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Alex Praglowski Photo

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WESTERN ADVANTAGE

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By Jacqueline Louie

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The addition of a Gulfstream G650ER ultra-long range business jet, with a range of 7,500 nautical miles, has allowed Sunwest Aviation to greatly expand its charter horizons. **Gulfstream Photo**



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Simon Blakesley was in the right place at the right time to catch this Alpine Aviation DHC-2 Beaver departing from a foggy northern lake.



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COLUMN

From the Editor

BY LISA GORDON

Looking for the win

I spent June 1 at a rainy baseball tournament in London, Ont., where numerous weather delays gave me lots of time to consider the subject of this editorial.

At the end of the day, my daughter's team was declared the tournament champion, a status earned by three wins on the diamond and then – due to torrential downpours – cancellation of the final game, with the winner determined by adding up each team's total runs for the day.

The team was certainly happy to get that first-place medal. But somehow it didn't deliver the same satisfaction that comes after winning a fierce, dusty showdown on the field.

Sometimes, though, an easy win is far preferable to a drawn-out battle.

For example, take the recent announcement on May 13 that private equity firm Onex Corp. is buying Calgary-based WestJet Airlines Ltd. for the sum of \$5 billion, which includes assuming the airline's existing debt of \$1.29 billion (as of the end of March).

Some aviation consultants believe the deal is a positive move for WestJet, which has charted a course of aggressive expansion over recent years. Indeed, a special committee of airline directors evaluated the Onex offer and is recommending that shareholders vote in favour of the deal at an upcoming meeting in July.

Pending approval from regulatory authorities, Onex said it will operate the airline as a private company and keep it headquartered in Calgary. Under the terms of the deal, the Toronto-based firm will acquire all outstanding WestJet shares for \$31 per share, which represented a 67 per cent premium when the deal was announced in mid-May.

While WestJet said it wasn't actively soliciting offers for a buyout, it certainly didn't send Onex packing, either. A "cordial" infusion of private capital could be just what the airline needs to complete its expansion, positioning it to compete against Air Canada as a truly global carrier.

"We now have the ability to focus on our long-term strategy to deliver against the lifetime of our assets [rather than quarterly reporting that comes with being a public company]," said WestJet CEO Ed Sims on May 14.

For his part, Onex chairman and CEO Gerry Schwartz has finally broken into the Canadian airline industry, 20 years after teaming up with American Airlines in an unsuccessful bid to take over Canadian Airlines and merge it with Air Canada.

No doubt, the WestJet deal – which is expected to close in late 2019 or early 2020 pending regulatory approvals – is a much easier win for Onex.

That deal wasn't the only big news from the Canadian airline sector in May, as Air Canada announced its intention to buy Transat A.T. Inc. for about \$520 million, or \$13 per share.

Transat, which had indicated at the end of April that it was considering offers from several potential suitors, said on May 16 that its board was in exclusive talks with Air Canada.

Air Canada president Calin Rovinescu said the deal would allow Air Canada Vacations to compete more heavily in the global leisure travel market, a sector that has been targeted for growth. The merged

entity is projected to have a market share of about 60 per cent in the transatlantic segment and close to 50 per cent for sun destinations.

Acquiring Transat now is a strategic move that would block Onex Corp. from snapping up the company later and merging it into competitor WestJet.

"This represents the best prospect for not only maintaining, but growing over the long term, the business and jobs that Transat has been developing in Quebec and elsewhere for more than 30 years," said Jean-Marc Eustache, Transat president and CEO.

With Transat ripe for the picking, it was looking like an easy – and timely – win for Air Canada. But then on June 4, Quebec real estate developer Groupe Mach stepped into the ring with a competing offer to acquire Transat A.T. As *Skies* went to press, the outcome was uncertain.

As the Canadian airline landscape shifts, it's too early to tell whether the flying public will win or lose. On page 14, Brent Jang writes that industry experts predict increased fares to less-travelled destinations. However, it will likely be months before the aftershocks of both deals are felt.

And speaking of wins, the MHM Publishing team travelled to Toronto for the National Magazine Awards: B2B, in late May.

Recognizing excellence in business to business (B2B) publishing, this year's inaugural awards evaluated hundreds of entries in 18 categories, including Best Profile of a Company, Best Feature Article: Trade, Best News Coverage and Best Issue. This year, we were thrilled that both *Skies Magazine* and our sister publication, *Vertical Magazine*, were nominated as finalists in the four categories I've listed above.

The competition was stiff, including many esteemed pillars of Canadian B2B publishing across several different industries. We were thrilled when *Vertical* earned a silver award for its February/March 2018 Heli-Expo edition in the Best Issue category! *Skies* received an honourable mention, too, proving that our tagline, "Aviation is our Passion," is more than just words.

That message evidently came through loud and clear to the judges tasked with evaluating the very best of Canadian B2B journalism. Congratulations to all the winners! We are already looking forward to next year.

In the meantime, our passionate team of publishers, editors, writers and designers have served up another fantastic issue that tells the story of Canadian aviation.

Visit Calgary's Sunwest Aviation with writer Jacqueline Louie, where the 2019 Canadian Business Aviation Association convention will land in July, and learn about Flightdeck Solutions of Newmarket, Ont. – a flight simulation business that started in a basement and now counts Boeing among its biggest customers.

Are you fascinated by the de Havilland of Canada legacy? Check out Frederick Larkin's story on the Dash 7 turboprop. Finally, as I write this shortly after Canadian Armed Forces Day, it's also a good time to point out Andy Cook's insightful feature on restructuring for maximum Royal Canadian Air Force recruitment and retention.

Enjoy! 🇨🇦

Lisa Gordon is editor-in-chief of *Skies* magazine, Canada's largest and most-read aviation industry publication. Contact her at lisa@mhmpub.com.

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COLUMN

In the Jumpseat

BY STEPHEN FUHR, MP

Parliamentary committee tables report on addressing Canada's pilot shortage

Aviation serves a crucial role in the Canadian economy, providing the safe and efficient transportation of people and cargo, while acting as a vital lifeline to northern and rural communities.

With the third-largest aerospace sector in the world, the national aviation industry generates \$29.8 billion in annual revenue and supports roughly 211,000 direct and indirect jobs, five per cent of them in the North.

Yet, in the face of a severe pilot shortage, Canada has lost its ability to generate the pilots it needs today or will require tomorrow. Without significant effort put towards solving the situation, the problem will continue to grow.

Current estimates are that Canada will need 7,000 to 10,000 new pilots by 2025, resulting in a projected shortage of at least 3,000 pilots given our current production rate.

To make matters worse, hiring pressures are likewise ramping up for aircraft maintenance engineers, avionics techs, flight attendants, assemblers, air traffic controllers, managers, machinists and aerospace engineers. Much of our aging airport infrastructure is also in need of considerable attention.

As a pilot and as a Member of Parliament, I am aware that without significant effort from government, education and industry stakeholders, there is little chance the situation will improve. In fact, it will probably get worse.

Acutely aware of this particular problem, I got the attention of the federal government by tabling a motion in the House of Commons.

M-177 called for the Standing Committee on Transportation, Infrastructure and Communities to study flight training schools in Canada and the challenges they face in providing trained pilots to industry. The motion was met with the support of colleagues from all parties and was passed unanimously in the House.

On April 9, 2019, the committee responded by tabling its 29th report, "Supporting Canada's Flight Schools."

The report confirms that, with an increase in air passenger traffic worldwide, the demand for qualified pilots is outpacing current training capacity. This affects not only commercial aviation, but also the military, as well as remote communities that rely on air transport for food, medicine and other goods.

According to a 2018 labour market report published by the Canadian Council for Aviation and Aerospace, fewer than 1,200 new commercial pilot licences are issued each year in Canada. With a large proportion of Canadian licences issued to international students, and only 70 per cent of new pilots choosing to remain in the aviation industry, fewer than 500 new pilots become available to the Canadian aviation industry each year. That number does not account for Transport Canada's

new regulations on flight crew fatigue management, which are expected to increase the number of pilots needed, due to stricter time limits on flight and duty time.

After hearing testimony from 26 witnesses and receiving 13 briefs from industry and academic stakeholders, the committee put forward 13 recommendations.

They included: providing incentives to promote flight instruction as a career path, including underrepresented groups; increasing support to flight schools to assist with high capital costs, especially in the North; improving existing financial assistance programs for flight training programs, including tax credits for experienced pilots and loan forgiveness programs for newly graduated pilots; taking measures to retain international flight students who have graduated from Canadian flight schools; reviewing regulatory oversight of safety and working conditions for new pilots; and supporting the development of new technologies and regulatory modernization to allow their appropriate use in flight training.

The federal government will now review the committee's recommendations to determine what measures it can take to help alleviate the challenge, and will respond to the committee's request that it table a comprehensive response to the report.

As the report concluded, no single solution will adequately address the current labour shortages in the aviation industry. However, better support for flight schools and students, and modernization of flight training regulations that respond to

recent and ongoing advances in technology and education practices are essential components of a long-term solution.

Our country's economic prosperity will be highly influenced by the health and well-being of the Canadian aviation industry. We must make the necessary investments to ensure that it not only survives, but thrives.

Aviation connects Canada and Canadians in ways no other form of transportation can, and our country's economic prosperity in every region is highly influenced by the health and well-being of the Canadian aviation sector.

By helping to bring this issue to the attention of government, and now with solid recommendations from the Standing Committee on Transport, Infrastructure and Communities, we are in a better position to determine an effective way forward to alleviate Canada's pilot shortage.

The committee's full report can be found at www.ourcommons.ca.

Stephen Fuhr is the Member of Parliament for Kelowna-Lake Country, and the chair of the Standing Committee on National Defence. He also holds both a Canadian and American airline transport pilot licence and is rated on several transport category aircraft.

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COLUMN

View from the Hill

BY KEN POLE

Follow the money—but where?

Contravening air transport regulations leaves operators justifiably at risk of a range of federal penalties. Minor transgressions usually mean a regulatory rap on the knuckles, while more egregious behaviour can result in financial penalties or worse.

The latter, as in time behind bars, seems rare in Canada. Research yielded only one relatively recent case; that of a Sunwing charter captain who showed up drunk for work in December 2016 and passed out in the cockpit after ignoring his co-pilot's attempts to intervene. Having pled guilty three months later, the European national was sentenced to eight months, less time served, and was subject to an Immigration, Refugees and Citizenship Canada "removal" order.

Enforcement of that order is up to the Canada Border Services Agency, which told *Skies* by email that it does not "speak to the specifics of a particular case or to confirm/deny the removal of any one individual."

As for lesser penalties, consider the case of a Montreal-based charter operator which used its website and a mining industry publication late last year to offer a service for which it wasn't licensed. Chrono Aviation was fined \$10,000 by the Canadian Transportation Agency (CTA) a couple of months ago.

Other operators, large and small, have been fined lesser amounts for contravening regulations about posting various fees. Still others have escaped with a formal warning for such things as failing to provide meal vouchers to passengers affected by lengthy departure delays. The unspoken subtext to warnings is, "Don't do it again."

When it closed the books on the 2018-2019 fiscal year at the end of April, the CTA, a tribunal with powers similar to those of a superior court, had fined 16 operators a total of \$185,000 and issued 63 warnings.

Since the beginning of 2013-2014, after new Air Service Price Advertising Regulations took effect, CTA enforcement of various regulations had resulted in 117 "administrative monetary penalties" totalling \$1,628,250.

The current year's books opened with a bang in April when Sunwing was fined \$694,500 and ordered to compensate passengers who had been on 96 flights to or from Toronto and Montreal over several days in April 2018. They had endured lengthy rolling flight and ramp delays, lost baggage, and had received virtually no communications about the situation.

To be fair, an ice storm in the Toronto area had prevented many airline staff—as well as those of its baggage-handling contractor, Chinese-owned Swissport International Ltd., which provides services at more than 300 airports in 50 countries—from getting to work.

However, the CTA said the carrier's handling of the chaos had "exacerbated" the situation. "Sunwing failed, in respect of at least some of the 96 affected flights, to properly apply the terms and conditions of carriage set out in its tariffs." In one situation, passengers arriving in Toronto from Jamaica were kept on the aircraft for five hours.

The CTA was responding to complaints from 578 of the 16,255 passengers on those flights. What happened to the other 15,677 is anyone's guess. Some problems were probably minor, but I'd bet that many passengers had other things to do with their time than chase potentially minimal compensation. Were others even aware they could complain to the CTA?

Even so, Sunwing must "make every effort to settle expense claims individually with all passengers who are owed compensation, whether or not they submitted a complaint." Unresolved cases can be adjudicated by the CTA.

"Passengers have rights and recourse," the CTA's chief executive officer, Scott Streiner, pointed out in a statement. "Even when problems stem from events such as bad weather, there is a minimum standard of treatment."

Ordered to develop a plan to better handle disruptions, Sunwing has since changed ground handlers and upgraded its scheduling system, but there remains a question: What happens to the revenues from the fines?

"According to Subsection 180.7(3) of the *Canada Transportation Act*, any amount received by the minister or the tribunal under this section is deemed to be public money within the meaning of the *Financial Administration Act*," Transport replied by email. Section 17(1) of the *Financial Administration Act* says "all public money shall be deposited to the credit of the Receiver General."

In other words, it winds up in general revenues. Details are in the Public Accounts of Canada, a three-volume annual compendium of revenues and expenditures. Transport's annual take from "fines, penalties and . . . other court awards" has tended to run to six figures.

This year, thanks to the Sunwing fine, it will see a record deposit into the federal kitty.

Wouldn't it be more appropriate to apportion the money to passengers? Arguably, but that would require legislative and regulatory amendments, which are unlikely for any government dealing with deficits.

Meanwhile, passengers are effectively left to their own devices if the operator involved balks at compensation. Their plight ostensibly will be improved with the new Air Passenger Protection Regulations which are being phased into effect.

A draft was published in the *Canada Gazette Part I* last December for a 60-day public comment period. That ended Feb. 20, setting the stage for final *Part II* publication this spring, with the regulations taking effect this summer. They take effect July 15 and Dec. 15, the longer period apparently needed for carriers to put some new procedures in place.

Say what? Has airline management been asleep at the controls? The signs of a crackdown have been there for a while. ■

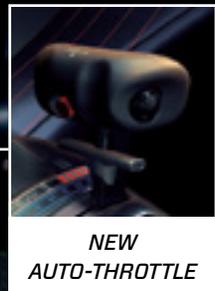
Ken Pole has had a life-long passion for aerospace, writing about all its aspects for nearly 40 years. The longest-serving continuous member of the Canadian Parliamentary Press Gallery, he's also an avid sailor.

"In fiscal year 2018-2019, the CTA fined 16 operators a total of \$185,000 and issued 63 warnings."

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COLUMN

Focal Points

BY TONY KERN

Let's hear it for the "no" people

A few weeks ago, a *Newsweek* story came out about a senior airline captain apparently ignoring advice from his female first officer to get a "Follow Me" vehicle to taxi to the ramp during a blinding rainstorm.

Of course, it wouldn't be a story if the captain had taken the advice. Even if you haven't read the account, you've probably already intuited that this situation ended badly. It did, in a drainage ditch, with three injured passengers and some serious damage to the aircraft, as well as the airline and captain's reputation.

This is not a new, or even unfamiliar, story. Authoritarian airline captains have been ignoring their subordinates for decades, although modern crew resource management (CRM) programs are thankfully making this an increasingly rare event.

I'd like to take a fresh look at this phenomenon through the eyes of the dissenters—a group of really important people in all of our organizations. I like to call them the "no" people.

Earlier this week, I sat in a safety review board for a highly complex test mission on an experimental aircraft. The stated purpose of the board was to "reduce risk to as low as reasonably practical and ensure public safety." The meeting went according to script except for a disagreement on one small procedure related to an extremely unlikely scenario. The debate on this small item lasted well over an hour with participation from engineers, operations managers, safety folks like me, and even outside consultants.

As we slowly moved to consensus around one of two options, there remained one holdout: a voting member of the board. As the final go/no-go poll was conducted, he stood his ground and said "no-go."

Since the rules of the game required unanimous agreement among the five voting members, this created an impasse which quickly turned to accusations of sabotage and him not being a team player. As the safety official in the room, I stopped the conversation. "We have to respect a no-go vote," I explained, "otherwise why are we here?"

The decision to dissent in a room full of peers and experts who disagree with you is an act of courage, and one worthy of our respect and admiration. It took a lot of courage for that junior first officer to tell the captain, who was 30 years her senior, that his plan was flawed. In this case, the outcome bore it out.

Likewise, it took great courage for our board member to hold his ground in a room full of experts on a seemingly insignificant procedure. We may never know the impact of that decision.

How many times have we all sat in meeting rooms or on flight decks and had lingering doubts about a plan of action that we were too timid to voice? The clash of strong opinions is vital to safety, and we should embrace a fair fight between well-intended people. Far too often we value fitting in over doing what is in the best interests of our organization or customers.

Sometimes the debates are external, but they can also occur between the better and lesser angels of our own conscience. Should I drive home or call a cab after that third glass of wine at the restaurant? Should I call in fatigued and get off the schedule after that sleepless night on a week-long road trip, or suck it up and try to push through? Should I make the maintenance write-up

that grounds the plane or put it in my hip pocket until we get home? In each of these cases, we need to listen carefully to the small inner voice that says "no."

Aviation is full of can-do, get-the-job-done people, and we are better for it. Right up to the point when we value conformity over safety. But that point is often hard to identify and considerable social forces work to suppress it. Saying no takes guts.

So, let's hear it for the "no" people! 🇺🇸

"Far too often we value fitting in over doing what is in the best interests of our organization or customers."

Editor of the *Controlling Pilot Error* series, **Tony Kern** is one of the world's leading authorities on human factors training in aviation. A former lieutenant colonel in the U.S. Air Force (USAF), he served as chief of cockpit resource management plans and programs at the USAF Air Education and Training Command. He is the author of three bestselling aviation books: *Redefining Airmanship*; *Flight Discipline*; and *Darker Shades of Blue: The Rogue Pilot*, all from McGraw-Hill.

SKIES DAILY NEWS TOP 10

Here's a recap of our 10 most popular online stories since our last print edition was published.

1

AIRBUS, BOMBARDIER ADVISE PATIENCE OVER A220 ORDERS

Airbus and Bombardier urge patience as they continue to ramp up A220 production.

2

PARLIAMENTARY COMMITTEE RECOMMENDS SUPPORT FOR CANADIAN FLIGHT SCHOOLS

The federal government is asked to support the flight training sector amid looming pilot shortages.

3

FLYING WITH THE STARS

Despite Air Transat's growth since it launched in 1987, the airline still cultivates a family atmosphere.

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ONEX TO BUY WESTJET FOR \$5 BILLION

Onex Corporation has signed a deal to buy WestJet Airlines Ltd. for approximately \$5 billion.



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Max still grounded

The latest estimate for the aircraft's return to service is August.

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BRIEFING ROOM

AVIATION INDUSTRY NEWS 

Big deals herald airline SHAKEUP



The month of May brought significant announcements from the Canadian airline world.

► BRENT JANG | AIRLINE NEWS

Major aviation deals announced in May are expected to shake up Canada's travel industry as WestJet Airlines Ltd. and Air Canada jockey for position in a competitive global marketplace.

On May 13, WestJet disclosed that it reached an agreement for Onex Corp. to acquire the Calgary-based carrier for \$31 a share, or \$3.5 billion in equity value. Toronto-based Onex would also inherit \$1.5 billion in WestJet debt,

meaning the enterprise value of the transaction totals \$5 billion.

Three days later, Air Canada and tour operator Transat A.T. Inc. announced that they had entered into exclusive talks that would see Canada's flag carrier buy Transat for \$13 a share, or \$520 million.

Under the proposal, Air Canada touted its strong presence in Quebec, including its head office in Montreal, where Transat also has its headquarters.

But on June 4, another contender emerged with a bid for Transat.

Onex Corp.'s plans to buy WestJet come two decades after Onex founder and CEO Gerry Schwartz made headlines with a bold idea launched in partnership with American Airlines. In 1999, Onex and American tried to take over Air Canada and merge it with Canadian Airlines International Ltd. **Galen Burrows Photo**

Quebec real estate developer Groupe Mach offered \$14 per share to take the company private, with assurances it would remain headquartered in the province.

At press time, Transat's future was uncertain, although any deal would be subject to the usual regulatory approvals.

Robert Kokonis, president of airline consulting firm AirTrav Inc., said in an interview prior to the Groupe Mach bid that the transactions should result in healthier entities.

For example, should Air Canada acquire Transat, it would be positioned to strengthen its transatlantic traffic.

"Air Canada not only has the synergies of acquiring Transat and taking out a competitor, there is also the loyalty side of the equation," said Kokonis.

While Transat is a partner in the Air Miles loyalty program, that relationship is weak compared with Air Canada's Aeroplan points system, he said. Air Canada also has a strong stable of credit cards targeted at frequent fliers, compared with no such offerings from Transat.

Even if Canada's Competition Bureau were to order Air Canada to make certain changes to address any concerns, Kokonis said the acquisition of Transat would bolster the country's largest airline.

Air Canada chief executive officer Calin Rovinescu said in a statement that job security would improve with the Transat purchase. "The acquisition presents a unique opportunity to compete with the very best in the world when it comes to leisure travel," he added.

Transat's chairman and CEO, Jean-Marc Eustache, co-founded the tour operator in 1987 with Philippe Sureau and Lina De Cesare, who currently serve on Transat's board of directors. Quebec Premier Francois Legault is a former Transat executive.

Nine years after Transat's creation, WestJet launched with three used Boeing 737-200s. WestJet's co-founders are Clive Beddoe, Donald Bell, Tim Morgan and Mark Hill.

Onex's plans to buy WestJet come two decades after Onex founder and CEO Gerry Schwartz made headlines with a bold idea launched in partnership with American Airlines. In 1999, Onex and American tried to take over Air Canada and merge it with Canadian Airlines International Ltd.

But Air Canada, led at the time by Robert Milton, outmanoeuvred Onex and ended up buying debt-laden Canadian in 2000.

This time around, Onex has set its sights on a much different target.

WestJet has diversified since its early years as a low-cost carrier and made the turbulent adjustment to unionization. It is now embarking on a new chapter by gradually adding a wide range of international routes. The carrier started taking delivery of Boeing 787 Dreamliners earlier this year for long-haul routes.

"Onex recognizes the pathway that WestJet has taken over the past number of years to evolve from a pure-play [low-

If it acquires Air Transat, Air Canada would strengthen its transatlantic traffic. An analyst with Desjardins Capital Markets estimates the combined Air Canada-Transat entity would have a market share of roughly 60 per cent in the transatlantic market and 46 per cent for sun destinations. **Andy Cline Photo**



cost carrier] to a full-service carrier," said Kokonis. "Onex has fairly deep pockets and they're putting up a lot of money for this investment, and I think they want to backstop that growth."

WestJet CEO Ed Sims believes the 23-year-old carrier will still be nimble. "We are delighted to continue the journey of building an airline based on a growing network, providing competitive airfares and more choice to, from and within Canada, for communities large and small," said Sims in a statement.

Chris Murray, an analyst with AltaCorp Capital Inc., said it will take months before the final outcome of the Onex-WestJet deal will be known.

WestJet itself estimates that it could take until late 2019 or early 2020 for the transaction to close. That would be well after the federal election in October 2019.

"Regulators have historically been reluctant to announce significant decisions around elections for fear of influencing outcomes," said Murray in a research note.

As for Air Canada, he sees significant benefits looming if it acquires Transat. Transat's narrow-body fleet includes Boeing 737NG and Airbus A321 jets, which would be added to Air Canada's Rouge fleet.

Transat's wide-body A330 planes could be a welcome addition to either Rouge or Air Canada's mainline operations.

"We expect the companies to realize a number of synergies from the transaction and see Air Canada gaining a strong group of pilots and other employees," said Murray.

He cautions that there are regulatory hurdles to clear, too, for Air Canada.

"While we anticipate technical regulators like Transport Canada and the Canadian Transportation Agency should have few issues with the transaction, a Competition review may prove more challenging but ultimately manageable," said Murray.

Consumer groups have expressed worries about rising ticket prices should the

"Industry experts say there will likely be fare hikes to less-travelled destinations, but it is difficult to predict the impact on competitive routes."

transactions proceed. Industry experts say there will likely be fare hikes to less-travelled destinations, but it is difficult to predict the impact on competitive routes.

Benoit Poirier, an analyst with Desjardins Capital Markets, estimates a combined Air Canada-Transat entity would have a market share of roughly 60 per cent in the transatlantic market and 46 per cent for sun destinations.

Concerns related to the Competition Bureau would be manageable, added Poirier. "Transat's solid market position in both the transatlantic and sun destinations markets, well-established brand/product in the leisure industry, fleet configuration (no exposure to the Boeing 737 MAX) and strong potential for cost synergies give us confidence that the transaction with Air Canada will be finalized," he said in a research note issued prior to the Groupe Mach bid. ✚

Boeing heads to Paris under MAX pressure

According to industry sources, the 737 MAX family of aircraft is not expected to return to the air until at least August.

◻ LISA GORDON | OEM NEWS

Last summer at the 2018 Farnborough Airshow, Boeing knocked it out of the park, celebrating “an outstanding week for order capture in commercial aviation, with customers announcing 673 orders and commitments in total.”

A whopping 564 of those orders were for the single-aisle Boeing 737 MAX family, the fastest-selling passenger plane in the company’s nearly 103-year history.

What a difference a single year can make.

In 2019, the Boeing contingent will arrive at the Paris Airshow (June 17 to 23) with a collective black eye, a wound inflicted by the very aircraft that was the darling of the order books just 12 months ago.

Indeed, about 400 737 MAX aircraft are sitting idle around the world since the type was grounded in March, following two apparently related crashes in which a total of 346 people were killed. According to

the most recent reports before *Skies* went to press, the aircraft are not expected to fly again before August.

Both crash investigations are ongoing, but preliminary information has pointed to the involvement of a Boeing software system unique to the MAX, the maneuvering characteristics augmentation system (MCAS). It automatically pushes the nose of the aircraft down if it detects an aerodynamic stall. However, it’s believed that an incorrect sensor reading caused MCAS to deploy repeatedly—and needlessly.

Boeing has been working full steam ahead on a software fix and related computer-based training for pilots, but until the U.S. Federal Aviation Administration—the regulator that initially certified the MAX aircraft—has tested and approved the remedial materials, the aircraft will remain grounded in that country.

Other national regulators appear to be adopting a wait-and-see stance, with several indicating they may require pilot training on a 737 MAX simulator before clearing the passenger jet to return to the skies.

Canada’s Transport Minister Marc Garneau said in the past that simulator training may be required before the MAX can resume operating in this country. The aircraft is currently flown by Air Canada, Sunwing and WestJet.

Following a meeting of 33 international regulators at the FAA office in Fort Worth, Texas, on May 23, Canada appeared to remain undecided on whether simulator training would be necessary.

Transport Canada’s director general of civil aviation, Nicholas Robinson, told reporters following the meeting that the MAX will only return to service once the regulator is confident that all concerns have been addressed.

He added that Canada will perform its own “risk-based validation” of the FAA’s report, and that there are “many factors” to consider before ruling what additional pilot training will be required. The question of adding simulator training “remains to be seen.”

The FAA also seems to be keeping that door open.

Should the U.S. agency require simulator training, it could result in huge delays in returning the global fleet to service. For example, there is currently only one 737 MAX sim in North America, at Air Canada.

A spokesperson for Canadian simulator manufacturer CAE said the company has sold more than 40 737 MAX simulators to airlines around the world. Only nine have been delivered so far, with 20 more scheduled to be shipped this year. So far, CAE does not have a MAX simulator in its own training network; all existing type training is now performed in-house by individual airlines.

Once Boeing has updated the aircraft software and it has been approved by the necessary regulators, it will be integrated into all existing and new simulators, said CAE.

Boeing boss Dennis Muilenburg said in a statement that the manufacturer is making “clear and steady progress” as it works to address the problems with the MAX fleet.

During a May 29 investor conference, he described the situation as a “defining moment” for the company.

“Public confidence has been hurt, and we have work to do to earn and re-earn the trust of the flying public,” he said. He added that Boeing is working with its airline customers to design compensation programs to cover the groundings and the halt in production. “In some cases, cash may be part of the solution.”

All told, airlines have ordered about 5,000 Boeing 737 MAX aircraft, according to the manufacturer’s website. ✈

—with files from Ken Pole

About 400 737 MAX aircraft are sitting idle around the world since the type was grounded on March 13. In Canada, the MAX is flown by WestJet, Air Canada and Sunwing. **Adrian Edwards Photo**





Passengers walk through Halifax Stanfield International Airport. The government says its new regulations will provide “clear, consistent, transparent and fair” guidance on passenger rights. HIAA Photo

Canada announces new air passenger protection regulations

Transport Minister Marc Garneau announced on May 24 that new air passenger protection regulations will come into effect in two stages, starting on July 15, 2019. The final regulations can be found on the Canadian Transportation Agency’s (CTA’s) website.

The *Transportation Modernization Act*, which received royal assent in May 2018, mandated the CTA to develop regulations for air travellers that would be clear, consistent, transparent and fair.

After months of public and stakeholder consultations, Canadians will soon be covered by new regulations that apply to all air carriers flying to, from and within Canada. These new regulations will require air carriers to proactively offer standards of treatment. Additionally, in some cases, carriers will be required to issue compensation to passengers within strict timelines.

Following input received on the draft regulations, a phased-in approach will ensure air carriers have time to adjust to the new regulations. Requirements related to communication, tarmac delays, denied boarding, lost and damaged luggage, and the transportation of musical instruments will come into force on July 15, 2019.

The more complex requirements related to flight delays and cancellations will come into effect on Dec. 15, 2019. The government says the new regulations also take into account the realities of small and northern air carriers, as well as ultra-low-cost carriers, with requirements adjusted accordingly. ✈️


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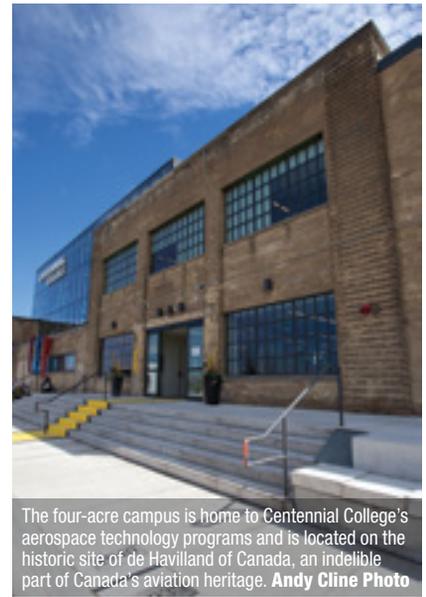
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Aviation students work on a helicopter engine at the new Centennial College Downsview campus. Numerous aircraft have been donated to the school, including a retired CRJ200 Regional Jet donated by Bombardier for airliner training. **Andy Cline Photo**



The four-acre campus is home to Centennial College's aerospace technology programs and is located on the historic site of de Havilland of Canada, an indelible part of Canada's aviation heritage. **Andy Cline Photo**

Centennial College unveils new centre for aerospace and aviation at Downsview

◻ **ANDY CLINE** | TRAINING NEWS

On April 25, 2019, the Centennial College Downsview Campus Centre for Aerospace and Aviation officially opened its doors with a ribbon cutting and public unveiling of the gleaming new \$72 million facility.

The college's new four-acre campus represents the first phase of the Downsview Aerospace Innovation and Research Hub (DAIR Hub) that will help train more people to meet the demand for aerospace workers, stimulate development of new technologies, and help fuel the Greater Toronto Area's manufacturing sector and Canadian aerospace leadership.

DAIR will soon see a consortium of educational institutions such as Ryerson University and the University of Toronto establish training and research facilities in new or other renovated historical structures at Downsview. The modernized

de Havilland Canada heritage buildings now occupied by Centennial College were built starting in 1929.

The official opening event featured speakers representing Centennial College, Bombardier, and government partners in the project. Numerous students attended as well, many looking down from the mezzanine above. Tours of the sprawling facility included the two spacious hangars, as well as an overwhelming number of laboratories.

The federal government provided \$18.4 million and Ontario chipped in \$25.8 million to help build the facility. All three levels of government, including municipal representatives, were on hand to deliver speeches at the event.

Several donations of advanced aircraft were provided to the college to help populate the new hangar. Ornge, Ontario's provider of emergency aviation medical services, donated one of its retired Sikorsky S-76 helicopters. The Canadian

Coast Guard donated a recently retired Messerschmitt Bo.105 helicopter.

Bombardier estimates that more than 6,200 Centennial graduates have worked for de Havilland and Bombardier over the years. As a tangible show of appreciation, Bombardier donated a retired CRJ200 Regional Jet to the college for airliner training. It is the largest aircraft in the college's educational fleet.

Centennial's student population now has room to grow at the new campus. There are just over 300 full-time aviation students enrolled at Downsview now. This is the same number that was at the old Ashtonbee Campus in Scarborough—the college decided not to add more until the dust had settled from the move into the new facility.

The new campus will eventually accommodate just over 1,000 students, approximately 500 each in the aviation and technology sections. Both sides of the centre are ramping up enrolment for September. ✦

Introducing Boeing Brasil - Commercial

Following The Boeing Company's purchase of a majority stake in Embraer's commercial aviation division, Boeing has announced that the new entity will be renamed Boeing Brasil - Commercial.

Earlier this year, a deal was ratified for Boeing and the Brazilian manufacturer to become partners in a joint venture to be

comprised of Embraer's commercial aircraft and aftermarket support services. Pending approval from competition authorities, Boeing will hold an 80 per cent ownership stake to Embraer's 20 per cent, for a purchase price of US\$4.2 billion.

Boeing selected the name Boeing Brasil - Commercial as it is unable to keep the Embraer name, which still independently

owns and operates products in the defence, security and business aviation sectors, according to a news article in *The Rio Times*.

A question still remains regarding the names and branding of the aircraft under Boeing Brasil - Commercial. Currently, all small and mid-sized aircraft bear the Embraer name with specific model codes, such as the E170 or E190-E2. ✦

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Chinook Helicopters expands to offer fixed-wing training

◻ BRENT JANG | TRAINING NEWS

Cathy Press sees a natural progression in the grand opening of the new \$3.4 million facility for her fixed-wing flight instruction school in Abbotsford, B.C.

The chief executive officer and the sole owner of Chinook Helicopters started flying an airplane at age 11, embarked on her first solo flight at 16, and obtained her plane and helicopter licences after she turned 17. She has been hooked on aviation ever since.

In an interview following a ceremony to open the hangar for Chinook's fixed-wing airplanes at Abbotsford International Airport, Press spoke about how her company went from training helicopter pilots to diversifying into fixed-wing flight instruction.

"August 2017 is when we seriously started the fixed-wing business," said Press in her office, taking a breather after greeting guests who attended the grand opening. "We had a company that we worked with in Thailand that wanted us to take on the fixed-wing side, and we said we would."

Her father launched Chinook in 1983, when she was 13. By 1997, she started taking over the operations of the privately-owned business.

Today, Chinook boasts a dozen helicopters and eight planes, with about 40 employees in total. Press also serves as the chief flight instructor.

She estimates half of the 60 people who recently enrolled on the fixed-wing side are from Canada while the other half are international students. In recent years on the helicopter side, the class composition of students has averaged roughly 70 per cent domestic and 30 per cent foreign.

"There's a real need for pilots, both fixed-wing and helicopter," said 71-year-old Dale Nielsen, who joined Chinook last fall as a fixed-wing instructor for a new generation of students. He also helps train new instructors.

"Pilots are retiring and many airlines are growing," he said, as he looked out a window at a four-seater aircraft just outside the new hangar. Chinook has five Cessna 172S planes and three Diamond Twinstar DA42s.

Wayne Cave is Chinook's assistant chief flight instructor on the fixed-wing side. The 70-year-old Cave remembers the humble roots for fixed-wing training starting with one plane in 2015, when he joined Chinook.

"Cathy had been doing helicopter pilot training for Thailand for something like 17 years. She got an e-mail one day that asked if she could do fixed-wing training, and she said sure to Thailand," said Cave.

Jacob Winterburn, an 18-year-old student from Mission, B.C., said he has been impressed with Chinook's groundschool courses and hands-on training. "You start right away in the Cessna 172S with your

instructor by your side," he said. "You're looking at charter companies for your first job and working your way up for maybe four or five years to an airline."

Parm Sidhu, general manager at the Abbotsford airport, said he's pleased to be witnessing Chinook's growth with its fixed-wing training centre. "This is a brand-new facility," he said, standing in the middle of the hangar.

The new 18,000-square-foot building includes 8,000 square feet with space designated for classrooms, briefing rooms, flight simulators, office space and other uses. The hangar itself is 10,000 square feet.

The new facility and the 22,000-square-foot helicopter training centre are located on land leased through the Abbotsford airport.

"On the rotary side, Chinook is the premier helicopter school in Canada, and both rotary and fixed-wing are getting people from all over the world to train," said Sidhu.

For one guest in particular, the grand opening brought back aviation memories. Jim Scott, president of Flair Airlines Ltd., said he was a 19-year-old flight instructor in Abbotsford when he met the then-14-year-old Press for the first time in 1984.

"I used to see her all the time at the airport," said Scott. "Over the years, I've followed her from afar as she built up her flight training business."

Press estimates that Chinook holds 25 per cent of the market in Canada for training helicopter pilots, and she has high hopes for the fixed-wing business.

"We're excited to be one of the top aviation training companies in Canada," she said. "The need for pilots is stronger right now than at any time that I've seen in my life."

Once the required paperwork is done, the new combined facility will be christened Chinook Aviation.

Press said she has been fortunate to attract experienced pilots such as Nielsen and Cave, who are two of the nine fixed-wing instructors. "We have a number of retirement-age instructors, and we feel that gives very good mentorship for the young people," she said. "Some spectacular staff members were available to be here. Wayne Cave helped me decide that this would be a good time to do fixed-wing."

International trainees for the helicopter and fixed-wing businesses have arrived from a wide range of countries, including Thailand, Switzerland, China, Australia, Egypt, Russia, Britain, France and Denmark.

"We're providing high-level, professional and well-respected training," said Press. ✈



Cathy Press, CEO and owner of Chinook Helicopters, learned to fly at a young age and has been hooked on aviation ever since. She has recently expanded her operation to include a fixed-wing school. The new entity will eventually be called Chinook Aviation. **Chinook Helicopters Photo**

VIKING ANNOUNCES Guardian 400 world tour

In late May, Viking Air announced a world demonstration tour for its Guardian 400 aircraft, the special missions variant of the Viking Series 400 Twin Otter.

The world tour will include detailed briefings and demonstration flights in Europe, Africa, the Middle East, India, Southeast Asia, Oceania, and North America.

For the past six months, a production Series 400 Twin Otter has been undergoing modifications to transform into Viking's Guardian 400 demonstrator aircraft. It will feature a left-hand SCAR pod with Hensoldt Argos EO/IR imaging turret, multi-spectral HDTV camera, mega-pixel HD Thermal imager, laser range finder, multi-mode auto tracker, and remote image bus (RIB) video feed for display on the cockpit MFD or crew workstation. The demonstrator will also feature a right-hand SCAR pod with Leonardo Osprey radar system and Sentient Vidar camera system.

In addition to its mission sensor package, the Guardian 400 prototype will be equipped with an Airborne Technologies' tactical workstation with high-definition touchscreen monitors, data/voice/video recorder, mission management unit (MMU), mission radio communications, intuitive hand controller for MCU and SLR camera targeting, CarteNav AIMS mission system software, Kestrel MTI targeting software, and IKHANA ergonomic mission seat for optimized crew comfort. The prototype will also be equipped with Viking conformal bubble windows, left and right wing-mounted hard points by IKHANA, Thunder Bay Aviation stretcher racks, and an aft lavatory for crew comfort.

With a target launch date of September 2019, the Guardian 400 world tour will culminate in Ottawa next May to coincide with the 2020 CANSEC Defence and Security show.

Viking developed the Guardian 400 in response to foreign military and government agency demand for a medium-range maritime patrol, search and rescue and critical infrastructure platform based on the new Twin Otter Series 400 aircraft.

Interested parties are encouraged to contact Viking if they wish to participate in a flight demonstration. ✈



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The 2019 inductees, left to right: John Holding; Bill Paris (representing his late uncle, William Paris); Greg McDougall; and Barry Lapointe. Missing is Tom Appleton, who represented the late David Fairbanks. **Rick Radell Photo**



Canada's Aviation Hall of Fame welcomes new members

◻ **BRIAN DUNN** | GENERAL AVIATION NEWS

Five individuals were recognized for their contributions to Canadian aviation at the 46th annual Canada's Aviation Hall of Fame induction dinner and ceremonies on May 16. The event was attended by close to 400 guests and was held at Bombardier's Laurent Beaudoin Completion Centre at Montreal's Trudeau International Airport.

"Honoured this year are two fighter pilots of the Second World War who, post-war, continued in aviation development for the rest of their lives. As well, we honour three individuals whose accomplishments in civil aviation have made advancements in the industry from

the design and development of aircraft to building airlines," said Rod Sheridan, chairman of the Hall.

Of note, one of the two oldest members of the Hall, wartime hero Russell Bannock, who turns 100 on Nov. 1, was also in attendance. He joined No. 418 Squadron, Royal Canadian Air Force (RCAF), in June 1944 and flew the de Havilland Mosquito on intruder missions over Europe. After the war, he joined de Havilland Canada as a test pilot. Bannock and engineer Dick Richmond, not in attendance, who turned 100 in January, were presented with portraits by the late Irma Coucill, known for her portraits of Hockey Hall of Fame inductees.

Longtime Hall historian John Chalmers

was recognized by Rod Sheridan for his dedication and hard work over the years as he retires this fall, but will remain on the volunteer Operations Committee.

The evening's MC was Denis Chagnon, former director of communications at ICAO, who introduced the inductees, namely David Charles Fairbanks, John Peter Holding, Barry Paul Lapointe, O.B.C., James McGregor "Greg" McDougall, and William Philip "Bill" Paris, C.M. The five will join 232 other inductees in the Hall, including Laurent Beaudoin, former CEO of Bombardier Inc., who was inducted in 1999 and presented the certificates and medals to the newest members of the Hall.

Fairbanks enlisted in the RCAF in 1941

before being posted to the U.K., where he achieved 15 victories flying the Hawker Tempest fighter. He commanded 274 Squadron Royal Air Force before being shot down just before VE-Day.

He was awarded the Distinguished Flying Cross three times.

In 1955, he joined de Havilland Canada and contributed to the development of its STOL (short takeoff and landing) technology products for which he was posthumously awarded Canada's oldest aviation award, the Trans-Canada (McKee) Trophy in 1976. Fairbanks died suddenly at the age of 52 in 1975.

After 17 years in the British aerospace industry, Holding joined Canadair for the development of the Challenger aircraft. For 25 years, he was involved in innovation, product development and engineering of every project undertaken by Canadair/Bombardier and its wholly owned subsidiaries. Holding's involvement in the advancement of the Canadian aerospace industry as Bombardier's executive vice-president, Engineering and Product Development, is difficult to overstate. Post retirement, Holding served as an industry consultant, board member and chairman for Canada's Aviation Hall of Fame. He received an Honorary Doctorate from the University of Montreal in 2001 for outstanding achievements in aerospace.

Lapointe co-founded Kelowna Flightcraft in 1970, now known as KF Aerospace, and built it into one of the largest maintenance, repair and overhaul (MRO) operations in the world, dedicated to military training, charter operations and commercial delivery. In 1974, he launched KF Air Charter and from 1976 to 2015, KF operated nearly 20 aircraft carrying cargo daily across Canada for Purolator and Canada Post. Today, nearly 80 per cent of the pilots who obtain their Air Force wings pass through the doors of the KF training facility at Portage La Prairie, Man. Among his many awards, he received the Order of British Columbia (O.B.C.) in 2015.

McDougall co-founded Harbour Air in 1982 in Richmond, B.C., after being laid off as a commercial pilot. What began as a modest charter operation is now the largest floatplane organization in the world with scheduled operations serving 10 locations in coastal British Columbia and Washington State. Both McDougall and Harbour Air have received many awards for management, service, environmental responsibility and contributions to air safety. Harbour Air is a stalwart supporter of the British Columbia Aviation Council and received the Traveller Experience of the Year award in 2015 from the Tourism Industry Association of Canada.

Paris, C.M., served with 152 Squadron

Royal Air Force in North Africa as a Spitfire pilot and as a test pilot. After the war, Paris worked with Transport Canada's regulatory regime governing general aviation in Canada and the reinstatement of the Webster Trophy competition for achievement in Canadian aviation. He was a founding director of the National Air Museum Society and served as president, lobbying for a proper home for the then National (now Canada) Aviation and Space Museum. Paris managed the technical aspects of the Great London to Victoria Air Race in 1970 and was recognized for his efforts both internationally and in Canada, including investment as a member of the order of Canada in 1989. He died in 2010.

The keynote address was given by H el ene Gagnon, vice-president, Public Affairs and Global Communications, CAE, who urged attendees to make the public aware of how the industry is reducing its carbon footprint through the use of more efficient aircraft, biofuels, more efficient airports and by training pilots on simulators, among other initiatives.

She also challenged the industry to "take action on diversity and inclusion," noting that less than five per cent of pilots globally are women, which needs to change in a world that will require 300,000 new pilots over the next 10 years. ✈



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Australian Hornets undergoing AETE testing

► CHRIS THATCHER | MILITARY NEWS



The first ex-Australian CF-188 Hornet shows its Canadian colours during testing over Cold Lake, Alta. The Royal Canadian Air Force says the jet will be integrated into the fleet this summer. **Krystal Wilson Photo**



With modifications now complete on the first two operational Australian F/A-18A Hornets, the Royal Canadian Air Force (RCAF) has begun conducting testing and evaluation of their upgraded systems at 4 Wing Cold Lake, Alta.

The two fighter jets, which were accepted in February as part of the federal government's plan to address an interim gap in the Air Force's ability to concurrently meet both NORAD and NATO commitments, underwent a number of changes at L-3 MAS in Mirabel, Que., to bring them up to the same operational configuration as the Canadian CF-188 Hornets.

The modifications included Canadian operational software, a revised cockpit configuration, installation of the naval aircrew common ejection seat, new night vision imaging system external lighting on the tail, a sniper targeting pod support, changes to the landing gear, and the RCAF paint scheme.

The government intends to acquire 18 operational Australian jets and possibly up to seven more for spare parts.

The Aerospace Engineering Test Establishment (AETE) is now conducting a range of tests, "primarily to verify that the Canadian software is fully compatible with remaining Australian-unique hardware and

systems, before being declared operational and integrated with the rest of the fleet," a spokesperson for the Department of National Defence told *Skies*. "This is the normal practice for changes that occur on any aircraft fleet."

AETE has also conducted test and evaluation of CF-188 Hornet systems and gear as the RCAF finalizes an upgrade package for its fleet of 76 fighter jets.

Both the RCAF Hornets and the Australian jets could also see an upgrade to their combat capability. A review by the Air Force is currently underway to assess any necessary improvements to the combat capability of the fleet, after an Auditor General's report in November flagged a shortage of pilots and the declining combat capability of the aircraft as the two "biggest obstacles to meeting the new operational requirement." The review is expected to be completed this spring.

Deliveries of the remaining Australian Hornets will continue at regular intervals for the next three years, with the final aircraft expected by the end of 2021. The jets will be distributed among the tactical fighter squadrons and operational training squadron at 3 Wing Bagotville, Que., and 4 Wing Cold Lake. ✂

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2019 Demo Hornet inspired by the stars



Every year, airshow fans look forward to the unveiling of the Canadian Forces CF-18 Demo Jet paint scheme.

The team revealed the 2019 jet's livery on its Facebook page on April 17. This year, the jet pays tribute to the Royal Canadian Air Force (RCAF) motto *Sic Itur Ad Astra*, Latin for "such is the pathway to the stars."

In an official release, the RCAF said the jet "will celebrate the history of the RCAF, recognize the innovative and driven Canadians who have led the charge for change and stand ready to inspire a new generation to take up the flame of innovation and help shape the RCAF's pathway to the stars."

In addition, the jet's markings will honour the 70th anniversary of the North

Atlantic Treaty Organization (NATO), a key element of Canada's international security policy.

Designed by RCAF Reservist Capt Jeff Chester, the 2019 theme mixes and matches a number of different elements in order to convey a strong message that not only honours the RCAF's past accomplishments, but looks ahead to a bright future.

Markings are more limited than in years past, with much of the fuselage retaining its standard light grey colour. However, the tail fin is a focal point, adorned with a dark blue background and set off by gold striping representing orbits. Gold stars dancing their way across the fin act as "a

nod to Canadian innovators, past, present and future," while a giant maple leaf is meant to represent the RCAF's 95 years of service to Canada.

Larger, more prominent gold striping represents the "pathway to the stars," lighting the way to the future of the RCAF.

The words "*Ad Astra*" and "#WEARENATO" also appear on the jet.

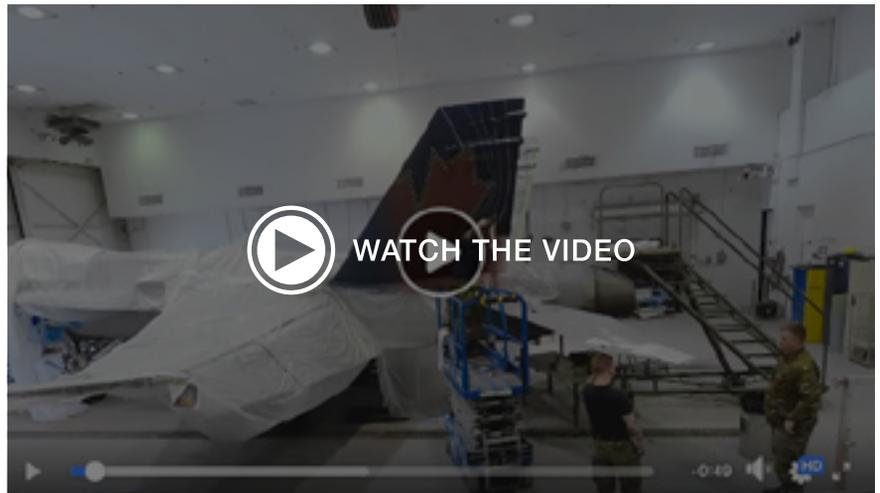
Along with a highly stylized serial number, the 2019 Demo Team pilot, Capt Brian Kilroy of Alberta, has his name and call sign, "Humza," displayed just underneath the cockpit window.

As of May 30, the jet was scheduled to appear at 17 Canadian airshows throughout the summer. ✦

The northern lights are a fitting celestial background for a jet that pays tribute to the RCAF motto *Sic Itur Ad Astra*, Latin for "such is the pathway to the stars." **Krystal Wilson Photo**



LS Erica Seymour Photo



Krystal Wilson Photo



AB Justin Spinello Photo



U.S. wants ITB requirement waived to offer F-35

► CHRIS THATCHER | MILITARY NEWS

Senior officials with Public Services and Procurement Canada were twice informed in the fall of 2018 by the United States government that the application of Canada's industrial and technological benefits (ITB) policy in a competition to select a replacement for the CF-188 Hornet would be inconsistent with its participation in a Joint Strike Fighter (JSF) memorandum of understanding (MOU).

Ellen Lord, Under Secretary of Defense for Acquisition and Sustainment, and VAdm Matt Winter, JSF program executive officer, both reminded the Liberal government in letters delivered in August and December, respectively, that as a signatory of the JSF Production, Sustainment and Follow-on Development MOU in 2006, Canada had agreed not to impose "work sharing or other industrial or commercial compensation ... that is not in accordance with the MOU."

When the Canadian government on Dec. 12, 2017, launched a competition to replace the Royal Canadian Air Force fleet of 76 aging Hornets with 88 advanced fighter jets, it made clear that the ITB policy would apply, "requiring the winning supplier to make investments in Canada equal to the value of the contract."

"The objective of the policy is to maximize opportunities for Canadian companies, support innovation through research and development, and grow export opportunities from Canada," it said in a statement.

Navdeep Bains, minister of Innovation, Science and Economic Development, told reporters the policy had already generated over \$40 billion in economic investment. "The economic benefits of these new fighter jets will add significantly to those ITB numbers," he said. "This is an enormous investment in a very important sector for us."

The \$19 billion Future Fighter Capability Project (FFCP) is the largest acquisition in recent Air Force history. The F-35 Joint Strike Fighter, manufactured by Lockheed Martin, is one of four aircraft likely to contend, along with the Boeing F/A-18 Super Hornet, Airbus Defence and Space Eurofighter Typhoon, and Saab Gripen E.

A draft of the request for proposals was shared with the companies last fall and the formal RFP is considered imminent. The government anticipates awarding a contract in 2021 or 2022.

Lord and Winter, however, reminded Canadian officials that under the JSF memorandum of understanding, partner countries agreed not to require industrial

offsets and instead accept work opportunities for their industry based on "best value" to the aircraft program.

Lord wrote that "requiring of an ITB element in any F-35 proposal Lockheed Martin (LM) might submit in the FFCP procurement, would have the effect of requiring industrial participation from LM not envisioned in the MOU, were LM to succeed. This ITB obligation would be inconsistent with the provisions of the [JSF MOU]."

"If the ITB policy is imposed as currently envisioned, there is concern that there would not be a level playing field for the FFCP competition," she concluded.

Winter went even further, stating that the ITB requirement as described in the draft RFP "is prohibited per the industrial participation provisions" of the MOU and that it would not "allow for the F-35 to participate in a fair and open competition that recognizes the special nature and distinct advantages of the partnership."

He warned that the F-35 supplier team would "submit an F-35 offer only if the ITB requirement is waived entirely and there is no future ITB obligation arising from selecting the F-35."

His response, he added, was based on his understanding that Canada remained a member of the partnership.

The Liberal government in January confirmed its participation in the JSF program, according to Canadian press. The government has paid over half a billion dollars to support the development of the F-35, including \$72 million this year, and Canadian companies have won more than \$1.2 billion in F-35-related contracts from Lockheed Martin and its suppliers. A report prepared for the government in 2014 on Canadian industrial participation in the F-35 program estimated over \$10 billion in future contracts.

The two letters were included in the annex of a report published in May by the Macdonald-Laurier Institute in Ottawa on what it called the "fiasco" of replacing the fighter fleet. While the letters were a revelation—and an indication of how the current U.S. administration is approaching the project—the potential clash between the ITB policy and the JSF MOU isn't. Officials with Lockheed Martin have been flagging it for at least the past two years.



U.S. officials are warning that Canada's requirement for industrial and technological benefits (ITBs) in the \$19 billion Future Fighter Capability Project is at odds with the agreement Canada signed when it joined the coalition of countries developing the F-35 Joint Strike Fighter. **Dave Mills Photo**

As *Skies* reported in 2017, Lockheed Martin was concerned that the JSF partnership "best value" approach—by which companies from participating nations bid and are selected to provide components and services for the entire F-35 fleet rather than just their own country's aircraft—might not return the types of regional and technological investments that Canada routinely seeks from major capital defence procurements.

"Because it is a partnership, any kind of cost put on the program for offsets would be shared by everybody, and that would just make the price of the jet go up," a Lockheed Martin official cautioned at the time.

The Canadian government appears to have taken notice of Lockheed Martin's stance.

At the CANSEC defence show in late May, Public Procurement Minister Carla Qualtrough said the government would loosen the procurement rules to "enable participation from all eligible suppliers while applying the same rules to everyone on a level playing field." ▶

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EBACE 2019 business aviation roundup

Here's a recap of the biggest OEM news from Europe's largest bizav expo.

► **COMPILED BY**
ROBERT WILLIAMSON | BIZAV NEWS

The 2019 edition of the European Business Aviation Convention and Exhibition (EBACE) was held in Geneva, Switzerland, from May 21 to 23. As usual, the show generated an influx of news from the business aviation world. All of the major players in the industry were present, and each had plenty of fresh information to share about their products and services.

EBACE 2019 brought together major players in the business aviation industry. Located at Palexpo, Geneva's exhibition and congress centre, the show spanned three halls and featured 400 different exhibitors, all showcasing their top-of-the-line products, both existing and future. The static display boasted more than 50 aircraft and with over 13,000 business aviation professionals in attendance, EBACE 2019 was a potent spot for networking and industry news.

A major theme surrounding this year's EBACE was the industry's progressive shift to sustainable alternative jet fuels (SAJF). According to Bombardier vice-president of Marketing, Communications and Strategy, Brad Nolen, "nearly half the airplanes in the static display flew here on SAJF."

In fact, 23 of the 50 aircraft had flown in powered by SAJFs. It's classified as Jet-A fuel by ASTM International (formerly the American Society for Testing and Materials) and is made by mixing biofuels with kerosene-based Jet-A, at a ratio of up to 50/50.

"This year, we kick off EBACE with our first ever SAJF fly-in," said Juergen Wiese, board chair for the European Business Aviation Association (EBAA). "Proving that SAJFs

are safe, do not impact aircraft performance, benefit airport communities and reflect our industry's determination to continually reduce business aircraft carbon emissions."

Building on the theme of sustainability at EBACE, the electric vertical takeoff and landing (eVTOL) sector had plenty of play at this year's conference.

"We know eVTOL will be transformational because of the people and passion invested in it," said Ed Bolen, president and CEO of the National Business Aviation Association (NBAA).

That passion was on full display in Geneva. Florian Reuter, CEO of Volocopter, gave a keynote address in which he urged other industry players to collaborate with the burgeoning eVTOL companies.

"Volocopter is a tech company with aviation at heart, and we're moving forward at breathtaking speed," said Reuter. "I'd love to use the opportunity at EBACE to communicate with you about how we could potentially co-operate going forward."

Volocopter is developing an air taxi with a 35-kilometre (22-mile) range designed for short-range, urban missions. Reuter envisions the aircraft shuttling business aviation passengers from airports to their final destinations in city centres.

"EASA (European Union Aviation Safety Agency) knows this technology is coming and they have to adopt to it," said Reuter.

In other EBACE developments, business aviation OEMs unveiled a number of new products and made several announcements at the show.

Here, we present a roundup of the biggest manufacturer news from EBACE 2019.

BOMBARDIER

The crew from Bombardier came out swinging in Geneva, with the Canadian OEM bringing along five aircraft for its static display at the Geneva International Airport: the Learjet 75, Challenger 350, Challenger 650, Global 6000, and Global 7500.

The Global 7500 was making its EBACE debut, where it was announced that Hong Kong's HK Bellwings Jet Limited had signed a letter of intent (LOI) for five new Global 7500s and also exercised options for two more, as part of an agreement signed last year.

Also at EBACE 2019, Bombardier announced it will be making a number of enhancements to the Challenger 350, which will be implemented by the end of 2019. The announced upgrades include a performance improvement to make the aircraft more effective on short runways, a compact heads-up display (HUD), and an enhanced vision system (EVS), along with aesthetic upgrades and cabin sound-proofing technology.

An improvement to the performance package consists of enhanced rudder authority and superior braking, allowing the aircraft to fly up to 1,500 nautical miles (NM) farther out of short runways. With a new range of 3,200 NM, the Challenger 350 can fly from New York to London non-stop.

"The new offerings we have introduced on the Challenger 350 aircraft clearly reflect our longstanding commitment to continually innovate and boost the performance of the industry's best-selling business jet," said David Coleal,



Bombardier's Global 7500 made its EBACE debut at the 2019 show. The Canadian OEM brought along five aircraft for its static display at the Geneva International Airport. **Bombardier Photo**



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president, Bombardier Aviation. “With its unmatched reliability and economics, unrivalled cabin comfort and ultra-smooth ride, the Challenger 350 aircraft offers customers an unbeatable value proposition.”

But Bombardier’s biggest news may have come from an aircraft that wasn’t at EBACE 2019. The company announced that the first Global 6500 had been inducted to its completion centre in Montreal, moving it closer to entry-into-service for the end of 2019.

The 6500 has completed 90 per cent of its flight testing while the first test flight vehicle (FTV) has successfully completed all mission testing and is now retired.

DAHER

French manufacturer Daher is happy to announce at EBACE that its new TBM 940 has been certified by EASA, enabling deliveries to begin.

The TBM 940’s airworthiness authority approval comes two months after the aircraft’s launch in March, with 25 orders already booked for the version. Initial deliveries will be to customers in Europe and Asia, followed by North America and other markets after subsequent certification by the FAA.

As Daher’s top-of-the-line TBM variant, key TBM 940 features include the integration of an automated throttle and an automated icing detection system—both of which are installed for the first time on a standard production turboprop aircraft weighing less than 12,500 pounds. The cabin also incorporates further enhancements to style, ergonomic and comfort elements.

At EBACE, Daher also highlighted its TBM Care concept, which enhances the TBM ownership and operating experience. This is underscored by Daher’s latest version of its “Me & My TBM” cloud-based application, which enables pilots and operators to share their flight plan and performance directly through different media.

The company had a TBM 910 on display at EBACE; the aircraft flew in on SAJF.

DASSAULT

Dassault Aviation announced during EBACE that it has completed the Critical Design Review for its new Falcon 6X, freezing the detailed design of the new ultra-widebody twinjet, and begun manufacturing major parts as the program tracks to assembly of the first aircraft by early 2020.

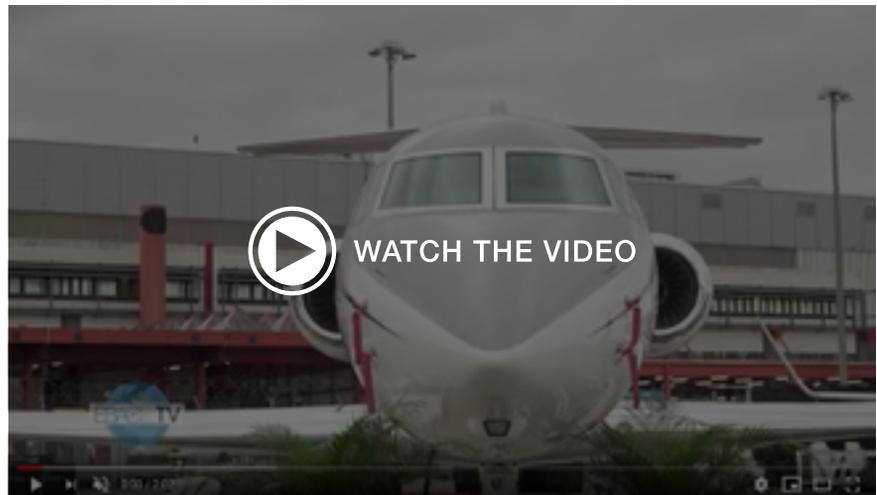
The Falcon 6X will make its first flight in 2021 and begin deliveries in 2022. It offers the largest cabin cross section of any purpose-built business jet as well as the quietest and most comfortable cabin of any aircraft in its class.

The Pratt & Whitney Canada PurePower PW812D 13,000-14,000 pounds thrust engine that will power the 6X has accumulated nearly

1,000 hours of runtime on the Pratt test bench in Montreal, using five development engines.

Parts currently in production at Dassault and partner plants include the fuselage

frame, skin panels and wings. Fuselage panels are produced at Dassault’s facility in Argenteuil, France, northwest of Paris, and wing panels at Seclin, near Lille.



Dassault Aviation has solidified the design for its new Falcon 6X. The jet will make its first flight in 2021 and begin deliveries in 2022. **Dassault Photo**



Daher’s TBM 940 was recently certified by the European Union Aviation Safety Agency, paving the way for first deliveries in Europe. **Daher Photo**



Embraer's Praetor 600 has now been certified by the U.S. FAA and the European regulator, EASA. **Embraer Photo**



EMBRAER

Brazilian manufacturer Embraer had big news surrounding its Praetor 600 super mid-size business jet. The aircraft has now been certified by the U.S. Federal Aviation Administration (FAA) and EASA. Brazil's Civil Aviation Authority (ANAC) awarded the Praetor 600 its certification in April this year.

"In just over six months since its launch and debut, the Praetor 600 has already been outperforming its certification goals, raising expectations of the ideal super-midsize," said Michael Amalfitano, president and CEO, Embraer Executive Jets. "Once again, I want to thank and congratulate the entire Embraer family for bringing to market such a revolutionary aircraft, designed to create a new value experience for customers and shareholders alike."

The Brazilian OEM brought six aircraft to EBACE 2019, including the Legacy 650E, Phenom 300E, Phenom 100EV, Lineage 1000E, Praetor 500 and Praetor 600.

GULFSTREAM

Savannah, Ga.-based Gulfstream arrived in Geneva with a number of fleet announcements for the coming year. According to the OEM, its brand new G600, which had its first flight back in 2016, is finally closing in on securing type certification from the FAA.

"Once we finish F&R [function and reliability] testing, the only thing left is the FAA's final paperwork review," said Mark Burns, president, Gulfstream. "Both certification and entry into service are just around the corner, so we're excited to be close to delivering this high-performing, technologically advanced aircraft to customers."

As for aircraft currently on the market, Gulfstream announced that the G650 family has now been approved for steep-approach by the FAA, allowing access to even more airports worldwide.

Meanwhile, the company's line of G280 aircraft has been approved for touchdown and rollout using the enhanced flight vision system (EFVS) by the FAA. The EFVS equipment will be optional, but with required training and a letter of authorization from the FAA, G280 pilots can now land on a runway without natural vision; instead, they can use EFVS imagery on their HUD.

Pilatus Aircraft re-opened the order books for its new PC-24 jet at EBACE 2019. One day after doing so, the manufacturer said it had already sold half of the 40 slots available. **Pilatus Photo**



HONDA AIRCRAFT

Honda Aircraft Company announced plans on May 20 to expand its global headquarters in Greensboro, N.C., by investing an additional \$15.5 million in a new 82,000-square-foot facility on its 133-plus acre campus. This will bring the company's total capital investment in its North Carolina facilities to more than \$245 million.

Scheduled to break ground in July 2019, the building will house a new wing assembly process for the HondaJet Elite, the fastest, farthest and highest-flying plane in its class. The new facility will allow for more wings to be assembled concurrently, resulting in a major increase in production efficiency. Additionally, this expansion will add more storage for service parts for the growing fleet of

Honda Aircraft Company is building a new 82,000-square-foot facility at its campus in Greensboro, N.C. **Honda Aircraft Photo**



HondaJets around the globe. The facility is expected to be completed in July 2020.

"As the HondaJet's popularity and presence continues to increase around the world, it is necessary for our facility to meet our production and service needs while operating at the highest level of efficiency," said Michimasa Fujino, company president and CEO. "We are proud that Honda Aircraft Company is expanding its footprint in North Carolina and in the aviation industry."

PILATUS AIRCRAFT

Pilatus has seen some incredible success with its PC-24 aircraft. After opening the order book for its first business jet in 2014, it sold 84 in one-and-a-half days and subsequently closed the order book on the product. To date, it has delivered 30 PC-24 aircraft since the first customer delivery in February 2018, with 40 more planned in 2019 and 50 more next year.

With all of this buzz, it's no wonder Pilatus announced they would be re-opening the order book at EBACE 2019. The response was overwhelming; a day after taking more orders for the PC-24, Pilatus said it had already sold half of the 40 slots available to customers at EBACE. The PC-24 is base priced at US\$10.7 million.

"With the first Canadian PC-24 delivery being imminent, we are especially excited for the reopening of the PC-24 order book. Canadian customers can now secure firm positions, and add to their fleet an aircraft that will be able to take them closer to their final destination, in a cabin that is unrivalled by any manufacturer in its class. Add to it the versatility of the PC-24 platform, and you have yet another Pilatus aircraft that will change the landscape of Canadian aviation," said Stan Kuliavas, vice-president, Sales & Business Development for Levaero.

The only challenge lies with Pilatus' production facility in Switzerland which has a production rate of 60 aircraft per year. Pilatus chairman Oscar Schwenk commented that demand for the new PC-24 twinjet exceeds the company's ability to produce the aircraft. Other production options, such as a second factory, could be considered.

Along with the PC-24, Pilatus brought a PC-12NG to EBACE, the rugged single-engine turboprop that first cemented the OEM's continued popularity.

TEXTRON AVIATION

Textron Aviation made a splash in Geneva over EBACE, bringing eight fixed-wing aircraft and two helicopters to Switzerland, more than any other participant.

On display was the OEM's new flagship, the Cessna Citation Longitude, with a 3,500 NM range, as well as a Citation Latitude outfitted as an air ambulance.

The Latitude was purchased for aeromedical operations by a company based in Norway, and the adjusted interior configuration offers compatibility with several types of medical equipment.

"For our mission-centric customers, we are excited about what the medevac Citation Latitude offers by the way of range, cabin size and speed in emergency situations where minutes count," said Doug May, vice-president, Special Missions. "Having our medical interior certified in production as part of the aircraft type certificate is another major win for our customers, providing significant cost and risk reduction for those outfitting the Latitude with their medical equipment of choice as it comes off the line."

Textron also announced that its clean sheet, single-engine high performance turboprop, the Cessna Denali, is

making progress. The prototype is almost complete, as are the first two flight and three ground test articles.

"The Denali is being designed and built to outperform the competition in capability, pilot interface, cabin experience and total ownership costs," said Chris Hearne, senior vice-president, Engineering. The flight test program is expected to begin later this year.

Also at EBACE, Textron announced that assembly of the Cessna SkyCourier twin utility turboprop prototype, flight and ground test articles is currently underway. ✈



Textron Aviation's Cessna Citation Longitude was one of eight fixed-wing aircraft the OEM displayed in Geneva. **Textron Aviation Photo**

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The birds are **BACK**

You know airshow season is upon us when the Canadian Forces Snowbirds return to 19 Wing Comox, B.C., for spring training! This year, we sent photographer Heath Moffatt behind the scenes to bring you these dynamic shots of a busy training period that began April 17 and ended May 7. With two training sorties per day, there was little time for rest as everyone rehearsed their roles for a busy show season. The Snowbirds had their first performance on May 18 in Barksdale, La., and will finish up on Oct. 20 in Houston, Texas.

PHOTOS BY HEATH MOFFATT



[VIEW THE GALLERY](#)



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The addition of a Gulfstream 650ER has extended the reach of Sunwest Aviation's aircraft charter business. Here, it takes off from Verona Villafranca Airport in Italy. **Monica De Guidi Photo**





WESTERN ADVANTAGE

Sunwest Aviation operates a diverse fleet of business jets and turboprops to deliver a multitude of aviation services from its state-of-the-art Calgary complex.

BY JACQUELINE LOUIE



Sunwest pilots have a unique opportunity to progress through the company's varied fleet, moving from turboprops to jets. **Kristian Bogner Photo**



Sunwest Aviation provides maintenance services for a wide variety of aircraft, including Bombardier, Gulfstream and Textron models. **Kristian Bogner Photo**

Calgary-based Sunwest Aviation has been doing things a little differently for more than 30 years.

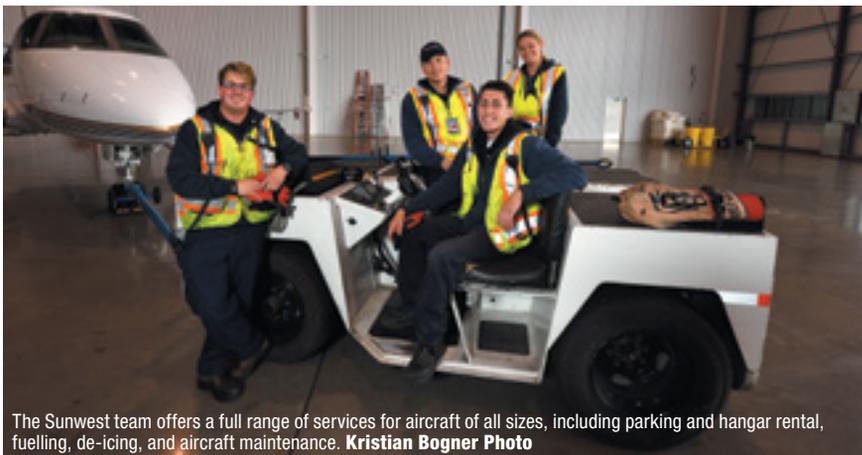
A privately-owned business aircraft management and charter company providing a diverse range of business aviation offerings, “we are unique in that we have such a broad scope of aircraft types and services,” said Sunwest’s business development director, Ian Darnley.

From domestic oilfield workforce transportation and medevac flights, to intercontinental jet operations, to business aircraft acquisition and sales and consulting services, it’s what Sunwest proudly refers to as “the Sunwest advantage.”

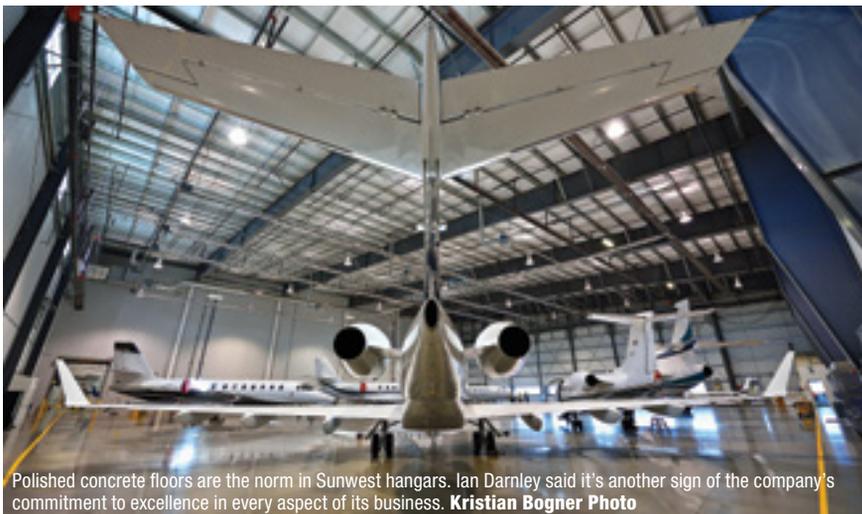
“What it’s all about is treating people right—our customers, our employees and our shareholders,” Darnley told *Skies*.

“It’s a challenging business and it’s a very complex business, from an operating standpoint, from a regulatory, technical, customer service and financial standpoint. People have very high service expectations and they should. It’s rewarding when you do it right, and in the rare times when it doesn’t go right, you deal with those situations in an honest and straightforward way. People [will] respect that and they’ll keep coming back. That’s how you stay in business a long time and are successful.”

The company operates and maintains a diverse fleet under the Sunwest operating certificate. Driven by the needs of its customers, the aircraft lineup includes everything from a Bombardier Lear 35 and a Beechcraft King Air 200, all the way to a Gulfstream G650ER and a Bombardier Dash 8-300.



The Sunwest team offers a full range of services for aircraft of all sizes, including parking and hangar rental, fuelling, de-icing, and aircraft maintenance. **Kristian Bogner Photo**

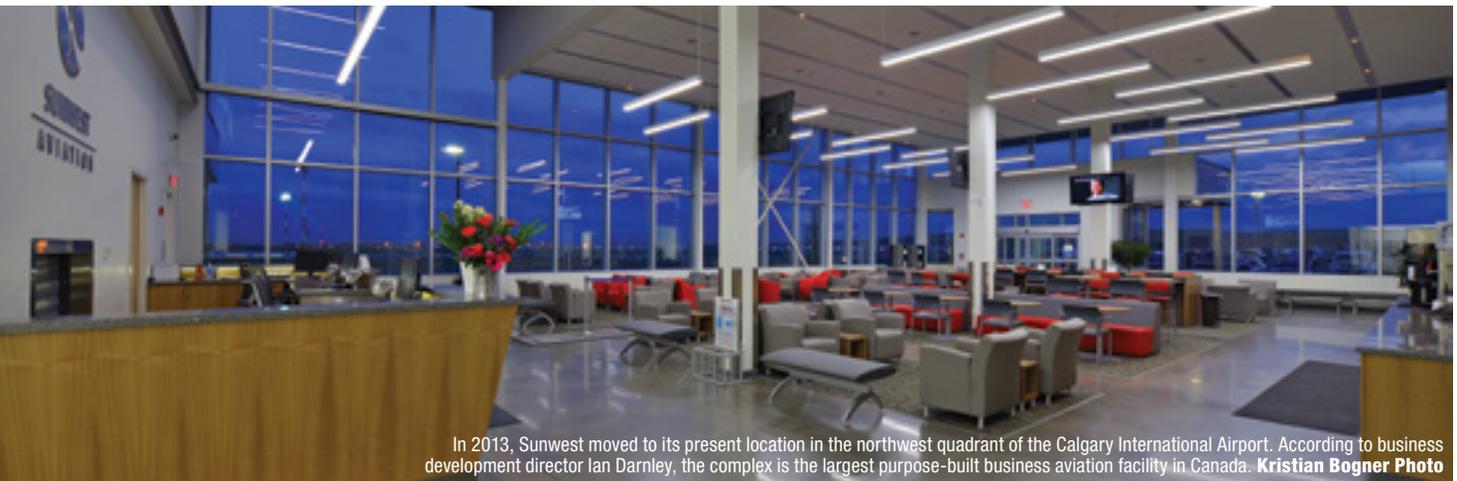


Polished concrete floors are the norm in Sunwest hangars. Ian Darnley said it's another sign of the company's commitment to excellence in every aspect of its business. **Kristian Bogner Photo**

“In the past three years, Sunwest added **four newer jet aircraft** to its fleet, including the **first Gulfstream G650ER in Canada.**”



Sunwest's hangar complex comprises 377,000 square feet of building and airside ramp space. **Kristian Bogner Photo**



In 2013, Sunwest moved to its present location in the northwest quadrant of the Calgary International Airport. According to business development director Ian Darnley, the complex is the largest purpose-built business aviation facility in Canada. **Kristian Bogner Photo**

Sunwest's turboprop fleet accounts for roughly 50 per cent of its operations. The aircraft are used mainly for workforce charter flights and corporate shuttle missions to oil and gas production facilities and other worksites.

Janos Englert Photo



“What also makes us unique and in contrast to many of our competitors, is that we also own a significant number of our aircraft,” said Darnley. Sunwest owns 13 of the 31 aircraft aircraft it currently manages, and it oversees the other 17 aircraft on behalf of individuals and corporate owners.

The fleet comprises 12 aircraft types, both business jets and business turboprops: a Gulfstream G650ER extended range business jet, a Gulfstream G550, a Bombardier Challenger 604, four Challenger 300s, two Cessna Citation Sovereigns, a Gulfstream G150, a Hawker 800XP, three Lear 45s and a Lear 35, four Dash 8s, six Beech 1900Ds, three Metros and two King Airs.

As a business jet operator, Sunwest flies all over the world. The company’s turboprop fleet, which makes up approximately 50 per cent of its aircraft operations, is focused on workforce charter flights and corporate shuttle missions, moving workers from urban centres such as Calgary, Edmonton and Vancouver to oil and gas production facilities and other industrial worksites across Western Canada.

Sunwest also does air ambulance work for public health providers, insurance companies and individuals, and operates a small package cargo business.

The company, which flies scheduled passenger charter flights as well as on-demand passenger charter flights, can travel anywhere in the world with its intercontinental business jets, but the bulk of its flights are within North America.

In addition, Sunwest offers aircraft sales, acquisition and other related consulting services.

“Given our operating expertise, it allows us to offer a unique and high level of advice,” Darnley explained. “We do a lot of work with clients to determine what their needs are, researching and sourcing the aircraft they require. We do all the ground work starting with a needs analysis all the way through to entry into service.”

Owned by three managing shareholders—CEO Richard Hotchkiss, chief operating officer Mike Gocal and Darnley—plus four non-managing shareholders, Sunwest employs approximately 200 staff.

The company’s roots go back to the 1980s, to the original Sunwest Aviation in Calgary. In 1999, Sunwest merged with Home Aviation—that company had its origins as the flight department of Home Oil, a Sunwest competitor founded by current Sunwest CEO Richard Hotchkiss in the mid 1990s. This consolidation paved the way for the subsequent expansion of the new entity. In 2013, the growing company moved to its present location in the northwest quadrant of the Calgary International Airport (YYC).

With sweeping views of the Rocky Mountains to the west and downtown Calgary to the south, Sunwest’s hangar complex comprises 377,000 square feet of building and airside aircraft ramp space, which Darnley describes as the largest purpose-built business aviation facility in Canada. It includes a 170,000-square-foot



Four 27,500-square-foot bays with varying door sizes can admit aircraft as large as a narrow-body Boeing commercial jet. **Sunwest Aviation Photo**



The ramp at Sunwest will be full this summer, when the company hosts the Canadian Business Aviation Association show from July 9 to 11. **Rod Hiebert Photo**



“Sunwest owns
13 of the 30 aircraft
 it currently manages, and it manages
 the other 17 aircraft on behalf of
 individuals and corporate owners.”

building, featuring 110,000 square feet of hangar space plus 60,000 square feet of office, passenger lounge and maintenance shop space.

Three separate passenger lounges with a total capacity of approximately 300 people offer something for every type of traveller. The company's private parking lot, which accommodates up to 600 vehicles, is lit and gated.

“This building is unique. There is nothing else of this size and capability for a multi-use business aviation facility in Canada,” said Darnley, noting that other than the main airport buildings, Sunwest's aviation complex is the largest in Calgary.

The hangar space is comprised of four 27,500-square-foot bays with varying door sizes that can admit aircraft up to a narrow-body Boeing jet. Darnley said the company takes pride in the condition and cleanliness of its hangars, believing this embodies Sunwest's commitment to excellence in every aspect of its business. A tour of the hangars reveals polished concrete floors and gleaming stainless steel storage cabinets lining the walls.

The three separate passenger lounges include a private VIP facility with its own separate entrance, passenger check-in, airside ramp access and valet car cleaning service as required. “You can drop your car off, throw us the keys and away you go,” said Darnley.

There is also a large public lounge and another secure passenger lounge that offers passenger screening and security services.

At the end of 2018, Sunwest Aviation became the official Shell AeroCentre fixed-base operator (FBO) at the Calgary International Airport. As one of Calgary's largest FBOs, Sunwest offers a full range of aircraft and passenger handling services for aircraft of all sizes, including parking and hangar rental, fuelling with Shell aviation fuel, de-icing, and aircraft maintenance on request. Crews make the most of Sunwest's pilot lounge and flight planning facilities, while passengers relax in Sunwest's comfortable lounges.

There are now five FBOs, including Sunwest, in Calgary. What makes Sunwest stand out, Darnley said, is “our state-of-the-art facility, very good access to downtown and Deerfoot Trail, great access to the main terminal, and, if required, a customs office right across the street. In addition, we have our own de-icing truck and we are in very close proximity to the north de-icing ramp at YYC.”

Like many businesses in Alberta, Sunwest has had to adjust its

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KING AIR 350 | TURBO PROP
Passengers: 11 | Range: 1,700 SM | Cruise Speed: 345 MPH



KING AIR 350 | TURBO PROP
Passengers: 11 | Range: 1,700 SM | Cruise Speed: 345 MPH

operations in the last five years in response to the downturn in the Alberta economy. At its peak in 2013-2014, Sunwest Aviation operated more than 50 aircraft, a number that has since contracted to 31, reflecting the significant reduction in the number of oil and gas-related charters in general.

“We had to adjust due to the downturn in the energy industry and the shrinking of the local charter business,” Darnley explained. “We’ve gone through a difficult time with our local economy in the last five years, but we managed our business through that very well. We are in a real position of strength, and we’re optimistic we’ll be able to grow our company back to where it was at its peak in terms of the number of aircraft and employees.”

One of the positives has been Sunwest’s expansion of its jet management business, which has evolved to become more global in nature. In the past three years, Sunwest added four newer jet aircraft to its fleet, including the first Gulfstream G650ER in Canada. “We see continuing growth and potential for that as we adjust our business to follow the needs of our clientele,” said Darnley.

“In terms of our operations, we operate to the absolute highest standards because of our close ties to the oil and gas industry. As a result, we adhere to safety and service standards that go beyond the average commercial aircraft operators, and we’re audited by numerous independent agencies on an annual basis, in addition to Transport Canada. All of our clients benefit from this level of scrutiny.

He added that considering increasing airport congestion and capacity constraints with commercial airlines, “I think there is going to be continued growth in business aviation in Canada

and in North America generally.”

Darnley pointed to the industrial air charter business as just one example. “Our clients need to move their people to work. It’s increasingly difficult to do that with the airlines, because the airlines tell you when you go and only to public airports. The only way they can establish their own schedule for moving employees to remote worksites is by chartering companies like ours. People want to avoid congested aircraft terminals; they want to go where they want to go, when they want to go, and that’s what we offer. And they want to go with companies with a long, solid safe history like ours. We have an exemplary safety record.”

This summer, Sunwest Aviation will be in the industry spotlight when it hosts the 2019 Canadian Business Aviation Association (CBAA) conference, which takes place July 9 to 11 in Calgary. It’s an opportunity to celebrate, on many levels—the Calgary Stampede will be in full swing, and that’s always a big draw to the city.

Conference goers will be able to see the latest business and private aircraft at the CBAA industry trade show, in a static display at Sunwest Aviation. Original equipment manufacturers, including Bombardier, Gulfstream, Textron Aviation and Dassault, will be onsite.

“That will draw some attention to our industry and to what our capabilities are here at Sunwest,” concluded Darnley. “We think it’s an excellent opportunity to showcase our facility and to show people what we’re all about.”



Jacqueline Louie is a Calgary-based freelance writer who writes on a wide range of topics, including business and travel. She adores airports and the magic of flight.



Sunwest’s jet management business has evolved in recent years to become more global in nature.
Scott McGeachy Photo



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SOLUTIONS THROUGH

A commitment to detailed craftsmanship and a passion for simulation drives Flightdeck Solutions to develop increasingly realistic fixed-base procedural training units that cut the cost of pilot training while enhancing operational safety.

BY LISA GORDON

When they were kids, brothers Peter and Steve Cos shared a room. Of their family's five siblings, the two boys also shared a love for aviation—a bond that would keep them connected well into adulthood.

As they grew up, the boys—whose parents had met in 1959 as employees of Canadian Pacific Air Lines—discovered a mutual passion for aircraft modelling and flight simulation.

Peter, who was working in car audio systems, and Steve, who was in the auto body repair business, often tinkered around in Peter's basement, building parts and pieces to integrate into their own flight simulator.

Gradually, those components got bigger, until they finally got their hands on the nose section of an Airbus flight training device that was being discarded by Atlantis Systems International, a flight simulation and training company in Brampton, Ont.

"It was always about airplanes," recalled Peter. "It was kind of like we were building our own devices and around 1999, it became a thing where we were starting to build things for other people."

But the tipping point really came when Peter got out of the car audio business and started taking on a few aviation-related illustration contracts.

"I was pretty good at illustration and I was drawing really detailed three dimensional posters of cockpits. So, I went to the building where Air Canada held groundschools, and I asked for the director of

training. I caught him just as he was leaving for a long weekend, and I asked for 30 seconds of his time.

"I unrolled some really detailed drawings of instrument panels. He asked if I could draw the circuit panel of a [Bombardier] CRJ, and I said sure."

Air Canada bought several of Peter's posters and asked him to illustrate their Airbus paper trainers.

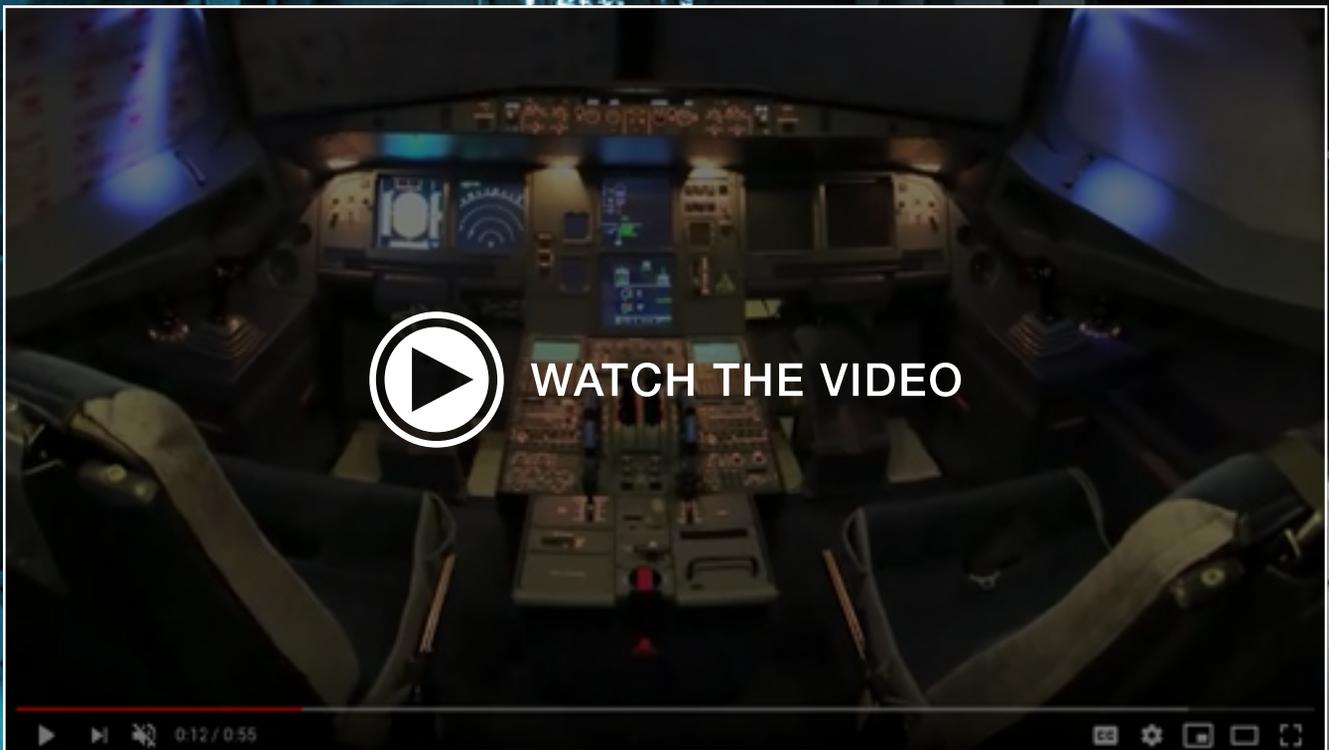
Later, after Atlantis Systems CEO John Wright took him on as a full-time employee, Peter was invited to pitch a solution to the U.S. Federal Aviation Administration in 2002. The agency was looking for air marshal training devices.

"The FAA had seen some of my paper trainers for the A320. They wanted 12 similar devices that had functional autopilot controls and radio management panels; they were trying to teach air marshals to deal with incapacitated pilots. They didn't have a large budget and they needed a dozen trainers in six weeks."

Due to the tight turnaround time the trainers were built with realistic-looking parts to pass an initial inspection—and then working components were subbed in later. The project was a \$1.4 million success.

Shortly thereafter, as the aerospace industry was reeling from the aftershocks of the Sept. 11, 2001 terrorist attacks, Peter was a victim of cutbacks at Atlantis. But CEO John Wright encouraged him to further develop his home-based business, Flightdeck Solutions (FDS).

SIMULATION



Flightdeck Solutions founder Peter Cos pioneered highly realistic paper trainers for the Airbus A320 in the early 2000s. His passion for flight simulation led him to grow a basement hobby into a thriving business, with the help of his brother, Steve. Shown here is the company's fixed-base A320 procedural trainer. **FDS Photo**



“He helped me realize this was attainable,” said Peter. “I spoke to my wife and that’s when the whole thing took off. I pulled everything out of the basement in early 2003 and we opened a tiny shop in Markham, Ont., in a rented room that was

so small my one machine had to be put in the hallway!”

Steve—always a “hands-on guy,” according to Peter—joined FDS in 2007 as vice-president and special projects manager. As president, Peter handles sales, marketing

and product planning, while Steve focuses on technical development and customer service, overseeing device setup for customers all over the world.

It’s a partnership that works, much like their shared childhood rooming arrangement.



Elayna works on populating PC boards with real aircraft light bulbs for FDS light plates. **Lisa Gordon Photo**



Bill and Scott integrate a real Boeing 737 yoke/column set into an FDS flight control box. **Lisa Gordon Photo**



Hassan works on motorization components for a throttle unit. **Lisa Gordon Photo**



Boeing has been FDS’ biggest customer for more than 12 years. The OEM usually commissions FDS to complete custom projects. Shown here is a Boeing 737NG trainer. **FDS Photo**



It's all about throughput: If FDS sends three complete trainers out the door each month, Peter Cos is happy. **Lisa Gordon Photo**

A BURGEONING BUSINESS

In the early years, FDS built its business catering to flight simulation enthusiasts who were constructing their own devices and needed replica flight deck components, parts and sections.

Eventually, major manufacturers came calling, too, including Boeing, which ended up commissioning a mock-up for the yet to be released U.S. Navy P-8A Poseidon.

"We found a retired Boeing 737-500. We rebuilt everything, put it together, and they put the real aircraft software and components in there."

When NATO needed to upgrade the flight deck on its E-3 AWACS aircraft—a modified Boeing 707 equipped with a radar dome mounted on the fuselage—FDS hunted around for a 707 throttle to integrate into a specialized lab set-up.

And when Boeing's Long Beach, Calif., factory—at the time home to the C-17 Globemaster III—wanted the ability to display various cockpit upgrade options for the massive transport aircraft, FDS obliged by building a flight deck with a removable instrument panel that could be "upgraded" to glass avionics.



FDS worked closely with Bombardier to deliver a custom C Series device destined for one of the OEM's development labs. The aircraft has since been renamed the Airbus A220, but it is still built in Mirabel, Que. **FDS Photo**

“Large companies like L-3 Communications and ECA-Faros work with FDS to realize lower cost solutions to their flight simulation needs.”

Even the King of Bahrain turned to FDS when he decided to buy a flight simulator. “The King of Bahrain is a big flight sim fan—he has a little alcove office where he decided to buy a flight sim to put next to his golf sim—that was one of the first major trainers we ever built [in 2007-2008]. He knew I was a big Formula One fan and invited me as his guest to see the race. It was a once in a lifetime experience,” said Peter.

Other notable customers over the years have included a famous singer who commissioned a simulator as a Christmas present for her husband at the time, a major flight simulation enthusiast. The device featured a single seat with an overhead panel and motorized throttle.

The “two brothers from Canada” were amazed when a longtime U.S. Navy customer invited them for a VIP tour of his ship. To their surprise, they discovered he was an admiral in charge of an entire U.S. Navy Pacific Strike Group, and they were flown out to his aircraft carrier while it was at sea!

Today, a significant portion of FDS’ sales are to serious high-end home simulator builders.

“This is their passion; this is their thing,” said Peter. “We’ve got a customer, for example, who is a hedge fund manager living in Vegas and a former Air National Guard captain. He bought a complete 777 simulator; it’s in his living room.”

Aside from enthusiasts, the majority of the company’s customers include airlines, flight schools, the entertainment industry and custom work for large companies and manufacturers, including Boeing, Honeywell, CAE, ECA Faros, the FAA and iPilot.

“I would say about two-thirds of our business is trainers,” said Peter Cos. “That’s a pretty healthy number, as complete trainers are where we are most focused.

“Our market was originally the enthusiast category, so we’ve tried to keep our prices in range for those guys. But we’re transitioning now where we will be selling a trainer with a certain level of certification ability.”



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“FDS built its business catering to flight simulation enthusiasts who were constructing their own devices and needed replica flight deck components, parts and sections.”

“IT’S ALL ABOUT THROUGHPUT”

Today, FDS has 25 staff members and is based in an 8,000-square-foot facility in Newmarket—quarters it is rapidly outgrowing.

Peter said his goal is to build three complete trainers a month. In the busy workshop, employees assemble components for simulators bound for customers all over the world. When the units are finished, they are packaged and shipped by air or sea.

“When I was building simulators in my basement, I had nine tools. Now, I own a forklift,” Peter joked, navigating the busy production floor when *Skies* visited FDS.

Most trainers the company makes are dual- or single-seat, fixed-base procedural training units, although FDS can work with partners to install motion platforms. Available models include the Airbus A320 and Boeing 737NG, 737 MAX, 747-400, 747-8, 777 and 787, along with a steady flow of custom projects.

While some parts are sourced externally, FDS machines other components and uses laser cutters to outline white lettering and backlit lines. Wiring harnesses are assembled by hand. Rudder pedals, cockpit panels, throttles, thrust levers,

sidesticks and oxygen panels—complete with the sound of oxygen flowing—are just some of the many parts available for individual sale. In fact, the Cos brothers take pride in saying that no order is too small.

Meanwhile, large companies like L-3 Communications and ECA-Faros work with FDS to realize lower cost solutions to their flight simulation needs.

FDS also has a track record for innovation: When crew seats became harder to find, staff simply found a way to build them. Complete with lamb’s wool coverings, the seats move and slide exactly like OEM originals, at a fraction of the cost. FDS sells its seats separately, with the most expensive model priced at \$3,299.

SHIFTING MARKETS

Calling himself an “accidental entrepreneur,” Peter said he only looks two years down the road, because markets are shifting that quickly these days.

During the 2008 financial crisis in the U.S., for example, that market dried

up while at the same time, China emerged as an increasingly important FDS customer.

As far as new markets go, FDS is targeting areas where there is a general



When crew seats became harder to find, FDS simply designed their own. These custom seats are available for individual sale. **FDS Photo**



While no order is too small, FDS takes pride in offering simulation solutions to large companies like L-3 Communications and ECA-Faros. Shown here is a Boeing 737 MAX pedestal. **FDS Photo**

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FDS founder Peter Cos, left, handles the company's sales and marketing. His brother Steve Cos focuses on technical development and customer service. **Lisa Gordon Photo**

need for a 737 trainer, for example, with several low-cost carriers and no in-house training programs. An FDS device can serve as a training element to help prepare pilots for type transitions or check rides. "The other big market for us is entertainment. People are opening up locations where they have these trainers, and people can go in and try them out. In those markets, we've sold more than 100 trainers

in the past 10 years or so." Peter said he is also working to expand the FDS representative network around the world, including the EU and recently in Korea. "In the certified devices, I think we are a real up-and-comer in the marketplace.

Maybe we'll get into the low-cost carrier market. They understand the value of training, but it's a real cost centre for them." But no matter the customer, Peter and Steve Cos are all about supporting them wherever they are. "Steve has been a huge part of our growth, because he provides the technical support," said Peter. "He provides online support and also visits customers. He will often talk people through technical issues." He was quick to credit the rest of the staff, too. "We've always had a really strong group around us. I have such a good team and we don't have a lot of turnover here—we pay above average, with benefits, and we've also just started a profit-sharing program. "My wife, Sorina, has been with us as well for the past 10 years and handles the financial end of things with her business expertise." It's a long way from that shared bedroom where they used to assemble aircraft models—but for two brothers with passion, building flight simulation devices doesn't really seem like work. "We'll just keep developing our products and making them better," concluded Peter. ❏

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Skilled workers are needed in every aspect of northern aviation, from flight crew to maintenance to airport operations. NATA promotes federally-funded support for vocational training and new hire assistance programs that will help employ local workers. **Brian Tattuinee Photo**



Following a successful 43rd annual conference in Yellowknife, the Northern Air Transport Association has mapped out the top four issues that will steer its course for the coming year.

BY LISA GORDON

Since it was founded as the voice of northern and remote aviation in 1977, the Northern Air Transport Association (NATA) has been publishing a list of annual resolutions that serves as a road map to guide the group's activities during the coming year.

Following NATA's 43rd annual general meeting in Yellowknife, N.W.T., held from April 29 to May 1, the association's board of directors zeroed in on four main priorities to tackle over the next 12 months.

"The resolutions clearly define what is important to us," explained NATA executive director Glenn Priestley. "NATA was developed to help the economic development of the North and these resolutions apply to that. We put them on our website and it keeps the association focused, even though other issues always come up."

PERSONNEL PLAN

At the top of NATA's 2019 resolutions list is a plan to increase the number of northern youth in the aviation industry. There is an ongoing challenge to staff just about any industry position, from ground handlers to aircraft maintenance engineers to management.

"In southern Canada, they are focusing on a lack of flight crew," said Priestley. "But in the North, we have a hard time getting the right skill set. We've always had to spend a lot of time taking southern pilots and turning them into northern pilots. Many pilots got their start in the North, and then they leave."

Northern operations are different by nature. When it comes to regulation, NATA is advocating for performance-based rule making, where the regulator acknowledges and accepts an individual operator's proven procedure. **Janos Englert Photo**



Iqaluit's new airport terminal opened in August 2017. This type of facility is a rarity in the North, where few runways are even paved. **Brian Tattuinee Photo**

“In southern Canada, they are focusing on a lack of flight crew. But in the North, we have a hard time getting the right skill set.”

The goal is to attract people interested in the lifestyle and hopefully have them stay a bit longer, as many have had a great career.”

As Priestley said, the present reality in Canada—including the North—is there are jobs without people, and people without jobs. NATA believes the solution rests in federally-funded support for vocational training and new hire assistance programs that will help employ local workers.

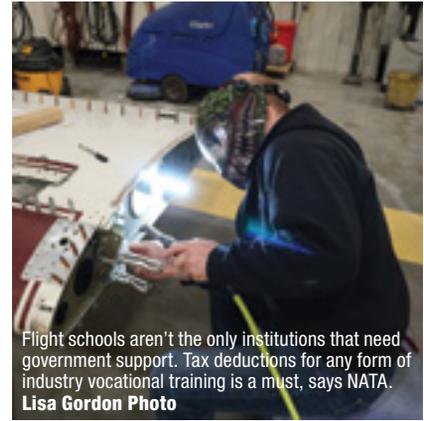
“It’s very important to me that we find ways to attract and train northerners to work in the North,” incoming NATA president Wendy Tayler told *Skies*. “As a result, they will stay here rather than spend a brief time and leave. If we can get a pilot from Iqaluit doing the medevacs in Nunavut, that would be ideal.”

NATA believes that with the right federal assistance in place, employers could be more connected to the hiring process.

“We need to have the employer involved more in a localized setting, working with the local



Operators who land on gravel runways must incur a performance penalty. If more hard surface runways were available in the North, operators could carry more cargo. **Jason Pineau Photo**



Flight schools aren't the only institutions that need government support. Tax deductions for any form of industry vocational training is a must, says NATA. **Lisa Gordon Photo**

high schools, the Air Cadets, etc., to attract, retain, mentor and build that person into the organization,” said Priestley.

The time is ripe for change. Last fall, Transport Canada held an aviation labour shortage forum in Ottawa, where Transport Minister Marc Garneau advocated for the inclusion of non-traditional workforce groups in aviation, including females, Indigenous people and other minorities.

Then, in April 2019, a government committee published a report called “Supporting Canada’s Flight Schools,” which called for—among other things—vocational skills funding support.

“We are looking for money in two specific areas: any form of vocational training should be a tax deduction, and any monetary gift for education should be a tax deduction,” continued Priestley.

As well, he added, there needs to be support for employers who must close an increasing “skills gap” for new hires who need additional training to reach operational standards.

“The experience threshold is shrinking. Newly graduated young pilots are coming to the North with minimum experience and operators who are not flight instructors are having to take longer to bring them up to the standards. Hence why we need to get bridging funding in place,” he said.

INFRASTRUCTURE INVESTMENT

NATA’s second resolution calls for a “cohesive northern aviation infrastructure funding program.”

“There are things the government and other agencies are asking us to do that we can’t do because the airports don’t have any money to expand the infrastructure,” said Priestley. “An example is de-icing/anti-icing. You need to be sure you have the facilities. Certain anti-icing material must be warmed up; you must have proper storage facilities. You can’t just let it sit there beside the runway in a drum.”

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He said northern airports need more funding than they currently receive through the federal Airports Capital Assistance Program (ACAP).

“Right now, ACAP is there to upgrade or put assets in place. There are other things that could be covered under a Northern Aviation Capital Assistance Program (NACAP).”

Making significant investments in northern aviation infrastructure now is an “investment into the future,” according to

Priestley, who pointed out that aviation provides a host of essential services to isolated communities.

“Yet operators are forced to operate from airports with short gravel airstrips. If we could get more hard surface runways, we’d be able to take more cargo [instead of incurring a performance penalty for gravel runway operations].”

Taylor is also vocal about what she calls northern aviation’s unique funding needs.

“We want a northern version of the ACAP,” she said. “Our airports are extremely remote and as a result we have a variety of capital needs. When we share one fund with all airports in Canada, there is little money available. So, we will continue to lobby the government to find funding for the North.”

RISK ASSESSMENTS AND ALTERNATE COMPLIANCE

If there’s one thing a northern aviation operator knows without a doubt, it’s that their days look nothing like those of their industry counterparts in southern Canada.

Consequently, if prescriptive rules are applied across the board without taking unique operational realities into account, northern aviation operations could find themselves crippled by the same regulations that may work well in other parts of the country.

That’s why NATA is advocating for performance-based rule making, a concept that would see the regulator acknowledge and accept an individual operator’s proven procedure—but only if it delivers a demonstrated equivalent safety standard to the associated regulation.

In new fatigue management regulations released in December 2018, Transport Canada provided operators with such a mechanism—the fatigue risk management system (FRMS).

Priestley pointed to that framework as an example where operators have been promised the ability to do risk assessments and propose alternate means of compliance.

“This basically was the promise when safety management systems were first introduced,” he said. “There is a flexibility where the rules say you can’t do something but if you have an SMS and a proven safety case, you can. It allows you to build a safety case to satisfy the rules with an alternate means of compliance.”

“It gets the operator and regulator working together to meet the operational realities of the situation.”

CUSTOMER-CENTRIC SERVICE

Transport Canada is currently in the process of reviewing the Canadian Aviation Regulations (CARs), with an emphasis on deleting rules that are no longer applicable and modernizing others.

At the same time, Priestley said federal service fees are on the rise.

NATA’s fourth and final resolution for 2019 simply asks for service levels to rise along with those fees.

“Let’s look at service delivery. We need a customer-centred process that speeds up the administrative functions. The standard right now is 60 working days to add an aircraft [to an operating

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“NATA’s fourth and final resolution for 2019 simply asks for Transport Canada service levels to rise along with planned fee increases.”

certificate]. The assumption has been made that the service is acceptable. But services like those that are required to do our jobs must be provided in a more expedient manner.”

He said Transport Canada must distinguish between safety-related service and retail-related administrative functions. The latter must speed up, he said.

The resolution recommends that new service delivery standards be established in consultation with industry, complete with “a better redress mechanism,” and with an annual report on key performance indicators.

Once drafted, NATA’s annual resolutions are posted on the association website. They are also circulated in a conference follow-up package to relevant government officials in Ottawa as well as to the territorial governments.

In the end, said Priestley, it’s all about keeping the lines of communication open.

“We try to work with the federal government to understand their issues, but also to make sure they understand our operational challenges.”

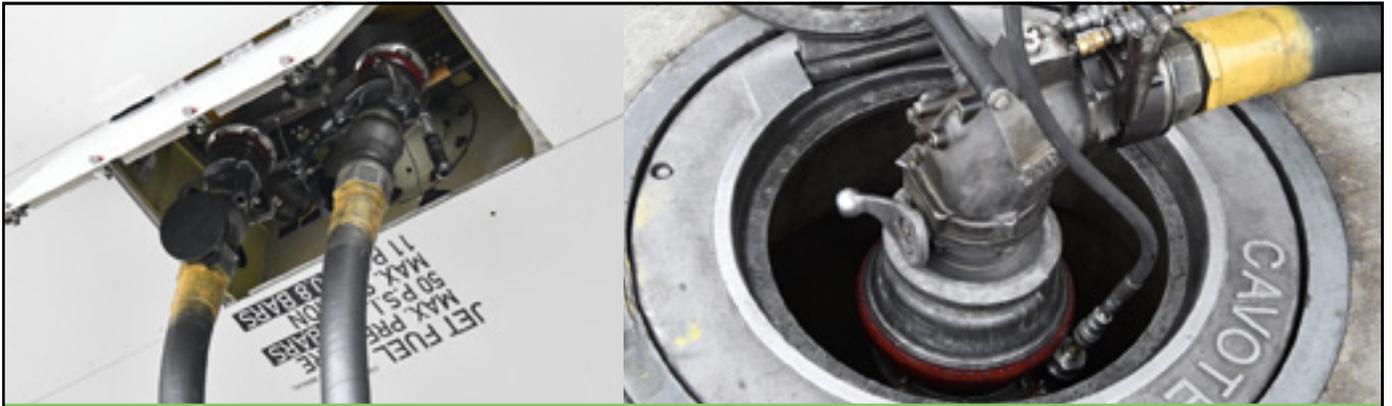
NATA 44—celebrating the 100th anniversary of aviation in the Yukon—will take place in Whitehorse from April 27 to 29, 2020. Check natacanada.org for more details as they are released.



Lisa Gordon is editor-in-chief of *Skies* Magazine. Contact her at lisa@mhmpub.com.



If they have the necessary facilities, northern airports can attract OEMs who want to do cold weather testing. In early 2019, the Bell 525 Relentless completed its evaluation in Yellowknife. **Stephen Fochuk Photo**



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British Antarctic Survey's Dash 7 makes regular flights to and from the Falkland Islands during the austral summer. The 1,900-kilometre journey can be completed in five hours with up to 16 passengers or 2,000 kilograms of cargo on board. **BAS Photo**



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THE QUIET STOL

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► BY FREDERICK K. LARKIN

De Havilland Canada's four-engine Dash 7 first flew in 1975. Originally developed to serve city centre "STOLports," the 50-seat aircraft's quiet characteristics made it popular with North American commuter airlines. Today, only 19 remain in service worldwide, performing a wide variety of transport and special purpose missions.

Fifty years ago, de Havilland Canada (DHC) was the global leader in the design and production of STOL (short takeoff and landing) aircraft. Beginning with the DHC-2 Beaver in 1947 and following with the DHC-3 Otter, DHC-4 Caribou and DHC-5 Buffalo, the Toronto-based company had developed a family of ever-larger airplanes that could access isolated locations—with or without a runway.

DHC entered a growth market when it delivered its first DHC-6 Twin Otter in 1966. The commuter airline industry was taking flight, as tiny air taxi operators initiated scheduled service into major airports from smaller communities within a 200-mile radius. The Twin Otter's 19-seat cabin and turbine power provided an attractive upgrade from the typical five-to-nine seat piston-powered twins (Aztecs, Doves and Beech 18s) flown by third-level carriers.

By 1968, the U.S. government was concerned that air traffic congestion was going to stifle economic growth in the largest metropolitan centres on both coasts. Studies concluded that while the major airports would remain ideal for medium and long-distance flights, short haul traffic would be best served by high speed rail and specialized air transport facilities.

The latter would include new 2,000-foot "stub" runways at large airports and the creation of "STOLports" near city centres. As these would be dedicated to STOL aircraft, there appeared to be a need for an aircraft larger than the Twin Otter.

DAWNING OF THE DASH

By late 1968, DHC had built a cabin mock-up of a 50-seat, high wing four-engine turboprop airliner. Given its lineage, it was nicknamed "dash 7"—as in DHC-7.

In July 1970, after DHC's British parent company expressed its disinterest in the aircraft, the Canadian government provided funding that advanced the project to the development stage. On Oct. 6, 1972, the federal government announced that two DHC-7 prototypes would be built and that a decision on production would be contingent on the type receiving full certification.

Earlier, Pratt & Whitney Canada had received federal funding to develop an engine specifically for the aircraft. The resulting PT6A-50 produced 1,120-shp and had a lower rpm gearbox that enabled large diameter (11'3" / 3.42m) propellers to turn at a relatively slower speed. As a result, the aircraft had a lower noise footprint. It was hoped that this attribute, as well as its impressive

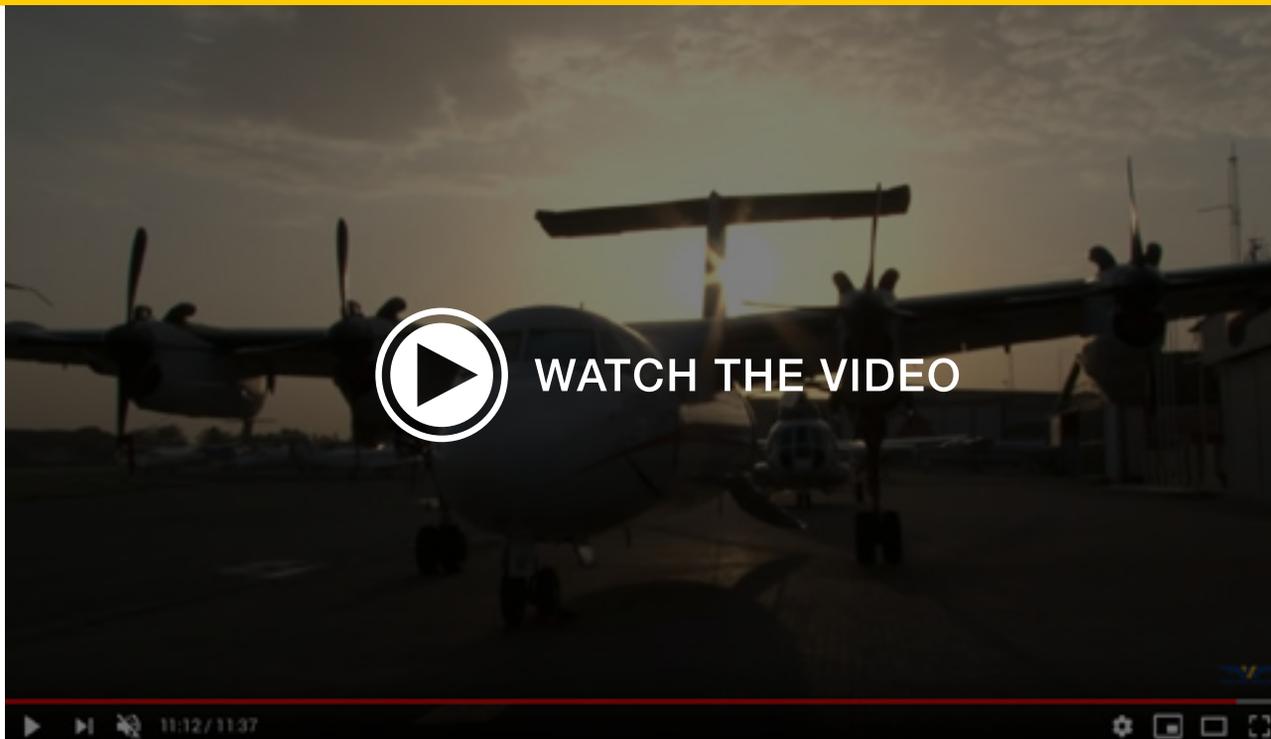
short field performance, would make it an acceptable neighbour at urban locations.

On Oct. 1, 1973, the DHC-7 was officially named "Dash 7" and an aggressive marketing campaign began. On May 27, 1974, the Canadian government acquired DHC from Hawker Siddeley, and on Nov. 26 permission was granted for the production of 25 aircraft.

The prototype was unveiled on Feb. 5, 1975, and it first flew on March 27. The second prototype took flight on June 26, 1975. Although its certification was received from Transport Canada on May 2, 1977, the first Dash 7 delivery wasn't until Jan. 18, 1978. Rocky Mountain Airways of Denver, Colo., placed it into service between Denver and its new STOLport at Avon, Colo., (near Vail) on Feb. 3.

The second delivery was made to Wardair on June 8, 1978. Soon after, it carried Queen Elizabeth II and the Duke of Edinburgh during a royal tour in Alberta. After that, it was hauling everything from containers of mineral concentrate and building materials to personnel and perishables.

Nine months later, the same aircraft shuttled scientists and 55 tons of goods between CFB Alert on Ellesmere Island and an ice camp near the Geographic North Pole.





CHANGE IN THE FLIGHT PLAN

From the beginning, the Dash 7 was targeted at the U.S. airline industry. The competitive landscape of that business was shaken by a regulatory earthquake on Oct. 24, 1978, when the *Airline Deregulation Act* became law. Now free to operate anywhere that they wished to, airlines looked to expand their route networks and ordered jet aircraft that would be required for medium to longer haul routes.

At that time, a key operating expense was rising. The average crude oil price had increased almost 150 per cent from US\$15 per barrel during 1978 to US\$37 during 1980. This was viewed as an opportunity by DHC to sell its fuel-efficient Dash 7 to carriers that were operating less efficient Boeing 737s and McDonnell Douglas DC-9s on short routes. During 1980, DHC reported that the U.S.-based Dash 7 fleet was flying an average stage length of 140 miles in scheduled service and had achieved a dispatch reliability of 99.1 per cent.

Although widespread development of “stub” runways and STOLports never occurred, the Dash 7’s 50-seat cabin and its quiet characteristics made it popular with commuter airlines across North America. During the early 1980s, new Dash 7s were delivered to Air Wisconsin, Atlantic Southeast, Golden Gate, Hawaiian, Henson, Ransome, Rio Airways and Time Air.

Carriers that were flying into challenging airfields in other parts of the world also purchased new Dash 7s. These included Air Guinée (Guinea), Air Niugini (Papua New Guinea), Alyemda (South Yemen), Arkia (Israel), Brymon Airways (UK), Greenlandair (Denmark), Inex-Adria Airways (Yugoslavia), Intercor (Colombia), Maersk Air (Denmark), Newmans Airways (New Zealand), Tyrolean Airways (Austria) and Wideroes (Norway).

Only two military operators purchased new Dash 7s. The Canadian Armed Forces received a pair of CC-132 transport aircraft in September 1979. The first was a low-density passenger version, while the second was combi configured to carry passengers and cargo together. Both were assigned to 412 Squadron at CFB Lahr in Germany. The combi was sold in August 1985 and the other departed in April 1987. The Venezuelan Navy acquired a new Dash 7 in 1982 and operated it until 1996.

By January 1985, 100 Dash 7s had been delivered.

But the four-engine aircraft’s fate was sealed when the first Dash 8 Series 300 flew on May 15, 1987. It could carry 50 passengers 24 per cent faster (285 kts versus 230 kts) and 29 per cent farther (890 NM versus 690 NM) than the Dash 7, with half the number of engines.

After the production line closed in July 1988, many other operators at home and abroad, including the U.S. Army, added previously-owned Dash 7s to their fleets.

Yellowknife, N.W.T.-based Air Tindi operates four Dash 7 aircraft. A combi configuration with movable bulkhead allows the company to transport several variations of passengers and cargo. **Jason Pineau Photo**



Air Tindi pilots Ted Duinker and co-pilot Nicole Rose preflight Dash 7 C-FWZV at Muskoka Airport in Ontario, in preparation for the return flight to Yellowknife. The aircraft was in for a respray at Muskoka Aircraft Refinishing’s paint shop in March 2019. **Andy Cline Photo**

“From the beginning, the Dash 7 was targeted at the U.S. airline industry.”



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THE CURRENT SITUATION

Today, only 19 of the 113 Dash 7s produced remain in service. Six operators use them to accomplish a wide range of tasks in extremely different environments:

**Air Tindi
Yellowknife, N.W.T.**

• DHC-7 Fleet: 4

Its four aircraft primarily support natural resource exploration, remote site rehabilitation and national defence missions. Alasdair Martin, the company's president, mentioned to *Skies* that its Dash 7s have been the largest aircraft to use the short strips at Grise Fiord (1,950 feet) and Kimmirut (1,900 feet) in Nunavut.

**Airkenya Express
Nairobi, Kenya**

• DHC-7 Fleet: 2

Carrying tourists on the safari circuit, these 50-seaters fly into short unprepared airstrips in national parks within Kenya, Tanzania and Uganda. Dino Bisleti, the carrier's general manager, told *Skies*, "We have been operating Dash 7s since 1988 and have found them to be strong and reliable, with a real STOL capability."

**British Antarctic Survey (BAS)
Cambridge, United Kingdom**

• DHC-7 Fleet: 1

Since 1994, the BAS has flown its Dash 7 south to its base at Rothera on Antarctica. From October until March, it shuttles personnel and supplies between Rothera and Stanley, Falkland Islands (1,155 SM) and to Punta Arenas, Chile (1,015 SM). It also flies as far south as the ice strip at Sky-Blu (74.85 degrees south).

**Trans Capital Air
Toronto, Ontario**

• DHC-7 Fleet: 3

Since May 2000, this operator's DHC-7s have supported United Nations missions in 16 countries including Afghanistan, East Timor, Nepal and Somalia. Antoine Pappalardo, the company's president, told *Skies*, "During the past 19 years, our Dash 7s have successfully completed approximately 40,000 air taskings with a zero injury and zero fatality flight safety record." Trans Capital's founder, Victor Pappalardo, described the DHC-7 as a "flying Mack truck."

**Transport Canada
Ottawa, Ontario**

• DHC-7 Fleet: 1

From July until October, this uniquely equipped example can be found in the Arctic patrolling shipping lanes. Outfitted with sophisticated scanners and cameras, it can transmit vital information (voice, data and images) that document the presence of environmental hazards, undesirable marine traffic and wildlife activity to the appropriate authorities.



The gravel runway at the Rothera Air Facility is no problem for the BAS Dash 7. **BAS Photo**



Air Tindi acquired its first Dash 7 in 1996. Today it operates four: three combis and one passenger-only aircraft. **Andy Cline Photo**



Toronto-based Trans Capital Air uses its Dash 7s to support United Nations missions in Afghanistan, East Timor, Nepal and Somalia. **TCA Photo**



Transport Canada's one-of-a-kind Dash 7 IR (ice reconnaissance) aircraft has bubble windows on the top and sides as well as cutting edge surveillance equipment. **Mark Brandon Photo**



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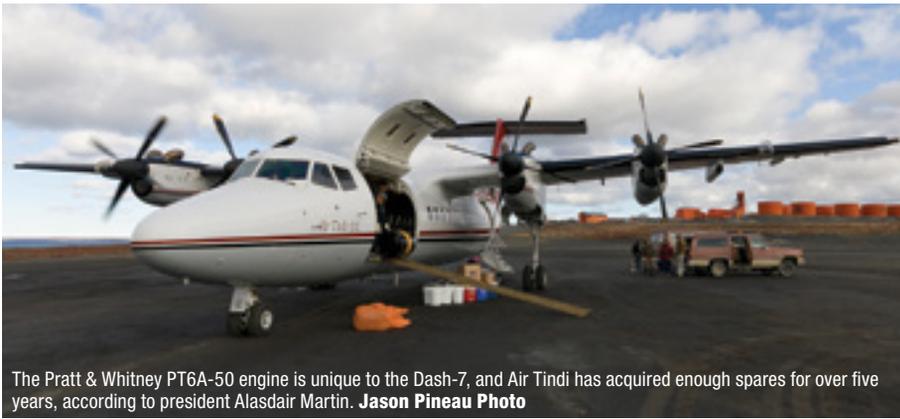


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The Pratt & Whitney PT6A-50 engine is unique to the Dash-7, and Air Tindi has acquired enough spares for over five years, according to president Alasdair Martin. **Jason Pineau Photo**



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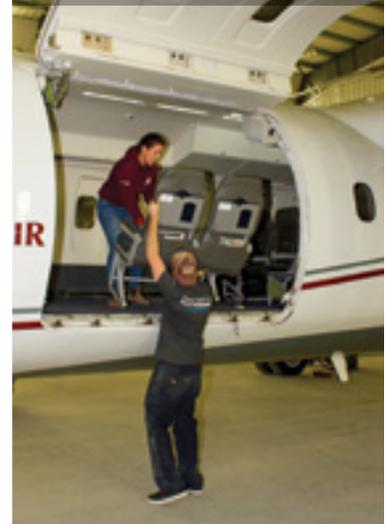
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Bush pilots are responsible for loading as well as weight and balance in their aircraft, whether it be a small de Havilland Beaver, or its big brother the Dash 7. Here, Air Tindi co-pilot Nicole Rose reinstalls seats with a company AME after the aircraft was weighed. **Andy Cline Photo**



**United States Army
Washington, U.S.A.**

• **DHC-7 Fleet: 8**

Designated as EO-5Cs, these Dash 7s are used to intercept electronic transmissions in order to track down elusive adversaries. Their high-resolution infrared and optical sensors are said to be capable of tracking footprints in sand. They are deployed to geopolitical hotspots.

HOW MUCH TIME IS LEFT?

Now into its fifth decade, the Dash 7 has served reliably on all seven continents. Viking Air of Victoria, B.C., has owned the DHC-7 type certificate since 2006.

British Antarctic Survey fitted its Dash 7 with long-range fuel tanks with a fuel jettison system, a large cargo door and a strengthened cargo floor. Because the aircraft can land on ice runways, it is a regular visitor to the Sky-Blu Field Station. **BAS Photo**



Today, it is the sole source of certified factory-new spare parts. Spokesperson Angie Murray advised *Skies* that, “Viking is committed to supporting our operators for the duration of their aircraft’s operational use.”

How long might that be? Al Martin of Air Tindi noted, “We expect to be operating the Dash 7 for another 10 years.”

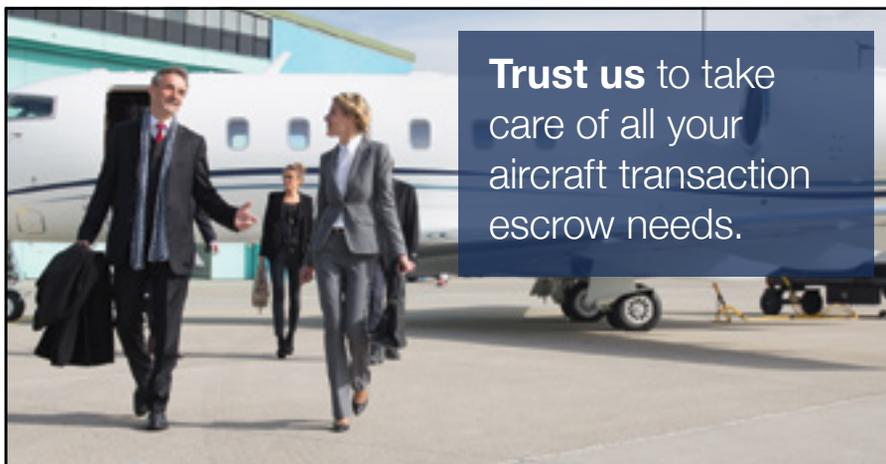
Meanwhile, FlightSafety’s Toronto Learning Centre continues to offer maintenance technician courses and pilot training on a Level B certified Dash 7 simulator.

Forty-four years after it first flew, this Canadian aerospace icon is expected to perform many more missions before it retires. ❏



Frederick K. Larkin | Licensed to fly before he could drive, Ted Larkin has closely followed the airline, business aviation and aerospace industries for more than 50 years. During nearly

three decades in the investment business, he advised institutional investors in North America, Europe and Asia on their holdings in aviation-related corporations.



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Below glidepath

A few simple tweaks to pilot career management practices in the Royal Canadian Air Force could make a big difference when it comes to plugging the personnel leak to the civilian sector.

BY ANDY COOK

The RCAF is falling victim to a seemingly voracious appetite for pilots in the commercial sector; and as such, it is descending well below the ideal personnel glidepath.
MCpl Mathieu Gaudreault Photo



WATCH THE VIDEO

0:07 / 6:29



Pilots are not voluntarily leaving the Air Force to make their fortunes elsewhere. Instead, research suggests they leave the service for family-related reasons. **Mike Reyno Photo**

Any military pilot flying a precision approach radar (PAR) or “talk down” approach knows that if the controller calls them “below glidepath,” the next instruction they get will be “adjust rate of descent.”

The concept is simple: If you descend too far below the ideal trajectory, you may not make it to the runway. Reducing the rate of descent is necessary to get back on the approach path.

Just as an aircraft tries to maintain an ideal descent rate to touchdown, so too do air forces the world over try to maintain an ideal number of pilots to fly those approaches. When they get it right, air forces recruit and retain sufficient pilots to exactly offset the retirement of experienced veterans. But the Royal Canadian Air Force (RCAF) is falling victim to a seemingly voracious appetite for pilots in the commercial sector; and as such, it is descending well below the ideal personnel glidepath.

Deliberate measures must be taken to reduce the current exodus of trained pilots if the Air Force wishes to maintain full operational capability in the future. What can the RCAF do to promote the retention of experienced pilots? The simplicity of some answers might surprise you!

A November 2017 article in the *Air Force Times* noted that even though United States Air Force (USAF) pilots could be offered as much as US\$455,000 to sign on for up to 13 years of continued service, very few pilots were doing so.

Given our American counterparts’ lacklustre response to their retention bonuses, and given that many RCAF pilots are leaving for fixed initial salaries which are about half of what they made in the Air Force prior to retirement, it’s not surprising that an April 2018 report on RCAF pilot releases found that pilots were not leaving to make their fortunes on the outside.

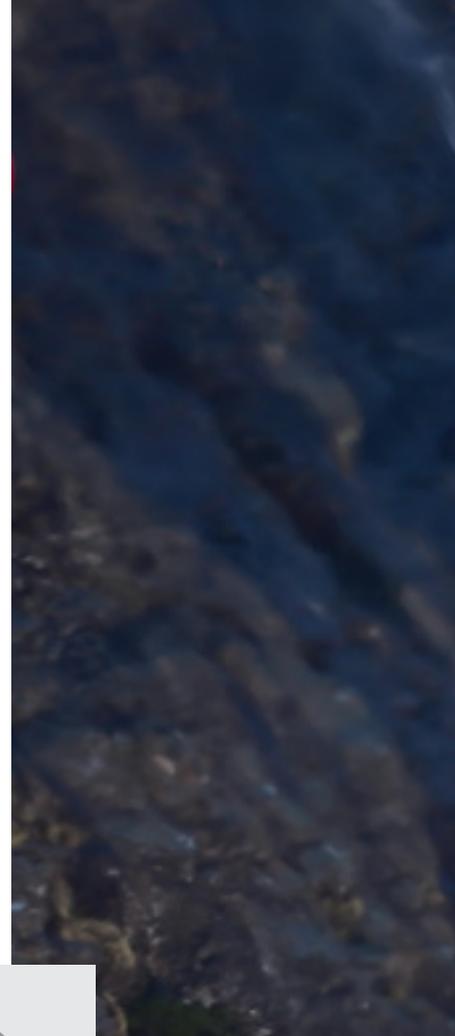
Clearly, if someone is willing to give up a career in the RCAF to make 50 per cent of their military salary initially, bonuses will not be an effective retention mechanism. If money is not the answer, what is?

According to that same April 2018 research, geographic stability and issues such as family health care and education were uppermost in the minds of RCAF pilots who sought voluntary release. My own personal experience as military commander confirms that conclusion. I met many pilots and other Canadian Armed Forces (CAF) members over the years who cited the CAF posting system as a major stressor in their lives.

As a former personnel officer (or career manager) myself, I can confirm that the CAF believes a broad variety of geographic and operational experiences makes for a well-rounded officer or non-commissioned member. As a result, once an individual has been in one location for a significant period of time, the pressure to move that individual (quite literally for the sake of moving them) results in a new posting.

Each military move costs taxpayers approximately \$40,000. And despite the challenges associated with family members trying to find new jobs, make new friends, find new doctors and deal with new school systems in the new place of duty, “Service Before Self” means that the military member and their family are expected to uproot themselves in the interest of serving Queen and Country.

Postings are not as stressful for all RCAF members. Some like the excitement and new experiences, especially early on in their careers. But many others find those moves stressful. I have personally met members who were forced to outlay tens of thousands of dollars to provide continuity of health care when moving from one province to another (due to



“Deliberate measures must be taken to reduce the current exodus of trained pilots if the Air Force wishes to maintain full operational capability in the future.”



“The RCAF must discard its current employment methodology, which **wastes significant portions** of obligatory service and forces pilots to move for the sake of moving.”



DOWNLOAD THE WALLPAPER

The Canadian Armed Forces has long subscribed to the idea that multiple postings and operational experiences make a more well-rounded military member. But, new postings that require moving to a new location often put tremendous stress on military families. It's a price that some are unwilling to pay. **Rich Cooper Photo**

provincial discrepancies on treatment funding and waiting lists for those treatments). And I've met a family who (after several quick postings at an unforeseen rate) fell victim to a softening real estate market and went from having a comfortable retirement plan to avoiding personal bankruptcy by only a hair's breadth.

Like these examples, many experienced RCAF pilots make the decision to leave when faced with a new posting they feel will place too much stress on their family. Faced with a choice of disrupting the family or taking a 50 per cent pay cut for a few short years before making more than their current salary as an airline captain, many RCAF pilots choose the latter and endure the short-term financial pain for the longer-term family stability afforded by not moving.

As such, they leave the RCAF because they come to a point where they must choose between Air Force and family. But what if the RCAF could change its personnel policies

to understand that as pilots gain experience they also start families, and eventually those families become more important to them than the RCAF? How could the RCAF change its personnel strategy to keep the world's most talented pilots flying operational missions as opposed to flying the red-eye between Toronto and Calgary?

First and foremost, the RCAF should run its personnel management more like a business, by maximizing its return on a very significant training investment. At present, newly-trained pilots are required to serve seven years in the RCAF after receiving their military wings. But many of those new pilots spend more than a year waiting to train on their operational aircraft, and that training often takes several months. By the time they are operationally trained, many pilots have expended up to two years of that seven-year commitment waiting for training! This is a waste.

At a minimum, the seven-year obligatory service period should be amended to begin after completing

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In November 2018, Auditor General Michael Ferguson wrote, "If CF-18 pilots continue to leave at the current rate, there will not be enough experienced pilots to train the next generation of fighter pilots." **Sgt Daren Kraus Photo**



operational training as opposed to Wings qualification. And postings within that seven-year period should be avoided where possible. For some aircraft types and remote locations with fixed tour of duty lengths (e.g. Twin Otters in Yellowknife), a second posting within the seven-year restricted release period may be necessary. But where it is not, retaining pilots on the same aircraft type (or at least in the same geographic location) is good for the pilot (it promotes family stability) and good for the taxpayer (the return on that \$3.5 million initial training investment is maximized and a \$40,000 move at public expense is avoided).

With a more business-like pilot HR strategy, RCAF pilots would be streamed to their operational aircraft quickly, their seven-year restricted release period would begin when they become operationally trained, and they would fly that first aircraft for as much of that period as possible. That seven-year period, then, would form the bedrock of RCAF personnel planning.

At that seven-year point, pilots would be faced with a decision. Several options would be available at this point: release to the private sector, apply to become eligible for command and senior flying positions, apply to become members of a



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“The seven-year obligatory service period should be amended to begin

after completing operational training

as opposed to Wings qualification.”

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non-flying air ops occupation focused on supporting flying operations (e.g. CAOC, Wing ops, etc.), or become instructor pilots (IPs) at basic or advanced flying training schools or Operational Training Units (OTUs).

Depending upon vacancies at flying units at the time, pilots completing their seven-year obligatory service period could also be offered short contracts of one to three years to remain flying at their current unit (with salary incentives dependent on the length of the interim contract).

Each of these options should involve a modest period of obligatory service and pay increases commensurate with the complexity of the aircraft flown, the pilot's responsibilities, and comparability with similar roles in the civilian world. Those who chose release would be thanked for their service. Those who applied for and were selected for the command stream would receive leadership professional development training and experience and would be eligible and expected to

take on more senior (and joint) roles and responsibilities. Those who chose to apply their previous expertise to operational support issues would become critical mission enablers. And those who wished to (and were identified as possessing the skills to) train *ab initio* or advanced pilots would have the opportunity to continue to fly regularly and impart the lessons learned in their seven-year obligatory service period to less experienced pilots.

Just as the RCAF tried to create a positive, family-friendly environment in the seven-year obligatory release period, so too should it make it attractive to pilots to remain in the RCAF following that obligatory service. Instead of forcing them to move, the RCAF should offer a range of options from which pilots choose to further their careers. Where possible, post-obligatory service contracts should reflect an organizational commitment to family stability (moves should occur only for those who desire them, where possible).

Further, compensation for members

who apply for and are selected to follow-on roles should be competitive with civilian equivalent roles. If the RCAF implemented these changes correctly, only a small fraction of the total cadre of pilots trained would be eligible for conversion to a follow-on contract. Dollar amounts for pay differentials would not be overly high and if the RCAF implemented a sub-occupation of the main pilot occupation (e.g. senior pilot), it would be more strategically palatable to initiate a pay scale in line with similar skills in the commercial sector, as the military already has for physicians and lawyers.

Above all, RCAF strategic leaders must understand and accept that the RCAF they joined was the RCAF of the 1980s. The world has changed, and the RCAF must change as well if it hopes to attract and retain talent.

The RCAF must discard its current employment methodology which wastes significant portions of obligatory service and forces pilots to move for the sake of moving (regardless of the cost to the



Following the obligatory seven-year service period, author Andy Cook suggests the Air Force should offer pilots a range of options, with compensation similar to the equivalent civilian roles. **Lloyd Horgan Photo**



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Geographic stability and issues such as family health care and education were uppermost in the minds of RCAF pilots who sought voluntary release. **Mike Reyno Photo**

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family). With some simple policy changes, it can maximize the return on the initial training investment (with a long and stable period of obligatory service following initial operational training). Most importantly, with a focus on family and geographical stability, the RCAF may just prove that it can develop a sustainable and efficient pilot retention model which is reliable, predictable, and relatively immune from external commercial “boom and bust” cycles of pilot hiring.

By changing to a model whereby RCAF pilots bid for follow-on employment after their obligatory service (and are well compensated to do so), the RCAF could demonstrate the agile policy development necessary to retain talent in the face of a global pilot shortage. Doing so would stem the outflow of trained pilots to commercial cockpits and bring the RCAF pilot management system back where it should be: “On course, on glidepath.”



Colonel (ret'd) Andy Cook is a former RCAF pilot with over 28 years of experience. He has flown the CT-114 Tutor, CC-130 Hercules, and CC-150 Polaris operationally.

During his time in the RCAF he also served as a career manager, and commanded at the deployed, unit, and Wing levels. He is currently employed as operations manager and director of flight operations at West Wind Aviation in Saskatoon, Sask.



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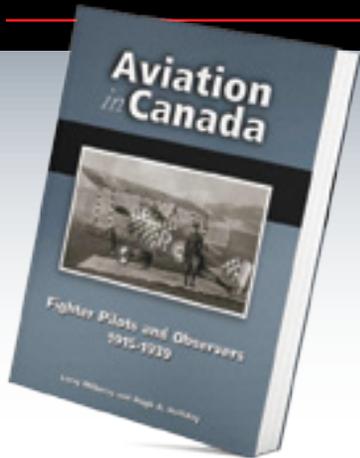
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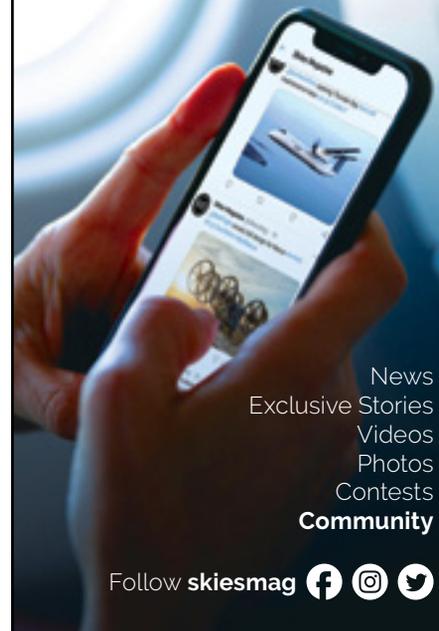
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In the Circuit

YELLOWKNIFE AIRPORT (CYZF) | BY DAYNA FEDY

A northern light

Yellowknife Airport in Canada's Northwest Territories continues to be a major driver of the Northern economy.

Air travel is regularly relied upon by communities and industries in the Canadian North. For example, Yellowknife Airport (CYZF) moved approximately 645,000 passengers in 2018 (a six per cent increase over 2017), in a city of roughly 20,000 residents.

"Transportation in the North plays a hugely important role," said Randy Straker, acting regional airport manager. "The roads of our northern communities [go] as far as Yellowknife, but after that you're often relying either on sea lift in the summer or air for much of the cargo delivered to the communities."

Yellowknife Airport plays a major contributing role to the surrounding economy, acting as a hub for communities and invaluable infrastructure for exploration and mining operations throughout the North.

The extreme cold that comes with living in Yellowknife during the winter months also makes the airport a great location for cold weather testing for fixed- and rotary-wing aircraft alike. Straker said the airport has been working with the city and the Government of the Northwest Territories, along with other groups, to establish itself as a cold weather testing location of choice. "[Cold weather testing] is a fairly significant economic advantage for the city as well as the territory," he added. "We're really making a push to be the premier [location]—at least in Canada."

Original equipment manufacturer (OEM) Bell brought a 525 Relentless helicopter to CYZF in early January, followed by a second 525 in mid- to late-January, for cold weather tests that lasted just over two months. "Bell booked 40 some rooms for around 70 days. And then you had car rentals, meals . . . space, fuel, and everything else," said Straker.

"This year for Bell was fantastic; we had a lot of cold weather [and] a lot of clear weather, so it was a very successful season."

In the last five years, CYZF has hosted aircraft for cold weather tests from other major OEMs like Airbus Helicopters, which brought its H160 helicopter to the airport, and Bombardier, which brought the C Series aircraft (now the Airbus A220), said Straker.

Operating in severe weather for eight months of the year calls for unique preparation at CYZF. The Yellowknife winter can bring extreme cold temperatures as low as -30 C, along with snow, of course. This means having the proper snow clearing equipment, de-icing equipment and infrastructure, and employee training.

In addition to severe weather, the airport faces another unique challenge during the winter due to its geographic location—longer periods of darkness. There are only about five hours of daylight in Yellowknife during the months of December, January and February, typically from 10 a.m. to 3 p.m.

Straker said this factor also makes additional training necessary "because it's dark for pretty much most of our work day. It comes down to awareness and training for our [employees], and how to operate and prepare for any kind of circumstance in our type of environment and conditions."



EVOLVING INFRASTRUCTURE

Logging nearly 56,000 aircraft movements in 2018, Yellowknife Airport welcomes major airlines such as WestJet and Air Canada on a daily basis, as well as regional carriers Canadian North and First Air that compete head-to-head in the northern markets.

With a runway length of 7,500 feet, direct international flights are not currently able to land at CYZF. "We have been working closely with Calgary [and] Edmonton airports in trying to develop one-stop connections to international markets—South Korea and China being our growth markets right now," said Straker.

Extending CYZF's runway to 10,000 feet to accommodate direct international flights has been an ongoing discussion point, but Straker said the airport has to complete other important infrastructure projects first.

"Earlier this year, the federal government announced that we were successful in our ACAP [Airports Capital Assistance Program] bid for funding for a runway lighting upgrade to our primary Runway 16-34—somewhere in the neighborhood of \$2.5 million," he said.

CYZF is also in phase two of a \$2 million project with the Canadian Air Transport Security Authority (CATSA) to upgrade the airport's baggage handling system—a project that should be completed by November. The airport has earmarked a few additional projects, pending approval of its application to the federal government's Disaster Mitigation and Adaptation Fund, including development of a new de-ice pad and significant repairs to the primary runway.

"We have a lot of opportunities going forward to make some changes," Straker concluded. "And we continue to look at who we can entice to come into Yellowknife and the North, whether that's businesses, new routes, or new carriers. That's one of our major mandates." ■

Instrument IQ

BY JOHN MONTGOMERY



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GANDER NL, (CYQX) NDB RWY 13 (GNSS) APPROACH

1. Your aircraft is equipped with an IFR certified GPS. The QX NDB is U/S. Are you legal to complete this approach?
2. You are on final approach at 2,200 ASL and are planning to do the CDFA (constant descent final approach). The active waypoint on the GPS is QX. How far back from QX should descent to MDA be initiated?
3. What ceiling and visibility would give you the required visual reference to successfully complete the landing?
4. The Safe Altitude 100 NM is published as 3,800 ASL. This will provide _____ feet of obstacle clearance and is based upon 100 NM from _____.
5. What should be your course of action in the event of a missed approach and arrival over the QX NDB prior to receiving further clearance? Hold entry?

CYQX-IAP-9

GANDER INTL. NL
CYQX

NDB RWY 13 (GNSS) 485613N 0543405W VAR 20°W

ATIS - 124.8	ARR - 128.5 132.1	TWR - 118.1 236.6	GND - 121.9 275.8
SAFE ALT 100 NM 3800	NDB OX 280	APCH CRS 121°	MIN ALT OX 1400

AN 6.2°

13.3	12	11	10	9	8	7	6	5.3	4	3	2	1.1	DIST FROM RW13
4770	4340	4020	3700	3390	3070	2750	2430	2200	1790	1480	1160	880	ALT (3.00° APCH PATH)

Procedure turn LEFT within 10 NM of *QX* NDB.

MISSED APPROACH Climb to 2700 track 121°. Then LEFT turn direct to *QX* NDB.

ELEV 496 TDZE 488

CATEGORY	A	B	C	D
	880 (392)		1 RVR 50	
QX NDB to MAP 3.3 NM				
CIRCLING	1000 (504)	1½	1000 (504)	2 1100 (604) 2
Knots	70	370	2:50	
ft/min	90	480	2:12	
Min:Sec	110	580	1:48	
	130	690	1:31	
	150	800	1:19	

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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.

Faces of Flight

BY LISA GORDON

Meet Tim Fagan, industrial design manager for Bombardier Business Aircraft



It's fair to say that Tim Fagan's professional career has focused on creating the customer experience.

Shortly after graduating from the industrial design program at Carleton University, he landed a job at Bombardier's Downsview plant in 1999, where he contributed to the design and development of the manufacturer's new Q400 turboprop.

A big part of his role was adapting the interior of that aircraft for each operator—experience that later proved invaluable when he jumped to the business aviation side of the house.

As part of the Global business jet development team in Toronto in the early 2000s, Fagan was involved in flight deck and baggage compartment design.

"I was always drawn towards product development," he told *Skies* during a recent interview. "After I relocated to Bombardier's Montreal headquarters, I took the opportunity to work on some development projects such as the original Global flight deck. There were other R&D projects at the time, such as the stand-up shower option on the Global 6000."

Fagan was also part of the Bombardier team that spent more than two years designing and testing the 2010 Olympic torch for the Olympic and Paralympic Winter Games in Vancouver.

He enjoyed working as an account manager on the Global 5000 and 6000 program, where he worked with customers in the specification and design of their aircraft.

But Fagan's most exciting professional challenge was yet to come. In late 2010, Bombardier launched its flagship Global 7000 program—a fully fly-by-wire, ultra-long-range business jet that would offer passengers an unprecedented four distinct cabin zones. Later renamed the Global 7500, the aircraft offers a spacious full-size kitchen and a crew rest suite, along with a variety of cabin floor plans and furnishings.

Early in the 7500's development, Fagan was chosen to lead the industrial design team that would define the cabin offering.

"Our focus was to establish and create the customer experience on the aircraft," he explained. "We started off with a team of four or five, which ultimately expanded to 15 or 16. We were designing from the inside out; looking at the needs of the cabin, which in turn informed the design of the airframe itself—the size of the windows and other critical dimensions of the fuselage, etc."

Working in consultation with individual business jet owners, fleet operators, pilots and flight attendants, the team took a modular approach to designing the Global 7500 interior.

"We divided the project by functionality and by experience. What are the different ways that people would want to dine on board, work on board, relax on board? What are the characteristics we would need in the seats, in the entertainment and connectivity systems, in the lavatory and galley?"

Drawing on experience gleaned from the Q400 program, Fagan envisioned a modular structure to which a customer's preferred design elements—such as a stand-up shower or a permanent bed—could easily be added.

Ultimately, the goal was to create a personalized home in the sky, including a galley inspired by high-end luxury kitchens.

"We wanted to expand the ability to create amazing meals on board the aircraft. We had a cabin crew focus group assist us through full-scale mockup development. They brought ideas, including two ovens, each with traditional convection and steaming as well as microwave mode."

Certified by Transport Canada on Sept. 28, 2018, and subsequently by the U.S. Federal Aviation Administration on Nov. 7, the first Global 7500 was delivered just before Christmas.

"It was an amazing project," reflected Fagan. "As a design activity, it was the culmination of several different projects. We had to bring it all together into a single space that is adaptable and ready for the unique customer."

"The great challenge was in accommodating all of the variability of the cabin . . . to offer an aircraft that has different seating and divan configurations to accommodate all of the things you do on board—work, entertainment, sleep, storage, etc."

The Global 7500 project heralds the origin of the Bombardier Business Aircraft Industrial Design Team. Since then, Fagan said his group has assumed a more central role in both product strategy and marketing.

The goal is to not only maintain design quality, but also a consistent look and feel across all of Bombardier's business jet platforms.

"When you enter a Bombardier business jet, from a customer experience point of view, there are common points," he explained, referencing elements such as seating, cabin design and connectivity.

"For example, we developed the Nuage seat from scratch for the 7500, and will now bring it to the Global 5500 and 6500. The seat is one of the most important elements of any aircraft design. Being able to design the [Nuage] seat to incorporate the important points of human geometry is very rewarding."

Fagan appreciates the wide variety of design activities inherent in his job, from developing graphical user interfaces, to seating, lighting, monuments and floor plan configuration.

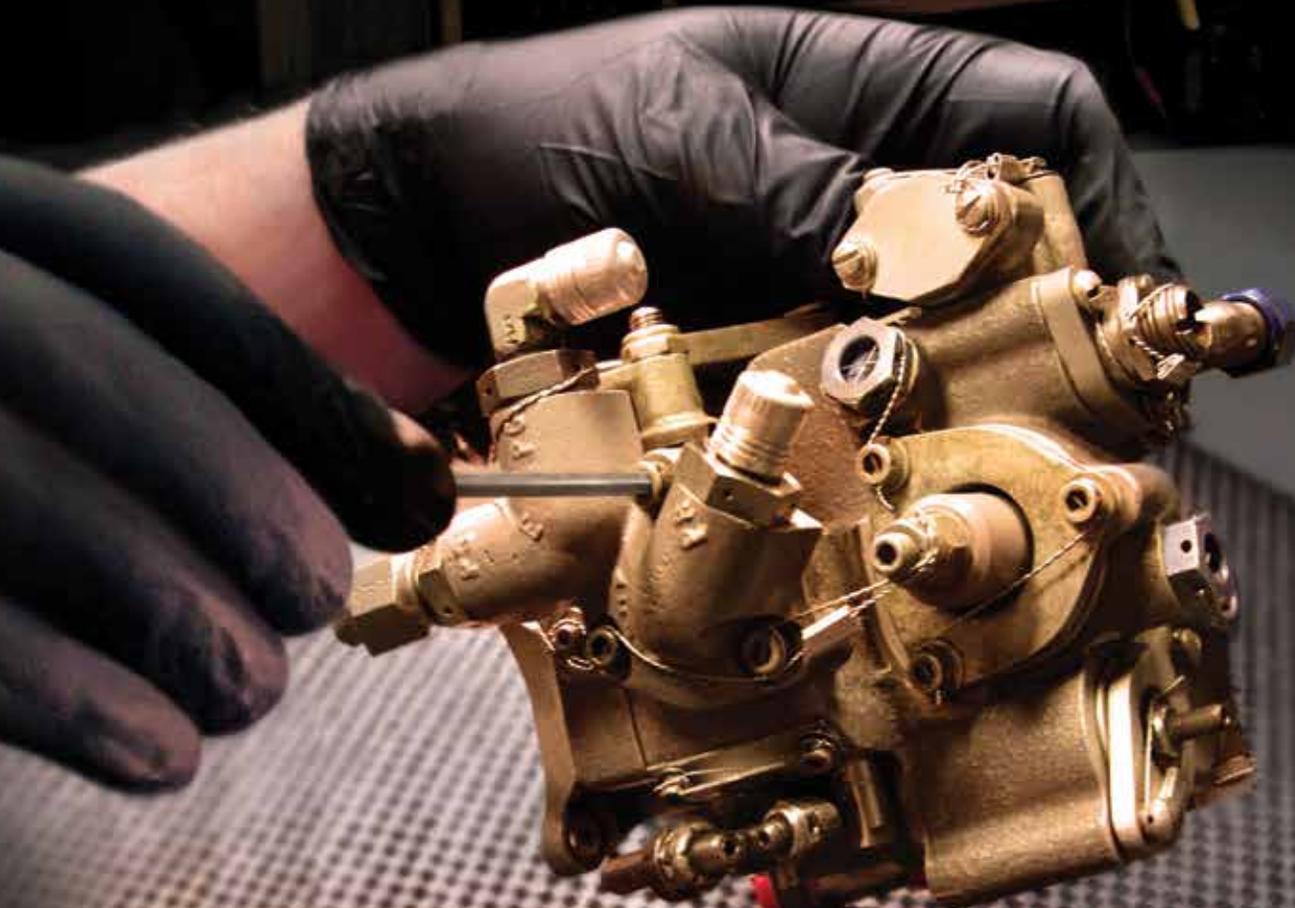
"It keeps things fresh as a designer, and technical and product development roles are rewarding, especially when we can bring completed aircraft into service with our customers."

He believes the future of business jet design will focus on overall passenger wellness. Elements such as cabin lighting, connectivity, nutrition and space—space to work, relax and rest—will be emphasized.

As he focuses on an exciting future in product development, Fagan is thankful for the opportunities he's had to broaden his experience in a variety of roles. Along with industrial design projects, he's also been immersed with engineering teams and assumed customer-facing roles.

They've all helped him get to where he is today—creating "amazing and innovative experiences in the air" for Bombardier customers around the world. ✈

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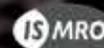


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