DIGITAL BONUS | 14 PAGES OF BONUS FEATURES & PHOTOS!

AN MHM PUBLISHING MAGAZINE

SEPTEMBER/OCTOBER 2016

SKIESMAG.COM

SKIES

AVIATION IS OUR PASSION

[INSIDE]

2016 PHOTO CONTEST

Each mission is unique, but all P&WC turboshaft engines have one thing in common: You can depend on them. Designed for outstanding performance, enhanced flying experience and competitive operating economics, the PW200 and PT6 engine families are the leaders in helicopter power. With innovative technology that respects the environment and a trusted support network that offers you peace of mind, you can focus on what matters most: **A MISSION ACCOMPLISHED**

DEPENDABLE ENGINES

WWW.PWC.CA

Pratt & Whitney Canada
A United Technologies Company

Get To The Top

Master Efficiency

Mastering the aviation game is complex. You need maximum output with minimal input. You need a fleet that reflects not only efficiency, but flexibility and optimized operations as well.

Whether you're in the market for a new Pilatus, a pre-owned solution, or a consult, Levaero Aviation can help you master efficiency. Make Levaero your co-pilot to the top.

Call now.

Levaero
AVIATION

SALES • SERVICE • SOLUTIONS

Stan Kuliavas, Vice President of Sales
skuliavas@levaero.com
1 844-538-2376

www.levaero.com

September/October 2016
Volume 6, Issue 5

in this issue

features

COMPANY

BUILDING ON THE LEGACY

Steeped in rich history, Fleet Canada is in the midst of transformational change.

BY LISA GORDON

FLIGHT TEST

STAND-UP PERFORMER

Rob Erdos travels to Wichita, Kan., to check out Cessna's newest midsize jet, the Citation Latitude.

BY ROBERT ERDOS

MILITARY

MEET THE MOOSEMEN

419 Squadron's fighter lead-in training mission remains steady even as it evolves with the times.

BY CHRIS THATCHER

MILITARY

FIGHTER JET JOURNEY

Ask Capt Thegne Rathbone about becoming a fighter pilot and you can feel his excitement.

BY CHRIS THATCHER

SKIES

ON THE COVER

Congratulations to photographer **Jason Pineau**, who is the Grand Prize winner of our 2016 Photo Contest! See page 76 for more details on his winning photo.

*Download this wallpaper **here***


Steve Bigg Photo


Rich Hulina Photo


Rich Hulina Photo


Heath Moffatt Photo

10 YEARS

PROUDLY SUPPORTING THE RCAF

Whether it's providing humanitarian relief or defending freedom and sovereignty around the world, Abbotsford's Cascade Aerospace proudly ensures our troops are always ready for the call.

LOCKHEED MARTIN CERTIFIED | CANADA'S C-130 EXPERTS

CASCADE
aerospace

AN OPERATING UNIT OF IMP AEROSPACE & DEFENCE

1337 Townline Road, Abbotsford, BC
Canada V2T 6E1

www.cascadeaerospace.com

WHAT'S ONLINE@

skiesmag.com

We're your best source for aviation industry news! Come on over to our website for your daily dose of the latest news, original *Skies* feature articles, unique desktop calendars and wallpapers, and much more.

Skies News

Stay current with ***Skies News,*** our e-newsletter that delivers the latest aviation news to your inbox three times per week. Sign up today at skiesmag.com/subscription.

Stay Connected

Subscribe to *Skies News*
skiesmag.com/subscription

Read the magazine online
skiesmag.com/digital

Follow us on Twitter
Follow @skiesmag

Like us on Facebook
facebook.com/skiesmag

Watch videos on Vimeo
vimeo.com/mhmmedia

Shop *Skies* merch
shopcanada.mhmpub.com
shopinternational.mhmpub.com

Photo Pick

Photographer **Benoit Riendeau** captured this stunning shot of a CC-177 Globemaster III as 429 Transport Squadron flew circuits over 8 Wing Trenton, Ont., this summer.

Want your photo here?
Post your amazing aviation photography to facebook.com/skiesmag for a chance to be featured!

SKIES

THE TEAM

GROUP PUBLISHER | MIKE REYNO
mike@mhmpub.com

GROUP PUBLISHER | LINDA REYNO
linda@mhmpub.com

ASSOCIATE PUBLISHER | DEREK KAST
derek@mhmpub.com

EDITOR-IN-CHIEF | LISA GORDON
lisa@mhmpub.com

ASSISTANT EDITOR | BEN FORREST
ben@mhmpub.com

JUNIOR EDITOR | SARAH GRANDY
sarah@mhmpub.com

SALES & MARKETING DIRECTOR | TIM MUISE
tim@mhmpub.com

MARKETPLACE SALES | FRANK SARGEANT
frank@mhmpub.com

PRODUCTION MANAGER | JEN COLVEN
jen@mhmpub.com

GRAPHIC DESIGNER | KAYTLYN WISMAYER
kaytlyn@mhmpub.com

SR.WEBMASTER | CHRISTOPHER ZIMMERMANN
christopher@mhmpub.com

WEBMASTER | DAVID AGOTESKU
dave@mhmpub.com

THE TALENT

CONTRIBUTORS

SCOTT DIERINGER, ROBERT ERDOS, BRENT JANG, TONY KERN, JOHN MONTGOMERY, KEN POLE, HOWARD SLUTSKEN, JANE STANBURY, KENNETH I. SWARTZ, CHRIS THATCHER, GARY WATSON

PHOTOGRAPHERS

STEVE BIGG, DARRYL BILTZAN, PAUL BOWEN, SEBASTIAN BOUCHER, DAVE BROOK, JOHN CHUNG, ANDY CLINE, RICH COOPER, JASON CROCKETT, JEFF DICKINSON, ERIC DUMIGAN, JEAN-FRANCOIS DUPONT, MICHAEL DURNING, SHAWN EVANS, MIKE FIZER, PIERRE GAUTHIER, PETER HANDLEY, PAT HANNAH, COREY HARDCASTLE, MACIEJ HATTA, RICH HULINA, JAN JASINSKI, BO KIM, COLIN KUNKEL, DARIN LACRONE, ALEX LEBRUN, JOE LETOURNEAU, WARREN LIEBMANN, MIKE LUEDEY, KAREN MASSIER, MATTHEW MELSNESS, VIJAY MISTRY, HEATH MOFFATT, JASON PINEAU, MIKE REYNO, BENOIT RIENDEAU, SKIP ROBINSON, STUART SANDERS, HOWARD SLUTSKEN, KENNETH I. SWARTZ, MARK TAYLOR, WILLIAM VAVREK, GARY WATSON

SUBSCRIPTIONS

subscriptions@skiesmag.com

CONTACT US

PHONE: 1.866.834.1114
FAX: 519.748.2537
SKIESMAG.COM

Skies magazine (ISSN 1703-8812) is published six times per year (Jan/Feb, Mar/Apr, May/Jun, Jul/Aug, Sept/Oct, Nov/Dec) by MHM Publishing Inc., paid at Kitchener, Ont.

Canadian Publication Mail Agreement Number: 40741549
Postmaster: If undeliverable, return mailing label only.
Printed in Canada

HONOURING THE AVGEEK

BY MIKE REYNO
PUBLISHER/OWNER
SKIES MAGAZINE

Our annual photo contest issue is my favourite edition of the year. It's our special issue where we showcase some of the best aviation photos in four categories: Airshows, Commercial, General Aviation and Military.

For weeks leading up to the contest, I have the pleasure of reviewing hundreds of images submitted by professional and amateur photographers across Canada. This year, the competition was stiff. But ultimately, the ability to determine the contest winners is out of my hands—it's up to our photo contest sponsors to select the winning photos.

You would be hard pressed to find a group of individuals that are as passionate about aviation as aviation photographers—they combine their love of photography with their love for aviation. In fact, they are sometimes referred to as "avgeeks."

Some, like Jan Jasinski who won second place, commercial, will wait tirelessly at the end of a runway to get the perfect shot of a Boeing 777 cutting through the early evening moisture. This year's grand prize winner, Jason Pineau, waited by a dock for the perfect shot of a couple of de Havilland Beavers running up in the early morning light. And Heath Moffatt, who won first place in our military category, went to sea to capture images of a CH-124 Sea King landing on the back of a ship at night. Even though these photographers may have been "grounded" when taking their photos, their images convey their tremendous passion for aviation.

I, too, am an avgeek. I had already been shooting for about 15 years when in 2002, my wife Linda and I decided to take my passion for aviation to a new level by launching *Vertical* magazine. This was followed by *Vertical 911*, *Skies*, *RCAF Today* and *Insight*. Stellar aviation photography is a key component of each and every magazine, especially in our annual photo contest issues!

A photographer is always trying to capture the essence of aviation. It sounds easy, but it's not, especially when shooting air-to-air. Trying to capture an aircraft's performance or capabilities in a photo sometimes pushes both pilots and photographer to the limits. I have been pushed many times, whether in the back seat of a CF-188 Hornet fighter jet or hanging out of an Airbus Helicopters H125. But the key is to plan accordingly, do it safely, and do it efficiently.

While photographing aircraft on the ground is relatively inexpensive, doing the same in the air can be quite costly. Take, for example, flying with a CF-188, as I have done dozens of times throughout my career. This year, I flew with the 2016 Demo Hornet, painted to commemorate the 75th anniversary of the British Commonwealth Air Training Plan. For this shoot, I was flying with demo pilot Capt Ryan "Roid" Kean, and chase pilot Capt Adam "Manik" Runge. The average cost for a CF-188 is about $25,000 an hour when you factor in the fuel, maintenance, pilots and many other things. Keeping this in mind, pre-planning is an absolute necessity to ensure a successful photo shoot—and this is after you have gone through a half day of ejection seat training and had your anti-g suit fitted to your body!

I typically brief for 10 different photo sequences that will maximize the amount of time we have in the air, which for the CF-188—carrying about 9,600 pounds of fuel internally—is one hour, since we are constantly in and out of afterburner during the mission. The photo flight is briefed using past imagery, hands (the language of every fighter pilot), and a whiteboard to explain how the photo will be taken, and how it will be taken safely. There's no room for risk in aerial photography; however, choreographed properly, the flight will be safe and successful.

Taking photos in the back of a CF-188 is no easy feat, and it's definitely not for those who are prone to motion sickness or claustrophobia. Not only is a photographer wearing all of the same equipment that fighter pilots wear, but they are also strapped in tight to the seat, with little mobility to turn their body left or right to take an image through the canopy.

Photographers endure heavy g-forces at times, and may fight nausea while trying to give the pilot explicit directions to get the shot that was briefed. In a vertical climb, in full afterburner, you have only a second to take a picture when you call for the break—two seconds if you are lucky. And you are doing this as you are looking backwards over your shoulder, working with the pilot to get the wingtip out of the picture!

Some think a photo flight in a CF-188 is a fun ride. It's not! In fact, a photographer doesn't really get the chance to sit back and enjoy it. But it is worth it when you see your photos, pictures that have captured the dynamism of the CF-188 Hornet in flight. Mission accomplished for this avgeek!

Unfortunately, I'm now usually found behind a desk or at a trade show, unable to get out on photo missions as much as I once did. But looking at the images that grace these pages, it's plain to see there is a cadre of photographers coming up through the ranks who can easily take the reins.

FlightPath
international

Bringing world-class training to **YOU.**

Integrated Airline Training
Operations Support

BOMBARDIER · BOEING · AIRBUS · EMBRAER

TRUSTED EXPERIENCE.

TORONTO • DUBAI • COSTA RICA • PORTUGAL • JOHANNESBURG

www.flightpathinternational.com • +1-705-434-0058

DITHERING: NO PLACE FOR IT IN AVIATION

BY KEN POLE

Call it an icon or an underdog, there's no gainsaying Bombardier's importance to our economy or, indeed, to Canada's global reputation.

However, in the years since its visionary commitment to the C Series, it's no secret the project has floundered.

The C Series was conceived more than a decade ago, not unusual in an industry where long leads are the norm. I recall Bombardier's feasibility study, announced at Farnborough 2004. Seeking to capitalize on the fact that other original equipment manufacturers' fleets were aging, Bombardier promised significantly lower operating costs and noise profile as well as better range.

By February 2013, major components and systems, including Pratt & Whitney's quiet gear turbofans, were mated to the first CS100 test platform. It flew that September, followed by the CS300 in February 2015.

Announcements about orders, some firm but mostly potential, continued to flow, but there was no denying that the program was two years behind schedule and $2 billion over budget.

Again, that's not unusual with an all-new aircraft, but Bombardier was hammered by the financial community, setting the stage for management changes. Last October, the Quebec government committed US$1 billion toward the C Series, pressing the federal government to provide matching support.

Premier Philippe Couillard considers it an investment in a company that is an important driver of the provincial economy, providing well-paid jobs not only in his own jurisdiction, but also at suppliers nationwide.

"Aerospace is as important to Quebec as the automotive sector is for Ontario," Couillard said, clearly referring to that province's multi-billion-dollar support for General Motors and Chrysler in 2009. "It is quite normal that the state gets involved."

Other OEMs complained about "unfair" subsidies, neglecting to mention that most are directly or indirectly supported by their own governments!

But market skeptics prevailed and, earlier this year, Bombardier shares closed below $1 on the Toronto exchange. Then Bombardier confirmed plans to cut 7,000 jobs, mainly at other programs. Adding insult to injury, Airbus Group rebuffed Bombardier's offer of a strategic partnership.

A few months later, however, Air Canada decided to buy 45 CS300s, adding its name to a growing list of customers. It would've been nice if our national carrier had bought in earlier, but playing OEMs off against each other is common practice and central to fleet renewal.

Quebec's deal, finalized at the end of June, established a partnership to which all C Series assets, liabilities and obligations were assigned. Bombardier retains a 50.5 per cent equity and three seats on a board still ultimately controlled by the company's founding family.

Bombardier said Quebec's support, together with the company's matching funds, would help to complete development and restore customer confidence, particularly in ongoing service support. It expects to build up to 20 C Series next year, ramping up to full production by 2020.

The program received a boost this summer when Swiss International Air Lines took delivery of its first CS100. Calling it "the world's newest innovative and technologically advanced aircraft," the carrier's CEO, Thomas Klühr, said that "along with the CS300 aircraft that we've also ordered, the C Series fleet will allow us to perfectly tailor our capacity to demand."

Meanwhile, the federal funding push waned—even with Ontario Premier Kathleen Wynn jumping on the bandwagon—as the federal government dithered much as it has about new fighters for the Royal Canadian Air Force.

Former Quebec Premier Jean Charest found the federal fumbling strange. "It's a very important signal," he said. "If the national government doesn't support its industry, then outside the country, investors ask themselves, 'What's wrong? What's the issue?'"

The likely issue is that the federal Liberals were worried about political backlash in the West. So they played a waiting game, hoping the problem would go away, with sundry ministers lamely telling *Skies* that "constructive" talks were ongoing and that Bombardier in particular and aerospace in general were huge economic drivers.

It's long past time the government put our money where its mouth is.

Then there is Porter Airlines' proposal for C Series service at Billy Bishop Toronto City Airport. Instead, yielding to a vocal minority, the Liberals reiterated their opposition to jets, which actually would be quieter than the current turboprops.

Contrast that with London, England, where Bombardier is expected to validate the C Series' use of the downtown City Airport. Go figure.

WHAT CANADIANS SHOULD KNOW ABOUT
THE F-35 JOINT STRIKE FIGHTER.

Lockheed Martin was selected to build the F-35, the world's only 5th Generation multirole fighter with nine partner nations. Subsequently, three other countries, Japan, South Korea and Israel, selected the F-35 as their fighter.

HERE ARE THE FACTS

Fact – Canada is a Valued Member of the F-35 Joint Strike Fighter Program Partnership

Fact – F-35 is Operational Today

- The F-35 was declared combat ready in 2015 by the United States Marine Corps.
- 185+ F-35s flying, 300+ pilots and 2,700+ maintainers operating at 10 bases amassing 60,000+ flight hours.
- F-35 production line delivering combat capable aircraft today and for decades to come.

Fact – F-35 is Best Value

- The F-35A has dropped in price by 57 percent since production began.
- In the Denmark competition, the Super Hornet and Typhoon were determined to be 50% more expensive than the F-35.

Fact – Single Engine Safety

- The F-35 Pratt & Whitney engine is the most powerful and reliable fighter engine operating today.
- The United States Air Force has flown single-engine F-16s in Alaska for 25 years with no engine failures.
- F-35 will operate in Arctic conditions for Norway, Denmark and the United States.

Fact – F-35 Undefeated in Competitions

- The F-35 has won every competition it has entered, most recently it was chosen over the Super Hornet and Typhoon.
- Denmark evaluated the F-35 as superior to 4th generation fighter competitors on price, military capability and economic benefit. The F-35 won in all categories.

Fact – F-35 Enables Canadian Innovation and Economic Benefits

- More than 110 Canadian companies have contributed to the development and production of the F-35 – supporting thousands of jobs in Canada.
- More than $825,000,000 USD has already been contracted for advanced technology and engineering work in Canada.
- As F-35 production continues, billions of dollars more in contracts are anticipated.
- F-35 connects Canadian industry to global supply chain securing high technology jobs for the next 40-50 years.

Learn more at F35.com/Canada

Lockheed Martin Remains Ready for a Fair and Open Evaluation Process

- Best Solution for the Defence of Canada
- Ready Today to Serve Canada for the Next 40 Years
- Meets Canada's Defence and Security Needs at the Most Affordable Cost
- Delivering High Technology Job Growth for Canadians

F-35 LIGHTNING II

NORTHROP GRUMMAN | BAE SYSTEMS | PRATT & WHITNEY

LOCKHEED MARTIN

MENTORS MATTER, NOW MORE THAN EVER

BY TONY KERN

The journey to becoming an aviation professional is never a solo flight. All of us got to where we are today with help from someone, likely *multiple* someones. Maybe it was our parents, a coach, or an early instructor that took a special interest in us and our dreams.

Take a moment and think back. Who were the mentors that helped you climb the ladder? Now, ask yourself a second question. Who are you providing this same service to today?

Mentors know they are making small inputs that have long-term benefits they may never see. Following his 1913 National Football Championship, a reporter asked Coach Amos Alonzo Stagg, "What do you think of your team?" Stagg responded, "I'll let you know in 20 years."

Mentoring has a ripple effect, with long-term consequences. The coach's goal was to build good human beings with character, not just to win championships. We all need to take a similar long view—it's not merely about teaching professionals new technology, procedures, or even best practices—it's about giving them the character, tools, and motivation to continue to grow and achieve great things long after we leave.

Organizations and regulators need to refocus on elevating our mentorship programs. We must do it in part because there are new regulatory requirements on the way, but mostly because it is the right thing to do given all the new hires coming aboard in our industry. Recently, I received some feedback on this concept after conducting mentorship training at a large aviation organization:

> "I'll be interested to see if these comments make their way into our formal training classes. The instructors and evaluators will be the leading edge of building habits of critical thinking, analysis, and professionalism. I'll also be interested to see if our formal evaluations and check rides model the concepts of high standards which lead to high achievement."

Initial steps are underway in many companies to accomplish just that, but we all know that effective mentoring occurs across our industry *every day* out on the line, and at various training organizations and companies.

As we formalize and upgrade our mentorship efforts, let's continue the excellent job we are already doing. Here are a couple of refresher tips for making it work:

ROADBLOCKS TO EFFECTIVE MENTORSHIP

- A "not my job" mindset inhibits mentoring.
- Inability to accept honest feedback prevents active listening to others about your performance.
- A condescending attitude of "I know better, so listen to me" inhibits others from benefiting from your insights.

GETTING STARTED

- Mentor with intention; plan for opportunities on each trip to positively influence the pilot sitting next to you.
- Routinely request feedback from peers to improve performance.
- Accept honest criticism gracefully and gratefully to promote future feedback.
- Remember to say "thank you" after receiving any tip or feedback, even if it is negative.

KEEP GOING

- Work to make others better and you will continue to get better yourself. Mentoring improves the mentor as much as the protégé, sometimes more.
- Initiate and engage in professionalism-related conversations with others to support continual professional and personal growth.

Remember, feedback is the primary nutrient of mentorship. Everyone learns from everyone. Take your professionalism to the next level by sharing and learning with others. Pay it forward. It's what we are about in aviation!

INNOVATIVE FEATURES FOR SMART BUSINESS

The Bell 429WLG with retractable landing gear is one of the most advanced light twin helicopters ever developed, offering a state-of-the-art fully integrated glass flight deck with advanced drive system and best-in-class SBAS navigation and IFR capability. It is the first helicopter certified through the MSG-3 process, resulting in reduced maintenance costs for operation. Its interior is exceptionally spacious with seating for up to seven passengers plus a pilot and can be reconfigured for your personal comfort and style.

BELLHELICOPTER.COM

TERRAIN AWARENESS SYSTEM (HTAWS)

On a Mission.

Bell Helicopter
A Textron Company

Farnborough 2016

BY JANE STANBURY
PHOTOS BY RICH COOPER

Airbus showed off its A380 (foreground) and the A350 XWB at Farnborough.

*Watch the video **here***

More than 100 aircraft types attended the 2016 Farnborough International Airshow (FIA) held July 11 to 17 at Farnborough Airport, U.K. The event welcomed 73,000 trade visits over the week, despite torrential rains disrupting the first three afternoon airshows.

However, the sun was shining on the order front with over US$120 billion worth of orders and options confirmed, beating last year's Paris Air Show figures. Standout orders came from Air Asia, which acquired 100 Airbus A321neos, and Virgin Atlantic, which confirmed the purchase of 12 Airbus A350-1000s.

The show buzzed with talk of the Bombardier C Series launch customer, Swiss International Air Lines, making its first commercial flight between Zurich and Paris during Farnborough week. Whilst no C Series orders were forthcoming at the show, Bombardier proudly displayed the aircraft in the distinctive Swiss livery, and received huge interest from delegates, airline leaders and the media. Bombardier also confirmed an order for three Q400s from Porter Airlines, in a deal which, at list price, is worth US$93 million. This brings Porter's exclusively Q400 fleet to a total of 29 aircraft.

Once the clouds lifted, visitors were treated to some dramatic flying displays. The F-35B Joint Strike Fighter opened the air demonstration flanked by the U.K.'s display team, the Red Arrows. The fighter's gravity-defying ability thrilled onlookers, but it remains unclear whether the Canadian administration is equally thrilled enough to confirm the original intent to purchase.

The Airbus A350 also debuted in the air, validating its flexible handling with a near vertical takeoff. Airbus Group used the show to buoy up interest in its big sister, the A380, in the same week it confirmed that a sluggish order book has resulted in slowing production to one a month by 2018. Boeing also debuted the 737 MAX, impressing the crowds with its agile flight capabilities. The Airbus A320neo was notably absent from the aerial manoeuvres, but won out on orders in the annual air framer duopoly league.

Whilst the large jet airliners dominated the skies, it was a good show for the turboprop fraternity. Pratt and Whitney Canada (P&WC) confirmed it has been named as the engine supplier to the Ankara, Turkey-based aviation company TRJet. The program will use a new version of the PW127 turboprop engine to power TRJet's new TRP328 turboprop aircraft. The new TRP328 engine program will commence in late 2016 at P&WC's Longueuil, Que., facility. P&WC has already been selected to supply the engines for the TRJ328 jet variant, a modernized version of the Dornier 328.

P&WC is also predicting a boost in business resulting from a European regulatory change that will allow single-engine instrument flight rules (IFR) for commercial passenger services. P&WC played a leadership role in supporting the European Aviation Safety Agency's (EASA) development of the new policies. The expanded use of single-engine turbine aircraft flying commercial passenger missions throughout Europe is expected to become reality in 2017. This is good news for the PT6 engine that powers many of these aircraft types.

Further bolstering its turboprop orders, P&WC signed a memorandum of understanding (MOU) with Antonov to provide the Antonov AN-132 aircraft production program with a new version of the PW150A turboprop engine. The AN-132 is part of a new generation of light, multi-purpose aircraft intended for short- and medium-haul routes.

P&WC customer Viking Air Limited of Sidney, B.C., revealed it had now flown its 100th production Series 400 Twin Otter from its facilities, as part of the completion process before delivery to Viking's sister company, Pacific Sky Aviation Inc.

In addition, Viking sealed a deal with Nepal's Tara Air for three Twin Otter Series 400 aircraft in regional commuter configuration, after making modifications to improve operational safety in the mountainous regions of the country. To support future business Viking also stated it had formed a relationship with Longview Aviation Asset Management, a newly-formed entity set up to offer attractive leasing and financing options for utility turboprop aircraft. Longview has entered into an agreement with Viking to acquire six new DHC-6 Series 400 aircraft and has secured one used DHC-6 Series 400 aircraft, which was on display during the show.

Utility aircraft were in the Canadian spotlight as three of the contenders for Canada's new fixed-wing search and rescue (FWSAR) aircraft displayed at the show. The Leonardo Aircraft C-27J Spartan and the Airbus Defence & Space C295 are in the mix, as is Embraer's developmental KC-390.

For Canadian aerospace small to medium-sized businesses (SMBs), Farnborough presented the perfect platform for aerospace cluster members to mix with the international aviation community. The Aero Montreal booth welcomed its largest number of SMBs, as 33 companies participated. Demonstrating its cross-continent approach, the organization signed an agreement with Hamburg Aviation to encourage collaboration between companies, educational establishments and research centres from both clusters.

The Ontario Aerospace Council hosted close to 20 SMBs as it showcased its strength in the industry, citing that 15 of the world's top 25 aerospace companies have key operations in the province.

Canada's Minister of International Trade, Chrystia Freeland, took part in the launch of Canada's first independent research, development, flight test and certification centre [see story on page 32]. The CertCenterCanada experts will help domestic and international customers to reduce the costs, risks and timing associated with flight testing and certification.

The National Research Council of Canada celebrated its centenary, marking its attendance at the show by announcing the creation of a Cabin Comfort and Environment Research centre. The new facility, located adjacent to Ottawa's Macdonald-Cartier International Airport, will aim to recreate the air travel experience to help industry develop and evaluate new cabin interior concepts.

As this year's Farnborough closed, plans for the 2018 show (July 16 to 22) are already underway, with numerous exhibitors reconfirming participation in one of the most important events for the global aerospace industry.

Several Canadian contingents made the trip to the 2016 Farnborough International Airshow.

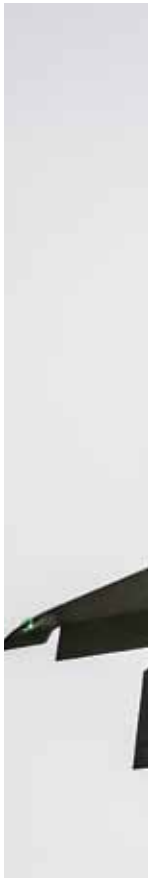
C Series CS100 service launched during the Farnborough show, with Swiss International Air Lines making its first commercial flight between Zurich and Paris.

Thirty-three companies participated in the Aero Montreal delegation.


Boeing's 737 MAX 8 test aircraft appeared at Farnborough, marking its public debut by performing in the flying display.


Farnborough 2016 will be remembered for its aircraft, but also for torrential rain which disrupted several aerial displays.

More than 100 aircraft types attended the 2016 Farnborough International Airshow, held July 11 to 17 at Farnborough Airport, U.K. Photographer Rich Cooper caught many of them in action.




24

Watch the video **here**

About 10,000 aircraft made the trip to Wisconsin for EAA AirVenture 2016. **Warren Liebmann Photo**

Oh, what an Oshkosh!

2016 AirVenture attracts 565,000 to aviation's Mecca

BY KENNETH I. SWARTZ

The 2016 Experimental Aircraft Association (EAA) AirVenture Oshkosh was another outstanding aviation success, thanks to the efforts of 5,500 volunteers who made the largest airshow in the world possible.

This year's event attracted approximately 563,000 attendees and approximately 10,000 aircraft to Wittman Regional Airport in Oshkosh, Wis., and local area airports.

In the sky, there was plenty of red and white Canadian content in this year's airshow, thanks to the appearance of the Canadian Forces Snowbirds air demonstration team, Coulson Aviation's Martin Mars waterbomber and the Canadian Harvard Aircraft Association aerobatic team.

On the ground were several aircraft in the experimental, warbird, vintage and ultralight display areas, including several with Canadian ties.

RED AND WHITE AIRSHOW

The Canadian Forces Snowbirds was the first military air demonstration team to appear at Oshkosh back in 1976. It's been 33 years since the team last appeared in the skies over the Wisconsin show.

The nine-aircraft aerobatic team received a very warm reception from the appreciative and knowledgeable aviation audience.

Snowbirds team members were also thrilled to attend, with two of the pilots electing to camp in a tent next to an RCAF CT-114 Tutor parked in the vintage aircraft section!

During the half century the Martin Mars was on the frontlines as a waterbomber in British Columbia, the aircraft was always based near the forests it was paid to protect. However, with no current contracts, Hawaii Mars was able to attend Oshkosh for the first time. The EAA has a long history of showcasing rare and unusual aircraft at its signature show, and in 2016 the massive aircraft landed at the EAA seaplane base on Lake Winnebago.

Both the EAA and vintage aircraft enthusiast Kermit Weeks helped sponsor the trans-continental flight, with the Coulson Group welcoming the exposure since Hawaii Mars and Philippines Mars are both currently for sale. Priced at about $3 million each, the aircraft generated lots of interest at the show.

This year marked the 70th anniversary of the first flight of the de Havilland Canada DHC-1 Chipmunk trainer at Toronto's Downsview Airport on May 22, 1946. Almost a dozen aircraft from Canada and the U.S. converged at Oshkosh for a reunion.

BUSINESS FOCUS

Beneath the surface, Oshkosh is not just a "love-in" for aviation enthusiasts, but a serious place to do business.

Tens of thousands of pilots attending the show are interested in buying, building or upgrading their aircraft. This was the core audience for more than 1,000 aviation seminars offered at Oshkosh over the seven-day show.

The "experimental" segment of the general aviation fleet has been growing at a faster pace than the certified aircraft segment, according to Jack Pelton, the EAA's chairman and CEO.

Owner-built aircraft comprised 15.9 per cent of the active U.S. fleet in 2014, including experimental and light sport category aircraft, up from about seven per cent in 1996.

On the good news front, the United States market share of new aircraft deliveries is increasing as the U.S. economy rebounds, which is a positive development for kit and certified aircraft manufacturers exhibiting their latest models at AirVenture.

Worldwide new piston aircraft deliveries were down 6.5 per cent in 2015 compared to 2014, according to the General Aircraft Manufacturers Association, but two-thirds of sales were in North America, up from 55 per cent a year earlier.

Turboprop deliveries declined five per cent from 603 to 557 aircraft in 2015, but deliveries in North America increased by five per cent.

For one week every year, the control tower at Wittman Regional Airport in Oshkosh is the busiest in the world. **Kenneth I. Swartz Photo**


The Martin Mars waterbomber made its first appearance at AirVenture, where it was a star attraction. **Kenneth I. Swartz Photo**


The new $4.8 million Cessna Denali single-engine turboprop was announced at Oshkosh 2016. Its features include a spacious cabin, large rear cargo door, and a new GE 1,240-horsepower engine. **Textron Photo**


Members of the Canadian Forces Snowbirds team stop to chat with the folks at Diamond Aircraft. **Kenneth I. Swartz Photo**

JETS, TURBOPROPS AND PISTON AIRCRAFT

The HondaJet first appeared at AirVenture in 2005 as an experimental concept aircraft and returned in 2016 as a fully certified jet.

The personal jet spotlight now shifts to the single-engine Cirrus Vision Jet SF50, which is undergoing FAA certification flight testing at the OEM's factory in Duluth, Minn. Cirrus anticipates producing 20 to 50 of the $1.93 million jets during the first year of production and between 75 and 125 annually in subsequent years.

On the first day of the airshow, Textron Aviation revealed full details of the new clean-sheet Cessna Denali single-engine turboprop, the latest development in the growing market segment.

The new $4.8 million Denali will be of conventional aluminum construction and have a 285-knot speed, 1,100-pound payload with full fuel, and a range of 1,600 nautical miles at high speed with a pilot and four passengers. Its large cabin will accommodate six people in normal configuration, and nine people in a high-density set-up. For added versatility, the aircraft will be equipped with a rear 59 inch by 53 inch cargo door.

It will feature a Garmin G3000 avionics suite and be powered by a new General Electric 1,240-horsepower FADEC-equipped turboprop driving a five-blade composite McCauley propeller. This is GE's first major challenge to the P&WC PT6 in the single-engine market.

The Denali is a new challenger to single-engine turboprops produced or in development by Piper, Daher, Pilatus, Epic Aircraft, Evolution Aircraft and Kestrel Aircraft, including owner-built models.

At the Piper booth, the first production $2.85 million M600 turboprop was on display following FAA certification in June 2016. The six-seat 274-knot aircraft has a Garmin G3000 cockpit, a maximum range of 1,484 miles (2,748 km) and a new clean-sheet wing design. It is powered by a PT6A-42A.

Pilatus introduced the PC-12 NG with a higher cruise speed and better takeoff and climb performance in May 2016. The upgrade features a more efficient composite five-blade Hartzell prop with scimitar shaped blades and numerous small aerodynamic improvements. The Swiss aircraft maker delivered its 1,400th PC-12 in July and the fleet recently surpassed five million flight hours.

Daher introduced the TBM 900 with an integrated keyboard controlled Garmin G1000 cockpit in 2014, and the TBM 930 with touchscreen Garmin G3000 avionics in April 2016. The 900 series features a number of safety enhancements and many aerodynamic improvements that provide the equivalent of a 50-horsepower increase in engine power and a 10 per cent increase in cruise speed. Both aircraft are powered by the 850-horsepower PT6A-66D. The TBM 900/930 is now available with a rear lavatory.

In the piston market, Canadian light aircraft manufacturers Diamond Aircraft, Zenair and Murphy Aircraft all showcased new models, the latter two in the kit aircraft category.

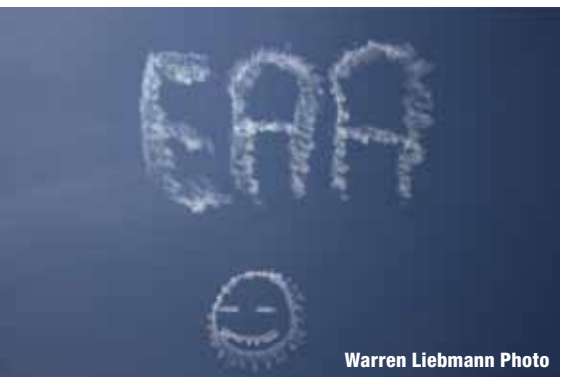
Diamond Aircraft has delivered six new twin-engine diesel DA62s built in Austria to U.S. customers through its London, Ont., factory since the latest Diamond model was certified in March.

The OEM has diversified its business base since the collapse of the general aviation market in 2007-2008. The Canadian factory is building new DA40s, refurbishing older DA42s still equipped with Thielert engines, building the composite structure for the Dornier Seastar twin turboprop amphibian and working on an undisclosed design and production project for Lockheed Martin.

With so much to see and do, this year's Oshkosh was one of the best ever. But aviation aficionados are already looking to top it next year, when the show roars into town once more from July 24 to 30, 2017, with Canadian band Barenaked Ladies already booked as the headline musical act.

EAA AirVenture Oshkosh, the 64th annual EAA fly-in convention, was held July 25 to 31 at Wittman Regional Airport in Oshkosh, Wis.

Kenneth I. Swartz Photo



Warren Liebmann Photo

Warren Liebmann Photo

John M. Dibbs/EAA (airventure.org) Photo

Kenneth I. Swartz Photo

Warren Liebmann Photo

Kenneth I. Swartz Photo

Kenneth I. Swartz Photo

Watch the video **here**

Several aircraft were on display at CBAA 2016 in Calgary, including the much-anticipated HondaJet, at right.

Biz av community stampedes to Calgary for CBAA 2016

STORY AND PHOTOS BY GARY WATSON

More than 700 people attended the 2016 Canadian Business Aviation Association (CBAA) convention and exhibition, held at Million Air Calgary from July 5 to 7. The numbers were up this year over last, with many attendees planning to take in the Calgary Stampede, which got underway right after the show.

A total of 18 business aircraft were on static display, ranging in size from a Leonardo Helicopters AW109 Grand helicopter to a Bombardier Global 6000. Sixty-five tradeshow booths in the hangar were grouped around a Dassault Falcon 2000S, with exhibitors showcasing the latest products and services for the business aviation market.

From a presentation perspective, one of the highlights of this year's show was the public release of the CBAA's new "Economic Impact of Business Aviation Operations and Business Aircraft Manufacturing in Canada" report, delivered by Mike Tretheway of InterVistas Consulting. The study found that Canadian business aviation operations and related manufacturing contributes $730 million in taxes, 22,300 direct jobs and $6.8 billion in direct economic output. The total amount of all direct and indirect economic impacts is almost $11 billion. The CBAA is working to make politicians aware that the business aviation industry in Canada is about much more than corporate jets as perks for senior management.

This year's program also included a number of topical training sessions and discussions, including an update on ICAO's "Destination Green" program, which looks at reducing CO2 emissions from aircraft. Although the majority of airborne emissions are created by commercial airlines, the business jet original equipment manufacturers (OEMs) and organizations such as CBAA are onside to reduce those created by corporate aircraft.

Several programs are now underway, starting with better aircraft technology, improved flight infrastructure and the development of a suitable alternate fuel. Since the CO2 reduction program started, the carbon footprint has been reduced by 30 per cent across the worldwide fleet of business aircraft.

Social media was covered as part of a presentation on emergency response planning. Business consultant Peter Agur of the Van Allen Group discussed how smartphones enable the immediate broadcast of information and videos moments after an event takes place. The filming of an aircraft incident can be circulated around the world before the operator is made aware of the event or has had the chance to notify next of kin. The use of Facebook, Twitter and other social media programs has created a culture of unfiltered and often inaccurate information.

Agur pointed out that aviation managers or directors might not be using social media, but it's important to remember that younger employees most certainly are online. They are often working airside, where pictures of company aircraft can appear on aviation websites without any type of filtering and vetting by senior staff.

Other sessions included Nav Canada's list of upcoming changes to obsolete ground navigational aids. Under-utilized systems such as non-directional beacons (NDBs) and VHF omni-directional range (VORs) will be slowly decommissioned over the next 20 years, as space-borne systems provide more accurate and less costly services.

Transport Canada provided an update for the business aviation sector, including a discussion about the much-maligned minimum equipment list (MEL) approvals process. Although none of the attendees stood up to challenge the declining level of service at Transport Canada, a number of them later expressed increasing frustration with their Transport Canada dealings.

New cross-border customs rules were discussed, as were potential Canada Revenue Agency tax implications regarding shareholders and employees.

The annual CBAA golf tournament raised nearly $29,000 for Hope Air, and the association announced a donation to Fort McMurray fire restoration and support programs. President Rudy Toering recognized CBAA member operators who were heavily involved in the evacuation of fire victims during the crisis.

CBAA 2017 will be held Aug. 9 to 11 at the Tradex Centre in Abbotsford, B.C., just before the renowned Abbotsford International Airshow.

Rudy Toering, CBAA president and CEO, said the successful show sends a strong message to government about the value of business aviation.

FlyPink campaign shoulders fight against breast cancer

Canadian pilot Susan McHaffie, second from left, is the founder of FlyPink, an international breast cancer awareness campaign that encourages aviators to wear pink epaulets during the month of October. McHaffie came up with the idea while working as manager of fleet technical development for Australia-based QantasLink regional airline.

This year, Porter Airlines has joined the movement, which also includes Canadian charter operators NovaJet and Skyservice as well as numerous international carriers. Operators pay for the cost of the epaulets and in turn the pilots who wear them donate to their national breast cancer foundation. Last year, its first year, the campaign raised close to $100,000 worldwide. This year's goal is $150,000, with the hope of including pilots from all across the industry.

For more information, visit www.flypink.net.

With files from Ben Forrest

QantasLink Photo

Toronto carrier offers commuter flights to Niagara

Imagine stepping onto an eight-seat, twin-engine Piper Navajo Chieftain in Toronto and landing 12 minutes later in the Niagara region, soaring blissfully over gridlocked commuters stuck in a three-hour drive.

It's the kind of thing motorists daydream about when highways become parking lots, and starting in mid-September it may be a reality.

Greater Toronto Airways (GTA), a private airline based at Billy Bishop Toronto City Airport, aims to start offering commuter flights for $85 (or $159 for a round trip) starting Sept. 15.

"Our main goal was to connect Niagara Falls and Toronto in a different way than done before," said Chris Nowrouzi, the airline's president and CEO, in a speech on Aug. 9, 2016.

"Our goal is to grow from just connecting Toronto and Niagara Falls to then Toronto and Collingwood, Niagara Falls and Collingwood, Muskoka after that," he said.

Flights will depart Toronto for Niagara at 7 a.m. Monday through Friday and return at 8:30 a.m., landing at Billy Bishop airport in time for the start of the business day. At 4:30 p.m. the planes return to Niagara, with final flights back to Toronto at 6 p.m.

The airline is focusing on the business sector at first and plans to expand from there into the tourism sector and into weekend operations, said Nowrouzi.

Tickets are on sale at flygta.com.

Aerospace, Defence and Security Expo roars into Abbotsford

BY HOWARD SLUTSKEN

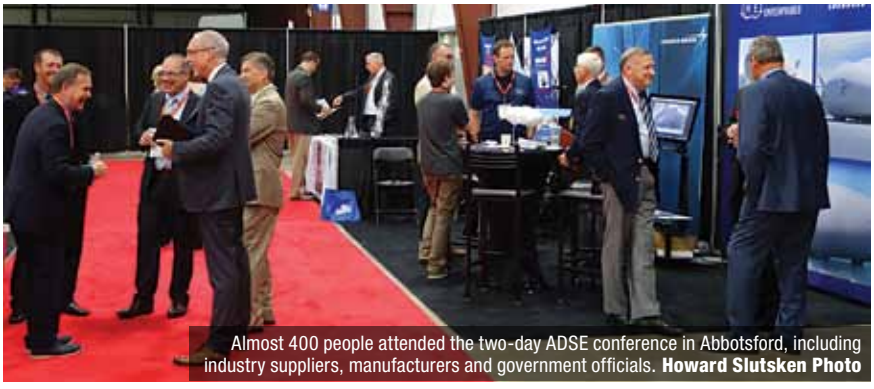
The official opening of the 2016 Aerospace, Defence and Security Expo (ADSE) on Aug. 11 was punctuated by the roar of fighter jets and warbirds that were arriving and practicing for this year's Abbotsford International Air Show.

Hosted by the Pacific arm of the Aerospace Industries Association of Canada (AIAC), the two-day conference at the Fraser Valley Trade and Exhibition Centre (Tradex) saw a full slate of sessions and events. It was an important opportunity for industry suppliers, manufacturers, and government officials to mingle and meet.

"This year was excellent. We really focused on a high-calibre, content-rich program," said Mike Mueller, vice-president of operations and communications for AIAC Pacific. "Our business-to-business sessions this year have been a huge hit, with over 160 meetings."

John Maris, AIAC chair and president of Marinvent Corporation, kicked off the conference with a review of an AIAC initiative that encourages companies to develop consortium models, recognizing the small size of the Canadian industry on the global stage.

"The people that are the most like us are our closest competitors, are they not? We don't have the size and scale to be able to afford luxuries such as competing with our own potential best partners," said Maris.



Almost 400 people attended the two-day ADSE conference in Abbotsford, including industry suppliers, manufacturers and government officials. **Howard Slutsken Photo**

Supply chain development was addressed, along with breakout sessions with a number of major British Columbia aerospace companies.

In a boost to the B.C. industry, the Hon. Amrik Virk, B.C. minister of technology, innovation and citizens' services, announced Boeing is planning to open a downtown Vancouver data analytics lab, adding to the 200 employees at the company's Richmond, B.C., facilities. He welcomed the nearly 400 registrants in the packed room, and noted that for the first time, the conference was playing host to visitors from Jordan.

Imad Ghwein is chief executive officer of the Jordan Aeronautical-systems Company, a maintenance, repair and overhaul (MRO) organization based in Amman. His team was in Abbotsford to visit Cascade Aerospace, looking to enhance relationships that the two companies, and the Jordanian and Canadian governments, already have in place.

"We took advantage of this event to have a look at the aviation industry in Canada and British Columbia," said Ghwein.

Sessions included a review of opportunities in India; panelists sharing their experiences of doing business in the Asia Pacific region; and a forum focused on the procurement environment related to Canada's new defence strategy.

Friday's "Super Sessions" gave high-level presenters the opportunity to share their perspective on the industry, as well as showcasing their company's successes and initiatives. KF Aerospace president Tracy Medve led off the day, and other presenters included Boeing's Bob Noble, vice-president of supplier development; WestJet's president and CEO, Gregg Saretsky; and RCAF Commander LGen Michael Hood.

In a presentation introducing Lockheed Martin's hybrid airship technology, Grant Cool, chief operating officer of Hybrid Enterprises, showed the opportunities offered by what he describes as a "ferry boat in the sky."

With air-cushion landing gear, the LMH-1 hybrid airship has the potential to serve Canada's north, carrying up to 21,000 kilograms of cargo and up to 19 passengers to unimproved landing areas. Hybrid Enterprises' booth was one of the most popular at ADSE, with people lining up to fly a hybrid airship simulator.

In 2017, ADSE and the Canadian Business Aviation Association's (CBAA's) annual convention will be held in conjunction with the Abbotsford International Air Show, from Aug. 9 to 11.

"It's going to be incredibly exciting," said Mueller. "We're forming a great relationship with CBAA. It'll give our delegates access to more of the industry, and vice versa. The relationship between the two organizations is very complementary."

AMAZING THINGS HAPPEN WHEN YOU'RE BOUND ONLY BY PHYSICS.

Barring the immutable laws of science, Embraer designers and engineers enjoy a unique freedom to create our executive aircraft. To reshape a fuselage that slips through the air while providing unrivaled cabin roominess. Or tweak the delicate balance of lift and thrust to increase efficiency. Or create control systems that help pilots always perform at their very best. All are a product of unconventional thinking at its finest. With all deference to pioneers like Newton, Galileo and Einstein — we simply don't think their good work is finished.

Rethink Convention.

EMBRAER
Executive Jets

EmbraerExecutiveJets.com

Although Jetlines plans to launch with Boeing 737s (shown), the airline is also considering Bombardier's C Series jet. **Boeing Image**

ULCCs continue to wrestle with launch issues

BY BRENT JANG

For two budding ultra-low-cost carriers (ULCCs) in Canada, the key ingredient to gaining consumers' attention appears simple enough—vastly discounted airfares.

But translating the theory into reality has been difficult for Vancouver-based Canada Jetlines Ltd. and Calgary-based charter operator Enerjet.

In theory, cheap domestic ticket prices would lure Canadians to choose flying instead of driving six hours or more to their destination. In addition, the thinking by prospective discounters is that on routes where there is head-to-head competition, budget-minded travellers would prefer to fly on an ULCC rather than Air Canada or WestJet Airlines Ltd.

The reality is that there are a wide range of issues to deal with, from lining up planes to securing financing.

Jetlines chief executive officer Jim Scott has Bombardier C Series jets on his mind for potential aircraft, even though Jetlines plans to launch with Boeing 737s and transition to the Boeing 737 MAX in 2021.

"We are still in a huge relationship with Boeing, but the C Series is a good airplane," said Scott. "Bombardier has told us that it has no problem with us starting with Boeing and then migrating to the C Series. It will be who gives you the best deal."

Jetlines has been working at becoming a ULCC since the fall of 2013, while Enerjet has considered entering the discount game for several years. Enerjet is using the temporary name FlyToo for its ULCC plans after initially using the label Jet Naked.

Jetlines hopes to have a solid financial foundation through a reverse takeover of Jet Metal Corp.

While Jetlines and Enerjet have been unable to get off the ground, NewLeaf Travel Co. Inc. launched as a reseller of flights on July 25.

NewLeaf can't call itself an airline because the Canadian Transportation Agency (CTA) requires proper licences and other compliance with federal rules to be deemed an airline.

NewLeaf said it has managed to meet the CTA's conditions for becoming a reseller. Critics such as air passenger rights advocate Gabor Lukacs, however, continue to have concerns. The Federal Court of Appeal ruled in June that it will hear Lukacs's legal challenge to the CTA's March decision. The CTA paved the way for NewLeaf to operate as a reseller of air services to 11 Canadian destinations without an airline licence.

For the fall and winter schedule, NewLeaf's aim is to diversify into some sun destinations in the United States.

Dean Dacko, NewLeaf's chief commercial officer, said the Winnipeg-based company is confident that it will be successful in its second launch attempt this year. Previously, NewLeaf announced in January that it had targeted a February takeoff for its services, but it had to postpone the start date, pending receiving the go-ahead from the CTA.

"Back in January, we created a lot of excitement and attention," said Dacko in an interview.

He supports Jetlines' efforts to persuade the federal government to increase the limit on foreign ownership of a Canadian airline to 49 per cent of voting rights from the current 25 per cent. "We're on the side of competition and we're on the side of loosening regulations to make that a reality," he said.

Enerjet is also hoping that Ottawa will increase foreign ownership limits.

Jim Young left Jetlines in 2014 to focus on what could become NewLeaf. Young, who is now NewLeaf's chief executive officer, formerly worked for six months as president of Jetlines and he is also a former marketing executive at Denver-based Frontier Airlines Inc.

NewLeaf has an arrangement with Flair Airlines Ltd. of Kelowna, B.C., to have Flair operate 156-seat Boeing 737-400s in the single-cabin configuration. Flair is providing pilots and other crew.

Plane scheduling has been worked out so that crew members return to their home base, said Young.

NewLeaf claimed in June that it had lined up Enerjet as Flair's subcontractor for certain flights. But in July, Enerjet committed its leased 737-700 for flying in Europe on behalf of Transavia Airlines until mid-September, so Enerjet didn't have any role in NewLeaf's launch, said Enerjet president Tim Morgan, who is a WestJet co-founder.

Jump On Flyaways, a marketing company, signed a deal in July to help lure passenger traffic to NewLeaf by offering an online system in which consumers bid for seats that would otherwise fly empty.

YOU FLY.
WE SUPPORT.

HCare is Airbus Helicopters' redefined services offer, focusing on our commitment to quality service and performance to better meet the evolving needs of our customers. Together with training, 24/7 technical support and connected services, HCare's innovative solutions for spare parts and MRO services, are expertly tailored to your operational requirements. **HCARE - With you on every flight.**

Important to you. Essential to us.
www.airbushelicopters.ca

AIRBUS
HELICOPTERS

Although the potential market for civilian C295Ws is quite small, some operators feel the aircraft meets the requirements for northern operations. **Andy Cline Photo**

Versatile platform

AIRBUS' C295W IMPRESSES CIVILIAN OPERATORS DURING NORTHERN TOUR

BY CHRIS THATCHER

As a former CC-130 Hercules pilot, Garrett Lawless has an appreciation for military design and ruggedness. So perhaps it's not surprising that the chief operating officer of Transwest Air would be weighing the merits of a military aircraft.

Transwest provides passenger and cargo services to northern Saskatchewan with a mix of Saab 340, Beechcraft 1900, DHC-3 Turbo Otter and various King Air aircraft. But with a burgeoning natural resource sector in the province and rapid development across the territories to the north, Lawless sees business opportunities—if he had a more robust aircraft.

"The problem with doing business in the north and the Arctic is that it is very difficult to reach [and] the infrastructure is not very robust," he said.

Rather than aircraft that require 5,000 to 10,000 feet of paved runway and a main operating base, he said that what northern airline operators "need are aircraft that can operate on meagre airstrips in remote destinations that are unsupported by any surrounding facilities, repeatedly, again and again."

Words like that have prompted Airbus Defence and Space to take note. Governments may be the primary customers for its military aircraft, but Canada's sparsely populated but industry-intensive North, much of which is serviced by small companies with aging fleets, could offer a modest sales market for platforms traditionally built for the rigours of combat.

In late June, the company coordinated a tour of a Mexican Air Force C295W (W for winglets) across the Canadian North to demonstrate to regional operators what military capability could mean for their future business plans.

Airbus has sold more than 165 of the C295 transport aircraft to 23 governments, and is hoping to be the successful bidder in the Canadian military's fixed-wing search and rescue program. Entering the civil market, however, is a new step.

In late June, a Mexican Air Force C295W was showcased to civilian operators across North America. The tour included several stops in the Canadian North. **Airbus Graphic**

The market might be small—between 10 and 20 aircraft, according to Pablo Molina, head of Airbus Defence and Space in Canada—but the aircraft's capabilities would "fit the mould" of the versatile planes that opened up the North decades ago.

In fact, interest from civil operators provided the impetus for the Canadian portion of a larger North American tour. Starting in Saskatoon on June 20 and ending on the tarmac of the Quinte International Air Show at 8 Wing Trenton, Ont., six days later, the C295W demonstrated an 11-person paratroop drop over Prince Albert, Sask., as well as short takeoffs and landings on a 2,500-foot grass strip. It covered the more than 2,000 nautical miles from Yellowknife to Resolute Bay and then Churchill with five metric tons of cargo and passengers on a single tank of gas (with 1,400 kilograms of fuel to spare in its wing tanks) and without any ground support in Resolute Bay; and conducted several short field landings and takeoffs on the 3,500 foot gravel airstrip of a First Nations community in northwestern Ontario, using no more than a third of the runway.

While range, endurance, and payload capacity were key highlights, the primary objective was a demonstration of the aircraft's self-sufficiency, including the ability to load and unload with a robotic system and work from remote airfields with little or no support. That level of autonomy could be critical to provincial and territorial governments facing large bills to upgrade and maintain airport infrastructure.

*Watch the video **here***

WHERE WILL IT TAKE YOU TODAY?

ROAM

HAVE THE TBM OF YOUR DREAMS

TBM 900 G1000

TBM 930 G3000

TBM DAHER

Exclusive Distributor for
Eastern Canada

Columbia.
Aircraft Sales, Inc.

Exclusive Distributors of
New and Select Experienced Aircraft

Ken Dono
SALES MANAGER
800-787-5001
kdono@columbiaaircraftsales.com

ColumbiaAircraftSales.com

CAE to create wildfire training and simulation centre in B.C.

BY BEN FORREST

CAE announced plans in February to create a wildfire training and simulation centre in British Columbia, long before the disastrous fires in Fort McMurray, Alta.

But the lessons of Fort McMurray will help guide the company as it works toward opening the centre in 2018 with Abbotsford, B.C.-based Conair Aerial Firefighting as its anchor customer.

"The experiences in Fort McMurray and other locations are definitely demonstrating that this team environment is complex," said Mike Greenley, vice-president and general manager of CAE Canada.

"It's increasingly complex. Fires are getting bigger [and] the number of assets coming in on them is increasing. You've got a combination of helicopters, the waterbombers that are dropping down into lakes, scooping up water and dropping it on the fire. And then these long-range chemical bombers, all working in coordination in the same airspace under coordination of the air attack officers."

Aerial firefighting is similar to a tactical military operation, so there is an opportunity for the training environment to reflect that and to be able to train teams, continued Greenley.

CAE has signed a contract with Conair for the proposed centre, which would be located in Abbotsford and would feature a CAE-built Avro RJ85 full-flight simulator qualified to Level D, the highest qualification for flight simulators.

The company is in discussions with a second and third customer, and a fourth has reached out to CAE in preliminary conversations, said Greenley.

"We would expect to have some of those signed up this year," he said.

The drive to create the centre is prompted in part by a market created with the conversion of RJ85 regional airliners into aerial firefighting assets.

Other operators are using the aircraft primarily in Canada's North, where it's possible to complete short takeoffs and landings on gravel runways, said Greenley.

"In Canada, there's a decent cluster of these aircraft now being used," he added. "There's going to be at least three operators picking up RJ85s out of the global market, and then the biggest operator is Conair, converting them into aerial firefighting assets in both Canada and the United States."

The training centre will be suitable for giving pilots their certifications and re-certifications to fly the RJ85, but CAE will add enhancements to the simulation environment for firefighters.

CAE is planning to open a wildfire training centre in Abbotsford in 2018, with Conair Aerial Firefighting as its anchor customer. **Conair Photo**

"They have very good visuals, very good, realistic firefighting scenes and a good modelling of the chemical release into those fires, so that we can do mission-specific training for the firefighter customers," said Greenley.

CAE expects the centre to be part of a distributed simulation network that connects wildfire training and coordination centres throughout Canada.

"We would have additional simulators for other aircraft types that could go into Abbotsford," he continued. "In addition, some of the provinces have their own simulators. So we would look at the potential of connecting provincial simulators in other provinces into our network to work on team training. But that's not a confirmed thing. That's something we would like to explore."

With support from the federal government, CAE is in the midst of a training needs analysis for aerial firefighting in general, the results of which could help inform future advancements at provincial first responder sites as well as the Abbotsford centre.

The company is also completing a training technology assessment and finalizing its building and space requirements.

CAE expects to start the building design phases in the fall, with development and setup lasting more than a year. In the interim, the company will offer training at its facility in Brussels, Belgium.

Ultimately, Greenley expects the new centre in B.C. to increase crew availability and reduce costs for operators, while providing safer training.

"You just use a simulator today to get your type certificate as a pilot or a co-pilot of the aircraft, and then you do everything else in a live aircraft," he said.

"Now, we'll be able to introduce simulation to learn the trade of aerial firefighting. So that's going to decrease the cost to the operator and increase the training opportunities for the crew.

"We're going to be able to have a safe environment to put them in stressful aerial firefighting scenarios, which will hopefully even further increase their already high skill levels in a very safe and cost-effective manner."

Training agreement to serve Chinese students

Twenty Chinese students arrived in mid-July for preparatory classes, and official flight training is expected to start sometime in mid-September. **OAS Photo**

Air Transport Association of Canada (ATAC) members Ottawa Aviation Services (OAS) and National Helicopters Inc. have entered into an innovative partnership to offer helicopter training to groups of Chinese students.

The companies expect to host hundreds of Chinese helicopter students over the next three years.

"National Helicopters and Ottawa Aviation Services won this contract against other cheaper international bids despite regulatory and economic headwinds," said Cedric Paillard, CEO of OAS. "At the end, quality of flight training was the deciding factor."

OAS will be managing the entire project, including offering aviation English and ground schools as required. National Helicopters will provide the flight training component. The first intake of 20 Chinese students has already arrived and started commercial ground school. National Helicopters will be offering the training out of the airport in Cornwall, Ont.

What makes this project even more exciting is that OAS has also entered into an agreement with the Nav Centre in Cornwall to host this group of students and other domestic and international students in OAS's training programs.

The Nav Centre is the largest facility of its kind in Eastern Ontario, offering world-class education facilities and technology, air traffic control simulation capabilities, accommodation and recreational facilities. At this location, OAS expects to offer domestic and international students an exceptional flight training and life experience in Cornwall and in Canada.

"We are very pleased to have entered into this agreement with Nav Canada and National Helicopters," said Paillard. "We are working together to establish a campus in Cornwall that will support the training of hundreds of domestic and international students. We look forward to working with Nav Canada, the Nav Centre, the City of Cornwall and surrounding communities to place the Cornwall area on the map of professional pilot training destinations."

"National Helicopters Inc. is very excited to partner with our ATAC associate, Ottawa Aviation Services," added Dan Munro, president, National Helicopters Inc. "This is a strategic partnership with the Cornwall Nav Centre, which brings two of Eastern Canada's foremost flight training schools together. The quality of flight training at our respective schools has been recognized on the world flight training stage."

Kim Coe-Turner, general manager of the Nav Centre, said the program is a perfect fit for the facility and augments Nav Canada's international offerings.

SKYPLAN

Leave everything UP to us.

We exceed your expectations with flying colors.

The Aurora flight planning system lets you easily build, test, manage, visualize, file and uplink flight plans ANYTIME and ANYWHERE! Couple that with a fully integrated map that allows you to generate flight plans, retrieve tabular and graphic weather data and NOTAMS, and deliver flight plans using multiple communications networks. Contact a Skyplan representative today and ask about our web-based Aurora flight planning system.

Suite 104, 7777 10th St. N.E., Calgary, Alberta, Canada, T2E 8X2
TEL +1 (403) 275-2520 • FAX: +1 (403) 275-3911 • TOLL FREE: +1 (800) 661-9189
E-mail: ops@skyplan.com • www.skyplan.com

Boeing and Lockheed cross paths in Abbotsford

BY MIKE LUEDEY

Not unlike a prize fight in Las Vegas, the Abbotsford International Airshow in B.C. was the scene of a battle of sorts between two rivals vying for a potential contract to replace Canada's aging fleet of CF-188 Hornet aircraft.

In one corner was Lockheed Martin's F-35A Lightning II. In the other, Boeing Defense, Space & Security's (BDS) Block II F/A-18 Super Hornet.

The airshow marked a series of firsts for Abbotsford and Canada. Boeing's corporate Super Hornet demo jet had never been to Canada, and neither had Lockheed's F-35—but there they were, about to be introduced to a massive Canadian audience.

"We're very excited that Abbotsford was recognized as a stage to show off the latest in technology by some of the world's most exciting aerospace companies," said Jim Reith, president of the Abbotsford International Airshow.

The Abbotsford Airshow has a history of being well attended by high-profile guests such as the RCAF's Chief of the Air Staff and was the site for the delivery of Canada's first CC-177 Globemaster III back in 2007.

All weekend, there was speculation as to whether the F-35s from the 34th Fighter Squadron at Hill Air Force Base, Utah, would fly. However, since Lockheed does not own the aircraft and neither pilot was qualified to fly a demo, the crowds had to make do with a static display that was still a major attraction for many visitors throughout the show.

Senior Lockheed Martin F-35 experimental test pilot Billie Flynn believes it's hard for people to distinguish one fighter jet from the next unless they get a chance to see them in person.

"They need to talk to the people who fly it and they need to see the sophistication of how it's been built, the geometric shapes of every panel, every hinge, and then they'll start to realize that there's something very unique about this aircraft," he said. "You don't necessarily believe everything you've read so in our experience, it's just very important to put it on the ground and let the public see it and talk to us."

Boeing flew a U.S. Navy combat loaded F/A-18F Super Hornet during each of the three daily airshows. **Mike Luedey Photo**

An F-35 from the 34th Fighter Squadron at Hill Air Force Base in Utah arrives in Abbotsford. **Mike Luedey Photo**

Boeing placed a combat loaded F/A-18E on static display but also flew an F model, with a full combat load (inert, of course) during each of the three daily airshows.

"We had a couple of jets on lease from the U.S. Navy for the Farnborough Airshow and felt that while we had them, there was a great opportunity to take that same demo into Canada for the people in Abbotsford," said BDS' senior manager of communications, Becky Yeamans. "It gave us a great opportunity to talk about advances made over the classic Hornet and demonstrate what really is a new aircraft, with a larger surface area and features like the AESA [active electronically scanned array] radar system."

While the F-35s did not fly at the show, they did exact a measure of revenge with a high energy, low altitude pass down the north/south runway for onlookers before departing Abbotsford for Utah.

Until next year!

One of two F-35A Lightning IIs from the 34th FS departs for Hill AFB in Utah. **Jeff Wilson Photo**

While the two F-35A Lightning IIs were on static display only, Boeing put on a spritely air demonstration with a fully combat-loaded F/A-18F Super Hornet during the show.
Jeff Wilson Photos

C295W: MISSION READY FOR CANADIANS

Most proven. Most reliable. Most Canadian.

The C295W is the market leader with over 165 aircraft sold in 23 countries. It is proven in the toughest conditions, be it the Arctic, at sea, or in the mountains, and its missionized SAR variant is already saving lives around the world. Canada's C295W will be supported by a partnership with PAL Aerospace. Plus, the C295W offers the best industrial benefits for Canada, creating sustainable, export-oriented jobs. This includes engines made by Pratt & Whitney Canada and training by CAE. Operationally and industrially, the C295W and Airbus Defence and Space is the right FWSAR choice for Canada. Find out more at www.c295.ca

PALaerospace

AIRBUS DEFENCE & SPACE

Avmax converts Dash 8 for FlyViking

BY BEN FORREST

Avmax completely overhauled this former Alberta government Dash 8 for Norwegian airline FlyViking. **Jeff Dickinson Photo**

When the Alberta government put a 1985 de Havilland Dash 8 up for sale nearly two years ago, the offering naturally attracted Calgary-based Avmax, a diverse aviation support company that has completed Dash 8 conversions for operators around the world.

This was the last of four aircraft in the former government fleet, sold after prolonged controversy over their use by sitting politicians, including former premiers Ralph Klein and Alison Redford.

Avmax acquired the Dash 8 in January 2016 and set about converting it for commercial use by FlyViking, a Norwegian airline.

This type of conversion was nothing new for Avmax, but its tight deadline stretched the company in new ways. With only 16 weeks to finish the work, nearly every division in the organization rallied behind it.

"I think the challenge certainly came from a very aggressive timeline, and the fact that we were doing a fairly large-scale project," said Al Young, Avmax vice-president of global operations. "But for Avmax in general, this is what we do. We're a heavy maintenance facility. We do these kinds of projects as a normal course of business."

Alberta put its four government planes up for sale in 2014, following a promise by then-premier Jim Prentice. The move was heralded as part of a new era for the Progressive Conservative Party after an auditor general's report revealed the planes were used for partisan events and other controversial purposes.

Alberta's three government Beechcraft King Air planes reportedly sold to Fargo Jet Center Inc. of Fargo, N.D. for $6.1 million in 2015. Avmax acquired the Dash 8 for a reported $5.026 million.

The plane was completely overhauled, with several modifications carried out by Avmax's maintenance, repair and overhaul (MRO) and avionics division in Calgary.

Avmax's engineering division created and certified most of the modifications and the plane flew to the Avmax facility in Montana to be painted before returning to Calgary for final touches.

A partial list of modifications includes converting the plane from 37 to 39 seats; installing an LED lighting system; installing ADS-B Out; and installing an underfloor duct heating system.

"The scope of the project was fairly large for us, but certainly it was well within our capability and well within our wheelhouse," said Young.

This was the first of 10 aircraft Avmax expects to convert for FlyViking over the next two to three years, all of them Dash 8s.

"It's their intention to basically have the same configuration on all the aircraft that are coming out," said Young.

"So this was a little bit of a learning curve for us as well as them in terms of what exactly they wanted and how they wanted the configuration and all of those things. But now that all of that work is done, we're just going to be replicating the product."

Avmax has been doing this kind of work for the last 20 years, working with airlines like Air Georgian, Ravn Alaska, Canadian North and SkyWest.

Still, due to the tight time constraints the Fly Viking project was a learning experience that will help the company as it seeks more of this work in the future.

"I think one of the big lessons is that we learned we're stronger and more able to help our customers when we pull everybody together and streamline our processes," said Young.

"This came in as a fairly large program, touched all of our divisions, basically all at once. And obviously as a company we all worked together to complete this program successfully in the short timeline provided."

Aero Design certifies bicycle racks

Aero Design has announced a new addition to the Aero Design Extreme Line. The Quick Release Bicycle Racks for the Airbus AS350/355 utilize the existing Aero Design quick release mounts for their line of cargo baskets.


Newly certified bicycle racks for the Airbus Helicopters AS350/355 are getting a lot of attention from cyclists and heli-tourism companies around the world. **Aero Design/Matthew Melsness Photo**

The system allows an operator to swap from basket to bike rack in less time than it takes to perform a weight and balance amendment, allows for three bikes per side or any number of combinations of bike rack plus any of the four models of Aero Design Cargo Baskets or two models of Aero Design Quick Release Steps for the Airbus AS350/355.

The rack will accept the shortest frame bike with a 26-inch wheel to the current longest frame mountain bike with a 29-inch wheel all up to four inches wide and with no modification necessary to the rack. Additionally, the bikes themselves are removed or installed in less than a minute each.

"We knew this was something that the Western Canadian helicopter operators wanted, but we had no idea how much attention this would get from helicopter companies, cyclists as well as heli-tourism companies around the world," said Aero Design president Jason Rekve.

"At the time of certification we had already spoken with 22 different parties interested in bike racks throughout the globe and have been working hard to make connections so that we can all realize the mutual benefits of this and other opportunities both locally and abroad."

Jordy Norris of Blackcomb Helicopters said: "This rack is going to be a huge game-changer in a sport with incredibly powerful growth right now. We were very excited to jump in early on this project, knowing that it would bring great things for mountain biking in the Sea to Sky region and beyond."

Added Canadian professional rider, guide and coach Lorraine Blancher, "I don't think the bike industry yet comprehends how impactful this addition will be. Mountain bikers want adventure; they want to explore, and we now have a tool that will provide us access to unique and diverse areas around the globe."

Don't buy hardware.

Instead, try Spidertracks' new simple scalable service.

ATaaS is aircraft tracking without the capital outlay. Starting at $1.65 per flight hour, ATaaS is an on-demand package where you pay for the service, not the hardware.

No startup costs

No depreciating assets

Reduced exposure

Over 4500 aircraft in 100 countries already trust Spidertracks.

What do you see?

- Aircraft ID
- Local Time
- UTC Time
- Position (Lat/Long)
- Aircraft Altitude
- Speed
- Direction (° T)
- Description of event
- ETA
- Total flight time
- Distance flown
- All your aircraft on one screen

Why Spidertracks?

	Spidertracks	Free online trackers
Automated Flight Following (AFF) Compliant	✓	
Secure flight data (you control who can see what)	✓	
No black-spots (worldwide coverage)	✓	
Overlay custom layers (weather, TFRs, POIs, etc)	✓	
Drives your safety management system	✓	
Automatically alerts you if your aircraft goes missing	✓	

We get it's better to try it for yourself — so take control of our online demo for free.

www.spidertracks.com/skies

Marinvent launches independent certification centre

Representatives from Esterline CMC Electronics, Antonov, AIAC and Marinvent join the Honourable Chrystia Freeland, minister of international trade (fourth from left) and Marinvent president John Maris (third from left) to announce the launch of CertCenterCanada at the Farnborough Airshow. **Rich Cooper Photo**

Marinvent Corporation announced at the Farnborough International Airshow that it is launching Canada's first independent research, development, flight test and certification centre.

CertCenterCanada addresses the challenges faced by aerospace companies as they try to reduce the substantial costs, schedule, and risks associated with flight testing and certification. The centre will provide a single-source resource of expert services, facilities, test assets, and access to Transport Canada delegates (DARs) covering a broad spectrum of disciplines.

"CertCenterCanada is of strategic importance to the Canadian aerospace industry," said Marinvent president John Maris. "It is a national initiative that I have personally been championing for many years. The centre will provide a full range of flight test and certification services to support a worldwide customer base from its headquarters location, by integrating with DARs and satellite facilities across Canada using Marinvent's Synthesis web-based certification tools."

CertCenterCanada will significantly expand upon Marinvent's current scope and capability to support clients seeking civil and military flight test and certification for aircraft, avionics, and aircraft systems. The centre is also expected to become a focus for aerospace companies wishing to conduct advanced research and development.

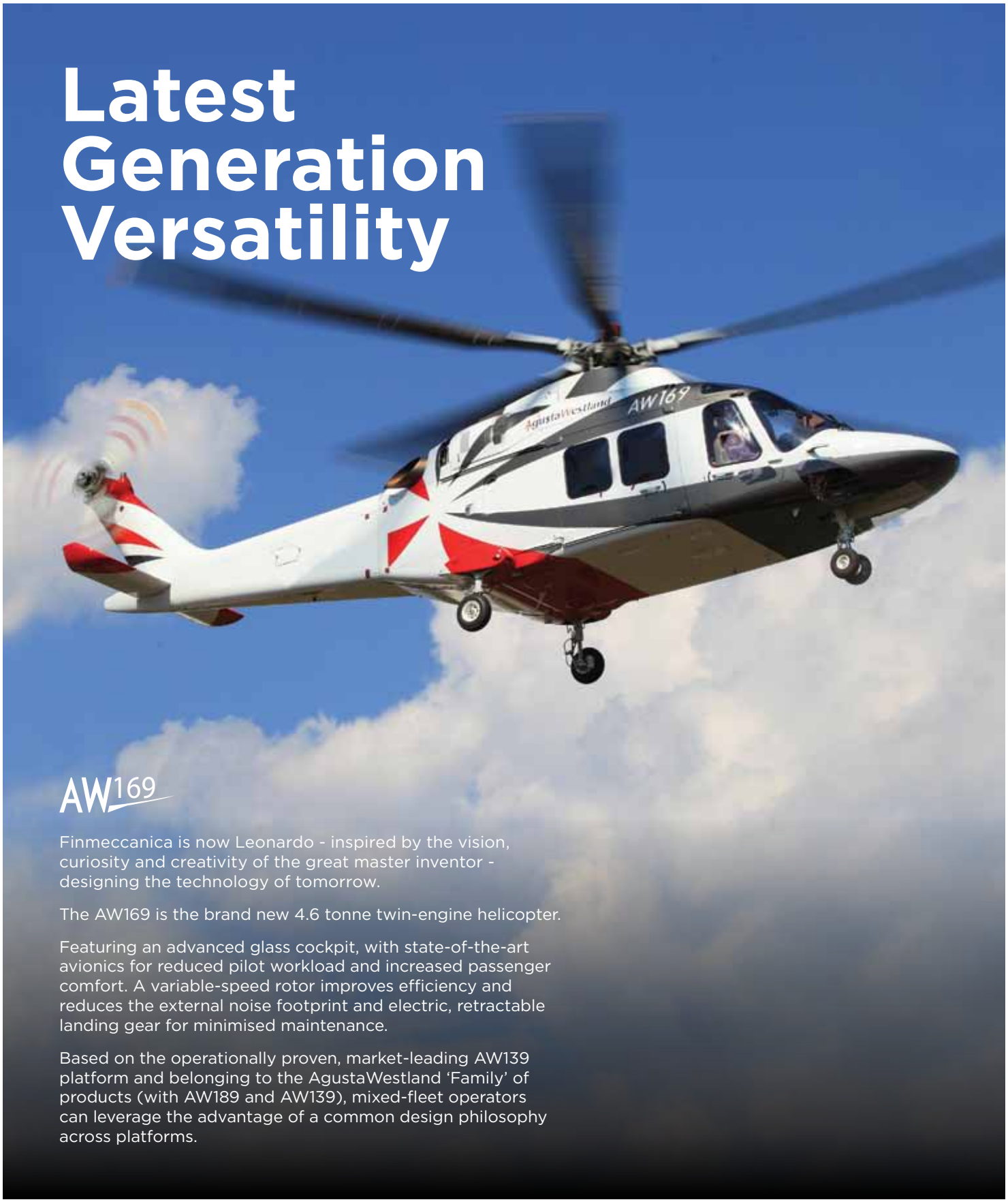
As such it will provide an ideal conduit for consortium and incubator initiatives, Canadian investment in aerospace, foreign direct investment, and industrial technology benefit opportunities.

"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 Canada," said Jim Quick, president and CEO of the Aerospace Industries Association of Canada (AIAC). "Marinvent is a small business success story in the Canadian aerospace industry, and [this] announcement is 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."

Discussions are already underway with potential launch partners, customers and investors.

If you would like to submit a press release or if you have a new product or service that you believe is newsworthy, please email our news editor at news@skiesmag.com.

Latest Generation Versatility



AW169

Finmeccanica is now Leonardo - inspired by the vision, curiosity and creativity of the great master inventor - designing the technology of tomorrow.

The AW169 is the brand new 4.6 tonne twin-engine helicopter.

Featuring an advanced glass cockpit, with state-of-the-art avionics for reduced pilot workload and increased passenger comfort. A variable-speed rotor improves efficiency and reduces the external noise footprint and electric, retractable landing gear for minimised maintenance.

Based on the operationally proven, market-leading AW139 platform and belonging to the AgustaWestland 'Family' of products (with AW189 and AW139), mixed-fleet operators can leverage the advantage of a common design philosophy across platforms.

leonardocompany.com

Helicopters | Aeronautics | Electronics, Defence & Security Systems | Space

LEONARDO
HELICOPTERS

Building on the LEGACY

STEEPED IN RICH HISTORY, FLEET CANADA IS IN THE MIDST OF TRANSFORMATIONAL CHANGE DESIGNED TO ENSURE ITS FUTURE SUCCESS AS A MODERN AEROSPACE MANUFACTURER.

BY LISA GORDON

Fleet holds 12 type certificates in all, including the Fleet Finch (shown here). The Fort Erie factory churned out 427 Finches between 1938 and 1941. Today, the company is focused on contributing to modern aircraft programs such as Boeing's CH-47 Chinook. **Eric Dumigan Photo**

*Download this wallpaper **here***

Tucked away in Fort Erie, Ont., Fleet Canada is an anomaly.

A tour of the Gilmore Road factory—part of which dates back to the company's founding in 1930—is like stepping back in time. The cavernous 500,000-square-foot plant is staffed by veteran workers sprinkled at a series of workstations, operating vintage tooling by hand, with nary an automated process to be seen.

Save for a much smaller present-day workforce, you can almost close your eyes and imagine how the Fleet Aircraft factory looked during the Second World War, when almost 4,000 people—mostly "Rosie the Riveters"—cranked out single-engine Fleet Fawns, Finches and Forts for the British Commonwealth Air Training Plan. Fleet also made Cornells for Fairchild and supported Victory Aircraft in Malton, Ont., which made the Avro Lancaster bomber. At the height of its wartime production, Fleet was turning out about 160 complete aircraft per month.

While the hustle and bustle of the war years is long past, Fleet Canada—as it is now called following an employee buyout in 2006 from then-owner Magellan Aerospace—remains committed to craftsmanship and old world quality.

Today, the build-to-print aerospace manufacturer makes the bonded wingskins for Viking's Series 400 Twin Otter—as it did for every legacy Twin Otter ever made by de Havilland Canada—as well as the plane's rear fuselage, fin and horizontal stabilizer, and interior bonded panels.

Fleet's other big contract is with Boeing. The Fort Erie company makes the front cockpit nose enclosure for the CH-47 Chinook heavy-lift helicopter, from metal-to-metal and composite bonding stages to final assembly and paint. On average, Fleet completes four to five Chinook cockpits per month.

While revenues from the Twin Otter and Chinook business pillars are relatively equal, the remaining 30 per cent of Fleet Canada's $20 million business book is made up of some work on the Boeing KC-46A tanker, spares production for Bombardier's Q300, Challenger, CRJ, Lear, and Dash 7, and detail work for Erickson Aircrane.

WINDS OF CHANGE

While it stays true to its history of handcrafted excellence, Fleet Canada is every inch an organization in transition. Like a modern-day butterfly emerging from the cocoon of yesteryear, the manufacturer is undergoing a slow and steady metamorphosis.

The seeds for change were planted in 2003 when company president and CEO, Glenn Stansfield, partnered with 14 minority employee shareholders to buy the business from Magellan Aerospace (previously known as Fleet Aerospace).

It took three years, but the deal was eventually concluded in February 2006.

"It's a real Canadian success story," Stansfield told *Skies* in the company's boardroom. "We started our business 10 years ago with 90 per cent Bombardier work on the Q300. Ninety per cent of the exterior surface of the Q300 was bonded here in Fort Erie. Slowly, we started to evolve into other customers."

When Viking Air decided to launch its Series 400 Twin Otter in 2007, the OEM approached Fleet Canada, which had been the only company to ever make the wingskins on the legacy aircraft.

"Before you knew it, we were doing the rear fuselage, the fin, the horizontal stabilizer, and putting the things together, and all the bonded panels inside the aircraft," said Stansfield. "We were building 35 or 40 per cent of the total structure of the Twin Otter. Viking is a cornerstone program for us."

Stansfield is passionate about the work that is done at Fleet Canada. His ties with the company go back to 1974, when he was hired as a production electrician on the Boeing 707 program at the age of 20. It was his first full-time job.

After working at Fleet Aerospace (as it was then called) for 18 years, Stansfield left to start an aerospace fastener business. Years later, he found himself working for the Niagara Enterprise Agency, which had ties to a community venture capital fund. One day, he got a call from a former colleague who told him Magellan was looking to pull out of Fort Erie.

Stansfield knew the workforce and the quality products they made. If he could help to bring all the pieces together, he was confident the deal could be done.

"The Town of Fort Erie helped us do a viability assessment.

(ABOVE) Glenn Stansfield, president and CEO of Fleet Canada, took his first full-time job in the Fort Erie factory back in 1974. In 2006, he and 14 minority employee shareholders purchased the company from Magellan Aerospace. **Mike Reyno Photo**

When Viking Air started building the Series 400 Twin Otter in 2007, it approached Fleet Canada—the only company that had ever made the wingskins on the legacy de Havilland Twin Otter. Today, the Viking work remains one of Fleet's cornerstone programs. **Heath Moffatt Photo**

Custom handiwork is a hallmark of Fleet Canada, whose veteran workers are experts at operating vintage tooling by hand. **Mike Reyno Photos**

Jean-Sébastien Coulaud, an aerospace engineer from France, joined the Fleet Canada team a year ago as general manager. **Mike Reyno Photo**

All indicators said if you could have a situation without dissidence, with product priced and structured in the right way, it would be a success."

In the end, everything fell into place. "Magellan was supportive, offered start-up assistance and a long-term lease on the facility; Bombardier was patient and wanted to offer us the opportunity to keep the Q300 work here; and we had venture capital investment," said Stansfield.

Fleet Canada was re-born as a privately held company with just 35 employees. But by the end of the year, the staff roster had increased to just shy of 100.

"You couldn't have had a better start to a new company—an experienced workforce; a very supportive landlord in Magellan; and a customer, Bombardier, for 25-plus years. We knew the product," recounted Stansfield. "We shipped our first product within about 12 days of closing the deal. We came flying out of the chute."

Within two years, Fleet Canada had repaid all its loans and beat financial projections. Around the same time, its workforce voted to decertify the union, even though a five-year collective agreement negotiated in 2006 was still valid.

THE BOEING WAY

In September 2013, Fleet Canada, with assistance from Magellan, landed a major contract with Boeing to build the front cockpit nose enclosure for the Chinook helicopter. The contract was the catalyst that would change the company's future direction.

It also proved to be an opportune time to bring in a new investor to solidify the company's foundation. Mark Maybank, former chief operating officer of Canaccord Genuity Corp., joined Stansfield at the helm of Fleet Canada. The partners set out to improve corporate governance and enhance strategic planning.

In 2014, the Canadian government revamped its longstanding Industrial and Regional Benefits (IRB) program, which had been in place since 1986. The changes were made following the 2011 Jenkins report on innovation. Among the new requirements, foreign contractors (or "primes") must now present their so-called "value proposition" when bidding on a Canadian government contract.

Points are awarded to bidders based on a weighted-and-rated system that says they must be very specific about which technology benefits they will bring to Canada. Primes must now identify, in advance, a mix of Canadian small and medium businesses (SMBs) and other contractors with whom they plan to work.

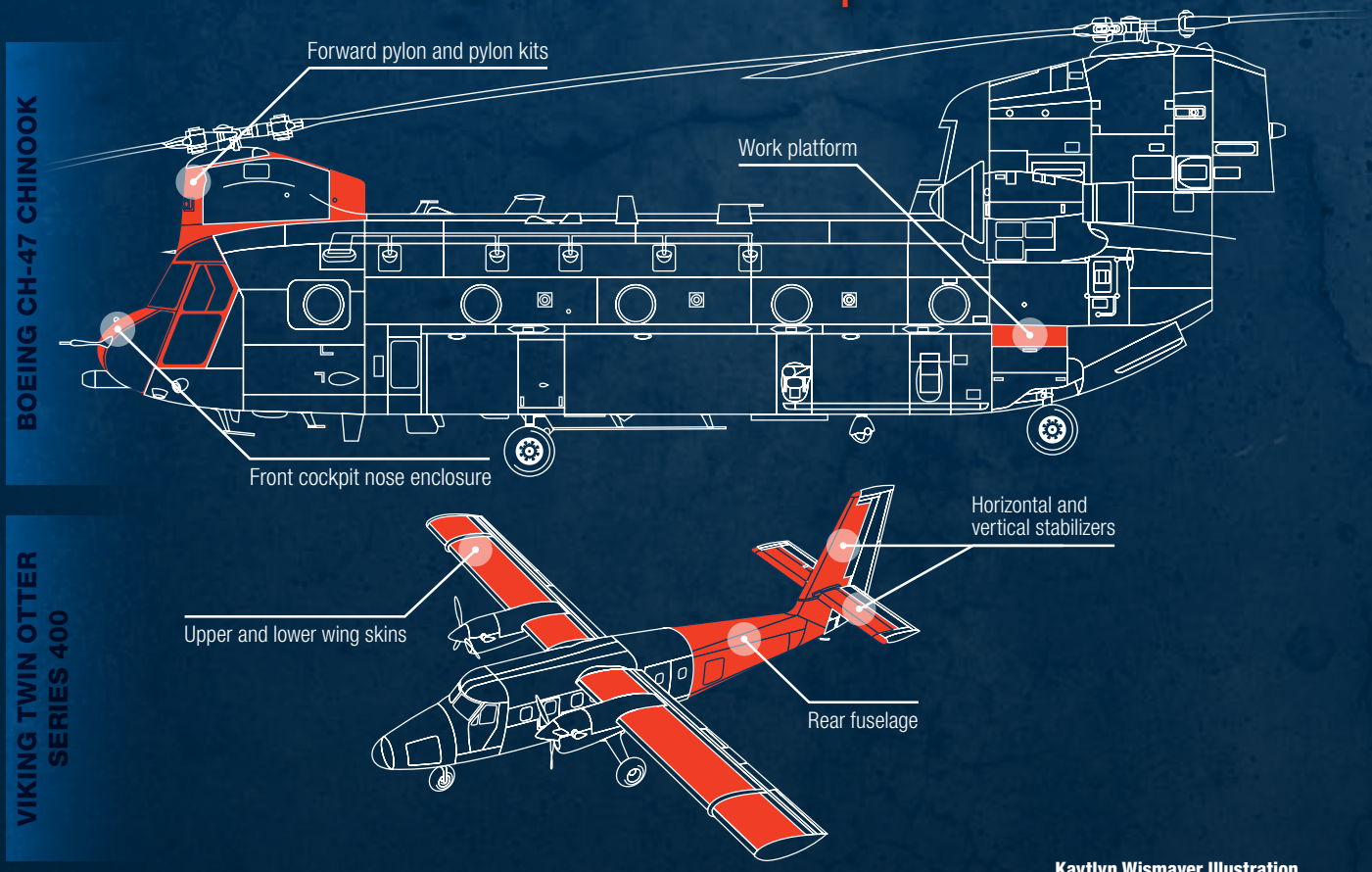
In the meantime, companies that want to be considered for the Industrial and Technological Benefits (ITB) program, as it is now called, can register for free in a database that quickly links their capabilities with those being sought by a prime contractor.

With 160 employees, Fleet Canada fits squarely into the SMB category. Not only that, but the company boasts a suite of attractive capabilities that are in demand by prime contractors searching for skilled Canadian partner companies. Fleet holds several key certifications from Nadcap, the established aerospace global accreditation program, including chemical processing, composites, heat treat and non-destructive testing.

Certifications are important, but so is process. The Chinook contract also prompted some changes on the shop floor.

"Boeing wants you to do things the Boeing way," noted Marika Kozachenko, Fleet Canada's business development manager. "Within reason, we had to find a way to up our game and strengthen our processes. We are focused on making things repeatable to ensure we are performing the right process the same way, every time."

WHAT'S BUILT AT FLEET CANADA INC.?



Kaytlyn Wismayer Illustration

CALCULATED TRANSFORMATION

In 2015, the company's leadership team launched a two-year, carefully executed plan to modernize the operation on three fronts.

First came the adoption of lean manufacturing processes, pioneered by Toyota after the Second World War and migrated to the aerospace industry in more recent years.

Second, Fleet Canada moved to implement a modern enterprise resource planning (ERP) system, scheduled to go live at the end of 2016, which will represent a quantum leap forward in the company's ability to modernize and document its processes and procedures and track data in real time.

The third priority is workforce rejuvenation—five years ago, the average age of the workforce was 57; today, it's down to 50. Sixteen people have been hired by Fleet in the past year and a half, facilitating the transfer of knowledge between older workers and their younger colleagues.

One of those hires is Jean-Sébastien Coulaud, an aerospace engineer from France with past experience as an automotive manufacturing manager at Renault, as well as time spent at Airbus. He joined the team a year ago as general manager.

"Succession has been a huge focus in our business for the last four years," said Stansfield, who added that Coulaud will be ready to take the baton from him in about three years. "Our workforce succession program is moving ahead. You don't replace a 40-year craftsman in the shop with someone off the street. But Niagara is rich in talent, and we are partnering experienced employees with new people."

Coulaud is leading the team that is driving change at Fleet, applying lessons learned from the automotive world to the highly specialized aerospace industry.

"We are bringing in some of the best practices from lean manufacturing and job standardization," he told *Skies*. "We're moving to an exact method of manufacturing using specific tools, and there is no way around it. It is the spec, and we're limiting variability in the way we build, because that improves the quality of our build."

Great improvements have been made in the last year. Today, all work packages are completed on time and the company has gone from a red to a silver rating in the Boeing quality system. Now, it's going for gold.

"These are some of the metrics we are trying to make sure we meet. They will allow us to land more work in the future," explained Coulaud.

When considering future work packages, he said it's important to note that Fleet Canada is not "opportunity constrained." There is lots of potential work out there, but the company is limited by its current capacity.

Once all processes have been streamlined, it will be time to pursue a few other contracts. The ideal arrangement will fit into Fleet's core competency: lower-rate, higher-margin jobs that don't interest bigger, highly automated companies.

"In five to six years we want to double revenues to $40 million while maintaining a healthy profit margin," said Coulaud. "We have two major business pillars now [Chinook and Twin Otter] but we want to have three to five all together, to diversify the business."

Stansfield has his sights set on Bombardier's C Series program, for example.

"We've quoted some work on the C Series through a third-party customer. We'd love to get a foothold in that program," he said. "We think that is a very good long-term business silo.

NavWorx®
Affordable ADS-B™

The Leader in Affordable ADS-B Technology

ADS-B

CERTIFIED AIRCRAFT – ADS600-B

- Compliant to FAR 91.225 and FAR 91.227
- TSO/STC for 2020 ADS-B OUT mandate
- Internal ADS-B Compliant WAAS GPS
- Certified ADS-B Receiver for upcoming certified ADS-B IN applications
- Provides Traffic and Weather to various displays
- WiFi Capable (optional WiFi Adapter)
- Three simultaneous display capability
- Uses any existing Mode-C or Mode-S transponder; no need to replace your existing transponder or altitude encoder

LIST: $1,999.00

NavWorx Accessories

List: $199.00

TransMonSPE™ P/N 200-0008

The FAA requires a control head for remote mounted ADS-B devices. Keep your existing Mode C or Mode S transponder and Altitude Encoder - the TransMonSPE connects to the transponder coax cable - in less than a minute. Doesn't take up precious panel space. Doesn't require any interaction with the pilot.

WiFi Adapter P/N 210-0060

List: $149.00

Send traffic and weather to iPad and Android applications. Connects up to 7 iPad/iPhone/ Android devices simultaneously.

Distributed by Dallas Avionics **800-527-2581**

800-527-2581/214-320-9770
www.dallasavionics.com

AS9100 CERTIFIED

DALLAS AVIONICS, INC.

One of the priorities at Fleet Canada is workforce rejuvenation. Five years ago, the average age of the workforce was 57; today, it's down to 50. Sixteen people have been hired by Fleet in the past year and a half, facilitating the transfer of knowledge between older workers and their younger colleagues. **Mike Reyno Photos**

In September 2013, Fleet Canada landed a major contract with Boeing to build the front cockpit nose enclosure for the CH-47 Chinook helicopter. **Skip Robinson Photo**

"We're also watching intently to see the government's decision on the new fighter. The opportunity to bring in more new Boeing business is exciting [if Canada places an order for the Super Hornet]. They'll be looking for qualified outlets to put work into Canada. We think we're in a very good spot."

Viking's recent acquisition of the type certificate for Bombardier's CL-415 waterbomber may also translate into interesting future possibilities. As well, Coulaud said Airbus represents another avenue for possible diversification.

In the meantime, Fleet Canada's management team will concentrate on getting as much as possible from existing work packages, especially Boeing's CH-47 helicopter program. Sometimes that means working for a competitor—such as the parts Fleet makes for B.C.-based Avcorp, which are used to help fulfil that company's Chinook contract.

Stansfield said while current projections call for Fleet Canada to double its revenues over the next few years, it will take care to stay below the 250 full-time employee cap that officially defines an SMB in Canada for ITB purposes.

NO WIDGETS HERE

Brian Havill is an assembly fitter on the Twin Otter program at Fleet. He's been there for four years, but did a previous stint at the company 14 years ago. He said times have really changed.

"I think it's better now. There is no union, so you can do different things and there is more versatility," said Havill, who completes the final assembly of the Twin Otter's rear fuselage.

"I like that they're getting structured and implementing the 5S [workplace organization] program and cleaning everything up," said Havill. "That's what you need to be successful; it's going in the right direction."

He is proud of the work done at Fleet. "You're building something people fly—it has history to it."

That sense of pride is most evident on Wednesdays. That's when Stansfield kicks off the workday with a company-wide meeting that delivers a simple message: "We don't make widgets. We make parts for aircraft that save lives."

At one such meeting, Stansfield showed photos of a Royal Canadian Air Force CH-147F Chinook participating in its first domestic humanitarian mission during the devastating wildfires in Fort McMurray, Alta.

On the Wednesday that *Skies* visited, the team discussed the dramatic developments at the South Pole in late June, when a Twin Otter operated by Calgary's Kenn Borek Air braved total darkness and incomprehensible cold to successfully complete a medical evacuation mission.

"I told them, 'How proud are you to have made those wings? Those are Canadian heroes, those pilots who went down there and did that. No other plane could have done it, and no other country has pilots who could do it. We have some great stuff going on here!'"

While a lot is changing at Fleet Canada, pride in a job well done has always permeated the old factory on Gilmore Road, ever since it was founded almost 90 years ago. Today, having just celebrated its tenth anniversary since restructuring, the company is gearing up for what promises to be a bright future.

As Kozachenko said, "It's a wonderful thing to see a company rowing in the same direction."

Lisa Gordon is editor-in-chief of Skies magazine. Prior to joining MHM Publishing in 2011 to launch Skies, Lisa worked in association publishing for 10 years, where she was responsible for overseeing the production of custom-crafted trade magazines for a variety of industries. Lisa is a graduate of the Journalism program at Ryerson University.

NBAA BACE

BUSINESS AVIATION CONVENTION & EXHIBITION

NOVEMBER 1–3, 2016
ORLANDO, FL

ATTEND THE WORLD'S LARGEST BUSINESS AVIATION EVENT

Join 27,000 industry professionals for the most important three days of business aviation, with over 1,100 exhibitors, 2 static displays of aircraft – one inside the exhibit hall and the other outside at Orlando Executive Airport, and over 50 education sessions. Visit the NBAA-BACE website to learn more and register today.

REGISTER TODAY: www.nbaa.org/2016/skies

STAND-UP PERFORMER

FLY ALONG WITH *SKIES* IN CESSNA'S CITATION LATITUDE.

BY ROBERT ERDOS

It's based on the successful Sovereign design, but the Latitude's spacious cabin makes it an all-new airplane. **Mike Fizer Photo**

*Watch the video **here***

*Download this wallpaper **here***

The Cessna Citation Latitude plays tricks upon the eye. It is simultaneously a brand new airplane and an incremental development of previous Citation models. Both perspectives seemed true during *Skies*' evaluation of Cessna's latest midsize jet. It manages to be a low-risk derivation of the Model 680 Sovereign, whilst offering passengers a travel experience that is unprecedented in previous Cessna midsize designs.

If you want to understand the Latitude in a sound bite, here goes: same great wing, new roomier fuselage. Anyone familiar with the Sovereign will immediately notice the Latitude's new, spacious 77-inch-wide fuselage; Cessna's first with a six-foot stand-up cabin and a flat floor. There are other changes, as we'll see, but the Latitude is Cessna doing what they do best; building upon success.

I test flew Cessna's then recently updated Sovereign+ in June 2014 and found it a capable, albeit modest, upgrade to an already successful midsize design. The more ambitious Latitude's first flight was in February 2014. It was certified on June 5, 2015 as the Model 680A, under an amendment to the Model 680 Sovereign Type Certificate. Pilots trained on the Sovereign will only need differences training to fly the Latitude.

The Latitude uses the same terrific wing as the Sovereign, which is generously sized and mildly swept to balance off cruise and field performance. Generous flaps are another reason why a jet with a maximum operating Mach number (Mmo) of 0.80 Mach can have approach speeds below 100 knots.

Engineering design is the art of compromise. With so much wing, the Latitude is not the fastest jet in its class, but that's offset by strong field performance which gives it access to more airports, and ultimately greater overall utility. In fact, the newer Latitude is about 10 knots slower than the Sovereign, but Cessna evidently thought the improved cabin volume to be more than a fair offset. After flying it, I'd agree.

MEET THE JET

Textron demonstration pilot Ken Mullins began my introduction to the Latitude with the pre-flight inspection. The demonstrator aircraft, N626LA, was well equipped, including optional automatic direction finder (ADF), high frequency (HF) receiver, Iridium satellite Internet, VHF datalink and XM weather.

The electrically-operated main door is another new feature on the Latitude, and provides a definite "Wow!" effect for passengers as it whooshes open in welcome. It can be operated manually as a back-up, and even includes a small gee whiz periscope to ensure that the ramp beneath is clear.

The Latitude retains the Sovereign's enviable systems simplicity. The flight controls are mechanical and unboosted, with the exception of the five hydraulically-powered multifunction spoiler panels per wing. The ailerons incorporate speed-dependent gearing to keep control forces manageable. The flaps are electric. Delta fins are another visual indicator of the Latitude over the Sovereign, providing additional directional stability at high angles of attack.

As in the Sovereign, the Latitude sports a pair of high-bypass PW306D1 turbofan engines, with 5,907 pounds thrust, flat rated to ISA +15°C. The engines feature full-authority digital engine control (FADEC).

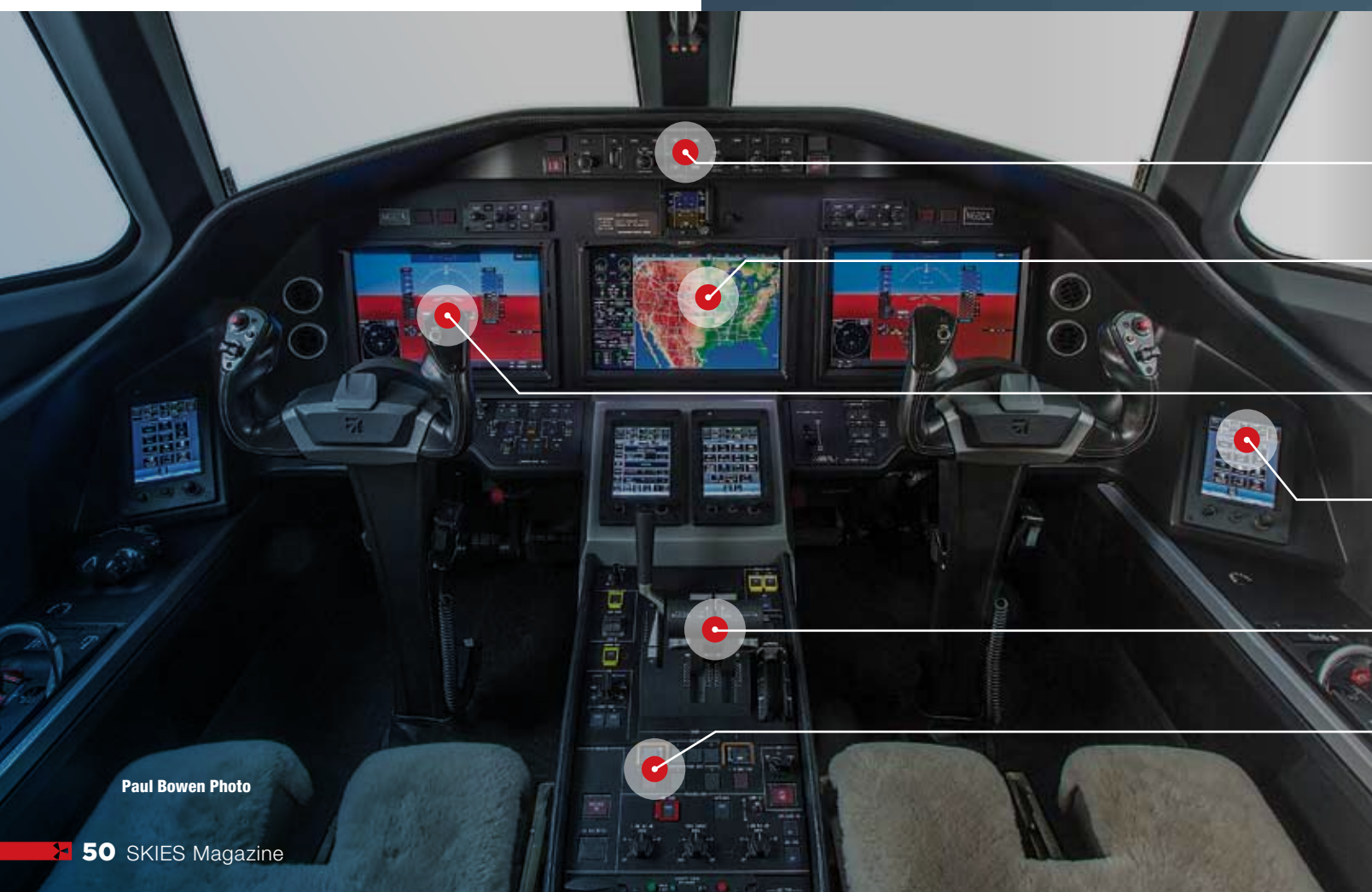
A further upgrade from the Sovereign is the 9.7 pounds per square inch cabin pressure differential which provides a 6,000 foot cabin altitude at the Latitude's maximum certified ceiling of 45,000 feet.

The unheated and unpressurized baggage compartment will make any corporate co-pilot smile, incorporating stairs into the inside of the door to facilitate access to the furthest corners of its 100 cubic foot interior. No more fishing for luggage with a grappling hook!

The cockpit features the innovative and capable Garmin G5000 avionics suite. The interface to the G5000 is via the iPad-like

Trailing link landing gear help to soften arrivals. **Mike Fizer Photo**

The Pratt & Whitney PW306D1 turbofan engines are digitally controlled. **Mike Fizer Photo**



Paul Bowen Photo

A six-foot stand-up cabin and flat floor enhance the Latitude's appeal. **Mike Fizer Photo**

INSIDE THE LATITUDE

GARMIN G5000 AVIONICS
Customizable, flexible, upgradable. Graphical systems synoptics.

THREE 14-INCH COLOUR LED DISPLAYS
High brightness and high resolution, configurable format.

SYNTHETIC VISION
Standard to G5000. Provides a realistic "window like" external view of attitude and terrain.

FOUR GARMIN TOUCH CONTROLS
Highly integrated iPad-like graphical touch interface.

AUTOTHROTTLES
Smooth programmable automatic engine response coupled to the flight management system.

FADEC ENGINE CONTROL
Helpful computers manage starts, monitor limits and match power.

Garmin Touch Controller (GTC). The Latitude features dual GTCs per pilot. In this configuration, each GTC is optimized for a different role, with the left unit controlling mainly the primary flight display (PFD), and the right reserved for the multi-function display (MFD). This arrangement minimizes burrowing in the page structure, and is the optimal configuration. I've raved about the G5000 before, so I'll be concise this time: I love it! It's easy to use, simple to operate, and inherently flexible enough to afford the pilot multiple ways to accomplish the same task.

As yet there is no integrated performance database, although Textron expects it to be available in the third quarter of 2016, including en route performance. In the meantime, Cessna offers a range of iPad apps for performance calculations, and although not integrated into the aircraft, they are eminently usable and convenient.

FLYING TO HIGH LATITUDES

I am always curious what will be my first impressions when settling into an unfamiliar aircraft. In the Latitude it was the spacious cockpit. There were acres of leg and elbow room, yet everything fell easily to reach.

Our jet's basic empty weight was 18,372 pounds. Inclusive of 5,540 pounds of fuel, or roughly half of the 11,394 pound maximum fuel capacity, plus 768 pounds of crew and equipment, our ramp weight was 24,680 pounds. The Latitude's maximum takeoff weight is 30,800 pounds.

Engine starting was push-button simple, thanks to the FADEC, and pre-flight systems checks were mercifully brief. Ground handling benefited from smooth carbon brakes and low idle thrust. With up to 88 degrees of nosewheel deflection available through the tiller, the Latitude can negotiate congested ramp space with ease. I found the tiller's spring centering quite strong, but precise, and it was nice not to need the tiller in most cases. Nine degrees of nosewheel steering from rudder deflection allowed me to steer with my feet along the straightaways.

It was a sunny June day in Wichita, Kan., which means it was hot! Tower reported a temperature of 33 degrees Celsius and winds from 110 degrees at 10 knots as we taxied for Runway 19L. Using the iPad "app" for reference, Mullins determined that our "Flap 2" takeoff speeds were decision speed, V1 = 96 knots indicated airspeed (KIAS), rotation speed, VR = 99 KIAS and takeoff safety speed, V2 = 108 knots.

The autothrottle was something I appreciated in the Sovereign+, and it'll prove just as popular in the Latitude. Garmin's autothrottle implementation is elegantly simple. The throttle quadrant has only two stops, denoted "Idle" and "TO" (takeoff). The FADEC sets power adaptively, based upon phase of flight and elapsed time. Once aligned with the runway, the autothrottles detected my intention to go flying as I began to advance power, and the throttles moved themselves smartly to the takeoff (TO) detent.

Away we went! Field performance was a strength of the Sovereign+, and the Latitude was clearly a strong performer in that department, too. The required takeoff field length was only 3,066 feet, and that distance was covered quickly! Cessna quotes an impressive takeoff field length requirement of 3,580 feet under standard conditions and maximum takeoff weight.

I tracked the normal climb profile of 250 KIAS to 0.64 Mach. I didn't need a stopwatch to know that the Latitude's climb performance was exceptional. Initial indicated rates of climb were slightly over 4,000 feet per minute through 10,000 feet. We levelled at 41,000 feet (FL410) just 16 minutes after takeoff (under ISA +1C conditions), having burned about 850 pounds of fuel.

At FL410 I set a maximum cruise power setting and let the Latitude off leash. The result was 435 knots true airspeed (KTAS) (0.76 Mach), burning 1,600 pounds per hour total fuel flow (with 4,440 pounds fuel remaining, under ISA-2C conditions); performance slightly better than the "book." Mullins offered that productive initial cruise altitudes are 40,000 to 41,000 feet at normal weights and conditions, and that a typically equipped aircraft will easily let you fill the seats with 10,000 pounds of fuel.


Large windows provide a spacious cabin feel. **Darin LaCrone Photo**

The iPad is the interface to the onboard entertainment system. **Darin LaCrone Photo**


Flexible cabin configurations include an optional forward two place divan. **Darin LaCrone Photo**

"THE MAGIC OF THE LATITUDE IS THAT BY "UPGRADING" THE SOVEREIGN WITH A SPACIOUS NEW FUSELAGE, CESSNA HAS MANAGED TO CREATE A COMPLETELY NEW AIRPLANE."

COMMODIOUS CABIN

As the Latitude gobbled up the miles, I ambled into the cabin to see how the other half lives. Textron demonstration pilot Ben Nofziger stirred from his plush repose to show me around. The stand-up cabin, flat floor and large windows make the Latitude immediately feel like more than a midsize jet.

The main cabin seating is a "club plus two" arrangement, with an additional seat or two-place divan across from the entry door, depending upon optional galley configuration. There is an additional belted seat in the lavatory. The centre seats swivel to "club" with either the forward or the aft pair. Each seat is individually able to cant, swivel and recline. The centre seats convert into nearly flat berths. There was storage space artfully concealed everywhere, including behind the pocket door within the spacious lavatory.

Nofziger demonstrated how the barrier curtain over the main cabin door served to reduce interior noise noticeably, especially in the forward cabin. We took seats at opposite ends of the fuselage, and could easily speak at conversational levels.

The Clairity in-flight entertainment system is becoming Cessna's standard, and relies upon an iPad "app" as the interface to control lighting, cabin temperature, moving maps and an assortment of streaming media sources. The system's sound quality was so good that I accidentally caught myself enjoying a sample of country music; something that usually causes me to break out in hives.

MEANWHILE, IN THE COCKPIT

As we began our descent, Mullins demonstrated one of the Latitude's envelope protection features. We disengaged the autothrottles and commanded a steep descent using the autopilot's vertical speed mode. As the speed passed through the 0.80 Mach Mmo the autothrottles engaged to reduce power, following which the aircraft pitched up to prevent overspeed. Mullins had me subsequently pull back the throttles and hold the nose up to stimulate the low-speed envelope protection features. As the airspeed entered the yellow range on the display, the autothrottles again engaged to shove forward the throttles to prevent stall. I'm always reassured when an aircraft participates in its flight limit protection.

I took a few minutes to sample the handling at low altitude. The large wing gives the Latitude a rather lively response to summertime Kansas convection. We performed a simulated circuit at around 8,000 feet, followed by a simulated dual-engine overshoot. Hand flying the Latitude was predictable and fun, albeit slightly heavy in roll. Configuration changes were easily managed, in part because of the slow response rate of the flaps.

We returned to Wichita via the RNAV Y approach to Runway 19L. With the autopilot and autothrottles coupled, there was little to do but watch and configure the jet for landing. The flight management system cued us to begin deploying flaps at 190 KIAS as we decelerated for a final approach reference speed (Vref) of 99 KIAS. The autothrottles were moderately busy dealing with convective turbulence; but then again, the approach was far more precise than I could have hand-flown it. At 50 feet the autothrottles retarded to idle; I awoke, flared and landed. The iPad told us that the required landing field length was 2,562 feet (3,200 pounds fuel, +33°C). It was easily achievable.

The magic of the Latitude is that by "upgrading" the Sovereign with a spacious new fuselage, Cessna has managed to create a completely new airplane. The fine balancing act of ample cruise speed and impressive field performance now includes a commodious super-midsize cabin. The Cessna Latitude strikes a fine balance indeed.

Robert Erdos is a contributing editor for Skies *magazine. He is a professional test pilot with over 8,000 hours of flying experience on a wide variety of aircraft. A graduate of the U.S. Navy Test Pilot School, he is a former RCAF test pilot who now works as an Experimental Test Pilot for the National Research Council in Ottawa. In his spare time, he does formation and airshow aerobatic flying as a pilot for Vintage Wings of Canada.*

Almost every RCAF fighter pilot has touched down at 419 Squadron since 1975, making the unit a cornerstone in the air force pilot training program. Today, the squadron flies the CT-155 Hawk. However, once Canada chooses a new fighter jet, a new jet trainer aircraft will follow.

*Watch the video **here***

MEET THE Moosemen

419 SQUADRON'S TACTICAL TRAINING MANDATE IS CHANGING WITH THE TIMES, BUT ITS MISSION TO PROVIDE OPERATIONALLY RELEVANT FIGHTER LEAD-IN TRAINING REMAINS AS STEADY AS EVER.

BY CHRIS THATCHER | PHOTOS BY MIKE REYNO

Four CT-155 Hawk jets flew into Kamloops, B.C., on July 8, part of a wave of past and present "Moosemen" from 419 Tactical Fighter Training Squadron, also known as Moose Squadron, who descended on the city for the weekend.

The occasion was a reunion to mark the squadron's 75th anniversary, one of many celebrations taking place across the country this year as most of the Royal Canadian Air Force's (RCAF) 400-series squadrons commemorate their founding under the British Commonwealth Air Training Plan.

Among the four Hawks was a newly painted jet in a brown and green camouflage pattern that honours 419's origins as a bomber squadron in the Second World War. The call letters VR-W are in recognition of the Wellington bomber flown by the unit's first commander, John "Moose" Fulton, a native of Kamloops.

Insignia and other markings—created by 4 Wing Cold Lake, Alta., veteran design director Jim Belliveau—tell the tale of the squadron's bomber history flying the Vickers Wellington, Handley Page Halifax and Avro Lancaster.

Disbanded following Japan's surrender in 1945, 419 Squadron was reactivated in 1954 as a fighter squadron, first in North Bay, Ont., and then, three years later, in Baden-Soellingen, Germany, as part of Canada's contribution to NATO in Europe.

Disbanded for a second time in 1962, the unit returned to active duty in 1975 as a tactical fighter training squadron on the Canadian-built Canadair CF-5 Freedom Fighter. Although the squadron was deactivated again in 1995, its training mandate endured. When it was revived in 2000, it became a core part of the NATO Flying Training in Canada (NFTC) program, a role it has continued to play for the past 16 years.

Despite those disruptions, almost every RCAF fighter pilot has touched down at 419 Squadron since 1975, making the unit a cornerstone in the RCAF's pilot training program.

But it is also a squadron adapting to change: a new training curriculum since 2012 and, as of October 2015, a new corporate partner for the NFTC program, CAE, that maintains its facility, its aircraft and its simulation systems.

And more change is on the horizon. The air force has begun analyzing options for future aircrew training that will replace or incorporate NFTC and Contracted Flying Training and Support, a primary flight training program provided by Allied Wings, a consortium lead by Kelowna Aircraft, in the mid 2020s. And once the government decides on a replacement for the CF-188 Hornet, the RCAF will also move forward on a new fighter training jet to replace the squadron's fleet of nine BAE Systems CT-155 Hawks.

CRITICAL COMPETENCIES

419 Squadron provides the RCAF's fighter lead-in training (FLIT) program, a selection course for the frontline squadrons that is also known as Phase IV of NFTC. Those who pass the four-month program then trek across the runway at 4 Wing to 410 Tactical Fighter (Operational Training) Squadron, the final step on a long road to being assigned to a CF-188 Hornet operational fighter unit.

Without the bomb-dropping capability or the radar and night vision systems of the Hornets, 419 prepares fighters for operations on the Hawks by drilling fighter skills and tactics and instilling three critical competencies: situational awareness, capacity, and decision-making in dynamic environments.

410 Squadron may now be training pilots on new GPS-guided weapons as part of a revamped syllabus, but the basics of close air support, airborne interdiction and air-to-ground attack missions remain generally the

Under the NATO Flying Training in Canada (NFTC) program, 419 Squadron has since 2000 provided training to a multinational student population, with an equally diverse mix of instructors.

same, said 419 Squadron's commanding officer, LCol Mike Grover, a decorated fighter weapons instructor with tours in the Balkans and Afghanistan.

"Dropping weapons has still got a work cycle that we work to, it's just now there is way more data fed into the frontline that has to be assimilated by the aircrew," he said. "But that comes down to those three competencies: does the young pilot have the capacity to gain the situational awareness and make the proper decisions?"

"By focusing on those areas, 419 makes it easier for [student pilots] to transition here," added LCol Chris Matthews, the commanding officer of 410 Squadron. "Students who have the most success are the ones that have all the core stuff that is taught at 419, are able to assimilate it quickly, and then move on to the new stuff we teach."

Under the original NFTC program, 419 Squadron has since 2000 provided training to a multinational student population of around 58 Canadian, Danish, Italian, British, Singaporean and Hungarian pilots per year, with an equally diverse mix of instructors.

Although that international flavour is unlike any other squadron in Canada and offers enormous benefits—"it shows students the coalition operations we will always be in," said Grover—it has not always aligned well with the missions of the RCAF's operational squadrons.

From 2000 to 2012, the schoolhouse delivered a fighter lead-in training syllabus geared to the collective needs of its international clients, focusing on requirements common to all. With the departure of Britain, Denmark, and Italy in 2010 as per the original NFTC contract, the schoolhouse in 2012 changed the course to better fit Canadian needs. It still has an international dimension—Singapore and Hungary remain clients, and it is courting others—but it now has more flexibility.

"We wanted to do close air support and a few nations didn't, which stopped it because the contract didn't allow us to add extra hours. It was fairly rigid back then," Grover explained. "The new syllabus is more responsive to the desire of the frontlines."

Today, 419 Squadron puts about 30 students through the program per session, approximately 20 of whom are Canadian. (The legacy syllabus has been retained for the Republic of Singapore Air Force.) The four-month course, which can extend as long as eight months due to Cold Lake's weather, consists of 37 sorties of approximately 45 flight hours per student.

The RCAF also sends two student pilots to the Euro–NATO Joint Jet Pilot Training course at Sheppard Air Force base in Texas. Grover said that while a national FLIT program allows Canada to set a program specific to its requirements, "I like the fact that we have a couple outsourced. It keeps us connected with other people and how they do FLIT. And those two do equally well going through 410 Squadron." In addition, students in Texas are able to fly almost every day, reducing the course time considerably.

The new syllabus is still evolving, Grover said, but one noticeable outcome of the change has been an increase in the failure rate. Prior to 2012, few, if any, students failed the program. Although the sample size is still small, failures are now around three to four per course. That might not seem a positive statistic at first glance, but it means those that pass are more likely to succeed at 410 Squadron.

"We feel that is a success," Grover said. "Before 2012, they would have passed this course and gone on and failed 410."

Added Matthews: "We would historically [fail] about 15 to 20 per cent of our 18 students. The last course had zero and the one that just graduated had two."

If the squadron has a challenge at the moment, it is with its instructor cadre. Although there were 18 when *Skies* visited, just six were Canadian, including the commanding officer, his deputy, and the operations officer.

"The frontline squadrons have an experience gap of lots of new guys and a few elders and not much in the middle," Grover explained. As a result, the RCAF is struggling to man the schoolhouses in both Cold Lake and 2 Canadian Forces Flying Training School in Moose Jaw, Sask.

His goal is to bring in more young instructors with recent operational

Stepping stone: The CT-155 Hawk provides students with a solid base from which to transition to 410 Tactical Fighter (Operational Training) Squadron, where they will learn to fly the CF-188 Hornet (top).

While new recruits may be more comfortable with simulation and virtual reality, simulators will never replace live flying at 419 Squadron.

419 Squadron commanding officer LCol Mike (Moose) Grover, right, with his deputy CO, Maj Carl (Sleepy) Cottrell.

419 Squadron operates a total of nine BAE Systems CT-155 Hawks. It is one of the highest time global operators of the Hawk, with its 16-year-old fleet logging roughly 3,000 flight hours annually.


155211

Approximately 20 pilots per session graduate from 419 Squadron and move over to 410 Squadron where they will train on the CF-188 Hornet.

experience—"they can talk the talk, they have immediate street credibility, and they know those subtleties that maybe I don't know not being in that combat."

But convincing operational pilots to become teachers is a tough sell.

"Being a single seat front-end fighter guy is what we want to do, and any time you get plucked to sit in the back seat there is a bit of a transition. We have a hard time drawing down for that reason. They are hungry; they have spent so many years on that train getting to the frontline."

He said new initiatives to help pilots understand the posting is temporary and they will soon be back on operations might help, but "it's tough right now with our current numbers."

Fortunately, many of the international instructor pilots, who usually sign on for three years, will often extend their tour by one or two years, allowing the school to maintain its high standards.

The difficulty of producing enough instructor pilots is directly tied to an ongoing challenge of generating enough fighter pilots. With fewer fighter instructors in Moose Jaw as part of the early phases of NFTC, the community has a smaller footprint and less influence on young pilots still determining which aircraft to fly, Grover observed.

"The fighter stream is the longest track to go through to get to operational. They see that. After [getting their] wings, a multi-engine or helicopter pilot will get posted to their squadron, do a check out, and generally most are then employed. With fighter jets, there is a long way to go."

The NFTC program consists of 37 sorties for a total of approximately 45 flight hours per student.

CULTURE SHIFT

In October 2015, CAE finalized a $19.8 million deal to acquire the Military Aviation Training division of Bombardier Aerospace, which included responsibility for the NATO Flying Training in Canada program. For most of the 27 civilian staff at 419 Squadron, the change in ownership meant little more than a change in golf shirt and baseball cap. The day-to-day activities still carried on and the strong relationship with the military personnel continued.

But there was a noticeable shift in culture when CAE became the prime contractor for the NFTC.

"They are simulation and integrated training solutions experts," said Grover. "Bombardier did a great job, but [CAE] definitely has a different focus, strategy and vision on what they want to do within Canada and the air force, [especially] with getting into live flying training. We are still in that honeymoon period, I would say, but I am impressed every day at how focused this company is on wanting to make change and evolve."

CAE has a lot with which it can work. The squadron might be relatively small but the contractor team manages to sustain two maintenance shifts per day, keeping the Hawks in the air for roughly 3,000 flight hours per year. That annual total—an "incredible feat," according to Grover—makes 419 Squadron one of the highest time global operators of the Hawk.

The main difference in ownership is attitude, said Dale Daw, CAE's group leader and a 31-year veteran of the Canadian Armed Forces, who has

In October 2015, CAE acquired the Military Aviation Training division of Bombardier Aerospace, which included the NATO Flying Training in Canada program in Cold Lake, Alta. and Moose Jaw, Sask. Since the takeover, CAE's expertise in training and simulation has prompted a noticeable shift in culture.

While the Hawk has proven to be ideally suited as a fighter lead-in trainer for the CF-188, a new trainer will be needed for the fighter lead-in training syllabus once Canada selects its next generation fighter.


Canada
210
Canada
210
210

One CT-155 Hawk from 419 Squadron features a new brown and green camouflage paint scheme in honour of the unit's 75th anniversary and its origins as a bomber squadron in the Second World War. Among other aircraft, 419 Squadron operated the Avro Lancaster bomber during the war. Here, the commemorative Hawk flies in formation with the Canadian Warplane Heritage Museum's Lancaster. **Eric Dumigan Photo**

*Download this wallpaper **here***

spent the past three years with 419. "They train. From my point of view, that is what has changed. We are now part of the training system."

To meet the high training demand, the 16-year-old Hawks are maintained every day to ensure they are rarely down during the training week. "When the [program] started, we used to fly, fly, fly and then do a whole bunch of work," Daw explained. "Every 500, 1,000 and 2,000 flight hours there are big inspections, but otherwise we do a little bit every day and just keep them flying." On the day *Skies* visited, seven Hawks were on the flight line, one was in for major repairs, and one was having its canopy replaced due to a bird strike.

The RCAF has laid out a strategic road map that will see it adopt a simulation-focused training system by 2025. Released in 2014, the simulation strategy found that while the air force already possesses much of what it needs to achieve that goal, most of its training and simulation systems were acquired specifically for a particular aircraft and are either not "synchronized or aligned" with the strategy or are "incompatible or redundant."

CAE has provided the squadron's lone simulation system since the NFTC was stood up in 2000. But it is an older model Hawk trainer—what Grover called "a big amusement ride." With CAE now responsible for support of the entire program, and with more and more of each phase of the NFTC being done on simulators to better manage tightened budgets, the hope is for two new, networked trainers to improve course delivery.

"They are incredible sims now. You can fly in a visual environment and get what you need out of a simulator," said Grover, adding that discussions have been underway between CAE and the RCAF since last fall.

FROM DAY TO NIGHT

While the operational squadrons are keenly watching the slow progress of the RCAF's fighter replacement project, 419 Squadron also has a stake in what comes next: Once a replacement jet is selected, the air force's next jet trainer must also be chosen.

That decision is still a number of years away, Grover said, but there are several capabilities that would help pilots transition better to a new fighter, including some form of radar and a helmet-mounted cuing system and night vision goggles.

"We are daytime fighters in the Hawk without those systems," he explained. "The frontlines are more than 50 per cent night flying. So we need to bring this program into the night, and we can do that with those systems."

Also, since the Hawks are not fitted to drop weapons, such training is often done in simulation. The addition of a "drop capability" would help build "pickle discipline," continued Grover.

419 Squadron prepares students for fighter operations by instilling three critical competencies: situational awareness, capacity, and dynamic decision-making.

"As a pilot you need to feel the [weapon] come off your wing, feel the weight and balance change, feel how it flies being all hogged up with the weight of all the bombs. That real time feedback is important. We wish that was in the program, for sure."

Whatever the RCAF acquires for its next trainer, it will be part of a comprehensive training system that brings together live, virtual and constructive training to attract and deliver fighter pilots for the air force. While tomorrow's recruits may be more comfortable with virtual reality, simulators won't replace live flying. Even as pilots are tasked to manage more data generated by an ever growing array of sensors, the basic manoeuvres of flying will still be essential. And so will 419 Squadron.

Chris Thatcher is a freelance writer specializing in defence, security and technology issues.

FIGHTER JET JOURNEY

BY CHRIS THATCHER | PHOTOS BY MIKE REYNO

The RCAF's fighter pilot training process is the longest and most challenging of all of its pilot training programs, involving over 400 flying hours and more than 180 hours in a simulator.

Ask Capt Thegne Rathbone about becoming a fighter pilot and you can feel his excitement. For one, the smile rarely leaves his face.

"I have it within fingertip reach," he said. "I've got eight months of training left and then I can call myself a fighter pilot."

Sitting in a small conference room at 419 Tactical Fighter Training Squadron, Rathbone is no more than a short walk across the runway from 410 Tactical Fighter (Operational Training) Squadron at 4 Wing Cold Lake, the introductory step into a CF-188 Hornet and the final stop in a lengthy but rewarding training process before being assigned to an operational fighter squadron.

"The F-18 is a twin-engine, after-burning, munitions dropping aircraft—what more do you want to give a 25-year-old to play with?" he asked as he opened his log book to Skies for a brief look at his journey to jet fighter status.

Maybe it's the movies, maybe it's a family member, or maybe it's just an early fascination with flying. But regardless of how young pilots come to crave the thrill, it's a pull that often proves irresistible.

Becoming a fighter pilot in the Royal Canadian Air Force, however, is not for the impatient.

Although Rathbone arrived at this point in his eight years with the RCAF about as quickly as any prospective pilot could, the training process is the longest and most challenging of all of the pilot training programs, involving over 400 flying hours and more than 180 hours in a simulator.

Eye on the prize: From the CT-155 Hawk, the next step is the CF-188 Hornet, Canada's front-line fighter.

Wheels and Brakes without the friction.

Atlanta, GA
Brisbane, AU
Long Beach, CA
Peachtree City, GA
Vancouver, BC 604-542-8824

Starter Generators
Wheels & Brakes
Accessories
Avionics
Hydraulics
Instruments

PAI
PRECISION ACCESSORIES & INSTRUMENTS CANADA
A PAG Company

IS MRO
Inventory Supported
Maintenance · Repair · Overhaul

- 8 locations gives you just in time MRO support
- $32.5 million dollar inventory / 75,000 line items
- Largest rotable pool of wheels & brakes
- OEM Authorized stocking distributor
- AOG Support teams available 24/7

"Others sell parts, WE SELL SUPPORT"

Take the heat off of down time, let Precision Accessories & Instruments-Canada (PAI-C) get the wind back under your wings. Our knowledgeable sales staff & AOG support teams will make sure that your experience is a pleasurable one. Call today, or visit us at **www.precisionaccessories.ca.**

Until the fall of 2015, he had shot through the four phases of the development program with barely a few days or weeks between each. But with operations over Iraq and Syria pulling many CF-188 instructor pilots away from training and limiting the number of aircraft available for students, as well as changes to manning requirements at 401 and 409 Tactical Fighter Squadrons as they undergo a division into two distinct units, Rathbone found himself in a holding pattern.

A self-confessed "flying mooch" who jumped into extra flights, even in the backseat, at every opportunity, he has continued to absorb as much as he can from the veteran instructor pilots at 419 Squadron as he awaits the call.

And it's a move that can't come soon enough. Becoming a pilot has been a dream since an early age. Rathbone joined the military in July 2008 at the age of 18 and, over the next four years, completed basic training and earned a Bachelor's degree in aeronautical engineering from the Royal Military College in Kingston.

From there it was off to 3 Canadian Forces Flying Training School in Portage la Prairie, Man., for the first phase of pilot training. Rathbone took his preliminary flight in the fall of 2012 on the Grob 120-A, an elementary trainer operated by Allied Wings under the Contracted Flight Training and Support Program.

Over three months, he flew 16.8 hours in the small prop plane, more than the course syllabus of 12, by nabbing extra flights whenever weather delayed the training.

By January 2013, he had landed at 2 Canadian Forces Flying Training School in Moose Jaw, Sask., for phase two, also known as the first phase of NATO Flying Training in Canada (NFTC), a three-part program that begins by sorting the fighter pilots from their multi-engine and helicopter colleagues. Many may arrive with ambitions for one aircraft, but within months it is often apparent where they will fit best, Rathbone observed.

For him, the thrill of his solo proficiency check on the CT-156 Harvard II turboprop was a memorable moment.

"They gave me a 1,100 shaft horsepower aircraft, fully aerobatic, to go play with," he said, amazed that he was flying solo with just 34 hours of military flying time. "That gets the adrenaline going."

The 70 flying-hour course, which includes about 40 hours in the

simulator, takes pilots through "clearhood" or basic aircraft handling, instrument flying, low-level navigation (240 knots at 200 feet) and formation flying. "It is nerve wracking at first being that close," he said, "but it is very rewarding once it clicks."

With 97 flight hours under his belt, Rathbone was selected to the jet fighter program and just a week later, in September 2013, he entered phase three (phase two of NFTC).

The four-month course of 80 flying hours (plus 17 in the simulator), still on the CT-156 Harvard II in Moose Jaw, follows a similar but more advanced syllabus to phase two, introducing composite missions that integrate the specific aspects of the previous course into a single flight.

On Jan. 20, 2014, a day he recalls with some pride, Rathbone received his pilot's wings. It was barely 15 months since he'd entered pilot training, but he now had 178 hours of military flying time and was keen to move ahead.

A few weeks later, he was settling into the cockpit of a CT-155 Hawk. The three-month transition course in Moose Jaw qualifies students in the jet-engine aircraft before they make the flight north to 4 Wing Cold Lake, Alta., and phase four, the fighter lead-in training (FLIT) program at 419 Squadron.

"You do all the same basic manoeuvres you did in phase two, but now you are doing it on a jet and you are expected to learn in a much shorter time frame," Rathbone said. "That was the first jet aircraft experience ever, and that's fun."

With 247 flying hours in his log book, 55 on the Hawk, he began "the best course I have ever been on and one of the most fun times of my life."

Phase four, a five-month course that upped the ante in every aspect of his flying, gradually turned into a 10-month program as dismal weather wiped away most of December, January and February. But by May 2015, Rathbone had accumulated the necessary flying hours (94 in his case and 32 in the simulator) to pass.

He now had 347 hours and was itching to fly the CF-188 Hornet. But 410 Squadron wasn't ready.

While waiting, he has "mooched" his way onto training flights and was among the first students to go through a tactical refresher course, a new program designed to keep future fighter pilots proficient in tactical procedures.

"They were non-graded missions, so you were treated more as an adult pilot, less as a student," he explained. "The shots were yours to call in the air. I learned a lot on that refresher course."

He has also made good use of the simulator, though he's quick to caution that while it's "a great tool, sims can never replace actual flying time in an aircraft."

If the aim of the pilot training program, and especially the FLIT course, is to instill basic fighter skills and hone core competencies such as situational awareness and decision-making in dynamic environments, Rathbone believes the program has prepared him well. The training program at 410 Squadron may be another 60 flight hours, but that's the final reward.

"I feel comfortable going into 410," he said. "There is always that little excitement and nerves of a new aircraft. It has been a lot of long days, but they prepare you well. It's a rewarding experience all through."

In Canada, the law requires aviation medical examiners to report any medical conditions that may disqualify a pilot from flying.

Fit to FLY?

CANADIAN CIVIL AVIATION MEDICAL EXAMINERS ARE ALREADY LEGALLY BOUND TO FILE A REPORT WITH TRANSPORT CANADA IF THEIR PILOT PATIENTS AREN'T FIT FOR FLIGHT. *SKIES* REVIEWS THE CURRENT PILOT MEDICAL SYSTEM AND WHETHER THERE IS AN OPPORTUNITY TO DO MORE.

BY MARIO PIEROBON

In the aftermath of the crash of Germanwings flight 9525 in March 2015, airlines and safety regulators reacted to the tragedy by increasing scrutiny of pilots' mental health.

Multiple airline policies have since been implemented and rules proposed. Research has gone so far as tracking pilots' brains to measure mental states. For their part, pilot unions have cautioned that this increasing focus on pilots' mental health may lead to invasive practices.

In this report, *Skies* reviews existing Canadian processes, procedures and regulations relating to pilots' mental health. Is there an opportunity to do more?

Experts say pilots should not be automatically suspended from flying just because they are under stress. A thorough evaluation must be completed, with checks and balances at multiple levels.

"MORE THAN 950 DESIGNATED CIVIL AVIATION MEDICAL EXAMINERS ACROSS CANADA AND OVERSEAS CONDUCT APPROXIMATELY 55,000 MEDICAL EXAMINATIONS ANNUALLY."

THE CANADIAN WAY

In Canada, all commercial pilots are seen by a civil aviation medical examiner (CAME) prior to receiving a medical certificate from Transport Canada. CAMEs assess individual pilots on a regular basis according to the type of licence they hold, their age, and their health. Under Transport Canada guidelines, CAMEs review every pilot's medical history to ensure there are no signs of psychosis or suicidal behaviour. More than 950 designated CAMEs across Canada and overseas conduct approximately 55,000 medical examinations annually, according to Natasha Gauthier, a Transport Canada spokesperson.

"Transport Canada is committed to ensuring the qualification and high standard of performance of all CAMEs," she said. "They are required to regularly attend training seminars that include specific content on psychiatric issues in pilots. CAMEs are also required to submit all documents approving the medical fitness of pilots to Transport Canada for review, and their performance is monitored by board-certified specialists in aerospace medicine."

The Canadian system of monitoring pilots' physical and mental wellbeing is distinctly different from the jurisdiction under which Germanwings flew.

According to former Air Canada captain Marcel Martineau, there was a business aircraft accident several years ago in Toronto; the pilot had heart problems which were known to his doctors but never disclosed.

"The pilot had a heart attack on final approach and the aircraft crashed as a result," recounted Martineau. "Following this accident, the rules were changed in Canada. The law makes it compulsory for doctors who are aware that their patient is a pilot to report any medical situation that could disqualify them from flying to Transport Canada. It has been the rule for about 25 years and every pilot understands the rules."

According to Capt Brian Shury, vice president of the Air Line Pilots Association (ALPA) Canada Board, this policy represents a fundamental difference between Canadian and European regulations that could perhaps prevent a similar Germanwings-style occurrence in a Canadian airliner.

"Also, section 6.5 of the *Aeronautics Act* requires every pilot to disclose, when seeking treatment from any medical professional, that she or he is a pilot. The Germanwings accident report recommends similar changes in Europe," added Shury.

Shortly after the Germanwings event, Transport Canada reacted by issuing an interim mandatory order for two crewmembers to be in the cockpit of commercial flights at all times.

In June 2016, Transport Canada issued a further interim order requiring two crewmembers be on the flight deck at all times. Valid for one year, the interim order requires that, in the case of two-person flight crews, when one flight crewmember exits the flight deck, another authorized person must enter and remain until that person returns.

ALPA is anticipating consulting on Transport Canada's desire for a permanent regulation and is encouraging the regulator to review the interim order using an evidenced-based approach, supported by mature risk assessment methodologies and involving all stakeholders, in order to ensure there are no unintended consequences from making the order permanent.

In addition, Transport Canada wants CAMEs to probe a little deeper when it comes to pilots' mental health.

"Transport Canada intends to modify the CAME report to include questions about a pilot's well-being during the periodic examination for renewal of a medical certificate," said Shury.

SATISFYING STAKEHOLDERS

An increased scrutiny over pilots' mental health requires significant effort in order to satisfy all stakeholders; namely, pilots, airlines and the regulatory body.

According to Daniel Danczyk, a medical doctor and aviation psychiatrist, it is possible to strike a balance that meets the competing interests of stakeholders, but the process requires open dialogue and the willingness to compromise.

"A prerequisite is ensuring the problems are clearly defined; this is the foundation upon which to build stakeholder satisfaction," he said. "This is always a concern after any aviation mishap, since policy development can be political and/or reactionary, further engendering mistrust between stakeholders."

To help build that foundation and ensure stakeholder satisfaction, parties should agree to an independent, commissioned study which proposes potential solutions (and their drawbacks) for the defined problems. This commission would synthesize all the available research evidence, according to Danczyk.

He added that the only way to build trust into any mental health monitoring system is by guaranteeing that pilots will be given a medical "due process" evaluation—with checks and balances at multiple levels—which allows for the return to flying when appropriate; i.e., after treatment and/or during maintenance treatment with symptom resolution.

A due process evaluation would also allow for continued flying—if safety is not a factor—when the appropriate controls are in place.

"In other words, any pilot mental health monitoring system should not be black and white," said Danczyk. "For instance, it shouldn't automatically take a pilot off duty just because s/he is 'stressed' and presumed to have a mental health issue. For example, a prolonged child custody battle may lead to higher stress levels that preoccupy one pilot's mental focus, while in another pilot the same level of stress may not preoccupy their mental focus. The only way a pilot could trust a monitoring system is by knowing that revealing such stress levels do not automatically take them off flight duty; otherwise, they will not reveal them to begin with."

He added that the stigma of mental health in society at large would encourage pilots not to reveal stress, especially if they knew their livelihood was on the line and no system guaranteed a medical due process aiming to return them to flying status.

Other keys to building trust include a mechanism to ensure continued income while pilots are restricted from flying—without penalty—and maximizing medical privacy, said Danczyk.

Martineau also stressed the need for adequate income protection through the employer. "This is, in some cases, added to some supplemental income protection by the pilot association for a certain time period," he said.

According to Danczyk, pilots will not have an incentive to report mental health concerns if the flight doctor they see has a direct relationship with the airline hierarchy. The flight doctor must be a third-party who does not work for the operator, and can communicate with the treating doctor or therapist, he said.

Shury noted there are already a number of confidential programs in which pilots and management work together to resolve issues and help pilots return to or remain in their jobs. "Ultimately, the almost non-existent number of incidents demonstrates the system is working," he said.

HARMONIZING REQUIREMENTS

As pilots' mental health is more closely scrutinized, it will be necessary to harmonize future requirements with the already existing and stringent crew medical requirements, without causing too much of a regulatory burden.

According to Shury, pilots are one of the most regulated and scrutinized group of transportation workers in the world.

"We look forward to a thorough discussion—using an evidenced-based approach supported by mature risk assessment methodologies and involving all stakeholders of any proposed modification to the existing system of checks and balances—on pilot medical procedures and mental health monitoring," he said. "It is important that as we move forward, any modifications must be part of a complete package and not developed in isolation."

Martineau believes thorough scrutiny is merited. "The lives of many passengers are on the line. A pilot licence, at least in Canada, is a privilege and it is the cost of doing business," he said.

LOOKING AHEAD

Soon after the Germanwings accident report was issued earlier this year, the Air Transport Association of Canada (ATAC) formulated some concerns with regard to the lack of automatic communication between Transport Canada and air carriers.

"Only in circumstances where a serious threat is perceived does Transport Canada communicate with the carriers," said ATAC president John McKenna. "We would prefer that an automatic notice be sent to the employer when a pilot, or an air traffic controller, loses their privilege to fly (or work in air traffic) due to a failed medical test (or psychological test if such a thing existed in Canada).

"We even suggested that Transport Canada inform the employer without revealing the reason for the loss of flying (or controlling) privileges, hoping to remain compliant with the right to privacy of an individual," continued McKenna. "This was on our list of issues when we met with the Minister in May. He seemed in agreement with the need to find a solution quickly."

Transport Canada's Gauthier said the regulator is working closely with the medical community to ensure aircrew and air traffic controllers are medically fit, to close gaps in scientific knowledge of Canadian aviation medicine, to promote health and safety in the field of aviation, and to prevent aircraft accidents due to medically-related human factors.

"Departmental officials are reviewing the French Civil Aviation Safety Investigation Authority's recommendations and report into last year's Germanwings accident," she noted. "We are conducting further assessments and building on the work accomplished at the international level before proposing regulatory amendments. Transport Canada continues to work with our counterparts to ensure a collective approach is taken to avoid future accidents."

Martineau said some airlines offer employee assistance programs in cooperation with pilot associations' medical committees. "Obviously, there has to be some trust between management and the pilot associations. The pilot peers are the best source of information that another pilot is under stress, and a report through an association medical committee that works with great confidentiality with management can intervene successfully in many cases and decide what is best for the pilot and the company."

Shury reiterated that Canadian CAMEs already assess individual pilots on a regular basis according to their type of licence, age and health history. In addition, they already review every pilot's medical history to ensure there are no signs of psychosis or suicidal behaviour.

"Existing checks and balances are in place and [they] are working," he concluded.

Mario Pierobon is a safety management consultant and content producer who has extensively researched aircraft ground handling safety, among other industry-related topics.

Save the Dates!

Join us and our Diamond Sponsor, **Abbotsford International Airport**, as we host **CBAA 2017**, featuring targeted educational sessions, networking events, exhibits and Canada's largest static display of private and corporate aircraft.

CANADIAN BUSINESS AVIATION ASSOCIATION

CONVENTION & EXHIBITION

CBAA 2017

ABBOTSFORD BC ■ AUGUST 9-11

Abbotsford® INTERNATIONAL AIRPORT · YXX

Canada's Premier Business Aviation Event

Held in conjunction with the Abbotsford International Air Show and the Aerospace, Defence and Security Expo (ADSE)

cbaa-acaa.ca

BAM BUSINESS AVIATION MATTERS

CBAA·ACAA

Training for the UNEXPECTED

BY SCOTT "BONSAI" DIERINGER

On Dec. 28, 2014, the pilots of an Airbus A320 airliner carrying 155 passengers and seven crewmembers from Surabaya, Indonesia, to Singapore lost control of their aircraft, stalled and crashed into the Java Sea. The Indonesian National Transportation Safety Committee said in its accident investigation report that the pilots failed to make appropriate flight control inputs to regain control of the stalled aircraft.

There are few industries where the professionals doing the job are held to standards as high as those in aviation. The general public wants to know that our flight crews are prepared for *any* potential event. Unfortunately, the most recent aviation industry data on fatal accidents in the commercial jet fleet worldwide between 2005 and 2014 shows that over 40 per cent of all fatalities are a result of loss of control in-flight (LOC-I).

In an effort to reduce or eliminate this threat, aviation industry leaders attempt to identify the root causes of these events. LOC-I events are precipitated by incidents termed "upsets," where the aircraft enters a state that is outside of normal and typical training manoeuvring limits. In other words, the aircraft is doing something that the pilot is unfamiliar with and may be untrained to handle.

Further study of recent industry data indicates that during these upset events, startle among the aircrew is very often a factor, and when the element of surprise in the cockpit is present, flight crews are more likely to exhibit improper reactions on the flight controls.

HOW WILL A PILOT RESPOND?

To understand why pilots respond the way they do during an upset event, let's review the four assumptions made about traditional flight training requirements for pilots. We will see, sadly, these assumptions become largely invalid when a pilot unexpectedly enters an aircraft upset event.

> LOSS OF CONTROL IN-FLIGHT EVENTS ARE PRECIPITATED BY INCIDENTS TERMED "UPSETS," WHERE THE AIRCRAFT ENTERS A STATE THAT IS OUTSIDE OF NORMAL AND TYPICAL TRAINING MANOEUVRING LIMITS.

The four typical flight training assumptions are:

1. The aircraft will remain within the normal operating envelope;
2. Current pilot training is sufficient for the flight crew to resolve situations outside of the normal operating envelope;
3. Pilots will correctly interpret and understand cockpit indications in an upset event; and
4. Pilot responses in an upset will be predictable and reliable.

The last two assumptions on this list become the focus when an unexpected event occurs. In a 2012 American Institute of Aeronautics and Astronautics paper titled *Unexpected Pilot Performance Contributing to Loss of Control in Flight (LOC-I),*the last two flight training assumptions were identified as invalid.

Sixteen fatal commercial jet accidents were studied by three independent aviation industry experts. Eleven of the accidents (68.8 per cent) showed that the flight crew did not correctly perceive cockpit indications, leading to improper inputs on the flight controls. In *100 per cent* of the accidents studied, it was evident that in these unexpected events the instinctive psychological and physiological responses from the pilots were unpredictable and unreliable in comparison to expected trained behaviour.

In a separate study conducted by the Federal Aviation Administration (FAA) in 2014, 45 airline pilots rated on the Boeing 737 were placed in several situations in an advanced 737 simulator that recreated upset events such as the Air Asia accident. The study showed that in the unexpected stall incidents, less than one quarter of the pilots strictly applied the correct stall recovery procedure.

In a third study conducted in 2010 by the Joint Safety Analysis Team, 18 events involving loss of awareness in the cockpit were studied, many of which resulted in fatal accidents. In 12 of the 18 events, the flight crew responded to hazardous airplane states and conditions with control inputs that were *opposite* to what was necessary to recover the airplane.

CONCLUSION

Clearly, when startled by unexpected events, flight crew can exhibit behaviour counter to what is appropriate. The aviation industry is taking effective action to mitigate this problem. Both the International Civil Aviation Organization (ICAO) and the International Air Transport Association (IATA) have advocated for upset prevention and recovery training (UPRT). The Indonesian National Transportation Safety Committee recommended in its Air Asia accident report that the airline should begin implementing UPRT for all its pilots.

Effective UPRT exposes pilots to flight conditions well outside the normal flight regime, and teaches them widely applicable strategies to prevent—and if necessary, recover—from virtually any "unexpected" LOC-I event. This builds on the skillsets taught in traditional flight training.

Effective UPRT enhances confidence in flight crews and their abilities to properly diagnose upsets and to safely manoeuvre their aircraft out of undesirable flight conditions. In other words, UPRT trains pilots for the unexpected.

Scott "Bonsai" Dieringer is an advanced instructor for Aviation Performance Solutions (APS), with 10 years of experience as an operational U.S. Air Force F-16 pilot. Expanded versions of Skies *articles by APS are available at apstraining.com/skies. APS specializes in reducing the risk of loss of control in-flight globally through integrated upset prevention and recovery training (UPRT) solutions.*

SHOW US SKIES THROUGH YOUR EYES

2016 PHOTO CONTEST

Welcome to the third annual *Skies* Photo Contest! If you love aviation photography, you've picked up the right magazine. Once again, we put out a call for your best photos, and you responded with some of the most jaw-dropping aviation images we've ever seen. That's really saying something for a magazine that prides itself on publishing only the best aviation photography. It's what makes us different and keeps you, the reader, turning the page to see what's next!

We were particularly pleased to see that the submissions reflected the universal nature of aviation. The photos showcased aircraft of all sizes and stripes, including military, general aviation, airlines, warbirds, business jets and helicopters.

The *Skies* Photo Contest was open to both amateur and professional Canadian photographers over the age of 18. Photos were submitted in four categories: Airshows, Commercial, Military and General Aviation. Once the contest closed on Aug. 5, the *Skies* team had the difficult task of narrowing down the entries in each category.

Then, we called in our nine contest sponsors. Representatives from Cascade Aerospace, Columbia Aircraft Sales, Daher Socata, FlightPath International, Innotech-Execaire Aviation Group, Levaero Aviation, Lockheed Martin, Universal Avionics Systems Corporation and Vector Aerospace voted for their favourite photos in each category, as did MHM Publishing staff. Ballots were cast by email address, to ensure each person had only one vote, and were tallied automatically.

As you'll see on this spread, our 2016 Grand Prize goes to Jason Pineau, a Harbour Air pilot who submitted a breathtaking early morning photo of DHC-2 Beavers warming up at the dock in Sechelt, B.C., in preparation for a busy day ahead. Congratulations on winning our grand prize, Jason!

The first, second and third place winners in each of the four categories appear on the following pages, as well as some honourable mentions. While it's impossible to print all of the stunning photos we received, we hope you enjoy the winning selections.

The *Skies* team thanks all photographers for their submissions. Of course, we also recognize and thank our contest sponsors for supporting the third annual *Skies* Photo Contest.

PROUDLY SPONSORED BY:

CASCADE aerospace
Columbia Aircraft Sales
DAHER SOCATA
FlightPath international
INNOTECH–EXECAIRE AVIATION GROUP
Levaero AVIATION
LOCKHEED MARTIN
UNIVERSAL AVIONICS SYSTEMS CORPORATION
VECTOR AEROSPACE

Download this wallpaper **here**

GRAND PRIZE

Harbour Air DHC-2 Beavers warm up their engines prior to departure at first light on Jan. 14, 2016 in Sechelt, B.C. **Jason Pineau Photo**

Jason Pineau is a part-time photographer and a pilot with Harbour Air Seaplanes in Vancouver.

1st PLACE
AIRSHOWS

Capt Ryan "Roid" Kean punches through a cloud of vapour generated by his CF-188 Hornet aircraft as he performs a low level, high-speed pass over the crowd during spring training for the 2016 airshow season in Comox, B.C.
Steve Bigg Photo

*Download this wallpaper **here***

When **Steve Bigg** opened Air Combat Zone flight simulation centre in Mississauga, Ont., he had no idea that it would lead him to a passion greater than his love of aviation. Through his involvement with airshows, museums and a reconnection with the military, he now lists aviation photojournalism as his greatest passion.

2nd PLACE
AIRSHOWS

During a Canadian Armed Forces Snowbirds routine the solos perform a number of head-to-head crosses and two-ship manoeuvres, but they must eventually rejoin the other seven aircraft. Here, lead solo, Snowbird 8, Capt Shamus Allen and opposing solo, Snowbird 9, Capt Craig Sharp maintain formation as they make their way back to the rest of the team. **Mike Luedey Photo**

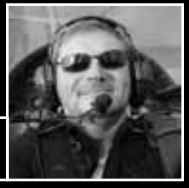
*Download this wallpaper **here***

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.

3rd PLACE
AIRSHOWS

Mike Tryggvason takes Canadian Red Bull Air Race pilot Pete McLeod's Edge 540 for a spin at Tillsonburg, Ont.
Eric Dumigan Photo

*Download this wallpaper **here***



Eric Dumigan is an Ontario-based aviation photojournalist specializing in air-to-air photography.

1st PLACE
COMMERCIAL

Clouds reflect off the calm waters of Tully Lake, northeast of Sioux Lookout, Ont., as David Friesen heads out on a camp check flight with Northern Adventures' de Havilland DHC-2 MK III Turbo Beaver, C-FOEX, in this May 20, 2016 shot. **Rich Hulina Photo**

*Download this wallpaper **here***

Rich Hulina has been a bush pilot and aviation photographer in Northwestern Ontario for over 25 years. His passion is for travelling the North while trying to capture the hard working bushplane in its natural element.

2nd PLACE
COMMERCIAL

A Turkish Airlines Boeing 777-300ER creates a surreal photo opportunity when it bursts through a sunset marine layer on departure off Runway 25R at Los Angeles International Airport (LAX). **Jan Jasinski Photo**

*Download this wallpaper **here***

Jan Jasinski is a 19-year-old aviation photographer based in Gatineau, Que. He is currently studying graphic design and working on his private pilot's licence. In the winter, he works as an aircraft de-icing technician.

3rd PLACE
COMMERCIAL

A fast-climbing Airbus A320 departing from Pearson International Airport is silhouetted against the CN Tower and Toronto's dramatic skyline. According to photographer and tower controller **Dave Brook**, the opportunity to get this kind of shot is limited to lighting conditions that only occur twice a year, in March and September.

*Download this wallpaper **here***

Dave Brook has been taking pictures of trains, planes and birds since he was 12 years old. He currently works as an air traffic controller at Toronto's Pearson International Airport, where he enjoys the chance to mix business with his photography hobby.

1st PLACE
GENERAL AVIATION

The overcast skies add to the mood in this Feb. 19, 2016, cockpit shot heading up Kootenay Lake on the VFR route between Cranbrook and Castlegar, B.C. The de Havilland DHC-2 Beaver C-GNXG was on a ferry flight from Nestor Falls, Ont., to Vancouver, B.C., when the shot was taken. **Rich Hulina Photo**

*Download this wallpaper **here***

Rich Hulina has been a bush pilot and aviation photographer in Northwestern Ontario for over 25 years. His passion is for travelling the North while trying to capture the hard working bushplane in its natural element.

2nd PLACE
GENERAL AVIATION

On the way back from a call, an Ornge AW139 helicopter turns inbound to its base at Billy Bishop Toronto City Airport. The city lines up beautifully in the windshield as the helicopter makes a left-hand bank turn.
Jason Crockett Photo

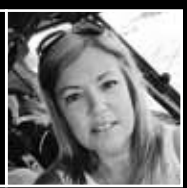
*Download this wallpaper **here***

Jason Crockett has been a paramedic for 15 years; for the last eight, he has worked as a critical care flight paramedic with Ornge, Ontario's air ambulance and ground transportation service. A fan of outdoor adventure, photography has been his hobby and passion for the last 10 years. He often brings his camera to work in the hopes of capturing some of the beautiful scenery he sees while on the job.

3rd PLACE
GENERAL AVIATION

While working at the University of the Fraser Valley's Aerospace Centre, photographer **Karen Massier** arrived early one morning to capture this amazing sunrise over the Abbotsford International Airport.

*Download this wallpaper **here***



Karen Massier calls B.C.'s Fraser Valley home. As an avid lover of the outdoors, she spends much of her time travelling the world chasing the light for the special images she creates. Karen's favourite photos are the unexpected ones that capture the uniqueness of the world around us. Her award-winning work has been used in books, magazines, calendars and promotional materials.

1st PLACE
MILITARY

A CH-124 Sea King from 443 Squadron conducts ship-based training and night qualifications onboard HMCS Vancouver off the coast of Vancouver Island on Jan. 14, 2016.
Heath Moffatt Photo

*Download this wallpaper **here***

Heath Moffatt is a commercial photographer based in Victoria, B.C. He has specialized in aerospace photography for more than 15 years.

2nd PLACE
MILITARY

A CF-188 Hornet from 409 Tactical Fighter Squadron executes a touch-and-go at 19 Wing Comox, B.C., after returning from a local flight on June 21, 2016.
Stuart Sanders Photo

*Download this wallpaper **here***

Stuart Sanders has been passionate about aviation since he was a kid. Fifteen years ago he picked up his first camera and merged his passion for aviation with a newfound love of photography. To this day, he still loves being able to freeze a second in time while preserving a memory forever.

3rd PLACE
MILITARY

The Snowbirds loop over their home town of Moose Jaw, Sask., on June 5, 2016. The team had returned home for maintenance after five weeks on the road during the 2016 airshow season. **Cpl Sebastian Boucher Photo**

*Download this wallpaper **here***

Cpl Sebastian Boucher is an aviation technician with the Canadian Armed Forces Snowbirds who has been in the military for six years. Photography has always been his passion, and travelling around North America representing his country and his military provides unique opportunities and perspectives.

HONOURABLE MENTIONS

Bruce Paylor cranks his Bucker Jungmann through the slot at the Guelph Airpark. **Joe Letourneau Photo**

A WestJet Encore Q400 takes off from Runway 04L at Boston's Logan International Airport. **Pierre Gauthier Photo**

Sunrise breaks over a VIH Kamov KA-32 helicopter on a powerline construction site in Sandy Bay, Sask. **Darryl Biltzan Photo**

Snowbirds technicians take a rare break and pose for a unique shot from above the No. 1 jet. **Maciej Hatta Photo**

Parts from First Air's retired 737-200, C-GNDC, are helping to keep the operator's remaining aircraft serviceable. **Mark Taylor Photo**

Greg Colyer performs a low, topside pass at the 2016 Cold Lake Airshow. **Colin Kunkel Photo**

A Cormorant crew awaits search and rescue technicians for a night jump during SAREX. **Jean-Francois Dupont Photo**

Three Boeing Stearman biplanes belonging to the Breitling wingwalking team put on a tightly-knit show. **Bo Kim Photo**

Ed Shipley beats up the sky in his Canadair Sabre Mk6. **Michael Durning Photo**

This photo is named "The Cause and The Cure," simply because lightning can both cause a wildfire while also heralding the rain that will help extinguish it. Taken this past summer, it shows one of four Convair 580A air tankers operated by the Government of Saskatchewan. **Corey Hardcastle Photo**

Two identically-marked Harvard aircraft featuring technology 75 years apart fly together over Gatineau, Que. This heritage flight featured Vintage Wings' Harvard 4 accompanied by 15 Wing's Harvard II (bottom). **Peter Handley Photo**

First Air's first ATR 42-500 performs engine runs in Ottawa prior to making its inaugural flight to Canada's north. **Mark Taylor Photo**

An Ornge Pilatus PC-12NG shelters in the hangar at Timmins, Ont., last winter. **Alex Lebrun Photo**

An Airspan Bell 212 on a heli-skiing job in British Columbia. **Shawn Evans Photo**

The Canadian Coast Guard's new Bell 429 helicopter fleet supports lighthouses and other marine infrastructure. **Heath Moffatt Photo**

Hear her roar! An up close look at the belly of the beast, the Lockheed Martin F-22 Raptor, at the 2016 Quinte International Air Show. **Vijay Mistry Photo**

End of a busy day: A Stearman biplane is framed against a peaceful sunset. **Pat Hannah Photo**

An RCAF CC-138 Twin Otter overnights at the airport in Grande Prairie, Alta., on Oct. 5, 2015. **William Vavrek Photo**

Quebec's fleet of Bombardier 415 Superscoopers sits ready for the onset of firefighting season after a long, cold winter. **Pierre Gauthier Photo**

An Air Canada 787 Dreamliner comes into Toronto's Pearson airport, with the fuselage reflecting both wings, the mighty GEnx engines, and the shadow of the aircraft itself. **John Chung Photo**

2016 CANADIAN AEROSPACE SUMMIT

Canada's **leading** national aerospace event

WELCOMES THE WORLD

November 15-16, 2016
Shaw Centre, Ottawa, Canada

REGISTRATION IS NOW **OPEN**

VISIT
AEROSPACESUMMIT.CA
FOR ALL
INFORMATION

DON'T MISS OUT ON OUR NEW PANELS:

- Aerospace & Government
- Innovation
- Small Business

Proudly hosted by AIAC

MARKETPLACE

To place an advertisement in *Skies*' Marketplace, contact **Frank Sargeant** at **866.834.1114** or email **frank@mhmpub.com**.

MARKETPLACE

To place an advertisement in *Skies*' Marketplace, contact **Frank Sargeant** at **866.834.1114** or email **frank@mhmpub.com**.

MARKETPLACE

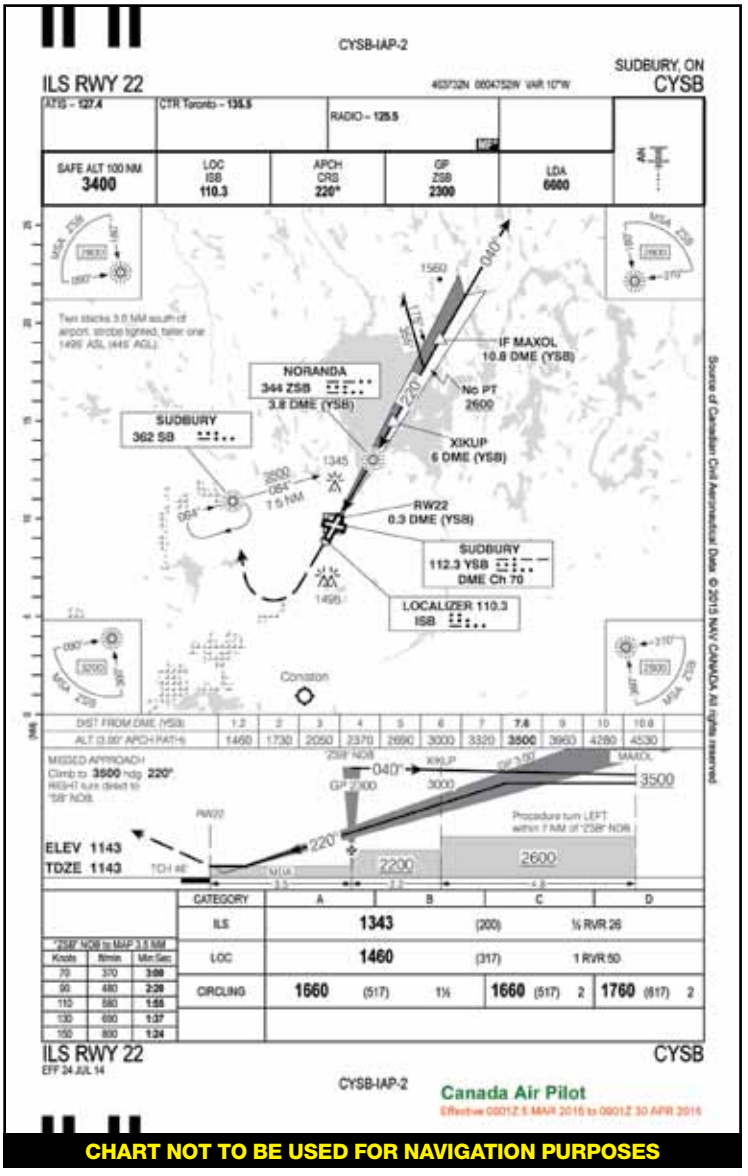
To place an advertisement in *Skies*' Marketplace, contact **Frank Sargeant** at **866.834.1114** or email **frank@mhmpub.com**.

SHARPEN YOUR IFR SKILLS

BY JOHN MONTGOMERY

Test your instrument flight rules (IFR) proficiency and sharpen your piloting skills with this exclusive *Skies* feature! Examine the following approach plate and take your best shot at the accompanying questions—answers can be found at www.skiesmag.com/iq.

SUDBURY, ONTARIO
ILS RWY 22 APPROACH



1. You are inbound to the ZSP NDB [non-directional beacon] from the SB NDB and cleared for the full procedure localizer (LOC) RWY 22 approach (G/P U/S). You intercept the localizer at 3,500 feet with a groundspeed of 120 knots. At what point should you initiate the descent and what should be your target sink rate to fly the CDFA approach?
2. The procedure turn must be accomplished within __ NM of what fix?
3. Is an RVR-based approach ban a possibility on this approach?
4. What would be the most accurate means of determining the missed approach point via this approach?
5. What should be your course of action upon arrival over the clearance limit, if further clearance is not received in advance?
6. You are cleared direct MAXOL intending to do a straight in ILS approach. What information on the plate authorizes the straight-in approach?

John Montgomery is the founder and president of Professional Flight Centre in Delta, B.C., which was established in 1986. A 12,000-hour ATPL pilot and multi IFR instructor, he also specializes in ground school and seminar instruction. John can be reached at john@proifr.com.

AGFT®
Aviation Ground Fueling Technologies

Your Complete Aviation
REFUELING
Supplier

ARE YOU READY FOR THE UPCOMING SEASON?

FALL MAINTENANCE MADE EASY!!!!

At **AGFT**, we understand how critical it is to have a well maintained, reliable fueling system. Our highly qualified team is available 24/7 to assist with troubleshooting problems and providing solutions that get you up and running again. With over 50 years of expertise to call upon, **AGFT** can provide the industry knowledge you need.

The extreme temperature changes of winter can cause fuel systems and truck components to become affected causing potential issues:

- Seals can be weakened from the cold causing potential leaks
- Ice formations in tanks, hoses and piping can cause unwanted moisture
- Ground shifts from frost heaves can cause leaks

Winter can be hard on fuel systems, now is the time to book your preventative maintenance with **AGFT.**

- 25 point inspection
- Annual filter change
- Internal inspections and cleaning
- Replacement of safety supplies
- Meter calibrations

AGFT carries an extensive inventory of aviation fueling handling parts and systems from industry leading manufacturers like **ContiTech AEROPAL, OPW, PecoFacet, Shell, Shultz,** and **Aljac.**

AEROPAL® CONTITECH · OPW FUEL MANAGEMENT SYSTEMS · Peco Facet a CLARCOR company · Schultz · Aljac

Contact us today: 1-877-960-AGFT | www.agftparts.ca

MEET ROB DEWAR

VP, C SERIES AIRCRAFT PROGRAM
BOMBARDIER

BY LISA GORDON

Bombardier Photo

Rob Dewar is 30 years into his aerospace career, and for a good chunk of that time he's been known as the man behind Bombardier's new C Series jet.

Since he was assigned to the program back in April 2004, Dewar's faith in the C Series has never wavered. Originally responsible for the new airliner's design—and subsequently promoted to the position of vice president, C Series aircraft program at Bombardier Commercial Aircraft—Dewar now leads development, engineering, and supply chain operations. About the only area he's not responsible for is aircraft sales.

A Montreal native, Dewar graduated from McGill University with an engineering degree specializing in aerospace structures and combustion before joining Bombardier in 1986. After leaving to pursue other opportunities, Dewar returned to the Quebec-based OEM in 1995, where he has remained ever since.

Throughout his career, he has been driven by a passionate interest in his field. "I was just fascinated by aerospace since I was a child," he told *Skies*.

As a private pilot who obtained his licence at age 16, Dewar flies Cessna 172s in his free time. He doesn't have much of that these days, though, with the C Series program marking one significant milestone after another in recent months.

From the CS100's Transport Canada type certification on Dec. 18, 2015; to the announcement this past February that Air Canada planned to buy up to 75 C Series jets; to the welcome news in April that U.S. giant Delta Air Lines had placed an order for up to 125 jets; and finally to the CS300's type certification on July 11, 2016, it's safe to say the C Series program is on a roll.

"The sale to Delta was a huge deal," said Dewar. "They have a very large fleet of aircraft in this category and they are very technically astute. Having them do a very thorough evaluation with all their different groups—pilots, maintenance, fleet planning, cabin—and have them come back and say they love the aircraft was the biggest endorsement we could have hoped for. This was a competition that was fought hard and won on the merits of the aircraft."

And while the Delta deal has changed the way the world looks at the new jet, the 2,300-member C Series team is now focused on two critical areas. First, ensuring a successful entry into service for both the CS100 with Swiss International Air Lines and the larger CS300 with AirBaltic this October is the "short-term critical factor," according to Dewar. Second, he said Bombardier must be ready to meet production demand.

"The market for this aircraft [combined CS100 and CS300] is around 7,000 units over the next 20 years," he continued. "We have over 350 firm orders now. If you include letters of intent and options, we have about 800 aircraft opportunities. The sales will be there; the challenge will be ramping up our production rate to meet the demand."

Of course, the aircraft must deliver on its promises and show results in the field. "We're the only all-new aircraft in this category designed specifically for this segment. The C Series has much lower operating costs than the other competitors," said Dewar.

There's no mistaking the importance of the C Series program to Bombardier's future—and indeed, that of Canadian aerospace as a whole. The clean sheet commercial airliner and the OEM's new top-of-the-line Global business jet are the flagship programs that are expected to carry Bombardier well into the next two decades.

Dewar said the C Series program has a lot of room to grow, including the possibility of a business variant and other seating configurations in the future.

When he's asked about the program's turbulent past, Dewar is matter of fact.

"I've been very fortunate to have had these opportunities and experiences, but it's been very challenging at the same time. Still, if you look historically, a lot of successful aircraft programs suffered the same types of challenges. If you have a great product, people will soon forget. What will really determine the program is how well it performs in service and how many sales we have."

Dewar said he and his team have maintained focus by "breaking the program into different phases and tackling the mountain one piece at a time." With goals set by quarter, month, week and day, success was measurable and real.

"Believe it or not, my faith has never been shaken. I just really believed in the market and I believed in the product. I knew that once we got the aircraft delivered and into service, that aircraft would be successful," said Dewar.

With the C Series program consuming more than a third of his aerospace career, Dewar admits he had a bit of a funny feeling when the first CS100 was delivered to Swiss.

"I flew the delivery flight with Swiss, and you know, that was when it really hit home. Up to then, all the flight test vehicles were ours. It really was like your child going away to university, or moving out. But I am so proud to have Swiss, because they are such a great partner. We're very fortunate to have them on board."

As for the future, Dewar said it usually take about two years to implement a successful entry into service, and he plans to be the man behind the C Series until that job is done.

Game Changer.

The new Cessna Citation Latitude 9-passenger business jet offers comfort and efficiency in perfect balance:

Cruise at 45,000 feet, with a range of 2,850 nm.

Enjoy Latitude's large, flat floor cabin – measuring 6 ft. high X nearly 6 1/2 ft. wide X more than 21 ft. in length, the most spacious in its class.

State-of-the-art Garmin® G5000™ avionics and wireless cabin technology.

Best of all, the Latitude is pure Citation, through and through, designed and built by Textron Aviation, the world's leading manufacturer of business jets, represented in Canada exclusively by Execaire. Together, we're Citation Team Canada.

Call us – we'll show you how the new Citation Latitude can change your game.

C I T A T I O N T E A M C A N A D A

INNOTECH–EXECAIRE AVIATION GROUP

Harald Maron (East)
Tel: 905.673.0800
harald.maron@innotech-execaire.com

Ken Moon (West)
Tel: 604.273.8686
ken.moon@innotech-execaire.com

Cessna
TEXTRON AVIATION

Mark Gardner
Tel: 303.880.6372
mgardner@txtav.com

CESSNA'S EXCLUSIVE AUTHORIZED SALES REPRESENTATIVE FOR CITATION JETS IN CANADA. www.execairejetsales.com

THE STANDARD IN MISSION READINESS

KING AIR 350ER

The versatile and easily reconfigurable King Air® 350ER turboprop will transform your ability to multitask. With a useful load of over 7,000 pounds, room for up to 11 passengers and an optional cargo door, it is the preferred aircraft for operators who fly multiple missions. Whether your pursuit is medevac, surveillance or executive transport, the King Air 350ER can carry the gear you need, wherever the mission takes you.

Learn more about the King Air 350ER today at Beechcraft.com.

U.S. **+1.844.44.TXTAV** | INTERNATIONAL **+1.316.517.8270**

Beechcraft®

TEXTRON AVIATION