 14, after collectively appearing at more than 70 venues in Canada and the United States over the summer.

The Canadian Forces Snowbirds performed their year-end show for military families on Oct. 14 at 15 Wing Moose Jaw in Saskatchewan, noting the CAF was marking 25 years of service provided by the Military Family Services Program. The CF-18 Demonstration Team returned home that same weekend.

### AIRSTRIKE OPERATIONS CEASE IN IRAQ AND SYRIA – FEB. 15, 2016

The Royal Canadian Air Force ceased CF-188 Hornet airstrike operations as part of Operation Impact on Feb. 15, 2016, as the CAF refocused its contribution to the Middle East Stabilization Force—the multinational coalition to dismantle and ultimately defeat Daesh.

Also in 2016, a detachment of up to four CH-146 Griffon helicopters deployed in May to provide in-theatre tactical transport of Canadian troops, equipment and supplies. The Griffons are also capable of conducting casualty evacuations if required.

"I'm proud of the efforts of our CF-188 aircrews and all those who supported airstrike operations. I appreciate greatly their contribution and that of all members who have deployed on Operation Impact," said Defence Minister Harjit S. Sajjan. "Canadians owe you and your families a debt of gratitude for your service and sacrifice."

During their mission—which lasted from Oct. 30, 2014 to Feb. 15, 2016—the CF-188s conducted 1,378 sorties.

A CH-146 Griffon helicopter flies over an Iraqi village during Operation Impact in northern Iraq on Nov. 23, 2016. **DND Photo**



The refocused approach for Operation Impact saw the continuation of air-to-air refuelling and aerial intelligence, surveillance, and reconnaissance missions in support of coalition air operations. It also intensified CAF efforts to train Iraqi security forces and to support coalition and regional partners in the campaign against Daesh.

The RCAF's six CF-188 Hornets, along with associated aircrew and support personnel, departed the region in a phased approach.

"In preparing for and conducting airstrike operations, our members responded quickly and effectively to contribute to efforts to halt the spread of [Daesh] and degrade the group's capabilities," noted Gen Jonathan Vance, Chief of the Defence Staff.

As of May 6, 2017, the RCAF's CC-150T Polaris air-to-air refueller had conducted 732 sorties, delivering some 43,200,000 pounds of fuel to coalition aircraft; as well, up to two CP-140 Aurora long-range patrol aircraft had conducted 784 reconnaissance missions.

## FORT MCMURRAY WILDFIRES – MAY 2016

An RCAF CH-147F Chinook helicopter delivered 8,200 pounds of food, water, and other relief supplies to Fort McKay First Nation on May 3, 2016. The mission marked the first time the CH-147F was used on a domestic humanitarian operation. The aircraft, from 450 Tactical Helicopter Squadron in Petawawa, Ont., joined four CH-146 Griffon helicopters and a CC-130J Hercules in support of relief efforts.

The CH-147F Chinook was part of Joint Task Force West's Air Task Force, which worked to evacuate people, transport emergency response personnel, conduct search and rescue missions, deliver emergency supplies, and fly reconnaissance and night surveillance missions.

The helicopter was deployed under Operation Lentus, the CAF contingency plan that outlines the joint response to provide support to provincial and territorial authorities in cases of major natural disasters.



Members from 417 Combat Support Squadron survey the damage created by the wildfires in the Fort McMurray area on May 4, 2016.  
**Mcpl VanPutten Photo**

French Air Force M2000 Mirage fighters and RCAF CC-130J Hercules transports prepare for take off as a CC-177 Globemaster lifts off from the runway behind them during Exercise Maple Flag 2016. **Cpl Ian Thompson Photo**



RIMPAC 2016 marked the first time a detachment of Canadian tactical aviation helicopters would participate. This included five Edmonton-based 408 THS CH-146 Griffons and two 450 THS CH-147F Chinooks (shown here) based in Petawawa, Ont. **Skip Robinson Photo**

## MAPLE FLAG 49 – MAY 30 TO JUNE 24, 2016

Exercise Maple Flag 49, held at 4 Wing Cold Lake, Alta., brought together up to 1,300 CAF personnel in participant or supporting roles, and more than 400 personnel from five allied and partner nations, along with multiple aircraft, including Canadian CF-188 Hornets, CH-146 Griffon helicopters, CP-140 Auroras, CC-177 Globemaster IIIIs, CC-130 Hercules and contracted Dornier Alpha Jets.

Additional air assets from the U.S., the U.K., France, Germany and Belgium were on hand in 2016.

The annual exercise takes place primarily inside the Cold Lake Air Weapons Range (CLAWR). This unique airspace permits the use of a variety of simulated and live weapons systems, as well as supersonic flight.

The goal is to prepare Canadian and international aircrew, maintenance and support personnel for operations in the modern aerial battlespace. Participants operate within a fictitious scenario in which they fight against simulated threats using the latest in tactics, weaponry, and technology.

The 2016 scenario presented a conflict between two fictitious nations. The nation of Lemgo had declared independence from the larger nation of Stromia. Stromia considered Lemgo a renegade province and had begun to mass troops and aircraft near the fledgling Lemgoese nation earlier in the year. After Stromian forces entered Lemgoese territory, a coalition of nations lead by Canada deployed into Lemgo to protect their independence.

The part of the Stromian Air Force was played by pilots from Discovery Air Defence Services, a.k.a. "Top Aces."

The goal was to hone their skills within a realistic, evolving, and challenging operating environment and it was as close as an exercise can get to the real thing.

Ten nations sent personnel as part of the International Observer Program during the second period of the exercise, including Australia, Chile, India, Israel, the Philippines, South Africa, South Korea, Sweden and Saudi Arabia.

## RIMPAC 2016 – JUNE 30 TO AUG. 4, 2016

Canada's participation in the world's largest international maritime exercise, RIMPAC 2016, took place from June 30 to Aug. 4, 2016.

More than 1,500 Canadian sailors, soldiers, airmen and airwomen participated in the United States Navy-led exercise in and around the Hawaiian Islands and Southern California. The 2016 iteration brought together 25,000 personnel, 45 ships, five submarines, and more than 200 aircraft from the armed forces of 27 nations.

During RIMPAC, CAF personnel filled key positions in the exercise. This included BGen Blaise Frawley of the RCAF, who was the Combined Force Air Component Commander overseeing the operations of the more than 200 aircraft in the exercise.

This was the 25<sup>th</sup> iteration of RIMPAC, which is held every two years. The CAF deployed maritime, land and air components, with the air task force including eight CF-188 Hornets, one CC-130 Hercules, and one CP-140 Aurora; a maritime helicopter detachment; and a tactical aviation detachment with four CH-146 Griffons and two CH-147F Chinooks.

"RIMPAC 2016 marks the first time the Royal Canadian Air Force deployed an Air Task Force composed of elements from every one of Canada's air combat capabilities," said Frawley last year. "It was an honour and a privilege to serve as the RIMPAC 2016 Combined Forces Air Component Commander, and to see our airwomen and airmen integrate seamlessly into the multinational contingent."

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## AUTHORITY FOR DIRECTOR GENERAL SPACE TRANSFERRED TO RCAF – JULY 27, 2017

On July 27, 2016, responsibility for the Director General Space organization was transferred to the RCAF during a brief ceremony at the Canada Aviation and Space Museum in Ottawa.

Col (retired) Chris Hadfield, a former member of the RCAF and the first Canadian commander of the International Space Station, sent a recorded message that was played during the ceremony.

“Since [the flight of the Silver Dart in 1919] our technology has steadily improved our ability to move into the third dimension. . . It’s a wonderful, logical evolution that today we are celebrating the transfer of responsibilities for the Canadian Armed Forces space domain to the Royal Canadian Air Force.”

The Director General Space is responsible for a comprehensive defence space program aimed at exploiting the medium of space to support Canada’s national interests, on behalf of the Minister of National Defence. The organization is



the focal point for all space development activity within the department. Specifically, its mission is to “develop and lead Canada’s space program to carry out Canada’s national global defence, security and sovereignty responsibilities.”

“The security environment in which we operate is ever-changing,” said LGen Guy Thibeault, then-VCDS. The decision to move ahead with these changes to enhance command, control and oversight of DND’s space program is based upon the “recognition that the criticality of the space capabilities upon which we rely for all aspects of our military activities . . . are essential aspects of our future forces.”

“This is the right time and the right way to align the Canadian Armed Forces for future success in the space domain.”

“I am very pleased to see the RCAF taking responsibility for DND’s space [program],” Canadian astronaut LCol Jeremy Hansen, a member of the RCAF, told the assembled crowd. “There are significant challenges in space and as leaders in the RCAF it is imperative that you understand your role in ensuring the effectiveness of that [space] infrastructure for Canadians. This is a significant call; I can think of no better organization to lead it.”

“This is the day that the RCAF fully embraces our motto: *Sic Itur Ad Astra* – Such is the pathway to the stars,” said LGen Mike Hood, commander of the RCAF. “I see this as a really important milestone to allow us to pivot and be ready for the challenges of the future.”

“I welcome DG Space into the RCAF family. We’re happy to have space come [to the RCAF] as a function and we think it’s going to be a transformational step in the long history of the RCAF.”

## OPERATION NANOOK 16 – AUG. 21 TO SEPT. 2, 2016

About 850 Canadian military members and civilians served on Operation Nanook 16. It took place near the Whitehorse and Haines Junction area of Yukon and in Rankin Inlet, Nunavut. The CAF sent in land, sea, and air units. This included military members for command, staff and support. Civilians from federal and territorial organizations also joined in.

Operation Nanook 16 took place in two parts. One was a safety exercise. It featured a whole-of-government response to a simulated earthquake. The other was arctic security training. This included military patrols, search and rescue training, and simulated combat exercises. The CAF showed that it could work well in the North with other partners. This is an important capability in a real emergency.



#### CLOCKWISE FROM FAR LEFT:

The “transfer of command authority” ceremony for Director General Space took place July 27, 2016, at the Canadian Aviation and Space Museum in Ottawa. Responsibility for the space mandate within National Defence was transferred from the Vice Chief of the Defence Staff (VCDS) to the Commander of the RCAF. Signing the transfer of authority documents are LGen Guy Thibeault (left), VCDS, and LGen Mike Hood, Commander RCAF. **Cpl Alana Morin Photo**

Now that it is responsible for developing and leading Canada’s space program, the RCAF is truly living its motto, *Sic Itur Ad Astra* – Such is the pathway to the stars. **NASA Photo**

The 2016 Battle of Britain memorial ceremony featured a fly-past of both current RCAF aircraft and historical airplanes from Vintage Wings of Canada in Gatineau, Que., and the Canadian Warplane Heritage Museum in Hamilton, Ont. **Cpl Alana Morin Photo**

Members of 12e Régiment blindé du Canada and a member of 1st Canadian Rangers Patrol Group disembark a CH-147 Chinook helicopter in the vicinity of Haines Junction, Yukon, during Operation Nanook 2016. **MCpl Mathieu Gaudreault Photo**



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## 76<sup>TH</sup> ANNIVERSARY OF THE BATTLE OF BRITAIN – SEPT. 18, 2016

The Royal Canadian Air Force marked the 76th anniversary of the Battle of Britain on Sept. 18, 2016, with a ceremony held at the Canada Aviation and Space Museum in Ottawa. Second World War veterans and current RCAF personnel marched alongside Royal Canadian Air Cadets, accompanied by the music of the Central Band of the Canadian Armed Forces.

“Our people are at the core of every successful mission. Today we honour our RCAF personnel who, 76 years ago, fought alongside our allies with great determination—out-numbered but not out-spirited,” said the commander of the RCAF, LGen Mike Hood, at the ceremony.

“The Battle of Britain was a turning point for the Allies during the Second World War, directly attributable to the commitment and bravery of the pilots and groundcrew who seized victory from the jaws of defeat during the dark days of 1940,” he continued. “It was also a turning point for our Air Force—the first time in history an RCAF squadron had taken part in combat action. Today, we honour their sacrifices and every day we strive to be worthy of their legacy of valour.”

The ceremony also featured a fly-past of both vintage and current RCAF aircraft from Vintage Wings of Canada in Gatineau, Que., and the Canadian Warplane Heritage Museum in Hamilton, Ont., including the 442 Squadron Mustang, the Robert Hampton Gray Corsair, and the Mynarski Avro Lancaster. Current RCAF aircraft included two CF-188 Hornets and the Government of Canada-configured CC-150 Polaris, which transports high-ranking government officials and foreign dignitaries as well as Canadian Armed Forces personnel.

More than 100 Canadians flew in the Battle of Britain from July to October 1940. Hundreds more served as groundcrew. Twenty-three Canadian pilots lost their lives during the battle, which is deemed to have lasted from July 10 to October 31, 1940.

The Battle of Britain marked the first time that a formed RCAF squadron (No. 1 Fighter Squadron, later renamed 401 Squadron) entered combat in the Second World War. Individual Canadians had flown with Royal Air Force (RAF) squadrons during the First World War and earlier in the Second World War. Canadian pilots also flew during the Battle of Britain with the RAF’s 242 “Canadian” Squadron and other RAF squadrons.

Historians have described the battle, which involved nearly 3,000 allied aircrew, as the turning point of the Second World War. Described by Sir Winston Churchill as Britain’s “finest hour,” the Allied victory over the Nazi forces by the end of the Battle gave hope to Britain and northern Europe.



In November, the Canadian government announced it would investigate the purchase of an interim fleet of 18 Super Hornet fighters from Boeing. **Jeff Wilson Photo**

RIGHT: Cpl Brett Guitard (left), Leading Seaman Garnet Robinson, Cpl Yvette Cedeno and Aviator Alain Fortier serve as sentries at the memorial cairn during its dedication marking the 25<sup>th</sup> anniversary of the crash of Operation Boxtop Flight 22. The cairn was raised on the crash site, about 16 kilometres south of Canadian Forces Station Alert, on June 15, 2016.

**Sgt Paz Quillé Photo**



### **BOXTOP 22 CRASH COMMEMORATION – OCT. 30, 2016**

A ceremony was held on Oct. 30 at 8 Wing Trenton's National Air Force Museum of Canada to remember the CC-130 Hercules that crashed near Canadian Forces Station (CFS) Alert 25 years ago.

During the service, a cairn was unveiled that commemorates the five people who lost their lives in the crash, the survivors, and the rescuers who risked everything to save them.

On Oct. 30, 1991, Boxtop Flight 22 crashed with 18 people on board during final approach to CFS Alert. The flight was part of Operation Boxtop, the bi-annual resupply of the station.

Logistics officer Capt Judy Trépanier; CANEX regional services manager MWO Tom Jardine; supply technician WO Robert Grimsley, and traffic technician MCpl Roland Pitre died in the crash, while the aircraft's commander, Capt John Couch, succumbed to hypothermia after leading the survival effort.

The ceremony was attended by many family members of those who died, survivors of the crash, and many who partici-

pated in the search and rescue effort—as well as community members and Canadian Armed Forces leadership.

"We lost some fantastic Canadians on that day 25 years ago. For families and friends, time has not softened the loss," said LGen Mike Hood, commander of the RCAF. "Survivors bear the emotional and physical scars. And the selfless rescuers still remember that day. Every day our men and women operate in the High Arctic, and we must remember the unique challenges that environment presents as we fulfil our role assuring Canada's sovereignty."

The 1,133-kilogram cairn, shaped like the tail of the crashed Hercules, had been flown to CFS Alert in June and subsequently slung via CH-147F Chinook helicopter to the crash site, 16 kilometres south of the station. It was dedicated as it stood next to the wreckage of the downed Hercules. The cairn now serves as a permanent memorial next to the Hercules in the airpark at the National Air Force Museum of Canada, accessible to all those affected by this crash as well as the Canadian public.

### **INTERIM SUPER HORNET ANNOUNCEMENT – NOV. 22, 2016**

Defence Minister Harjit Sajjan announced on Nov. 22 that Canada faced an immediate capability gap in its fighter force that it is currently unable to simultaneously meet its NATO and NORAD commitments.

Consequently, the government outlined a three-part plan, involving the launch of an open competition to determine Canada's next fighter jet; negotiations to purchase an interim fleet of 18 Super Hornet fighters from Boeing; and necessary maintenance to extend the life of the current CF-188 Hornet fleet.

On March 13, 2017, Canada sent a letter of request to the U.S. government, outlining its requirements in order to green light a Super Hornet purchase. The Americans are expected to reply by this fall, and negotiations could begin as early as the end of 2017.

In the meantime, the Senate defence committee has urged the Trudeau government to proceed directly to an open competition without the purchase of an interim fleet.

At the time of writing in early May, the results of the long-awaited Defence Policy Review was expected to be released within weeks.

### CF-188 HORNET CRASH – NOV. 28, 2016

The RCAF lost Capt Thomas McQueen, 29, of Fisherville, Ont. [near Hamilton], when his CF-188 Hornet crashed during an air-to-ground training exercise inside the Cold Lake Air Weapons Range in Saskatchewan.



Sadly, the RCAF lost Capt Thomas McQueen, 29, when his CF-188 Hornet crashed during a training exercise inside the Cold Lake Air Weapons Range on Nov. 28, 2016. **DND Photo**

McQueen was remembered as a leader among his peers and a consummate professional who will be forever missed.

"We have lost a member of our RCAF family, and it hurts," said LGen Michael Hood, commander of the RCAF, in a statement following the accident.

"We will support the family of Capt McQueen, and his squadron, to the fullest. And while the investigation determines the cause of this incident, I commend our men and women who through their grief will continue to serve Canada to their fullest. Thomas, we will miss you."

The investigation was still ongoing at the time of publication and a cause for the crash had not yet been released.

### C295W SELECTED AS NEXT FWSAR

#### PLATFORM – DEC. 8, 2016

Following a period of aircraft testing in March 2016 and a lengthy procurement process that has run hot and cold over the last 14 years, the Canadian government announced the selection of the Airbus C295W as the country's next fixed-wing search and rescue (FWSAR) aircraft late in 2016.

Scheduled to replace the aging CC-115 Buffalos and the CC-130H Hercules on SAR duty, the \$2.4 billion contract includes 16 aircraft (the first delivered in 2019 and the last in 2022); construction of a new training centre in Comox, B.C.; and options to provide maintenance and support services for an additional 15 years, bringing the total value to \$4.7 billion.

Using computer modelling, the C295W was assessed against more than 7,000 actual search and rescue calls to which the RCAF has responded in the past five years. While it and the competing Leonardo C-27J Spartan were both deemed compliant, Public Services Minister Judy Foote told *RCAF Today* at the announcement ceremony that "it came down to the cost."

With the announcement that Airbus' C295W will be Canada's next fixed-wing search and rescue platform, the Canadian government concluded a torturous procurement decision that has dragged out over the past 14 years. **Airbus Image**



# Meet the CHIEF



RCAF CHIEF WARRANT OFFICER GÉRARD POITRAS DISCUSSES HIS LONG AND SATISFYING JOURNEY TO THE UPPER RANKS OF THE CANADIAN ARMED FORCES.

BY KEN POLE

Canadian military recruiters relied for years on the slogan “there’s no life like it,” and it’s a pitch with which Gérard Poitras, chief warrant officer (CWO) of the Royal Canadian Air Force, would agree. His 34-year career has taken him from New Brunswick to National Defence Headquarters in Ottawa, with stops in some 60 countries in between.

As CWO, he’s tied into a network of colleagues within the RCAF and allied air forces, as well as within the Canadian Armed Forces (CAF) generally. Warrant officers and CWOs interact closely with their officers. Poitras’ is LGen Mike Hood, commander of the RCAF, who has an office nearby at National Defence Headquarters (NDHQ) in Ottawa and whom he sees formally and informally on a regular basis.

While Hood’s mandate is advising the chief of the defence staff, Gen Jonathan Vance, an Army careerist, on all things RCAF, Poitras keeps his own boss in touch with what’s going on down through the ranks, as do his counterparts in other commands.

“We meet about monthly as part of the Chief Warrant Officers Council,” he said in an exclusive interview for *RCAF Today*. “We discuss any and all issues that are relevant to the NCMs (non-commissioned members) across all environments because we also want to attack issues as they arise or share best practices.”

“It’s a very open forum; we’ve become very good friends. We’ve all known each other for some years because as you get promoted, you get to know who the players are. Of course, I always bring an Air Force flavour to the meeting.”

Poitras explained that CWOs have three distinct roles: co-stewards of their commanders’ professional environments; custodians of the non-commissioned members corps; and as part of the leadership team. “As part of our leadership team, I’m responsible for morale, welfare, the well-being, the professional development, the discipline and deportment of all the personnel employed in the Air Force.”

As for meetings with Hood, there is no set schedule. “I had a chat with him about 45 minutes ago, off-the-cuff because his door was open and I walked in,” said Poitras. “We have a weekly meeting where all the generals and myself will sit with the commander and discuss issues. But I am one of the very few individuals who will walk into his office at any time to discuss whatever issue I feel

Appointed in 2015, RCAF Chief Warrant Officer Gérard Poitras expects to leave his current post next year. His 34-year military career has taken him all over the world. What’s next? Time will tell. **DND Photo**

should be brought up. It's mostly personnel-related."

He said "the beauty" of being a CWO is that he can "reach down to find out what's happening on the ground" at the lower end of the RCAF hierarchy. That can be through a unit-level CWO or even to junior-rank individuals.

"It's expected of me," he said, adding that this is never meant to bypass the customary chain of command. "It's never meant to be disrespectful to any officer or commanding officer; it's just the way we do things. My job is about taking care of people, understanding what's happening here, there and everywhere."

His job can also require him to explain Hood's strategic positions. "I can say, 'This is what this actually means to you; this is where the Air Force is going,' so that they can buy in and work towards the commander's vision."

Poitras chuckled at the career track which got him to where he is today. Although his older brother had joined the army while Poitras was still in high school, he wasn't ready to simply follow suit until he and a friend went to a recruiting centre in 1983.

After a few tests, they offered training as a traffic technician. "I had no idea what it was going to be like; but, at the end, they said, 'Oh, by the way, you can go flying.' I said, 'All right, that's what I want to do' . . . and that's why I joined."

However, after that initial training, he found himself at Canadian Forces Base (CFB) Chatham, N.B., about 70 kilometres from where he grew up in the Acadian Peninsula community of Tracadie.

"I'd told everybody I was going to join the Air Force, see the world, and they sent me back home," he said, chuckling at the recollection. "My first job was behind a desk, moving personnel and their belongings, which is part of the traffic tech trade."

But he was regularly reminded about flying when a Lockheed Martin CC-130 Hercules transport or a Canadair CC-109 Cosmopolitan (the standard twin-engine turboprop executive transport replaced by the Bombardier CC-144 Challenger) landed at Chatham.

"I kept bugging my supervisor," he said. "I needed to get out, to do something, and luckily, I don't know, but as a young corporal, I was sent to the Middle East for six or seven months in the Golan Heights."

Canada was part of a long-standing United Nations buffer force between Israel and Syria and Poitras handled "anything to do with movement in and out, from sea containers out of Tel Aviv to airplanes out of Damascus."

It took Poitras "a few years" to realize he was a lifer. "At first it was just a job. . . but at some point, I started feeling that this was my family, brothers and sisters in arms. That first deployment in the Middle East? I knew this was going to be it because I felt good, part of something bigger."

That overseas baptism was followed by reassignment to CFB Baden, Germany, and then, promoted to master corporal in 1990, to 5 Air Movements Unit (AMU) and then 412 Squadron Detachment, both in Lahr, Germany. Three years later, while still a master corporal, he was posted to 2 AMU in Trenton, Ont., where he completed the Lockheed Martin CC-130 Hercules loadmaster course.

Poitras was a tactical loadmaster and search and rescue loadmaster until 2002 before being posted to 426 Training Squadron in Trenton, first as the standards warrant officer and then as the chief loadmaster instructor.

In 2005, he was posted to 437 Transport Squadron as its warrant officer, his last operational flying tour. That set him up for promotion to CWO in 2007 and posting to the newly-reactivated 429 Transport Squadron in Trenton.

Since then, he has been CWO of Joint Task Force Afghanistan Air Wing in Kandahar, Afghanistan; CWO at 12 Wing Shearwater, N.S.; CWO of Canada Command and Canadian Joint Operations Command in Ottawa.

It's an impressive record for someone who didn't have much time for classrooms. "You just don't join, do basic training and go work on planes," said Poitras. "I found out that not unlike any other colleges or even university, you have to learn the

technical aspects of your craft to get going. The rest you learn on the job throughout your career and through further training as you move up in rank. And this was not even the leadership aspect of the job."

But about flying? His career as a traffic tech and loadmaster enabled him to log roughly 4,500 hours on domestic and overseas operations, on Cosmopolitans, Hercules and Airbus CC-150 Polaris transports. He was out of the flying loop, however, by the time air-to-air refuelling began with the latter, but was chief loadmaster instructor on that platform while it was used mainly for VIP and passenger duties.

Asked whether he'd ever had the urge to be at the controls, he replied that he has had "many opportunities" to try but "as much as I love flying, I don't like piloting." That said, he loved every aspect of his loadmaster job, including cargo drops and parachuting troops; he has even done one tandem jump and would do it again.

Not all of Poitras' career has been without risk. While he is quick to point out that many others served even more dangerous tours in Kandahar, he remembers of his time there that "rockets were coming in, some not too far from where we were staying." He also recalled the 1992 delivery of relief supplies into Sarajevo. "Somebody on the ground used to put a missile lock on the Hercules and our systems would go off, the flares and chaff."

Then there was the 1994 airlift of refugees from Rwanda by a small Canadian tactical air transport detachment based in neighbouring Kenya, but operating out of Goma, Zaire (now the Democratic Republic of the Congo).

The missions Poitras flew were strictly goods-delivery, not refugee recoveries, but "I had just started flying in the Hercules and now I was seeing a lot of dead people," he recounted. "I thought, 'Oh my God, this is something different.' I'd been in Germany, flying VIPs, and now I was in Africa. . . . It was a rude awakening, not something you'd want to see."

He dismissed any suggestion that situations like those might have given him pause to wonder what he was doing there.

"It's part of the job," he shrugged. "I can't talk for everybody, but when I signed up, I decided—after the Golan specifically—that it was going to be part of the job. You accept it and share the risks, or get out. If I didn't accept those risks, I did not deserve to wear my country's flag on my shoulder every morning. It's part of what I do."

Appointed in 2015, Poitras expects to leave his current post next year. His options include staying in for "quite a few more years," joining the Reserves or going out into the civilian world.

He also would have been eligible to become CWO of the entire Canadian military but his Army counterpart, Alain Guimond, has already been appointed by Vance to take over that role in 2018.

What about returning to an RCAF Wing? Poitras dismissed that option. "There needs to be new blood," he explained, also acknowledging that another possibility, being commissioned as a major, didn't appeal.

"I have given it some thought; but, again, it's not for me. I'm very happy to serve as a chief and I'll be very happy to retire as a chief if that's my future."

There is also the prospect of what the Canadian Armed Forces calls an OOC move, as in out of Canada, to one of several CWO positions such as one with the North Atlantic Treaty Organization.

"It's all about timing," concluded Poitras. "When I'm done with this position and there's an OOC opening, I could go. Would I? Then it becomes a family decision."



*Ken Pole has had a life-long passion for aerospace, writing about all its aspects for nearly 40 years. The longest-serving continuous member of the Canadian Parliamentary Press Gallery, he's also an avid sailor.*



# A Renaissance for the RCAF?

BY MARTIN SHADWICK

The eventual successor to Canada's CF-188 fleet must have a multi-role capability and be able to integrate into the modern defence system. Here, 410 Squadron's 75th anniversary CF-188 Hornet (revealed in 2016) flies in Comox, B.C., in spring 2017. **Derek Heyes Photo**



In Nov. 28, 2016, testimony before the Standing Senate Committee on National Security and Defence, the commander of the Royal Canadian Air Force (RCAF), LGen Michael Hood, posited that the RCAF "is going through a time of great renewal."

He noted that the CH-147F Chinook medium transport helicopter had achieved full operational capability and that the CC-130J Hercules had recently completed a significant software and hardware upgrade, adding that "our fifth [CC-177] Globemaster is proving to be a tremendous addition to our readiness posture."

On a decidedly different operational front, Hood observed that "our anti-submarine warfare platform, the Aurora, has evolved into a long-range patrol aircraft capable of intelligence, surveillance and reconnaissance [ISR] over land as well as water. Fourteen Auroras are undergoing major upgrades that will keep them at the forefront of these capabilities into the 2030 timeframe."

He went on to say the "Aurora is a huge Canadian success story, with world-leading capabilities—Canadian capabilities researched, designed and built in Canada, developed by Defence Research and Development working alongside our



While the coming of the Airbus C295W in the fixed-wing search and rescue role is welcome, a renewal of Canadian SAR capabilities will be incomplete until the now-veteran CH-149 Cormorant helicopter fleet is modernized, life-extended and augmented in size. **Mike Reyno/Airbus Photo**

Canadian industry. The question now, and my priority, is how to move that capability” into an eventual successor platform. “I would like to see a Canadian-built platform such as the [Q400] or a [C Series] when the Aurora’s flying time is done.”

Moreover, by April 2018, “...we expect to have two helicopter air detachments of Cyclone helicopters deployed at sea, with further detachments to follow as we transition from the Sea King fleet, which will retire in December 2018.”

He also anticipated that “...the defence policy review will shape our current unmanned aerial vehicles program [i.e., JUSTAS]. Information from industry is being assessed, and notional delivery timelines are between 2021 and 2023, with final delivery in 2025.”

The renaissance theme was reinforced a few days after his testimony by the announcement that Ottawa had selected the Airbus C295W to replace the long-serving CC-115 Buffalo and legacy CC-130H Hercules in the fixed-wing search and rescue role.

Earlier in his testimony, Hood noted that “because of [the RCAF’s] roles and missions, we have the highest percentage of personnel on high readiness” of the three services. “In this context...the Government of Canada has just announced that it is investing in the [RCAF] and that we will grow to meet their policy direction regarding the availability of our fighter capability. The government has now directed that we be ready to meet our daily NATO and NORAD commitments simultaneously. The government is committed to delivering those resources, in part through an open and transparent competition to replace the fighter fleet. Meanwhile, they will enter into discussion with the U.S. government and Boeing to augment our present CF-188 fleet. We will also be provided the additional resources required to continue to fly the CF-188, and a potential interim fleet, through to transition to the ultimate replacement aircraft.”

Although it is readily apparent that Canada’s Air Force continues to confront a sobering and multifaceted array of challenges and dilemmas, one could indeed posit that recent developments—however lengthy their gestation periods—do signal, if not a full-scope renaissance, then at least a future that arguably approximates a renaissance more than a requiem.

Indeed, some analysts may submit that the country (and its Armed Forces) could experience a 21<sup>st</sup> century variation of the type of trade-security interface that influenced the 1974-75 Defence Structure Review conducted by the government of Prime Minister Pierre Trudeau. Prompted in part by entreaties from Canada’s European allies—their influence noticeably enhanced by Canada’s quest for a trade-diversifying ‘contractual link’ with Europe—the Defence Structure Review rescued DND from the financial wilderness and bequeathed to Canada’s Armed Forces everything from CF-188s and CP-140 Auroras to Halifax-class patrol frigates and Leopard C1 main battle tanks.

Playing the increased defence spending card in return for trade access and trade stability in the age of President Donald Trump may or may not prove advantageous or even viable; but, in a potential echo of the mid-1970s, it could bring at least some additional financial and other resources to DND. If increased Canadian defence spending favoured areas of concern to the new administration in Washington, such as home defence and North American defence, then multiple areas of Air Force endeavour—from its fighter, air-to-air refuelling and maritime patrol/ISR capabilities, to the eventual successor(s) to the aging North Warning System—could conceivably benefit. If such investments simultaneously advanced Canadian sovereignty and security interests in the Arctic, so much the better.

A thoughtful contemporary overview of the challenges facing civilian and military decision-makers was provided

by Alan Stephenson in *The RCAF and the Role of Airpower: Considering Canada's Future Contributions*. In the July 2016 essay, one of a series commissioned by the Canadian Global Affairs Institute, Stephenson observes that “however remote major conflict may seem in the current geopolitical environment, the possibility that the RCAF will be called upon to participate in combat operations in the future cannot be ruled out”—adding, quite correctly, that “combat-capable platforms can be used for non-combat missions whereas the reverse is not true.”

While acknowledging that the “economy is under duress,” he urged Ottawa “to approach the Defence Policy Review as the preservation of Canadian values rather than as a defence against identified threats. The government has a ‘Responsibility to Protect’ Canada and Canadians, neighbours in North America, friends and alliance partners, and the international system and society—in that priority. These imperatives demand a balanced RCAF in terms of the breadth of capability needed to meet national security and defence requirements in both domestic and deployed operations.”

The specific recommendations advanced by the Stephenson essay argue that: (a) “the Defence Policy Review should focus on maintaining core airpower capabilities, roles and missions, then incorporate emerging capabilities as increases in defence budgets permit;” (b) “operational deployments of long duration should be minimized to maximize funding for capital projects;” and (c), that “the RCAF should invest in life extension programs to maximize fleet life expectancy.”

The latter point is worth repeating, although it should be noted that not all life extension programs are cost-effective and that some may unintentionally extend a type’s service life beyond the production life of a desirable new-production replacement aircraft. The essay also recommends that: (d) “the RCAF must be capable of participation in both control of the air and air attack combat operations at home and abroad. Canada should maintain the capability to deploy and sustain six multi-role fighter aircraft with air-to-air refuelling

to support NATO- or UN-sanctioned operations in addition to defence of Canada commitments;” (e) “mobility support to the CAF and alliance partners should remain the basis for assigned mobility roles and missions. The government should consider increasing airlift contributions to complex peace support and traditional peacekeeping missions as well as humanitarian assistance operations.”

In that regard, one cannot resist the temptation to suggest asking Airbus to quote on a modest number of transport-configured C295Ws. “Given recent recapitalization of organic helicopter capabilities as well as life extension projects to the CP-140 and CH-146,” the essay further recommends that “RCAF roles and missions in support of the RCN, and SOFCOM [Canadian Army] should remain at current levels pending available funding for increased UAV ISR capabilities,” that “search and rescue should remain a required RCAF role” (a recommendation most heartily endorsed by this analyst, although one that is undermined by the increased outsourcing of base-level maintenance, as in the case of the forthcoming SAR C295Ws), and that “the recapitalization of the North Warning System with the United States should be approached from a holistic perspective to maximize Canadian sovereignty and national interests through ISR integration with national capabilities.”

The essay also posits that “replacement of the CF-188 is required by 2025. As the CF-188 has proven to be flexible and resilient during changing political and threat environments, the future fighter aircraft must be multi-role and capable of integration into the technologically evolving IAMD [integrated air and missile defence] system construct. Cost-effectiveness requires that analysis of all four dimensions of airpower be considered in the options analysis.”

The upgraded Aurora clearly constitutes an integral element of any RCAF renaissance, but Canada now faces two choices—one very short-term and related to the modernization and life extension of more than the 14 aircraft currently programmed, and one longer-term and related to

While the new CH-148 Cyclone maritime helicopter remains a capability in development, it holds genuine potential across a broad spectrum of military, quasi-military and non-military roles in both the domestic and overseas environments.

**MCpl Jennifer Kusche Photo**





At the very least, a limited upgrade of the fleet of CH-146 Griffons will be required to cope with obsolescence and airspace access issues. **Skip Robinson Photo**

an ultimate successor to the Aurora. Given the demonstrated versatility of the platform and the lack of funding for a short-to-medium term replacement initiative, a credible case can be made for modernizing and life-extending at least some additional Auroras. A recent study by the Maritime Air Veterans Association, for example, urges that “RCAF manpower and funding be increased to restore the Aurora fleet to its original 18 aircraft capability.”

Similarly, an Air Force Association of Canada position paper recommends that Ottawa upgrade “...as many Aurora aircraft as possible (up to 18).” The industrial window of opportunity for additional conversions is fast closing, however, thereby necessitating a prompt decision.

The question of a successor to the Aurora is more complicated. As this [author] has in the past observed, it is difficult to see how a modified twin turboprop or business jet could provide the long range and endurance, the space and capacity for a comprehensive mission avionics suite, the armament, the quantity of droppable stores, and the growth potential required of a multi-purpose maritime patrol/ISR aircraft. An adaptation of the C Series is admittedly an enticing prospect on several levels, but one that would incur substantial non-recurring expenses and could pose logistical and other challenges if the RCAF proved the only customer for a maritime variant. If would-be replacement candidates, such as the Boeing P-8 Poseidon, the Kawasaki P-1, or a suitable adaptation of an Airbus commercial aircraft go out of production or fail to materialize, Canada, and the RCAF, could be caught in a most awkward situation. The Aurora’s maritime stalemate, the

Given the CP-140M Aurora's demonstrated versatility and the lack of funding for a short-to-medium term replacement initiative, a credible case can be made for modernizing the remaining four Auroras that have not yet been upgraded.

**Richard Cooper Photo**



The CC-130J Hercules is the workhorse of the RCAF's transport fleet, providing support to joint domestic and international operations. **Derek Heyes Photo**



CH-148 Cyclone, constitutes another element of an RCAF renaissance although, given repeated, well-publicized and frankly disconcerting delays in its development and operational deployment, it may for the moment be prudent to deem it an “element-in-waiting” of an Air Force renaissance. Still, the type holds genuine potential across a broad spectrum of military, quasi-military and non-military roles in both the domestic and overseas environments, and should, in due course, prove to be even more versatile than the legendary Sea King.

The SAR element of a renaissance is anchored by the recent decision to acquire 16 Airbus C295W aircraft (i.e., two “maintenance floaters,” three aircraft each for CFBs Winnipeg, Trenton, and Greenwood, and five aircraft for CFB Comox). The latter will also provide operational training, as it does for the CH-149 Cormorant SAR helicopter. As such, CFB Comox will truly become the centre of excellence for Canadian SAR, and the home to almost one-third of Canada’s fixed-and rotary-wing primary SAR aircraft.

The C295W, the sensor suite and mission management system of which bear no comparison to the austere-equipped Buffaloes and Hercules, should provide an operationally effective and cost-effective alternative to the current fixed-wing types. Base-level maintenance by the RCAF will, however, be reduced to the first-line level. The C295W does represent some loss of speed and endurance from the Hercules, but it is intriguing that this issue—and Arctic SAR, which arguably benefits more indirectly than directly from the change of aircraft—attracted almost no parliamentary, public or media attention.

The newer Hercules (i.e., the CC-130J) will remain relevant as a secondary SAR resource (i.e., for the deployment of major air disaster [MAJAD] elements), but some analysts will no doubt favour a somewhat more active but still secondary SAR role, perhaps facilitated by removable sensor packages. The SAR element of any broader RCAF renaissance, however, will remain incomplete until the now-veteran Cormorant helicopter fleet is modernized and life-extended and augmented in size—partly to cover for aircraft removed from service to undergo updating, and partly to reintroduce the Cormorant to CFB Trenton. Fleet expansion could entail any of several options, including the activation of American VH-71s acquired by Canada as a source of spares for the Cormorant.

On other fronts—all of which will need addressing if the RCAF is to experience a thoroughgoing renaissance—Canada will in the not-too-distant future require a multi-role replacement for the Airbus CC-150 tanker-transports. If Canada acquires four or preferably five replacement aircraft, the entire fleet—unlike the current CC-150 quintet—should be capable of performing both transport and air-to-air refuelling duties. For this procurement—which represents a vital enabler, regardless of which fighter or fighters Canada ultimately acquires—the procurement options include, but are not confined to, such types as the Airbus A330 MRTT.

Mixed public-private initiatives, such as that adopted by the Royal Air Force, are worth examining but are not necessarily appropriate or desirable in a Canadian context. In other transport or transport-related realms, some observers also seek a slight increase in the number of CC-130Js, while more



Eventually, Ottawa will need to consider acquiring a successor to the Snowbirds' aging CT-114 Tutor. This decision could generate political angst on several levels. **Mike Reyno Photo**

On March 13, 2017, Canada submitted a letter of request to the U.S. government, outlining its requirements for an interim fleet of Boeing Super Hornet aircraft and associated in-service support. A response is expected as early as the fall of 2017. **Jeff Wilson Photo**



The Canadian government plans to continue its participation in Lockheed Martin's F-35 Lightning II Joint Strike Fighter program until at least a contract award for the permanent fleet. **USAF Photo**



than a few analysts favour deploying something beyond 're-winged,' 50-year-old Twin Otters in the Arctic. A decision to upgrade or replace the now 20-year-old CH-146 Griffon helicopter—which has gradually morphed into something more than a stock utility transport helicopter—would also constitute an important element of an RCAF renaissance. At the very least, a limited upgrade will be required to cope with obsolescence and airspace access issues. Supplementing the Griffon or its successor with a light or heavy attack helicopter (i.e., Apache, Tiger) has its devotees, but raises a host of doctrinal and financial issues.

The medium transport helicopter side is well taken care of by the Chinook, the Canadian version of which is particularly well-equipped. Other areas in due course requiring attention are the successors to the current flying training and related programs, including but not confined to the NATO Flying Training in Canada (NFTC) operation. A partial RCAF return to the NATO AWACS operation—which was unceremoniously and imprudently jettisoned during the Harper era—could also constitute a useful element of a renaissance.

The Snowbirds will require attention as well, if Ottawa sanctions the acquisition by lease or purchase of a successor to the seemingly evergreen Tutor. This decision could generate political angst on several levels, thereby prompting one to recall that equipping air demonstration teams was considerably easier in earlier decades (but not necessarily budget-proof in operating terms) when one could transfer surplus Crown-owned fighters or trainers to such a role.

At the end of the day, the renaissance gold standard for most Air Forces is the potency and effectiveness, both qualitatively and quantitatively, of their fighter aircraft and fighter squadrons. The Canadian journey to replace the CF-188 has taken an intriguing number of twists and turns, ranging from the Harper government's 2010 decision to pursue the acquisition of the Lockheed Martin F-35A Lightning II Joint Strike Fighter—and its subsequent pausing of that intention—to the Nov. 22, 2016, decision of the Justin Trudeau government to pursue a two-phase approach embracing "...within its current mandate, an open and transparent competition to replace the legacy fleet of CF-188 fighter aircraft" while also exploring on an immediate basis "...the acquisition of 18 new [Boeing F/A-18] Super Hornet aircraft to supplement the CF-188s until the permanent replacement arrives."

Discussions with the U.S. government and Boeing would "...determine if Boeing can provide the interim solution at a cost, time, and level of capability that are acceptable to Canada." The decision to pursue an interim solution reflected a perceived "capability gap" wherein Canada lacked sufficient mission-ready fighter aircraft to simultaneously meet obligations to both NORAD and NATO.

The government also stated that "Canada will continue participation in the Joint Strike Fighter [program] until at least a contract award for the permanent fleet. This will allow Canada to maximize benefits of the partnership and gives Canada the option to buy the aircraft through the program, should the F-35 be successful in the competitive process for the permanent fleet."

The quickest, least expensive, and most straightforward path to an interim Super Hornet fleet would presumably entail essentially stock, minimally-modified, USN-pattern F/A-18Es (single-seaters), and a small number of two-seat F/A-18Fs for operational training, combined with the training in the United States and perhaps Australia of an initial cadre of RCAF aircrew and maintainers. Indeed, some observers have broached an all-F/A-18E option, combined with out-of-Canada operational training. More ambitious scenarios have been advanced or broached in various quarters, including respected international aerospace journals. One of the latter, for example, speculated on an all-F/A-18F fleet with the necessary wiring to facilitate later conversion, if Canada so wished, to the EA-18G Growler configuration.



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The medium transport helicopter side of the RCAF's capability equation is well addressed by the CH-147F Chinook. The Canadian version is particularly well-equipped. **Skip Robinson Photo**



The RCAF obtained a fifth CC-177 Globemaster transport in March 2015. The aircraft has proven to be a tremendous addition to the force. **Stuart Sanders Photo**



Other options mooted in various quarters have included an all-F/A-18F fleet sans [without] wiring for later electronic warfare conversion, while still others have embraced a largely F/A-18E fleet incorporating at least some features of what was once designated by Boeing as the Advanced Super Hornet. Fiscal, doctrinal, and lead-time considerations would appear to leave such options as non-starters, although such "future proofing" of the Canadian interim Super Hornet fleet does hold a certain appeal and could look prudent if a member of the Super Hornet family prevailed in Canada's forthcoming fighter competition.

The latter should prove a most intriguing affair, pitting the Super Hornet or advanced versions of the platform (which appear likely to secure further orders from the USN, although not necessarily in the numbers mooted by some in the Trump administration) against a matured F-35A benefiting financially from increased economies of scale and formidable stealth and sensor capabilities. Non-American contenders, for a variety of reasons, would appear to be far less likely choices. Precisely which longer-term fighter path Canada will select remains unknowable at this time, but will in its own way contribute to an RCAF renaissance—albeit in a more circuitous and contentious manner than most would have predicted a decade ago.

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Returning to 2 Canadian Forces Flying Training School (2 CFFTS) in Moose Jaw, Sask., after an absence of 30 years, author Rob Erdos found that nothing had changed and yet everything was different. Technology has delivered several improvements, but the cultural fundamentals of military flight training remain unchanged. **Frank Crébas Photo**

# Striving for Perfection

A black and white photograph of a Canadian Forces Snowbirds fighter jet, likely a CF-18 Hornet, captured from a low angle. The aircraft is shown from the side, angled upwards towards the top right. The word "Canada" is visible on the fuselage, along with the number "210". The background is a dramatic sunset or sunrise, with warm orange and yellow hues in the clouds. The horizon line is visible at the top of the frame.

RCAF TODAY SENT PILOT  
ROBERT ERDOS BACK TO MOOSE JAW  
TO RELIVE THE STUDENT EXPERIENCE AT THE "BIG 2."

**BY ROBERT ERDOS**

I already had my wings, so why was I anxious? Our CT-156 Harvard II trainer was rolling for takeoff from Runway 29-Right at 15 Wing Moose Jaw, Sask., but this was just a media ride, right?

No. For one week last October, I “re-enlisted” as a student pilot to try my hand at modern air force flight training. *RCAF Today* sent me back to 2 Canadian Forces Flying Training School (2 CFFTS), otherwise known as the “Big 2”—30 years after my own pilot training course—to see what changes the intervening decades had brought to military flight training.

Most Canadian military pilots fondly recall their time in “The Jaw;” an experience combining high expectations, intense stress and incredible opportunities. Much had changed. The buildings, the aircraft and the young faces were new, and technology had left its digital fingerprints on everything. But a week with the Big 2 would show that the ethos and professionalism of RCAF pilot training were just as I remembered.

Canada has a proud heritage in aircrew training. RCAF Station Moose Jaw opened in 1941 under the British Commonwealth Air Training Plan. Then, as today, it was a Harvard base, although times have changed and so have the Harvards. The iconic yellow, radial-engine RCAF Harvard of the 1940s gave way in the late-1960s to the Canadair CT-114 Tutor jet trainer, and finally to the turboprop Beechcraft CT-156 Harvard II flown today.

## GROUND SCHOOL FIRST

Ground training monopolizes the first 10 weeks of the course and includes classes in aircraft systems and limitations, aerodynamics, meteorology, navigation, instrument flight procedures and air regulations.

In my role as a student pilot, I attended a groundschool lecture on instrument flight procedures with Class 1607; a group of 16 eager students in their early-20s who kibitzed and chatted before settling in front of their laptop computers.



The author admits a flutter of nostalgic excitement walking to the CT-155 jet trainer with his instructor, Capt Ross Harbottle. **DND Photo**



Thirty years has brought the author full circle from his days as a student in the Tutor to being a student again in the CT-156 Harvard II. **DND Photo**

LCol Smith and the author “mount up” for a four-plane formation training flight. **DND Photo**



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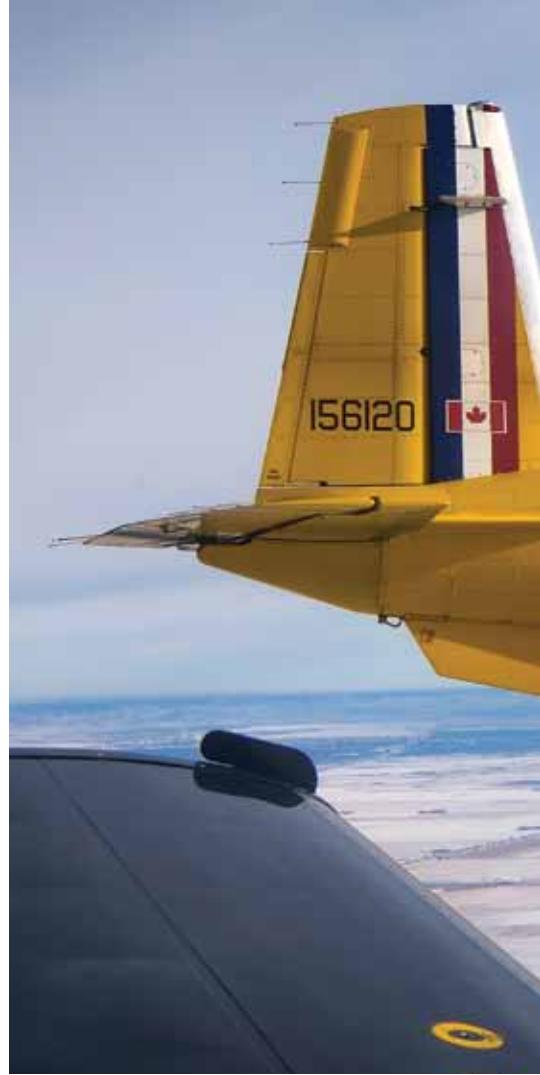


# SKIES NEWS

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Things happen fast in the aviation industry. For the most up-to-date news and press releases, subscribe to our free email newsletter, delivered every weekday, **Skies News**. You'll get important industry news delivered straight to your inbox or smartphone, so you don't miss out on anything.

The CT-155 Hawk jet trainer offers a big step up in handling and performance for prospective fighter pilots. **Frank Crébas Photo**



Eight smiling faces on the crews following the four-plane staff formation training mission. **DND Photo**



Today's groundschool is well equipped compared to the chalk-and-talk instruction that we received. Students are provided with digital courseware, and the lecture was a polished multi-media presentation covering the fundamentals of the instrument landing system. I'll admit that I learned a few things.

Our instructor, Trent Morgan, was eminently qualified, having been an RCAF CC-130 Hercules pilot who has been instructing in Moose Jaw for the last 14 years. Morgan's instructional style was casual, personable and interactive. I can't recall ever feeling as prepared for our classes as the group that I joined. They seemed to largely already know the material, and had gathered in class more for discussion and confirmation than for teaching. This was my first indication that Air Force flying training was not quite as I recalled it.

### SIMULATION CHANGES EVERYTHING

After 10 weeks of groundschool, students move into the simulator to prepare for their first flight. They wear a parachute harness, helmet and mask in the "box" to maximize the fidelity of the experience.

Similarly attired, I took a turn in the simulator for a familiarization lesson in cockpit systems and procedures, basic handling, overhead breaks, stalls and introductory aerobatics. Simulator instructor Jeff Young schooled me on Harvard II rules of thumb, noting for example that a one per cent change in engine torque equates to two knots airspeed.

Military flying is done very much "by the numbers." The specific technique of flying every manoeuvre is spelled out in

The Harvard II has proven to be well suited for pilot training. In 2016, CAE had this Harvard II painted to commemorate the British Commonwealth Air Training Plan. The aircraft was painted to resemble a Harvard flown by Pilot Officer John Gillespie Magee, Jr., the famed author of "High Flight." Magee completed his wings training on BCATP Harvards in June 1941, as a student at No. 2 Service Flying Training School, RCAF Station Uplands (Ottawa). **Mike Luedey Photo**



the impressively thorough *Standard Maneuver Manual* (SMM), making for a lot of detail to remember. I didn't. Things were moving a tad quickly. I risked a nostalgic smile. Welcome back to Moose Jaw!

The Air Force has made a commitment to comprehensively integrate simulation into the training syllabus. Pilots of my vintage will recall that we, too, had a Tutor "simulator," but the ol' Tutor "box" was built before the microprocessor age, and its operation relied mostly upon unseen hamsters on squeaky treadmills. Today's simulators are breathtakingly capable by comparison.

Owing to their extensive use, simulated emergencies are no longer practiced in the aircraft. The rationale is that emergencies conducted in the simulator can be performed to a higher degree of realism, and actually followed through to their logical conclusion, whether that involves a decision, a diversion or an ejection.

#### **WHAT DO YOU MEAN, "THE STUDENTS DECIDE?"**

Students typically hit the flight line after about 13 weeks on course. It wouldn't be an exaggeration to say that they will have learned to fly the Harvard II before they ever venture aloft in it. Having drilled themselves in aircraft limitations and operating procedures, and having practiced extensively in the simulator, the expectation is that students will demonstrate competence from their very first flight: starting the engine, talking on the radio, performing pre-flight checks and doing the takeoff.

Making the training challenging, or as one instructor put it, "seeing what you're capable of," is established from the

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CLOCKWISE FROM TOP LEFT:

The author hanging around, trying to recall the specifics of the parachute landing drill. **DND Photo**

A thorough briefing preceded the formation training mission. **DND Photo**

Students are taught the skill of mature and flexible aeronautical decision-making from the beginning. **Mike Luedey Photo**

The author is all smiles prior to his flight in the Hawk. It's easy to smile when every flight isn't being graded. **DND Photo**

The author observing how simulation is integrated into all phases of training. **DND Photo**

beginning. The training continues apace. Sortie "clearhood 2" includes stalls and unusual attitude recovery techniques.

To better understand a course that numerous students described as like "drinking from a fire hose," I sat down with the Big 2's commanding officer, LCol David "Donkey" Smith, who led the school through a fundamental "rethink" of the syllabus in 2012.

The new syllabus is structured in "blocks" of four to six training sorties, each culminating with prescribed performance objectives that the student is expected to meet. Students, rather than instructors, are responsible for deciding what they will do on a particular sortie, given the time available, their progress and aptitude, the weather conditions, and the material they are expected to master.

Pilots of my era will recall things differently, where the syllabus was rigidly prescribed, and each training flight followed the written plan. Notwithstanding the march of technology, this subtle pedagogical change is perhaps the singular biggest shift to have occurred at the Big 2 since my departure.

Smith offered that the new syllabus is more flexible and "makes students take ownership of their training." Instructors with whom I spoke were unanimous in their enthusiasm for the syllabus, often quoting the aphorism that, "flexibility is the key to air power," and noting that it was never too early to teach students mature and flexible aeronautical decision-making.

## TRAINING IN THE HARVARD II

By the evening before my Harvard II flight I had thoroughly read the SMM, but I still felt ill at ease. Putting away the books with the intention of getting a good night's sleep, I admit to feeling anxiety that I would be ready to perform the next day. I had learned to strap-in and egress safely; never a trivial procedure in an ejection seat-equipped aircraft, but I felt I could use more time for cockpit familiarization, and wanted to rehearse procedures a bit more.

Then it occurred to me...I came for the student experience. This is it! That's what they mean by "drinking from a fire hose!"

Our flight was to be a composite clearhood training mission including slow flight, stalls, spins and aerobatics, culminating in some circuits in the traffic pattern. We would fly aircraft CT-156118; call sign "Apache 15." My instructor in the Harvard was pipeline instructor Capt Mark Shular.

As I recall from my time at "The Jaw," students are expected to know the material cold before venturing into the briefing room. A typical sortie is 1.4 hours in duration, and time in the aircraft is a valuable resource. We briefed each manoeuvre thoroughly, so that there was nothing left to do in the air but watch Shular's demonstration and try to repeat it, in accordance with the military's instructional paradigm, "EDIC": explain, demonstrate, imitate, critique.

We squeezed a lot out of that hour aloft. The Harvard II was an excellent classroom, despite Shular's less than adept student. All manoeuvres were expertly demonstrated, and then some I was allowed to repeat, constrained as we were by RCAF flying regulations.

The first exercise, slow flight, didn't present too many challenges; but if I thought I might practice further, I was mistaken. The clock was ticking and we needed to move on to the next task. I commented on the pace of the sortie, and Shular's response seemed very apropos: "It's not enough to be smart. You're expected to be smart quick."

It was a good summary of the whole Big 2 experience.

The Harvard II's biggest strength is that, for a relatively high-performance airplane, it's very forgiving to fly. In terms of weaknesses, some instructors lamented its limited in-flight ice protection, lack of a precision approach-certified GPS, and its tandem seating, which gives the instructor less direct visibility to monitor the student's behaviour.

Its trim aid device, designed to reduce propeller-induced coupling, is notoriously quirky, requiring some less than



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intuitive footwork on the pedals when making power or airspeed changes; but overall I enjoyed the Harvard II's tight, responsive controls and honest character. Learning to fly in a trainer that delivers a 2,200 foot-per-minute climb rate at 180 knots is an experience only the Air Force can offer! Then again, if high-performance appeals...

### GRADUATING TO THE HAWK

The CT-155 Hawk jet trainer is a very British aeroplane indeed, meaning that the cockpit layout and ergonomics were—oh, putting it politely—different.

Fortunately, once aloft it's also a very charming aeroplane, and any red-blooded pilot will tell you that seeing 500 knots indicated airspeed en route to the training area is a good thing!

I had the pleasure of flying the CT-155 Hawk with pipeline instructor Capt Ross Harbottle. In a 60-hour syllabus, he takes newly minted fast-jet pilots through clearhood, instrument, navigation and formation training to build proficiency on the Hawk. The use of the Hawk in Moose Jaw is limited to type conversion training before commencing fighter lead-in training with 410 Squadron in Cold Lake, Alta.

During our hour as "Dragon 62," Harbottle demonstrated unfamiliar air combat manoeuvres such as pitchbacks and slices. There was even time for some aerobatics, slow flight, stalls and spins. Once again, making the most of our time aloft was clearly a priority.

From the cockpit, the value of the Hawk became evident. As an airplane with a glide speed of 190 knots, and one that requires 6,000 feet to do a loop, it is a big step up in capabil-

ity from the Harvard II. The Hawk's higher performance and more challenging handling make it a necessary stage for prospective fighter pilots.

### BACK TO SCHOOL

Returning to Moose Jaw after an absence of 30 years, I found that nothing had changed and yet everything was different.

New training aircraft and extensive use of simulation are among the improvements delivered by advances in technology. An even bigger change is the student-centred training syllabus that seeks to turn prospective military pilots into decision-making aviators from their very first flight.

The cultural fundamentals of military flight training, however, are unchanged. The RCAF still has high expectations for pilot trainees, and keen young students still invest a whole lot of late-night study, practice and sweat towards meeting those high standards. Today, as for generations, student pilots strive for perfection on each flight; an ethos of professionalism that pervades the entire culture of the Big 2.

Just as I remembered.



*Robert Erdos is a contributing editor for Skies and RCAF Today magazines. He is a graduate of the U.S. Naval Test Pilot School and a professional test pilot. Also an aviation enthusiast, his spare time activities include displaying vintage airplanes and flying his RV-6 kitplane.*



*Formation flying is a skill particular to military training, as it hones precision and teamwork. Frank Crébas Photo*



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The 1950s were the RCAF's golden years. Two all-weather fighter squadrons were formed at Bagotville in 1953. Equipped with Avro Canada CF-100 interceptors (screened photo), it was the beginning of a new era for the busy base. Today, Bagotville is home to the CF-188 Hornet (Mike Reyno Photo).



# A Storied Past

3 WING BAGOTVILLE CELEBRATES 75 YEARS OF RESPONDING TO THE CALL IN DEFENCE OF CANADIAN FREEDOM.

BY MARC-ANDRÉ VALIQUETTE

On Sept. 1, 1939, German troops invaded Poland. The Second World War had begun. On Sept. 10, Canada declared war on Germany.

At the start of the conflict, the British government turned to Canada for its aircrew training needs. Bagotville's Operational Training Unit (OTU) was the only Hawker Hurricane fighter training base in the country. In addition, the Ministry of Defence acknowledged the importance of protecting aluminum plants in Arvida and pulp and paper mills in Port-Alfred, Que., as well as harbours, dams, dikes and electrical generating stations located in the Saguenay—Lac-St-Jean region of the province. Thus, the Bagotville base would be home to a fighter unit tasked with protecting these facilities.

The majority of the buildings, the four aircraft hangars, and the three runways were completed by June 1942. At the end

of July, No. 1 OTU was operational. At its peak, the inventory included 87 Hurricane fighters, 22 Harvard trainers, five Lysanders and three Bolingbroke target tug aircraft.

The unit of about 1,250 personnel trained an average of 50 officers and 50 sergeants (all pilots) within the nine-week course. In order to meet military fighter pilot requirements, training included combat formation, instrument, night and air combat flying, as well as shooting at stationary and moving targets. Pilots practised these manoeuvres while flying over the vast Saguenay—Lac-Saint-Jean territory.





No. 1 OTU's flight line in the fall of 1943. **Bagotville Air Defence Museum Photo**

A formation of 12 Hurricane fighters from No. 1 OTU, summer 1943.  
**Bagotville Air Defence Museum Photo**



No. 1 OTU instructors perform a low pass in front of the unit's flight line, summer 1943. **Bagotville Air Defence Museum Photo**



While No. 1 OTU was preparing to undertake its mission, No. 130 Fighter Squadron landed at Bagotville on July 14, 1942. The unit was one of the nine fighter squadrons formed on the East Coast to patrol and protect industrial areas vital to the war effort. To fulfil its mission, the pilots flew Harvard trainer aircraft and P-40 Kittyhawk fighters. A year later, No. 129 (F) Squadron replaced the "Panthers" at Bagotville. Then, on Dec. 28, 1943, No. 1 OTU assumed these responsibilities.

By the summer of 1944, the Allied advance in Europe could not be stopped. There was no further need for additional fighter pilots and so on Oct. 28, No. 1 OTU was relieved of its commitments. During 28 months of operations, the OTU had conducted 29 courses and graduated 940 fighter pilots. Gradually, military aircraft left Bagotville, with all buildings placed on a care and maintenance program effective Feb. 1, 1945.

## THE FIFTIES, THE COLD WAR AND NORAD

At the conclusion of the war, the world entered a new and unsettling period of peace. The reconditioning of Air Force bases and acquisition of new jet fighters to protect Canada's airspace became a top priority for the government. With the creation of NATO in 1949, Canada committed to provide the military alliance with 12 squadrons of Canadair Sabres in Europe.

On July 1, 1951, RCAF Station Bagotville reopened. By early December of that year, No. 413 (F) Squadron was flying Sabre Mk.2 aircraft in the Saguenay skies. On Nov. 1, 1952, 414 (F) Squadron was also formed at Bagotville as a day fighter unit. In the spring of 1953, 413 (F) Squadron Sabres took off to cross the Atlantic as part of Operation Leapfrog III. On Aug. 27, 1953, 414 (F) Squadron flew to Europe as well, as part of Operation Leapfrog IV.

A few days later, No. 440 All-Weather Fighter Squadron was formed at Bagotville. It was the beginning of a new era for the base, which was now an important link to Canada's Eastern air defence network. Equipped with Avro Canada CF-100 interceptors, the squadron was tasked with carrying out all-weather interceptions as directed by Air Defence Command (ADC), and conducting training in the same weather conditions in order to maintain the unit's proficiency. While this was going on, the first Soviet intercontinental bombers appeared. Canada therefore found itself only a few flying hours from the USSR. In the event of an attack, the first reaction unequivocally belonged to Canadians. Consequently, a second all-weather fighter squadron was formed at Bagotville on Oct. 1, No. 432 AW(F).

The activity seen at Bagotville in 1955 accurately defined the decade between 1950 and 1960, the RCAF's golden years. The base was not only home to the two all-weather fighter squadrons, but as well to No. 108 Communication flight. Numerous air exercises were conducted within ADC, while day and night interception missions against the highly competent B-36 and B-47 crews of the Strategic Air Command intensified.

As a result of No. 440 Squadron going to Europe in support of NATO, No. 413 AW(F) Squadron reformed at Bagotville in May 1957. During the same year, the growing perception of a Soviet long-range nuclear weapons threat prompted the American and Canadian governments to develop co-operative air defences. The North American Aerospace Defense Command (NORAD) was thus formed. Day or night, the roar of departing jets was heard as aircrews took off to practise high and low-level interceptions. RCAF Station Bagotville had an important role to play in the national defence picture. Since its units secured one flank of the all-weather fighter force in Canada, its obligation was a vital one.

The final years of the 1950s represented the zenith of ADC and the CF-100 operations. However, the interceptor was by then obsolete and unable to adequately defend the country from any potential bomber threat. Both of Bagotville's AW(F) squadrons were disbanded by the end of December 1961.

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A 425 AW(F) Sqn CF-101B Voodoo flies over the St-Anne Bridge in Chicoutimi, 1967. F/O Turbo Tarling Photo

## PROTECTING CANADIAN SOVEREIGNTY

In 1961, ADC decided that No. 416 AW(F) Squadron would re-equip with the McDonnell CF-101 Voodoo interceptor and would be posted at Bagotville. The aircraft landed at the base on July 4, 1962, followed a few days later by No. 425 AW(F) Squadron Voodoos. On Oct. 1, No. 3 AW(F) OTU became the CF-101 conversion unit. Thus, with three units flying the new supersonic interceptor at the base, one could find nearly half of the Canadian fleet of CF-101s in the Saguenay region.

The Cuban Missile Crisis occurred a few days later. By its geographical position, Canada's northern territory offered the shortest route between the Soviet Union and the United States. The Bagotville base was therefore in a state of continuous alert during this period. The crisis ended in late October, and Bagotville resumed its regular activities.

In early 1963, the RCAF flew the CF-101B Voodoo as a long-range strategic bomber-interceptor. The use of atomic warheads on missiles would greatly increase the jet's operational effectiveness and as such, the military considered the aircraft most effective when utilizing the nuclear W25

warhead with the Genie rocket. Since No. 425 AW(F) Squadron could use this weapon (No. 416 Squadron had moved to Chatham, N.B.), Bagotville saw the construction of Special Ammunition Storage (SAS) and upgraded Quick Reaction Alert (QRA) facilities. In the spring of 1965, the station received the W25 nuclear warhead for the Genie rocket. The base could now be called upon to play a leading role in defending North America.

An important milestone in Bagotville's history occurred in the fall of 1966 with the creation of the Base Rescue Flight,

which would use three Piasecki H-21 helicopters; then later, three Bell CH-118 Iroquois to respond to search and rescue requests. A few months after the Canadian Forces unification, in April of 1968, No. 3 AW(F) OTU became No. 410 AW(OT) Squadron. On Aug. 15, 1968, a second French-language squadron was formed at Bagotville. This unit, No. 433 Tactical Fighter Squadron, had the task to support, among other things, the manoeuvres of ground troops. The first two Canadair CF-5 two-seater aircraft belonging to the "Porcupines" landed in Bagotville on Aug. 25, 1969.

H-19 of No. 108 (Comm) Flight flying over 432 AW(F) Squadron CF-100s on the alert area at Bagotville, summer 1955. **RCAF Photo**



A low altitude flypast performed by two CF-5s of No. 433 TFS at Bagotville, January 1973. **Capt Jean-Pierre Ferron Photo**



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# BAGOTVILLE

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Equipped with the Bell CH-146 Griffon, 439 Combat Support Squadron provides rapid response to local operations, including search and rescue, and general utility missions. **Cpl Bryan Carter Photo**



Col Darcy Molstad, commander of 3 Wing Bagotville, poses for a photo in front of a CF-188 Hornet before a training mission. **MCpl Chris Ward Photo**

Since its arrival at Bagotville in 1962, No. 425 AW(F) Squadron had continuously maintained two armed CF-101B Voodoos inside the QRA hangars. The pilots had to be prepared to be airborne in less than five minutes following the announcement of a potential threat. The goal was to identify the intruder and to respond appropriately as soon as possible. By the mid-1970s, the interception of Russian Tu-95 Bear bombers close to the Canadian coast, en route for Cuba, was a common occurrence. The Soviets used this opportunity to test our Air Force's reaction time, and thus were able to collect information about our defence system.

In 1975, No. 433 TFS transferred from Mobile Command to the newly created Air Command. Despite this adjustment, its mission remained the same. Notwithstanding this organizational change, exercises at home and abroad followed one another over the years at a hectic pace. Following the adoption of the *Official Languages Act*, bilingualism started to make real progress at Bagotville. By the beginning of the 1980s, the base conducted nearly 80 per cent of its operations and administration in French.

On April 10, 1980, the Canadian government announced the purchase of the McDonnell Douglas F/A-18 Hornet to replace the outdated aircraft in service within Air Command. [The Canadian fighters were officially designated CF-188s.] On June 15, 1984, the Voodoo performed its final flight from Bagotville's QRA. With the withdrawal of the CF-101, the W25 nuclear warheads were returned to the United States.

Meanwhile, for No. 433 TFS, support of ground troops remained one of the squadron's primary responsibilities. Deployments within Canada and the United States followed one after another. Moreover, the unit continued to undergo major exercises in Norway on behalf of NATO. In early 1986, Air Command chose No. 433 to become a CF-188 squadron. On April 19, Bagotville marked the end of an era when the CF-5 retired from service within the squadron.

#### AIR DEFENCE IN THE HIGH-TECH ERA

After an eight-month absence, No. 425 TFS returned home on April 1, 1985, proudly overflying the Saguenay. After an intensive training period, on the morning of May 31, the first two Hornets were able to maintain NORAD alert status on a 24-hour basis. Only 12 days later, Captains Matheson and Hadfield performed a "scramble" takeoff to achieve the first interception by CF-188s of two Russian Tu-95 Bear D bombers off the coast of Newfoundland.

For the "Porcupines," Oct. 9, 1987, was a day to remember when the first CF-188 sporting the colours of No. 433 TFS landed in Bagotville. On Jan. 15, 1988, the squadron became operational once more. As the years went by, the role of the



The majority of Bagotville's buildings, the four aircraft hangars, and the three runways were completed by June 1942."

Today, 3 Wing personnel continue to support the Canadian government through the Canadian Armed Forces' three key defence roles: to defend the country by delivering excellence at home; to defend North America (through NORAD); and to contribute to international peace and security. **Stuart Sanders Photo**



two tactical fighter squadrons has continuously adapted to changing political realities and frequent budget cutbacks. The "Alouettes" and the "Porcupines" now share the same responsibilities: the defence of Canadian sovereignty with a rapid deployment capability on behalf of NATO.

On April 1, 1993, 3 Wing relocated to Bagotville. Its responsibility was to manage all of the base's lodger units which fell under Air Command authority. At the same time, Base Flight Unit became No. 439 Combat Support Squadron (CSS). The Base Aircraft Maintenance Engineering Organization changed to No. 3 Air Maintenance Squadron, while No. 12 Radar Squadron completed the reorganization.

From July 18 to 21, 1996, torrential rain besieged the region in a matter of only a few hours. Overflow of many rivers destroyed a large part of the Grande-Baie area in Ville de La Baie, and the Bassin area in Chicoutimi. On July 19, No. 439 CSS carried out its first rescue mission. Although most of 3 Wing's personnel were on leave during this period, many military members returned to the base in order to help the flood victims. They set up a tent city capable of accommodating more than 1,000 refugees on base. During the first week of the rescue operation, CFB Bagotville hosted 4,189 evacuees and the kitchen served a record number of 15,000 meals! When it ended, Operation Saguenay had become one of the largest domestic rescue operations ever performed in the history of the Canadian Forces.

For 3 Wing and its fighter squadrons, the ability to deploy in support of NATO culminated when the situation in Kosovo (the former Yugoslavia) escalated in March 1999. The bombing campaign lasted 78 days. Bagotville's personnel

really stood out during this conflict. In all, 375 members of the Wing (about 29 per cent of the workforce) participated in the deployment to Aviano and Vicenza, Italy, for the duration of the campaign. Their important work is a legacy to peacekeeping operations in Southern Europe.

Two years later, the terrorist attacks of Sept. 11, 2001, on the World Trade Center and the Pentagon had a significant impact on Bagotville. It changed its approach to NORAD operations radically, almost overnight.

Following these events, DND gave very high priority to the setup of additional alert sites, capable of receiving armed aircraft from 3 Wing. The goal of this vision: to respond without hesitation to terrorist attacks and to assure protection of large Canadian urban centres.

Today, 3 Wing personnel continue to support the Canadian government through the Canadian Armed Forces' three key defence roles: to defend the country by delivering excellence at home; to defend North America (NORAD); and to contribute to international peace and security. Thus, the list of operations involving Bagotville military personnel since the beginning of the new millennium is impressive. Among others:

- Humanitarian mission to Haiti (earthquake–2010)
- Deployment to Trapani in Sicily (impose a no-fly zone over a part of Libya–2011)
- Support of the Jamaican Defence Forces (search and rescue capability–2011)
- Patrolling Iceland airspace (2013)
- NATO Baltic Air Policing mission

"Our talented technicians have outdone themselves, taking what was once a graphic concept on paper and transforming it into an incredible final paint scheme for the CF-18," said 3 Wing Bagotville commander Col Darcy Molstad of the 2017 CF-188 Demo Hornet. Flown by Capt Matthew 'Glib' Kutyk from 425 TFS, this year's demo jet celebrates Canada's 150<sup>th</sup> anniversary. **Mike Reyno Photo**



Most recently, Bagotville personnel have assisted in targeted military action in Syria as part of Operation Impact, working to dismantle and defeat the group Daesh (October 2014 to February 2016).

Finally, NORAD has acknowledged an unusual increase in incursions involving Russian aircraft near the North American Air Defence Identification Zone. On several occasions during the last few years, CF-188s from No. 425 TFS and No. 433 TFS have intercepted Russian Tu-95 Bear and Tu-160 Blackjack bombers.

True to their tradition of excellence, without compromising on the mission at hand, the base's military will always be there to defend Canadian freedoms. This is why 3 Wing Bagotville remains today one of the most important elements of the RCAF in support of Canadian government policies, both foreign and domestic. **K**



*Marc-André Vézina discovered aviation at a very young age. When internal ear problems prevented him from becoming a pilot, he turned to aerospace manufacturing and worked with CAE Inc. for more than 30 years. He is the author of many RCAF history books, the latest titled Bagotville – 75 Years of Air Defence.*

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# Playing THE PART

THE USAF 18<sup>TH</sup> AGGRESSOR SQUADRON IS ADEPT AT ROLE PLAY, OFFERING "RED AIR" SERVICES THAT PREPARE FIGHTER PILOTS FOR ADVERSARIAL ENCOUNTERS. MEET THE RCAF'S CAPT MICHAEL "SHREK" WALKER, WHO SERVES AS THE UNIT'S EXPERT ON FIGHTER WEAPONS TACTICS.

BY CHRIS THATCHER



A U.S. Air Force F-16 Fighting Falcon assigned to the 354th Fighter Wing, Eielson Air Force Base, Alaska, conducts a training mission. The Wing's 18th Aggressor Squadron is one of two USAF squadrons with the vital task of replicating the threats of enemy air forces in domestic and multinational training exercises. **Cpl Suzanne Dickson Photo**



Ask an actor what role they most enjoy, and the answer is often the same: the villain. Playing a well-scripted enemy is a challenge most come to relish.

Capt Michael "Shrek" Walker would probably agree. Since being assigned to the United States Air Force (USAF) 18th Aggressor Squadron of the 354th Fighter Wing at Eielson Air Force Base in Alaska, the Royal Canadian Air Force (RCAF) CF-188 Hornet pilot has come to appreciate the role of the adversary.

The 18th Aggressors are one of two USAF squadrons with the vital task of replicating the threats of enemy air forces in domestic and multinational training exercises. It's a role they embrace with total commitment, from the exhaustive research they

compile on rival aircraft, weapons systems and tactics, to the insignia on their helmets, the surnames on their flight suits, and memorabilia of the former Soviet Union, Russian, Chinese and North Korean air forces, among others, in their squad room.

"We try to create a culture and immerse ourselves in that," Walker acknowledged in a recent interview with *RCAF Today*.

Like the villain, however, that attention to detail is not always appreciated. For some pilots in training, the Aggressors, or red air, can be their worst nightmare.



TOP: U.S. Air Force Senior Airman Christopher Tidline prepares RCAF Capt Michael Walker, an 18th Aggressor Squadron pilot, for a sortie. As the squadron's adversary fighter tactics expert, Walker has developed a bank of knowledge on former Soviet equipment, still operated by many nations today, and the tactics of modern Russian and Chinese fighters. **Staff Sgt Shawn Nickel Photo**

ABOVE LEFT: A U.S. Air Force F-16 Fighting Falcon assigned to the 18th Aggressor Squadron blasts off from Eielson Air Force Base. **Senior Airman Peter Reft Photo**

ABOVE CENTRE: An F-16 from the 18th Aggressor Squadron soars over the Joint Pacific Alaska Range Complex. The squadron is responsible for training and preparing joint and allied aircrews for combat missions. **Staff Sgt Christopher Boitz Photo**

ABOVE RIGHT: The F-16 is a compact, highly manoeuvrable fighter aircraft vastly proven in air-to-air combat and air-to-surface attack. **Tech. Sgt Joseph Swafford Photo**

But the squadron's approach has a specific focus: to prepare "blue force" pilots to respond and counter enemy threats through the best and most realistic training possible.

"I think for the most part we are respected and people understand what we bring to the table," said Walker. "There might be some hard feelings because a guy is on an upgrade and our threat level might be a lot more than he has seen on home station training, and maybe he doesn't pass that ride."

But the Aggressor reputation of an earlier era for being "scalp takers," with the sole objective of winning each encounter, has been replaced by recognition for "having the most accurate information around and replicating it as accurately as humanly possible."

"We are not out there trying to win the exercise," he said. "We're just trying to provide the most realistic picture we can within the boundaries of the scenario we are asked to train in."

Each pilot in the squadron is a subject matter expert, well researched and repeatedly tested on the specifics of missiles, radars, airframes or tactics, all of which are adapted to fit the requirements of blue force commanders on a specific exercise.

"Every guy on the squadron will have a different one," said Walker. "When I am doing my mission planning, for example, if I have a specific question about the [Sukhoi] Su-27 Flanker and what it can do, we have a Su-27 expert I can ask for the most accurate answer. And if he doesn't have it, he has a direct line to one of the three-letter intelligence agencies and can get that information. It is a pretty unique opportunity to have that much expertise in one building."

As the adversary fighter tactics expert, Walker has developed a

bank of knowledge on former Soviet equipment, still operated by many nations today, and the tactics of modern Russian and Chinese fighters. Occasionally, USAF squadrons have also asked for representations of North Korean, Iranian and Syrian capabilities. He's also acquired an appreciation for thought processes that differ significantly from much of what he has learned.

"Potential adversaries definitely approach the tactical problems very differently than we do in the West," he said. "And they don't necessarily think about it the same way that we do. When you approach it from their side, you can start thinking about how to develop our blue air tactics to maybe counter some of those threats that are emerging."

And even though he is a Canadian, he too has access to the information of the 17 U.S. intelligence agencies.

"We get direct access to the intelligence folks who get the latest and greatest information, and we participate in all of the intelligence conferences," he said, adding that the pilots routinely brief each other "so that everybody has a well-rounded foundation of threat knowledge."

As part of his assignment, Walker is also ensuring that much of that knowledge is transferred to RCAF colleagues, either indirectly through his contributions to USAF threat manuals, which are shared with Canada, or through briefings to the tactical fighter squadrons at his home base of 4 Wing Cold Lake, Alta., or at a recent fighter tactics working group in Montreal.

"When I come back, I will have all of that experience and knowledge as well, and to the extent that I am allowed to share information, I certainly will add to our manuals and tactics moving forward, as the guys before me have done."

For some pilots in training, the Aggressors, or red air, can be their worst nightmare. But the squadron's approach has a specific focus: to prepare "blue force" pilots to respond and counter enemy threats through the best and most realistic training possible. **Staff Sgt Christopher Boitz**



## DREAM POSTING

Walker's fascination with aviation began as a child and gained momentum as a teenager working summers for an air charter company in British Columbia that his parents had invested in. He obtained his pilot's licence while still in high school and, during his final year of university, was swayed by the words of a military recruiter.

Once accepted by the Air Force, he followed a fighter pilot training path that took him from Portage la Prairie, Man., to Moose Jaw, Sask., and then to 419 Tactical Fighter Training Squadron in Cold Lake. He was deployed to Afghanistan as a forward air controller with 409 Tactical Fighter Squadron (TFS), and then assigned to 410 TFS, where in 2013 he completed the Fighter Weapons Instructor Course, the RCAF equivalent of the U.S. Navy's Top Gun, a qualification common to most pilots who have later been part of the exchange with the 18th Aggressor Squadron.

The exchange assignment had been high on Walker's wish list of next job postings, so he felt fortunate when the three-year assignment came through, even though it meant moving a pregnant wife to Alaska in the summer of 2015 (their first son would be born two weeks later, their second in March 2017).

The transition from a CF-188 Hornet to the Block 30 F-16 Fighting Falcon was smoother and faster than Walker expected, beginning with testing in San Antonio, Texas, to see how he handled a 9G profile—a significant step up from the 7.5G profile for the F-18—and then to Luke Air Force Base, Ariz., for a two-month conversion

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No detail is overlooked when the Aggressors are preparing for a mission. **Staff Sgt Shawn Nickel Photo**



USAF Capt Todd Possemato, an 18th Aggressor Squadron pilot, flies an F-16 Fighting Falcon as a “bad guy.” The average Aggressor pilot has at least 1,000 fighter hours and has put in hundreds of hours studying to become an expert in enemy tactics. **Staff Sgt Shawn Nickel Photo**



The F-16 does have its limitations when it comes to imitating the newest adversary aircraft, “but we have very good information on some of the fourth generation and older threats,” said the RCAF’s Walker. **Staff Sgt Christopher Boitz Photo**

course of intense groundschool and simulator flights, followed by live flying.

“I think I went solo on my third one, which seemed really crazy to me at the time,” he said. “But it is amazing how quickly you can adapt from one fighter to another.”

Once back in Alaska, he spent the first year working his way back up the squadron hierarchy, much like any newbie, first as a red air wingman, then red air flight lead, and finally as squadron weapons officer and chief Mig-1, a key role deciding how the squadron operates during large exercises such as Red Flag.

“I have a lot of say in terms of what direction we are taking and the type of replication we do,” he explained. “I am the only weapons instructor on the squadron, other than the commander. We have a limited number of guys who are air qualified to be the lead on these large force missions, and I’m in charge of them and making sure everybody is doing things the way we want to do them. It is a big role to give the Canadian, which is a great thing for [the RCAF].”

While most taskings involve large scale exercises, from the continental U.S. to Japan and Australia, flying against as many as 50 aircraft, everything from Apache helicopters to F-15C Eagles, F/A-18 Super Hornets, and now F-35 Joint Strike Fighters, local training is often concentrated on the F-22 Raptors of the 525th and 90th Fighter Squadrons out of Alaska’s Elmendorf Air Force Base. On rare occasions, the 18th Aggressors will step out of the “bad guy” role to serve as blue air strikers for F-22 training purposes.

“We’ll step up our threat based on where they are in their [training] syllabus,” explained Walker. “We’ll go from replicating old things like MiG-21s all the way to some of the newest stuff that is emerging.”

The F-16 does have its limitations when it comes to imitating the newest adversary aircraft, he acknowledged, “but we have very good information on some of the fourth generation and older threats, and we will actually limit our own systems onboard our aircraft to replicate as best we can what a pilot flying that aircraft would be limited to.”

And those limitations are becoming more pronounced as more fifth generation aircraft like the F-35 enter service. Walker has only had a few encounters with Lockheed Martin’s F-35 Lightning II, but he said it has a distinct advantage.

“It is a complete game changer in terms of the actual limitations we have in finding them and deploying against them. It is a completely different world of air combat at that stage. Any time I can work with fifth-gen fighters, it is pretty eye opening.”

As the only foreign pilot on an aggressor squadron with access to top intelligence, he does get the odd look of surprise when his Canadian colours are revealed. But while there are “things that I am not read into that are U.S. only, for the most part I am granted a bit of extra access so I can do my job,” he said.

However, the 18th Aggressor Squadron has modified his call sign slightly in recognition of his nationality.

Although he is big and might “sort of look like an ogre” in his green flight suit, he said the origins are much more benign. When he failed to hear a colleague repeatedly calling his name, the buddy yelled “Shrek,” prompting him to turn his head, and the nickname stuck. Since the Aggressors already have one “Shrek” in their ranks, he has become “Shrek-Eh.”

“They think it’s hilarious.”



Chris Thatcher is an aerospace, defence and technology writer and a regular contributor to Skies and RCAF Today.



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There are many moving parts to any successful show season for the Snowbirds, many of which are rarely seen by the general public. The Ops/Standards Cell and the Tutor SET are just two of those critical “behind the scenes” elements. **Mike Reyno Photo**





# Setting HIGH Standards

THE MANY IMPORTANT "BEHIND THE SCENES" ELEMENTS OF THE CANADIAN FORCES SNOWBIRDS INCLUDE A SMALL GROUP OF 431 SQUADRON PILOTS KNOWN AS THE OPS/STANDARDS CELL AND THE TUTOR SET.

BY MIKE LUEDEY

While the Canadian Forces Snowbirds are a household name with airshow goers and aviation fans around the world, many have not had a behind the scenes look at those who play a big part in bringing you the team each season.

Chances are, if you've never heard of the Ops/Standards Cell within 431 Air Demonstration Squadron—or the Tutor SET—you're not alone. There are many moving parts to any successful show season for the Snowbirds, many of which are rarely seen by the general public at airshows across North America.

#### OPS/STANDARDS CELL

One of those unseen elements of the Canadian Forces Snowbirds is a small group of 431 Squadron pilots known as the Ops/Standards Cell. This year, the group includes deputy commanding officer and unit instrument check pilot (ICP), Maj Patrick Gobeil, and operations officer, Capt Philippe Roy.

While there is no special selection process involved in joining the Ops/Standards Cell, each candidate must pass a Snowbirds Standards Instructor Pilot (SSIP) test. Ex-show pilots are preferred since they have the unique and valuable experience required to aid in the training and proficiency of the team's current roster of pilots.

Gobeil, a native of Longueuil, Que., trained on the Tutor while coming up through



An early start to a January day in Moose Jaw as (L-R) Capt Philippe Roy, Maj Patrick Gobeil and Capt Brent Handy prepare to fly a morning practice with the team. **Mike Luedey Photo**



Most pilots who try out for the Snowbirds today don't have any formal training or flying time in the Canadian-made CT-114 Tutor. They learn the ropes from senior team members and pilots from the Ops/Standards Cell. **Mike Luedey Photo**



The Standards, Evaluation and Training (SET) officer vets changes to Snowbirds procedures and regulations before the commanders sign off on them at 1 Canadian Air Division headquarters. **Mike Luedey Photo**

the Royal Canadian Air Force (RCAF), an increasingly rare credential among today's Canadian military pilots.

He tried out for the team and made the cut with the 2005 and 2006 Snowbirds as the outer right wing pilot in the No. 6 jet. In 2012, he was selected for the role of CF-188 demonstration pilot in the "True North, Strong and Free"-themed jet before making a return to the Snowbirds for the 2014 and 2015 seasons after being selected to be the new boss (team lead).

In 2016, after two safe and successful years, Gobeil turned the lead of the team over to the new boss, Maj Yanick Grégoire, and would remain with the squadron as deputy commanding officer (DCO), leveraging his immense skill, experience and over 4,600 military flying hours.

Roy, from Gatineau, Que., came to the team with a military flying career as both a Harvard II flight instructor with 2 CFFTS, also known as the "Big 2," and a search and rescue pilot on the CC-130 Hercules. Roy tried out for the team in 2013 and was selected to fly the No. 4 jet in the first line astern position, who along with the second line astern (No. 5 jet), are affectionately known as "Stemcats."

Roy flew the No. 4 jet for three seasons, from 2014 through 2016, and relinquished the position to new team member, Maj Andy Feltrin.

Unlike times past, most pilots who try out for the Snowbirds today come to the squadron without ever having any formal training or flying time in the older, yet reliable, Canadian-made CT-114 Tutor aircraft.

For those pilots, this is where they'll get their first hands-on experience with the Tutor, flying with senior members of the team and pilots from the Ops/Standards Cell. Successful candidates will report to the team in July and begin the type conversion process through various check rides (flights) such as instrument, proficiency and formation.

They'll fly these check rides with the Ops/Standards Cell and will continue to train with them through the summer months in Moose Jaw, Sask., while the team is on the road. Once Tutor type conversion is complete, the new Snowbirds are prepared for the long winter months ahead, where they will train with the rest of the team. Standards pilots will fly with members of the team prior to their spring training deployment in Comox, B.C., to "reset" their instrument tickets (ratings) and then take turns accompanying the team in Comox while they work through the formation checks for each of the pilots leading up to the start of the show season.

While not an actual role of the Ops/Standards cell, in some situations, the pilots could be called upon to step in for senior members of the team during the early stages of their training to reduce any potential gaps. This is however a rarity once the team gets to more advanced flying in January.

This past winter, the team experienced an extreme anomaly when Gobeil was called upon to temporarily step in as team lead for Grégoire. Grégoire was undergoing a surgical procedure that as a result (with his pilot medical category) would prevent him from flying high-performance aircraft until fully recovered.

It was good fortune that 431 Squadron still had Gobeil in the fold as the DCO who was still actively flying the Tutor. As a former and very recent team lead, Gobeil was able to lead the team through the remaining winter months in Moose Jaw, followed by spring training in Comox, B.C., and will continue as lead through to the second half of the 2017 show season, when Grégoire is expected to have made a full recovery and resume his position and duties as the team lead.

Because training must flow with as little interruption as possible, the squadron relies on its Standards pilots to deliver a high level of support to not only the team members, but the fleet of aircraft as well.

Test flights must be done following maintenance on the aircraft, which are especially important during the winter months when serviceable aircraft for training flights are at a premium. At times, aircraft need to be flown from the Snowbirds' home at 15 Wing Moose Jaw to 8 Wing Trenton, Ont., for "periodic maintenance," which every aircraft receives after 400 hours of flying time.

There are different overhaul requirements depending

on where each aircraft is in its lifespan, and because 431 Squadron is busy training Tutor technicians, that “periodic maintenance” is contracted out.

During the show season, jets may need to be swapped out for reasons such as mechanical issues which require more support than the team has available to them on the road. Pilots from the Standards Cell handle the task of getting those jets to the team and, if safe to do so, flying the aircraft in need of extra maintenance back to Moose Jaw.

## 1 CAD TUTOR SET

1 Canadian Air Division (1 CAD) is the source of air assets provided by the RCAF to the operational command of the Canadian Forces (CF). With 1 CAD Headquarters based in Winnipeg, Man., there's a need for eyes and ears on the ground (and in the air) with the Snowbirds, both at home in Moose Jaw and on the road. That responsibility goes to the 1 CAD Tutor Standards, Evaluation and Training (SET) officer, Capt Brent Handy.

Handy, a former CF-188 Hornet pilot, tried out for the Snowbirds while flying as a CT-155 Hawk instructor at 419 Tactical Fighter Training Squadron. He joined the team for the 2012 and 2013 seasons as opposing and then lead solo in the No. 9 jet, he continues to fly airshows as a solo aerobatic performer in his Pitts aerobatic plane and recently represented the RCAF in Vimy, France as one of five pilots to fly replica First World War biplanes over a ceremony commemorating the 100<sup>th</sup> anniversary of the Battle of Vimy Ridge.

He has over 3,600 hours of military flying time and as a former solo, Handy is also a valuable asset to the Ops/Standards Cell as he can speak with authority on the formation and solo manoeuvres, whereas a wing pilot (for example) would lack the relevant experience to provide useful feedback to a lead solo regarding those procedures.

With the Tutor SET being co-located on base with the

Snowbirds, Handy is well positioned to augment the squadron with routine pilot training flights and check rides, in addition to his regular duties. The SET role is like the standards cell for the Air Force, with the responsibility to report and advise to the air division commander on matters pertaining to fleet and pilot readiness.

The SET also vets changes to procedures and regulations brought forward by the squadron before the commanders sign off on them at 1 CAD HQ. Handy prepares annual ground exams and conducts check flights for the pilots. He also conducts an OSV (operational standards verification, or audit) twice a year, once during spring training and once more during the summer. As the SET does not fall under the jurisdiction of the squadron, Handy is also the only one who can do the commanding officer's check flight and sign off on new standards pilots who have completed the SSIP.

As airshow spectators and fans of the Snowbirds, we are treated to outstanding performances across North America. We marvel at the formation changes that occur during looping manoeuvres. We cheer for nine-plane bursts and head-to-head solo passes. All of this is brought to us by the many talented people at 431 Air Demonstration Squadron, including their hard-working technicians and support personnel at home.

The show must go on, and year after year it does, thanks in large part to the high-level training and support received by the talented members of the Ops/Standards Cell and the Tutor SET. ■



*Mike Luedey is a Langley, B.C.-based aviation photographer who got his start volunteering time with aviation museums in the Pacific Northwest, leading to an active role with airshows and the military. Mike's focus has shifted to photojournalism, allowing him to further share his passion for aviation and those he's met through it.*



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The Flight Lieutenant "Bunny" McLarty Hawker Hurricane in 6 Squadron RAF markings is the only flying example of a Mk IV Hurricane in the world. On the Hurricane's wing is Mike Potter in his beloved Supermarine Spitfire Mk XVI, dedicated to Flight Lieutenant William Harper of 421 Squadron, RCAF. **Eric Dumigan Photo**



# PLANES & PASSION

GATINEAU'S VINTAGE WINGS IS SOARING TO NEW HEIGHTS, POWERED BY ONE OF ITS GREATEST ASSETS—THE HUMBLE VOLUNTEER.

BY LISA GORDON | PHOTOS BY PETER HANDLEY



Forget software. Airplanes are so much more exciting—especially old airplanes.

That was Ottawa businessman Michael Potter's line of thinking in 1995, after he retired from a successful software career and began considering what to do next.

Fast forward to 2017 and there's no doubt that as the founder of Vintage Wings of Canada, Potter has made a lasting contributing to Canadian aviation history with his collection of rare, lovingly restored classic airplanes—each and every one boasting a strong connection to Canada's aviation past.

From his first acquisitions in 2000—a Beech Staggerwing and a Supermarine Spitfire—Potter, now 73, had a healthy appreciation for old planes. But it took an event in the summer of 2001 to really emphasize how much emotion they could evoke.

"I painted the Spitfire in Canadian camouflage livery," he recalled. "I went to a guy who was a modeller who had huge knowledge of the history of the airplane, and we mapped out a paint scheme that represented the livery of a Canadian squadron that flew that plane. I arranged with the Rockcliffe [aviation] museum to basically borrow their site and invited people to a display and a talk about the airplane."

With some advance press, the event attracted close to 3,000 people. Emotions ran high, with former fighter pilots sharing their memories with the crowd.

"We did a few passes with the plane and then taxied up where people could have a close look at it," continued Potter. "We got some of the [veteran] pilots into the airplane; there were a couple of guys we helped out of wheelchairs and into the cockpit. There were more than a couple of them who had flown those in combat and were sitting in the plane for the first time in 60 years."

**BELOW:** Mike Potter throttles up the Rolls-Royce Merlin of his North American P-51D Mustang for a night photography shoot. The Mustang is painted in 442 Squadron RCAF markings and is dedicated to Larry and Rocky Robillard, two Ottawa brothers who flew with 442 Squadron during the Second World War.  
**Eric Dumigan Photo**

It was the reaction to the Spitfire that made Potter realize the crucial role vintage aircraft play in keeping Canadian aviation history alive.

"I decided at that point to build a collection of airplanes that were important to Canada's military history," he told *RCAF Today*. "I'm not totally altruistic—I just love the airplanes. What they mean to other people is just one more reason to buy more of these planes and not just hide them away, but feel good about what they mean to other people."

## A COLLECTOR IS BORN

Unlike many present-day aviation aficionados, Potter didn't spend his childhood building model airplanes or plane spotting at the closest airport. Born in England, he moved to British Columbia when he was seven years old and later joined the Royal Canadian Navy after high school. He subsequently graduated from Royal Military College in 1966 and then the University of British Columbia in 1967.

It's been 50 years since Potter—in search of a little excitement—took his first flight at the local gliding club.

"I wanted a little adventure; I guess I got hooked on it very quickly," he said. "I was motivated and got a power licence mainly to tow gliders."

While he initially flew for fun, Potter later built up his experience flying for business in various personal corporate aircraft, including a Piper Malibu, Piper Cheyenne II, Cessna Conquest II and Dassault Falcon 200. In total, he has accumulated over 7,000 flying hours in business and vintage aircraft combined.

Following his retirement, Potter embarked on an ambitious plan to gather a collection of vintage aircraft. To house the planes, he built a custom 23,000-square-foot hangar and maintenance facility at the Gatineau-Ottawa Executive Airport.

"All of that together took the shape of Vintage Wings around 2004, while most of the aircraft acquisitions took place between 2000 and 2008," said Potter.

"I wasn't so budget constrained so I was able to search out airplanes that were really quite valuable—the Mustang, Hurricane, Corsair, P-40. We got some very rare airplanes like the Swordfish and Lysander, and trainers like the Tiger Moth, Fleet Finch and Harvard," he continued, adding that the collection also includes a de Havilland DHC-2 Beaver which, although not known as a Canadian military aircraft, is nonetheless a crucial piece of Canadian aviation history.

Today, Potter's irreplaceable collection includes 15 aircraft plus three more that he doesn't own, but invited into the Vintage Wings hangar. Visitors will see a Spitfire Mk XVI, Spitfire Mk IX, Hurricane Mk IV, Hurricane Mk XII, FG-1D Corsair, P-40N Kittyhawk, P-51D Mustang, Harvard IV,



Fleet Finch, Fairchild Cornell, DHC-2 Beaver, Fairey Swordfish III, Westland Lysander, F-86 Sabre, DH-83 Fox Moth, DHC-1 Chipmunk, Hawker Fury, and Extra 330LT. The collection also includes a Spitfire Mk XIV project that is for sale. Aircraft previously held by the collection include a Beech Staggerwing, Waco Taperwing ATO, DH-82 Tiger Moth, and a Boeing Stearman.

## VOLUNTEER ROOTS

When it first opened its doors in 2004, Vintage Wings was essentially a volunteer-driven private foundation.

In its first year of operation the group hosted two open houses; the next summer there were four. Then they decided to have an airshow. Eventually, volunteers were trying to uphold a complex agenda of events and programs. The spending far outstripped the income.

At that point, Potter—a businessman at heart—decided to create a registered charitable organization under a single independent board of directors that would oversee the collection, the hangar and events, public outreach, and the annual airshow.

"We wanted as much volunteerism as possible but at the end of the day, it would be a professionally staffed organization that managed restoration, aircraft maintenance, the facility, flight displays and events, etc.," said Potter.

Dave O'Malley, whose involvement with the organization goes back to the early 2000s, has been both a volunteer and a staff member at Vintage Wings. As the president of Aerographics Creative Services, O'Malley has been the driving force behind communications and branding initiatives for the vintage aircraft collection.

"I was happily sucked into the vortex," he laughed, reminiscing about the early days when plans for the collection were just coming together. "By the time the doors opened up, Mike had the Taperwing, Staggerwing, Beaver, Spitfire, Mustang, Harvard, Tiger Moth .... and then it just wound up," recalled O'Malley. "He started collecting these airplanes because he loved them."

O'Malley, too, recalled the financial challenges experienced along the way.

"The idea right from the beginning was to make it self-sustaining eventually," he said. "But the organization had a heavy cost. There was so much overhead and we never got close to being self-sustaining."

With Vintage Wings managing the restorations, aircraft maintenance, and all of the myriad bits and pieces required in terms of regulation, plus running major events, galas and airshows, O'Malley admitted: "It required so many people, but we could never generate enough money. Mike was always backfilling it."

## GROUNDSWELL OF SUPPORT

In late 2016, Vintage Wings' board of directors decided the status quo was not financially viable and Potter elected to privatize the collection once again.

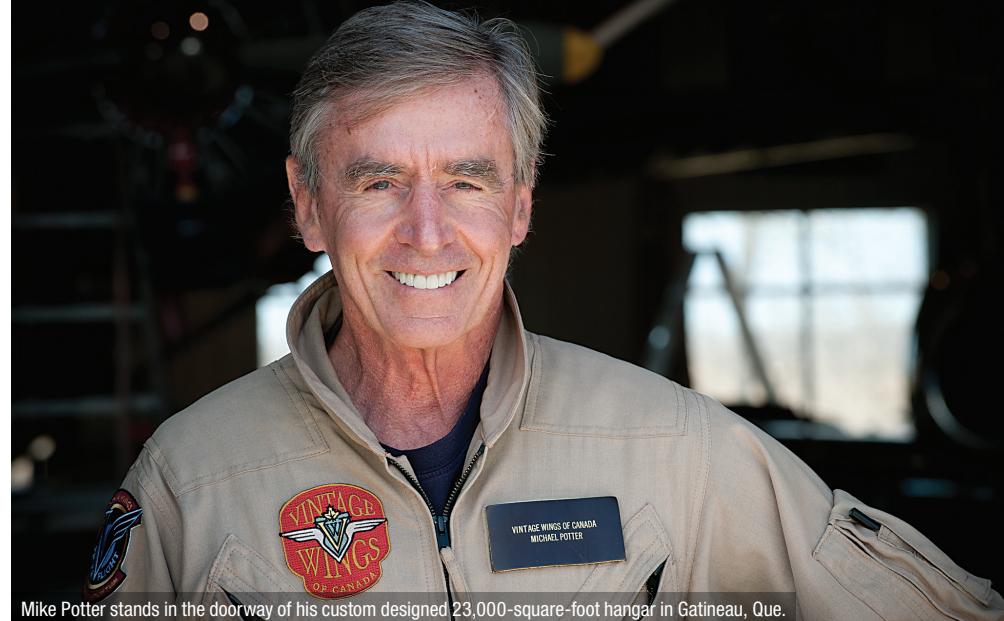
"I've been saying for years that it had to be more independent," he said. "But once the Vintage Wings board concluded it was not viable I decided to pursue the same mission as a private collection, on display and accessible to the public."

The education and public outreach functions returned to their volunteer roots and this has created clarity within the organization. Other than a paid receptionist, it's once again a volunteer-driven enterprise from top to bottom.

Those who want to help are pitching in to organize various events. For example, this year will see them revive a scaled back version of the Yellow Wings program, an initiative that introduces young air cadets to the priceless aircraft in Michael Potter's collection.

"I told them, 'If you still want visitors in the hangar, if you still want fly-in breakfasts and airshows, my doors are open. I'll support that in any way I can.' And there was just a groundswell of support," said Potter.

"Now they're not worried about restoration, maintenance or flight operations. They're worried about hosting events that will draw people who are interested in the collection and the museum."



Mike Potter stands in the doorway of his custom designed 23,000-square-foot hangar in Gatineau, Que.

The Canadian Warplane Heritage Museum Avro Lancaster X leads four Second World War vintage fighters. On the left wing flies the Spitfire XVI and Hurricane IV of the Michael Potter Collection, while on the right wing fly another Spitfire and Hurricane from the now-defunct Russell Collection of Niagara Falls, Ont. **Eric Dumigan Photo**



Harry Hannah of Oakville, Ont., chats with pilot Todd Lemieux after a flight in a Boeing Stearman dedicated in his name. Scottish-born Hannah, 94, was a Spitfire pilot with 602 Squadron, training on the Stearman in America in 1941.



Aircraft structures engineer Ken Wood (left) and mechanic Pat Tenger of Vintech Aero test fit an engine cowling on the Roseland Spitfire Mk IV. The project, which got its start in Comox, B.C., is now finished and the aircraft will undergo engine and initial flying tests at Gatineau.

This 2011 photo shows the entire Michael Potter Collection as well as the volunteers who are the backbone of Vintage Wings.



As of May 2017, the Michael Potter Collection includes two of the finest Spitfire restorations on the planet—both painted to honour the men and aircraft of RCAF squadrons in the Second World War.



Essentially, the recent changes have seen three separate entities coming together under the Vintage Wings brand: The airplanes, known as the Michael Potter Collection; Vintech Aero, the onsite restoration and maintenance provider that employs a paid staff; and Vintage Wings of Canada, the volunteer-driven organization that aims to showcase the aircraft. There is also a separate group that has formed to organize airshows, such as the Aero 150 event held on April 30.

In total, Potter said there are more than 100 volunteers powering Vintage Wings. He believes a renewed sense of energy has permeated the hangar since the restructuring.

"Both in terms of the flight program and the public outreach for 2017, both sides will be more active than the past year or two," said Potter. "The new model seems to be so much more appropriate for what we're trying to achieve and it makes my life easier. Frankly, that hangar and the collection and the restoration work involves some big dollars. As a business guy, I like to feel they're being managed efficiently and effectively."

He added that he's used the term "taking ownership" repeatedly to describe the changing role of the Vintage Wings volunteer.

"I have made it clear that I will take care of the hangar, the collection, and the operations of the aircraft—and doing that gives me enough on my hands—but reaching out to the public, bringing visitors and school groups into the hangar, and putting on events is under the full ownership of volunteers."

O'Malley said Vintage Wings volunteers are enthusiastic about the changes.

"This is the right way to go. The volunteers used to wait for the message [to come from] on high about what they'd be doing. Now, they're all stepping up and taking initiative and owning their projects," he said. "Mike wants this thing to stand on its own and at some point it's got to learn to do that. I think this is the way—this is how we started."

## EXCITING TIMES

As Vintage Wings completes its reorganization, the summer of 2017 looms large.

O'Malley said the biggest event of the season was the Aero 150 airshow on April 30 featuring the Snowbirds and *La Patrouille de France*.

"That show was a tremendous opportunity; they performed along with the Snowbirds," he said at the time. "The Air Force also sent some other assets to fly. We flew our airplanes as well."

O'Malley added that despite rain, ice pellets and just-above-zero temperatures, about 10,000 people attended the free one-day event. The City of Gatineau, the RCAF, and Michael Potter were all key sponsors.

In addition to the airshow, Vintage Wings volunteers are filling the calendar with a number of other engagements. So far, the list includes a Seat Check Saturday (where people can pay a fee to sit for five minutes in the cockpits of five different aircraft—"It's like speed dating with history," said O'Malley); a fly-in breakfast on June 17; numerous airshow appearances of the Second World War fighters in the collection, and several Yellow Wings initiatives to reach out to air cadets.

"From the volunteer side, we're all really excited and engaged like we've never been before," O'Malley enthused. "This is kind of where we started, with the Michael Potter Collection, a bunch of mechanics, a hangar, and a bunch of people wondering what we should do with it all."

Although a date hasn't been set, there is another long-awaited event that is expected to take place this summer—the first flight of Vintage Wings' Supermarine Spitfire Mk IX, RAF serial number TE294.

Rescued from a scrap heap in South Africa in the 1990s, the fighter's fuselage was transported to Comox, B.C., where a group of volunteers took on the task of restoring her as a millennium project. By 2007, the group realized a new source of funding was needed to see the project through to completion. The plane was offered to other museums and agencies and Michael Potter stepped forward to provide the considerable financing required to return TE294 to the skies.

A crew from Vintech Aero proceeded to build the fuselage



A CT-156 Harvard II of today's RCAF leads a similarly painted North American Harvard IV of the Michael Potter Collection. Both carry the markings of a wartime Harvard known to have been flown by Pilot Officer John Gillespie Magee when he trained at No. 2 Service Flying Training School Uplands. Magee, an American Spitfire pilot with 412 Squadron, penned "High Flight," the greatest poem about flying known to aviation. Every aircraft in the Michael Potter Collection is dedicated to a pilot of the Second World War or Cold War.

in Comox while the wings were constructed in Gatineau, from scratch, under the direction of project supervisor Ken Wood. The pieces came together in the Vintage Wings hangar and all that remains to be done is some final testing.

A mammoth undertaking, TE294 is "the most beautiful Spitfire on the planet," according to Potter. "Nearly all of it is made by our guys. There were 22,000 Spitfires built, all of them in the U.K. There have been many restorations but this is the first time a full build has been done in Canada."

The Spitfire will be dedicated to the memory of Flight Lieutenant Arnold "Rosey" Roseland of 442 Squadron, one of very few Canadian fighter pilots who fought both the Japanese and the Germans during the Second World War. With a reported 117 flights in the Spitfire totaling 130 hours and 10 minutes, Roseland is a Canadian hero.

"We're planning to do something really special," said O'Malley of the Roseland Spitfire unveiling. "It's been a long program for sure, but this summer it's going to fly. Not only is it the first Spitfire built from scratch in Canada, but the first in North America—it was built from the data plates upwards. It's a spectacular project. It's just beautifully done."

## RECREATING HISTORY

There's no doubt that Michael Potter has made a huge contribution to preserving and recreating Canada's aviation history. But what does the collection mean to him personally?

"I think there are three things to mention," he told *RCAF Today*. "I've found the personal challenge of flying those airplanes very rewarding. I have a great attraction to flying the planes.

"Secondly, I just love the restoration work. I was in the software business; it's abstract, you can't touch it. But there's

a great attraction to going into the hangar and talking to real people who spend their careers dealing and working on things that are tangible. It's a wonderful place to hang out.

"I also have to add that the creation of this has been a business challenge, so it links to my first career."

Potter is quick to recognize the pilots, maintenance engineers and volunteers who together form the backbone of Vintage Wings.

O'Malley agreed. "The best thing about Vintage Wings is the people. We have the best of the best," he said. When we were running full out about four years ago, the group was really talented. It was so much fun and it's great to see them all here today, fully energized under the new organizational model."

Potter's dream for Vintage Wings is that one day it will see the same kind of visitor traffic as Hamilton's Canadian Warplane Heritage Museum.

"There are a lot of people here in the National Capital Region who don't know about what we have here in Gatineau and how unique it is with our focus on Second World War fighters," he concluded. "There's a real opportunity for Vintage Wings to expand both their ground-based educational events and the flight program as well. My dreams are for them to be three or four times the size they are now."



Lisa Gordon is editor-in-chief of *Skies* and *RCAF Today* magazines. Prior to joining MHM Publishing in 2011, Lisa worked in association publishing for more than a decade, overseeing the production of custom-crafted trade magazines. Lisa is a graduate of the Ryerson University Journalism program.



# THROUGH THE LENS

SOME OF THE RCAF'S MOST DEFINING MOMENTS FROM THE PAST YEAR WERE CAPTURED BY DND PHOTOGRAPHERS. WE'VE ROUNDED UP A SELECTION OF THEIR VERY BEST IMAGES TO SHOWCASE THE MEN AND WOMEN OF THE RCAF IN ACTION.



An aviation technician from 443 Squadron gets ready to guide a CH-124 Sea King helicopter attached to HMCS Winnipeg on March 13, 2017. **Cpl Caribe Orellana Photo**



Members of the Canadian contingent participate in a sunset ceremony at the Canadian National Vimy Memorial in Vimy, France, on April 8, 2017. **MCpl Jennifer Kusche Photo**





ABOVE: Technicians from Air Task Force-Romania change one engine on a CF-188 Hornet in Constanta, Romania, during Exercise Resilient Resolve on March 17, 2016.  
**Master-Seaman Steve Picard Photo**

RIGHT: An aircraft technician from Air Task Force – Iraq (ATF-I) marshals a CP-140 Aurora aircraft during Operation Impact on Jan. 4, 2017. **DND Photo**





LEFT: Deployed members of 12e Régiment blindé du Canada (12 RBC) travel from Canadian Forces Base Valcartier to Hall Beach, Nunavut, on a CC-177 Globemaster on Feb. 21, 2017.

**P02 Belinda Groves Photo**

BELOW LEFT: Cpl Chris Schatz of 435 Transport and Rescue Squadron prepares a propeller from a CC-130 Hercules for replacement near Resolute Bay, Nunavut, in support of Operation Nunalivut on April 6, 2016. **Cpl Raulley Parks Photo**



ABOVE: A Canadian Armed Forces soldier guards his arcs of fire on board a CH-146 Griffon helicopter during an air mobility mission in Northern Iraq during Operation Impact on Nov. 4, 2016. **DND Photo**

LEFT: A soldier from 4th Canadian Division disembarks a CH-147F Chinook helicopter during Exercise Stalwart Guardian 16 on Aug. 19, 2016, at Petawawa, Ont. **MCpl Precious Carandang Photo**





ABOVE: CC-130J Hercules pilots from 436 Transport Squadron out of 8 Wing Trenton fly over Kauai, Hawaii, to respond to a simulated mass casualty scenario during RIMPAC 16 on July 14, 2016.

**MCpl Mathieu Gaudreault Photo**

RIGHT: A CC-177 Globemaster aircraft prepares to land at Thule Air Base, Greenland, after dropping off equipment at CFB Alert during Operation Boxtop on Sept. 30, 2016.

**Cpl Ryan Moulton Photo**





BELOW: Air Combat System Officers onboard a CP-140 Aurora patrol aircraft log in their observations during a reconnaissance mission as part of Operation Impact on Jan. 1, 2017.  
**Combat Camera Photo**

BOTTOM RIGHT: The pilot of a CC-177 Globemaster III makes adjustments to the controls while in flight during Operation Impact on Nov. 12, 2016. **Combat Camera Photo**







## CLOCKWISE FROM TOP LEFT:

A Canadian Armed Forces Avionics Systems Technician inspects and cleans a CH-146 Griffon helicopter at Camp Érable, Iraq, during Operation Impact on April 25, 2017. **DND Photo**

Deployed members disembark a CC-177 Globemaster aircraft at Hall Beach Airport, Nunavut, during Operation Nunalivut 2017, Feb. 23, 2017. **P02 Belinda Groves Photo**

A CH-146 Griffon helicopter from 408 Tactical Helicopter Squadron prepares to take off at Airfield 21 in Wainwright, Alta., during Exercise Maple Resolve 16 on May 29, 2016. **MCpl Jonathan Barrette Photo**

Capt Andrew Jakubaitis, CF-188 Hornet pilot from Air Task Force Romania, flies over the Transylvanian Alps while on a mission in Romania during Exercise Resilient Resolve on April 1, 2016. **Capt Andrew Jakubaitis Photo**

Two RCAF loadmasters observe two CF-188 Hornet jets from the open ramp of a CC-130J Hercules aircraft over Pearl Harbor-Hickam, Hawaii, during RIMPAC 16 on July 26, 2016. **MCpl Chris Ward Photo**

MCpl Eve Boyce, a search and rescue technician from 424 Transport and Rescue Squadron, Trenton, Ont., adjusts a simulated casualty in a skid as they are pulled up a cliff during the 2016 National Search and Rescue Exercise at Yellowknife, N.W.T., on Sept. 22, 2016. **Cpl Bryan Carter Photo**





Maintenance personnel from 4 Wing Cold Lake prepare a CF-188 Hornet for night flight operations at Marine Corps Air Station Miramar, Calif., as part of Exercise Puma Strike 16-B on Nov. 17, 2016. **Cpl Manuela Berger Photo**

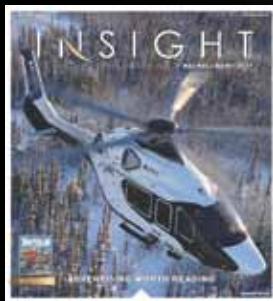


Canadian Armed Forces medical evacuation course candidates remove a patient from a CH-146 Griffon helicopter on the 430 Tactical Helicopter Squadron heliport at Valcartier Base, in Courcelette, Que., on Oct. 9, 2015. **Cpl Nicolas Tremblay Photo**





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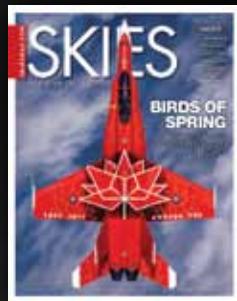
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ADVERTISING WORTH READING

# TENDING THE CC-150 Polaris

L3 MAS KEEPS THE RCAF'S FIVE AIRBUS CC-150 POLARIS AIRCRAFT AT NEARLY 99 PER CENT FLIGHT READINESS.

BY JAMES CARELESS

The Airbus CC-150 Polaris was not intended to exist as a military aircraft. Initially, the five CC-150s flown by the Royal Canadian Air Force (RCAF) were civilian Airbus A310 wide-body passenger aircraft that flew with the now-defunct Canadian Airlines.

The RCAF purchased the five A310s from Canadian Airlines in 1992 and converted them for military use under the CC-150 designation. Today, CC-150 Polaris aircraft are used to transport passengers and supplies around the world, for air-to-air refuelling missions and for medical transport.

When configured for VIP passengers, the CC-150 Polaris is used to transport government officials and foreign dignitaries, including the Prime Minister, the Governor General, and members of the Royal Family.

As aerial tankers, two CC-150s are performing air-to-air refueling for Canada's CF-188 fighter jets and coalition aircraft. Many missions have been conducted with this type of configuration.

## L3 MAS ERA

In 2012, L3 MAS won its first contract to provide in-service support for the CC-150 Polaris aircraft.

Based at Montreal-Mirabel International Airport, L3 MAS is Canada's premier supplier of civilian-sourced in-service support. The company has operating centres in many Canadian cities, including Bagotville, Que.; Cold Lake, Alta.; Trenton, Petawawa and Ottawa, Ont.; and Shearwater, N.S.

In addition to the CC-150, L3 MAS provides in-service support to several other Canadian military aircraft fleets, including CF-188 Hornets, CH-148 Cyclone maritime helicopters, CH-147F Chinook helicopters, and CT-114 Tutor jets flown by



the Canadian Forces Snowbirds.

"The CC-150 is a very different kind of aerial platform for the RCAF," said Jacques Comtois, L3 MAS vice-president and general manager. "Unlike the other aircraft they fly, the CC-150 is a very limited fleet that will never be expanded, and that requires a more civilian-focused skill set to keep it flying. That's where we come in."

"At the same time, the CC-150 is derived from the hugely popular Airbus A310," he continued. "This means that a global company as L3 with deep roots in the commercial aviation sector has the connections and resources to keep the fleet flight-ready—at a very affordable cost to the Department of National Defence."

The math backs this up. Thanks to L3 MAS' support team at Canadian Forces Base (CFB) Trenton—the CC-150's home base—the fleet's civilian personnel are able to maintain all five CC-150s at nearly 99 per cent flight readiness at all times.

"And when one or more of these aircraft are deployed away from Trenton, our people travel with them to wherever the RCAF is performing its mission," said Comtois.

L3 MAS' in-depth in-service support expertise and experienced workforce played a key role in winning the CC-150 interim in-service support contract in 2012. In a few days, L3 MAS employees were able to develop a complete proposal to support Canada's Department of National Defence

(DND) with this exceptional situation.

Very soon after contract award, L3 MAS was ready to work hand-in-hand with DND staff to maintain the aircraft and to develop solutions tailored to its needs. A year later, L3 MAS won the first five-year CC-150 support contract. Valued at \$683 million, the contract comes with the option of being extended for two more five-year terms.

Given the CC-150s are in near constant use, L3 MAS' success in keeping them at nearly 99 per cent readiness is a major achievement. So too is the company's focus on improving the performance and capabilities of these five aircraft wherever possible, so the RCAF has access to better aircraft than it started out with.

A case in point: In line with the terms of its CC-150 support contract, L3 MAS has installed and certified a modern Wi-Fi telecommunications system onboard the CC-150, and delivered patient transfer units (PTUs) for use on these aircraft during medical missions.

The CC-150's new Wi-Fi system is similar to those used in other RCAF aircraft, which saves money on design and implementation. It provides the crew and passengers with an Internet connection for their laptops, smartphones, and tablets.

L3 MAS created this capability by upgrading the CC-150's satellite communications systems and installing wireless networks for the cabin and cockpit. The work was supported by L3 Mission

Integration, a world-class systems integration division within L3's Aerospace Systems business segment. "Having access to this level of expertise, as L3 MAS does, is a real time- and money-saver," said Comtois.

Deploying medical evacuation PTUs in its aircraft was identified several years ago by the RCAF, but had not been fully implemented due to unresolved technical issues, the company said. L3 MAS made this desire a reality by developing a proactive plan that allowed it to deliver the PTU capability to the satisfaction of the RCAF medical community. The CC-150 Polaris aircraft is now properly outfitted to conduct medical evacuation of injured personnel.

"It is a great privilege to provide in-service support for the CC-150 of the RCAF, at a readiness level that meets its needs and a cost that works with its budget," said Comtois. "We look forward to doing this for many years to come for the CC-150 and all the other aircraft we support for the RCAF."



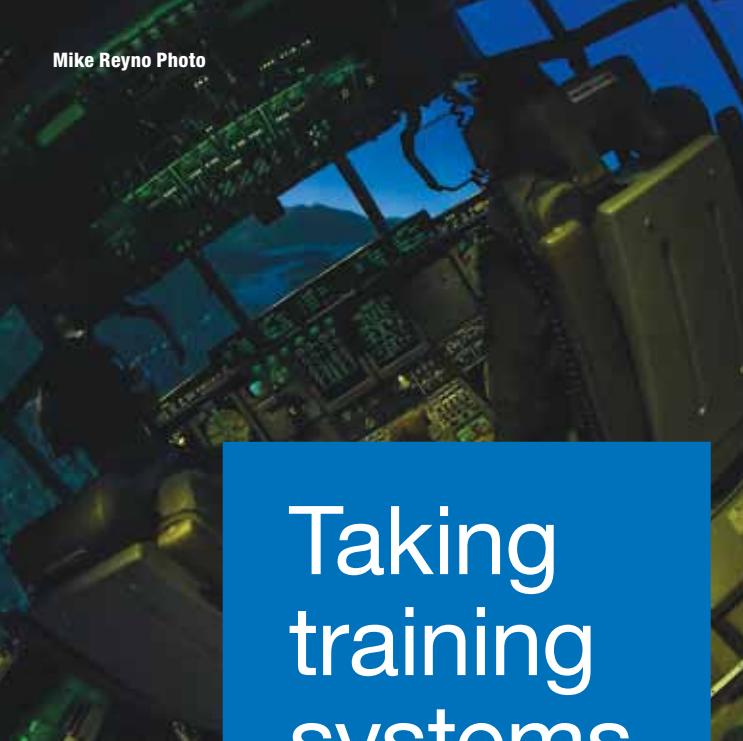
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# TO NEW

CAE SETS AN EXCEEDINGLY HIGH STANDARD FOR MILITARY AVIATION TRAINING IN CANADA, A LEGACY TRACED BACK TO ITS FOUNDER THAT REVERBERATES POWERFULLY TODAY.

BY CHRIS THATCHER

**V**When CAE acquired the NATO Flying Training in Canada (NFTC) program from Bombardier Aerospace in 2015, the deal marked a return to its roots, connecting the Montreal-based company, founded in 1947, with the formative training experience of its founder, Ken Patrick.

Patrick, a former Royal Canadian Air Force (RCAF) pilot, earned his wings in the British Commonwealth Air Training Plan, a Canadian-led Second World War program that between 1940 and 1945 generated more than 131,000 international pilots, navigators, wireless operators, bombers, gunners and flight engineers from 150 training schools across Canada.

NFTC continues that tradition of allied cooperation, providing the basic, advanced, and lead-in fighter pilot training for the RCAF and NATO partners under a comprehensive program at 15 Wing Moose Jaw, Sask., and 4 Wing Cold Lake, Alta., that combines classroom, simulation and live flying.

The NFTC program also exemplifies a change in business strategy that has been taking shape over the past decade as CAE transitions from primarily a provider of leading-edge simulation technology and training devices to a developer, integrator and maintainer of complete training ecosystems.

"If I look at where we have come as a business over the last five to 10 years, in my mind it has been to recapture our role as a company and a country able to provide mature, highly evolved, state-of-the-art training systems to produce aircrews," said Joe Armstrong, vice-president and general manager.

Beginning with the Operational Training Systems Provider (OTSP) program in 2009, CAE has steadily grown as the prime provider of complete "schoolhouses" that help train mission-ready aircrews as the RCAF introduces new fleets of aircraft.

Under OTSP, CAE first developed a comprehensive aircrew training solution at the Air Mobility Training



CAE Photo



CAE Photo



Mike Reyno Photo

# HEIGHTS

Centre in Trenton, Ont., comprised of full-mission simulators, flight training devices, integrated procedures trainers, a fuselage trainer, laptop-based virtual simulators, and courseware, along with the supporting tactical control centre and training information management system for a new fleet of 17 CC-130J Hercules transport aircraft.

The company then created a similar solution for the stand-up of 15 new CH-147F Chinooks at 450 Tactical Helicopter Squadron in Petawawa, Ont.,

possible, to ensure consistent and coherent training for complex skill sets, and lay the foundation for future networked and distributed mission training.

“It is no longer training a pilot on basic aviation skills,” said Armstrong. “You are training them to be mission system operators, to operate and maintain very complex weapon systems. So you have to have more complex and advanced concepts that underlie that training.”

Working in collaboration with the military

networking and support of an array of leading-edge flight, mission system, procedure and part-task training simulators.

More importantly, though, it will embed CAE within the search and rescue training program, ensuring training concepts advance as RCAF requirements evolve.

While securing the NFTC program was a “watershed moment,” conducting operational and system engineering support was not a step into the unknown, said Armstrong. Over the past three decades, CAE has supported mission systems for CF-188 Hornets, modernized Halifax-class frigates, and the Army’s electronic warfare capability.

Still, “NFTC became a perfect convergence of all those capabilities we had resident in the business into one single program,” he said.

And, as the company marks 70 years since Ken Patrick adapted his training skills to business, it has also provided CAE with global credibility for live

“Any time you have programs that elucidate your philosophy, they become an excellent footprint to take your story around the world.”

— Joe Armstrong, vice-president and general manager.

which also included a weapon systems trainer, permanent and deployable tactical flight training devices, and an integrated gunnery trainer, along with the classroom curriculum.

While the individual simulators are important to aircrews adapting to ever more advanced and capable aircraft, CAE’s distinctive edge lies in how those devices are integrated and supported, in partnership with the RCAF, to realize more effective and efficient training concepts. As interoperability across fleets becomes the mantra of all militaries, CAE has emphasized commonality of systems and methodologies, where

customer in operational training centres has helped CAE understand “what their ultimate training requirements are,” he added, further refining the company’s simulation-based technologies, training devices, courseware, and curriculum.

That collaborative approach will be at the core of aircrew and maintenance training for Canada’s incoming fleet of 16 Airbus C295W fixed-wing search and rescue aircraft. In February, CAE signed a contract with Airbus Defence and Space for a comprehensive training solution that includes leading the design and building of a new training centre at 19 Wing in Comox, B.C., as well as the

flying support and a template for export.

In March, subsidiary CAE USA opened a new training centre in Dothan, Ala., to provide the U.S. Army with classroom, simulator, and live flying training for fixed-wing pilots. Beyond North America, CAE also struck new partnerships for a multipurpose training centre in Brunei and a naval training centre in the United Arab Emirates.

“Moving into live training on the defence side has borne fruit in other pursuits globally,” said Armstrong. “Any time you have programs that elucidate your philosophy, they become an excellent footprint to take your story around the world.”

# THE certification SOLUTION

SPUN OFF FROM MARINVENT, CERTIFICATION CENTER CANADA (3C) PROVIDES INDEPENDENT FLIGHT TESTING AND CERTIFICATION FOR MILITARY AND CIVILIAN CLIENTS.

BY JAMES CARELESS | PHOTOS COURTESY OF MARINVENT CORP.



Flight test and certification is an expensive, expertise-based process for Canada's Department of National Defence (DND), and the civilian and commercial aircraft and equipment being built by Bombardier, CAE, Bell Helicopter and other world-class Canadian manufacturers.

To make matters more challenging, many of the qualified testing and certification personnel have reached retirement age and are leaving the profession according to officials from Certification Center Canada (3C), an exciting new organization that aims to fill the gap.

Given this fundamental shortfall for a vitally important service, the all-Canadian aerospace services firm Marinvent has spun off its flight testing and certification capabilities into 3C, an entirely new organization that meets an urgent need.

3C is the shorter brand name for Marinvent's Flight Test Centre of Excellence company, which has recently been approved as Canada's first independent flight test and certification design approval organization (DAO).

Based in Montreal with government-certified DAO and designated airworthiness representative (DAR) delegates nationwide, 3C received Transport Canada DAO approval to provide full flight test and certification services on March 15, 2017.

3C is a head-on answer to the challenges faced by Canada's military and civilian aerospace companies. All are trying to control and manage the substantial cost, schedule, and risk associated with airworthiness certification for aerospace products in terms of staff, test assets, infrastructure and tools.

Having received the DAO approval, 3C is expanding to cover a broader spectrum of disciplines, take on staff, train new certification professionals and handle larger, turnkey programs; all to help its customers deal with certification more efficiently and predictably. As a result, 3C can now help its military and civilian clients tackle flight

testing and certification in an affordable and reliable manner, even as the Baby Boomers retire out of the aviation workforce.

"Marinvent created 3C in direct response to urgent requests from our military and civilian clients," said Phil Cole, Marinvent's vice-president of business development. "Not only are retirements cutting into the expert base for flight testing and certification, but existing DAO arrangements only allow such DAOs to test and certify their own products. That's OK when you need a large group of DAO-approved experts in-house to immediately test and certify a specific type of aircraft, but not once this job is done and the staff has little left to do."

The creation of 3C eliminates this problem, because its members have Transport Canada permission to conduct flight testing and certification on any manufacturer's equipment. Meanwhile, by affiliating with 3C, military and civilian aerospace organizations can find gainful employment for their DAO staff when they are not busy internally, controlling costs while preventing the loss of this knowledge base.

"When it comes to serving DND, many of our people are ex-military," Cole noted. "This means they know how DND likes things done, and what procedures have to be followed."

The creation of 3C has been applauded by government and aerospace executives alike. "This new certification centre will not only save our aerospace companies time and money and make them more competitive globally, but it will create high-quality employment for the middle class at home," said Chrystia Freeland, who was Canada's Minister of International Trade when 3C launched at the Farnborough International Airshow on July 13, 2016.

"We congratulate Marinvent on this important announcement and are proud to endorse their efforts to work with both government and industry to create a stronger certification environment in



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Canada," said Jim Quick, president and CEO of the Aerospace Industries Association of Canada (AIAC), at the same event. "Marinvent is a small business success story in the Canadian aerospace industry, and today's announcement is a further testament to its leadership and to the important role that all small businesses have to play in maintaining a strong, globally competitive Canadian aerospace industry."

In fact, Marinvent is one of 3C's key supporters and suppliers. It is providing 3C with access to Marinvent's expert knowledge, Synthesis certification tools, and flight testing and certification platforms, including the company's research simulator and specially-equipped Piaggio P.180 aircraft.

Together, 3C and Marinvent have the know-how to meet DND's flight testing and certification needs.



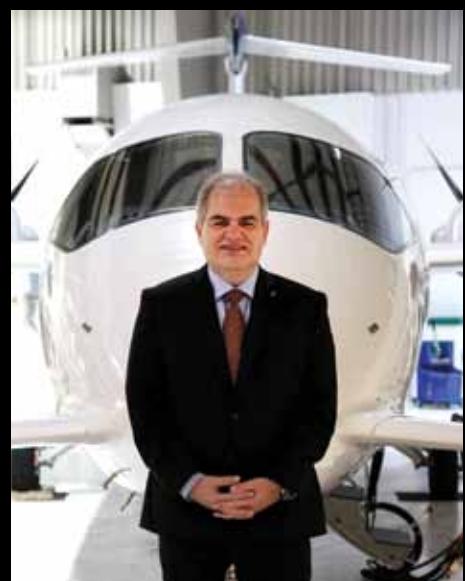
"This is a win-win for everyone in Canada's aviation sector."

*— Phil Cole, vice-president of business development, Marinvent*

"To date, Marinvent has aided Public Services and Procurement Canada (PSPC) with several vital aviation programs, including the request for proposal (RFP) and test plans for their new light helicopter," said Cole. "We were then hired by PSPC to conduct flight evaluations on the candidate aircraft."

After the Bell 429 won that bid, securing an order for 15 helicopters to replace the Canadian Coast Guard's aging fleet of MBB Bo.105s, PSPC selected Marinvent to assist with its medium helicopter program and the associated simulator RFP.

"Today, the team of 3C and Marinvent ensures that Canada's military and civilian aerospace clients have access to the flight testing and certification services they need, where and when they need it," Cole concluded. "This is a win-win for everyone in Canada's aviation sector."



# HERE TO STAY

TEXTRON INC. HAS BEEN AN INTEGRAL PARTNER OF THE ROYAL CANADIAN AIR FORCE FOR YEARS.

WITH BROAD CAPABILITIES AND A PROVEN RECORD, THE COMPANY IS ON A MISSION TO TRAIN AND SUSTAIN MILITARY PILOTS LONG INTO THE FUTURE.

BY BEN FORREST | PHOTOS COURTESY OF TEXTRON AVIATION

Dig below the surface, under the topsoil and down to the bedrock of the Royal Canadian Air Force (RCAF), and you'll find Textron, an essential part of a foundation that supports some of the world's best military pilots.

"We very much cherish and value the Canadian Air Force as a customer," said Bob Gibbs, vice-president of special missions at Textron Aviation. "And the ability to attend to the needs, whichever they are, is a high priority for us."

Textron Inc. is one of the world's best known multi-industry corporations. The Textron businesses include Bell Helicopter, TRU Simulation + Training, Textron Specialized Vehicles, Textron Systems and more, all of which are essential partners whose influence is felt throughout the RCAF and in

many other air forces around the world. With manufacturing facilities in Montreal and Mirabel, Que., as well as partners like Pratt & Whitney Canada in Longueuil, Que., Textron companies also contribute greatly to the Canadian economy.

Textron Aviation and Textron Aviation Defense, longstanding partners with the RCAF, provide class-leading airborne platforms for numerous mission needs.

"Global security—obviously, it's a major concern of the western world," said Gibbs. "But the way we look at that mission is, how can we provide airborne platforms for whatever that security mission is?"

Textron Aviation Defense, a subsidiary of Textron Aviation, manufactures the Beechcraft T-6, the world's leading military flight trainer and the fixed-wing trainer of choice for the Canadian military. The T-6 platform, known as the CT-156 Harvard II to the RCAF, is used to train fighter pilots for the RCAF and numerous other air forces through the North Atlantic Treaty Organization



(NATO) Flying Training in Canada Program.

The Harvard II remains a staple of fighter pilot training in Canada—an agile turboprop with an initial climb rate of about one kilometre per minute and the ability to handle sustained 2G turns at an altitude of 7,500 metres.

The aircraft is ideally suited to help new pilots move seamlessly from basic flight training to high-performance jet training, according to the RCAF.

An innovative, new military platform from Textron Aviation Defense is the Scorpion jet, which aims to complement high-cost, high-performance fighter jet fleets and slower turboprop aircraft with an economical mid-range option.

"It does provide a good dash speed for surveillance," said Gibbs. "It has good loiter time as well ... [and] it is completely weapons-capable, so you have options besides just surveillance and reconnaissance."

Textron Aviation manufactures the world's most popular turboprop platform, the Beechcraft King Air. Canadian pilots train to fly multi-engine aircraft on the King Air C90B, which is also used around the world for intelligence, surveillance and reconnaissance (ISR), medical evacuation (MEDEVAC) and other special mission operations.

Textron Aviation positions the King Air as the most versatile aircraft for surveillance, one that has been continuously refined since it was introduced more than 50 years ago. More than 7,300 King Airs have been delivered around the world since 1964 and the

fleet has surpassed more than 60 million flight hours.

"The King Air has proven itself time and again to be the vehicle of choice," said Gibbs. "They're on every continent, and the majority of countries that have ISR capability have King Airs."

The King Air can be upgraded with a cargo door that provides greater multi-mission capability for disaster relief and troop transport, as well as easy loading and unloading of mission-specific equipment.

Extended-range fuel tanks are also available, along with a heavyweight kit that allows up to a 17,500-pound (7,900-kilogram) maximum takeoff weight—about 2,000 pounds (900 kilograms) more than a standard King Air.

"That gives the customer the option of actually filling the tanks when they've got more equipment on board," said Gibbs. "It's all about getting off the ground with as much fuel as you can carry, so you can loiter as long as you can."

The standard King Air 350 uses a Pratt & Whitney Canada PT6A-60 engine, but can also be delivered with a PT6A-67A engine that offers superior hot and high performance.

With a large, pressurized, environmentally controlled cabin, high dash speed and extensive endurance, the King Air is an ideal surveillance aircraft.

It comes in ISR and maritime patrol variants, with several sensor packages including imagery intelligence (IMINT) and signals intelligence

(SIGINT). The King Air can also be used as an air ambulance or for aerial mapping.

The same sensor packages are available for the company's Citation jet line, which offers a blend of high speed, efficiency and low cost of maintenance.

As for the future, Gibbs sees a great deal of growth potential in the relationship between Textron and the RCAF.

"I think there's a lot of space for us to grow our relationship with Canada in the surveillance area," said Gibbs.

"But also I think there's room in the future for some of the longer-range solutions of our Citation products to be able to support other missions at a lower cost than some of the large aircraft currently deployed."

"I think there's significant potential to expand the relationship."

Beechcraft



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