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Le magazine des passionnés d'aviation canadiens

MAY/JUNE 2023



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ON THE COVER: Photographer Warwick Patterson captures Sealand Aviation's Beaver powered by a RED Aircraft diesel engine, which had flown 25 hours by April.

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COPA Flight

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NEW LEADERSHIP AND STRATEGIC PLANNING



As I write this article for *COPA Flight*, COPA's Board of Directors completed their work to identify a new President and CEO. By the time this article goes to print, Mark van Berkel will have been appointed as CEO and COPA will be started on our journey under new leadership. Mark brings with him a wealth of experience in aviation and business, and is an accomplished pilot, aviation business owner and advocate for General Aviation.

I am delighted to be able to pass on the COPA leadership into capable hands and share in the Board's confidence that Mark's leadership will guide COPA well into the future. I look forward to working with Mark and continuing to support COPA in my role as Director, Aviation Operations.

The Board has also been hard at work developing a new strategic plan to ensure COPA is well positioned at a challenging time in aviation. COPA's goal is to better serve our members, grow membership and enhance advocacy efforts. Several key areas of focus have been identified that will guide efforts over the next several years:

1. Providing market-leading member experience with quality and valued services, resources, programs and safety.
2. Promoting General Aviation in Canada to propel interest, participation and pilot and member numbers.
3. Advocating to improve access to, and safety of, General Aviation.
4. Developing a robust communications and marketing ecosystem to the all communities.
5. Diversifying and expanding revenue streams to assure the financial stability of the organization.

As part of the new strategic direction, the need to improve member communication was clearly highlighted. In response, COPA is investing in technology for self-serve options to find information and new ways for all members to interact with the association and communicate together. As we modernize, COPA will continue with the *COPA Flight* magazine and look to

improve both the quality and volume of content in each edition, which will be published bi-monthly to minimize skyrocketing publishing prices. This decision was not taken lightly, but we believe it is the right move for COPA at this time. In an era where information is readily available online, we need to focus our resources on modernizing and delivering value to our members in new and innovative ways.

The Board also recognizes a need to drive value for members for their support while the economy drives costs higher. In response, new benefits are being explored and in the last months several new benefits and discounts have been secured which offer some real opportunities to save on everyday items and services. Some members have reported significant savings, which return the value of an annual COPA membership several times over. With the opportunities now before us as an association, I am excited about the direction that COPA is heading. With our new President and CEO and strategic plan, COPA is well positioned for a bright future. I encourage all members to stay engaged and to take advantage of the many benefits that come with being a part of the COPA community. Thank you for your continued support of COPA. 🇺🇸

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NOUVELLE DIRECTION ET PLANIFICATION STRATÉGIQUE

Au moment où j'écris cette édition de COPA Flight, le conseil d'administration de la COPA vient de terminer son travail d'identification d'un nouveau président et chef de la direction permanent. Au moment où cet article sera imprimé, la nomination de Mark van Berkel a ce poste aura déjà eu lieu et la COPA aura commencé son voyage sous une nouvelle direction. Mark apporte avec lui une riche expérience dans le domaine de l'aviation et des affaires ; c'est un pilote accompli, un propriétaire d'entreprise d'aviation et un défenseur de l'aviation générale.

Je suis ravi de pouvoir transmettre la direction nationale de la COPA entre les mains compétentes et de partager la confiance du conseil d'administration dans le fait que le leadership de Mark guidera la COPA vers l'avenir. J'ai hâte de travailler avec Mark et de continuer à soutenir la COPA dans mon rôle de directeur des opérations aériennes.

Le conseil d'administration a également travaillé d'arrache-pied à l'élaboration d'un nouveau plan stratégique pour s'assurer que notre organisation

est bien positionnée en cette période de défis pour l'industrie de l'aviation. L'objectif de la COPA est de mieux servir ses membres, d'augmenter le nombre de ses membres et d'améliorer ses efforts de représentation. Plusieurs domaines clés ont été identifiés :

1. Offrir aux membres une expérience de premier plan sur le marché grâce à des services, des ressources, et une sécurité de qualité et appréciés.
2. Promouvoir l'aviation générale au Canada afin de stimuler l'intérêt, la participation et le nombre de pilotes et de membres.
3. Promouvoir l'amélioration de l'accès et de la sécurité de l'aviation générale.
4. Développer un solide écosystème de communication et de marketing pour les aéronautiques et non aéronautiques.
5. Diversifier et étendre les sources de revenus afin d'assurer la stabilité financière de l'organisation pour la bonne exécution de notre mission.

Dans le cadre de la nouvelle orientation stratégique, la nécessité d'améliorer la communication avec les membres a été clairement soulignée. En réponse,

la COPA investit dans une nouvelle technologie qui ajoutera de nouvelles options en libre-service pour trouver des informations et de nouveaux moyens pour tous les membres d'interagir avec l'association et de communiquer ensemble. Tout en se modernisant, la COPA continuera à publier le magazine COPA Flight et cherchera à améliorer la qualité et le volume du contenu de chaque édition qui sera publiée tous les deux mois afin de minimiser la montée en flèche des prix d'édition.

Le conseil d'administration reconnaît également la nécessité d'offrir aux membres une valeur ajoutée en contrepartie de leur soutien, alors que l'économie entraîne une hausse des coûts. En réponse, de nouveaux avantages sont à l'étude et, au cours des derniers mois. Certains membres ont fait état d'économies importantes qui compensent plusieurs fois la valeur d'une adhésion annuelle à la COPA.

Compte tenu des possibilités qui s'offrent à nous en tant qu'association, je suis très enthousiaste quant à la direction que prend la COPA. Avec notre nouveau président et chef de la direction et notre plan stratégique, la COPA est bien positionnée pour un avenir brillant. J'encourage tous les membres à rester engagés et à profiter des nombreux avantages qui découlent de leur appartenance à la communauté de la COPA. Je vous remercie de votre soutien continu à la COPA. ✈️

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RÉGIONS QUEBEC

DORVAL AVIATION À CYJN

PAR JONATHAN BEAUCHESNE

Le 6 mai dernier avait lieu l'inauguration officielle des installations de Dorval Aviation à l'aéroport de St-Jean-sur-Richelieu (CYJN). Il s'agissait d'un moment important pour l'entreprise et pour l'aéroport. Rappelons qu'en juin 2021, l'ancienne administration municipale de St-Jean-sur-Richelieu avait interdit l'implantation de toute école de pilotage à l'aéroport.

Heureusement, la nouvelle administration élue à l'automne 2021 comprend l'importance de former des pilotes pour assurer la pérennité de l'aviation canadienne. Ce faisant, Dorval Aviation a profité de cette bouffée d'air frais politique pour déménager de manière permanente ses installations de l'aéroport de Pierre-Elliott-Trudeau (CYUL) vers CYJN en vertu d'une entente s'échelonnant jusqu'en 2028. Plusieurs appareils sont ainsi à la disposition de ceux et celles qui souhaitent entreprendre un cheminement personnel ou commercial dans le monde de l'aviation tout en bénéficiant de plusieurs pistes, d'une tour de contrôle, d'approches aux in-



▲ Dorval Aviation a déménagé à CYJN avec une entente jusqu'en 2028.

struments et d'installations de qualité. Et selon les propriétaires de l'école, Deborah Marshall et Sébastien Hochart, cette institution répond clairement à un besoin de la région. À noter qu'une autre école de pilotage a également posé ses roues à CYJN avec une entente similaire, soit le Collège d'aéronautique. Ces deux ententes ont été conclues par la municipalité, qui souhaite développer l'actif économique important que représente l'aéroport, dont la valeur est actuellement estimée à 80M\$. 🇨🇦

DORVAL AVIATION AT CYJN

BY JONATHAN BEAUCHESNE

On May 6, the inauguration of Dorval Aviation's facilities at St-Jean-sur-Richelieu Airport (CYJN) took place. In June 2021, the former municipal administration of St-Jean-sur-Richelieu had prohibited the establishment of any flight school at the airport.

Fortunately, the new administration elected in 2021 understood the importance of training pilots. Dorval Aviation took advantage of this political breath of fresh air to relocate from Pierre Elliott Trudeau Airport (CYUL) to CYJN under an agreement to 2028. Several aircraft are now available to those who wish to embark on a personal or commercial

aviation journey while benefiting from multiple runways, a control tower, instrument approaches and high-quality facilities. According to the school's owners, Deborah Marshall and Sébastien Hochart, this institution meets a need for the region.

It should be noted that another flight school, the Collège d'aéronautique, also entered into a similar agreement with CYJN. Both agreements were entered into by the municipality, which wishes to develop the important economic asset that the airport represents, whose value is currently estimated at \$80 million. 🇨🇦

PHOTO: JONATHAN BEAUCHESNE

L'ASSOCIATION DES PILOTES ET PROPRIÉTAIRES DE HANGARS DE CYJN FÊTE SES 20 ANS

TEXTE ET PHOTOS DE JEAN-PIERRE BONIN

Guy Fortin, Alain Gélinas et Guy Tremblay ont co-fondé l'Association des pilotes et propriétaires de hangars de Saint-Jean-sur-Richelieu (APPH) en 2003. D'abord axée sur la défense des droits des pilotes et des propriétaires de hangars face à un petit groupe de résidents hostiles aux activités aéropor-tuaires, l'APPH s'est graduellement plutôt tournée vers la promotion de l'aviation. Rejoignant COPA en tant que groupe, ils sont devenus le Club COPA 160.

Leurs principaux objectifs sont de : initier (Jeunes en vol est l'un de leurs plus grands succès chaque année); s'ouvrir sur le monde (RVA annuel et accueil des visiteurs de l'International de Montgolfières pour faire connaissance avec

l'aviation générale); explorer (mise en place de différents voyages et événements aériens); s'améliorer (mise à jour des connaissances approuvée par TC); protéger (défendre le droit de voler avec des interventions auprès de différents organismes et acteurs gouvernementaux); et surtout s'amuser!

Et le nombre de membres a progressivement augmenté pour atteindre 320 en 2023, ce qui en fait la plus grande association locale au Canada et l'une des plus actives.

Jeunes en vol est leur événement phare. L'année dernière, 57 bénévoles ont aidé 250 enfants à voler pour la première fois dans un avion de l'aviation générale et environ 1 000 visiteurs étaient sur place. Le RVA annuel d'août

a également été un succès. Tenu en même temps que le Festival International de Montgolfières, les pilotes et équipages qui s'y rendent par avion reçoivent un laissez-passer gratuit pour le site du Festival.

Comme si cela ne suffisait pas, l'APPH produit également son propre magazine (Le Journal de bord) sur une base mensuelle. Véritable magazine d'information, on y trouve bien sûr des informations sur les activités de l'Association mais aussi des nouvelles du FBO et de l'aéroport CYJN (et il s'en passe des choses en ce moment!), des chroniques (Histoire de l'Aviation, de la Construction amateur, de la Météo et autres). L'édition couleur de février ne contenait pas moins de 34 pages. 📖

CELEBRATING 20 YEARS WITH COPA 160

TEXT AND PHOTOS BY JEAN-PIERRE BONIN

Guy Fortin, Alain Gélinas and Guy Tremblay co-founded the Association des pilotes et propriétaires de hangars of Saint-Jean-sur-Richelieu (APPH) in 2003. Initially focused on defending the rights of pilots and hangar owners in response to a small group of residents hostile to airport activities, the APPH gradually turned instead to the promotion of aviation. Joining COPA as a group, they became COPA Flight 160.

Their primary goals include: Inspire (COPA for Kids is one of their biggest successes each year); Open up to the world to aviation (annual fly-in and welcoming International Balloon Festival visitors become acquainted with GA); Explore (setting up different flying trips and events); Improve (with TC approved training for Flight Crew Recency Requirements); Protect (defend the right to fly with interventions with different

organisms and government bodies); and last, but not least, to Have fun!

Flight 160's number of members increased to 320 in 2023, making it the largest local association in Canada and one of the most active. COPA for kids is its flagship event and last year 57 volunteers helped 250 kids fly for their first time in a GA aircraft with approximately 1,000 visitors on site.

The APPH August annual Fly-In was also a success. Held at the same time as the International Balloon Festival, visiting pilots and crews coming by air get a free pass to the site.

As if that were not enough, the APPH also produces its own magazine, *Le Journal de bord*, on a monthly basis. A true information magazine, there is of course lots of information on the activities of the association but also news from the FBO and the CYJN airport, aviation chronicles



▲ Members of APPH Board of Directors helping to serve eggs at an event.

like history, home-building, weather and other key and creative aviation topics. APPH administrators and members do not lack imagination as they organize an event each month or so. 📖

CPT2, KILLARNEY, ONTARIO

A favourite fly-in location in Ontario is CPT2, Killarney, Ontario, located on the north side of beautiful Georgian Bay on Lake Huron. Killarney is a pleasant little town in a gorgeous natural setting, offering plenty of activities and options for a fly-in destination. Boating, sailing, canoeing, kayaking, and hiking are all available both on Georgian Bay and in the nearby Killarney Provincial Park, one of Ontario's most beautiful and popular parks. Both Killarney Mountain Lodge and the Sportsman's Inn offer first class accommodation and restaurants, and Herbert Fisheries on the main dock is a favourite for freshly caught fish and chips. Fly in for lunch or for a multiple day stay and enjoy one of Ontario's best destinations. Pleasant 30 minute, 2 km walk into town. Pick ups and drop offs can often be arranged with local businesses.



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IRON CREEK FLYING CLUB

DISCOVER AVIATION EVENT WILDLY SUCCESSFUL

BY LESLIE CHOLOWSKY, THE COMMUNITY PRESS

However you look at it, the Iron Creek Flying Club's Discover Aviation event held on April 28 was a huge success. Club President Doug Lindseth says, "Our goal this year was to have 100 youth. Last year we almost made it. Then all of a sudden this year we had 180 registered."

He says in all about 140 youth showed up, including their parents and siblings. Some travelled long distances, as far as from Calgary. "They had no ties to our community, they came just for this event." The club counted 39 different towns represented throughout Alberta, including those in Flagstaff County. "Outside a sports team, how many events attract that many out-of-town visitors?"

Lindseth says 15 pilots donated their time and their planes to take the youth for a short trip. "I don't know who had the biggest smiles, the pilots or the kids," he adds.

He's quick to note that without tremendous support from many volunteers, both in the air and on the ground, the event wouldn't have been such a success. "We're so lucky to have our volunteers with the 'we can' attitude. There are a million reasons why we wouldn't, but our volunteers work with that 'we can' attitude and make great things happen."

Lindseth says the free lunch served 19 dozen hot dogs. "We are so thankful to have a facility like the Flagstaff Regional Airport. I think the airport is often overlooked as a valuable resource. Look at all these families who got to experience Flagstaff County. There are benefits and exposure to all our surrounding communities." He said kids from the city were fascinated by seeing farmland from the air, and learning about the grid system. "The whole day gives them a chance to have a different perspective."

Besides lunch, participants receive a



▲ Fifteen pilots donated their time to take youth up during the Iron Creek Flying Club's Discover Aviation event.

swag bag, with aviation-related items, and items from Flagstaff County, as well as a certificate from their flight, with their pilot's name and call sign.

Lindseth says that aviation needs an influx of pilots, mechanics and other positions. "If just one of those kids feels it was something special, then the event worked. You never know what you might spark in these kids, and that's the whole point of the day. "It's an opportunity to get exposure to something different from their daily lives."

"This event does a very good job of sharing aviation experience and opportunities with more people," continues Lindseth, "many of who may have thought it was out of reach."

He says the size of the event rivalled those held in the city. "It's a big feather in our caps, for the club and the airport. Flagstaff Regional Airport and the Iron Creek Flying Club have very good reputations in western Canada."

"Events like this broaden the name recognition and place us on the map. Being known for something positive is a lot harder than to be known for something negative," he adds. Lindseth says one of his favourite things about the day is that it is a multi-generational day. He says it reinforces social cohesiveness. "The families of the youth enjoy it as much as they do, whether that's a parent or a grandparent." 🛬

PHOTOS: GRANT BAILEY (LEFT), SUNGMO KANG (RIGHT)

NORTH BAY'S FLIGHT DECK RESTAURANT

BY ROBERT GRANT

North Bay has been considered a Canadian crossroads since town planners suggested the community's geographic location should become a station on an airway route. Construction began in 1937 and, a year later, an airline landed a Lockheed on the unfinished surface. Today, nearly 2,000 passengers per month access the airport terminal.

Sisters Shelley Dunsmore and Tracy Bissonnette were no strangers to what became North Bay Jack Garland Airport. Both travellers, they noticed that Covid-19 forced the closure of the on-site restaurant and realized a niche existed to meet the needs of passengers and airport staff. They intended to establish more than "...just a place to have a cup of coffee." The Flight Deck held its grand opening during a snowstorm on March 31, 2023.

Born four years apart, both sisters hold business experience: Dunsmore, owner of a figure skating studio, and Bissonnette has worked in the service sector for 30-plus years. "We went ahead anyway, knowing that anyone passing through the terminal's main doors notices the Flight Deck waiting for boarding passes or entering pre-boarding," says Bissonnette. "We're both full-time here... and Kailey Crawford, Shelley's daughter, helps during busy days."

Airport manager Brian Avery adds feedback on the airport's only restaurant is positive. The sisters' culinary and management skills also draw from various aerospace organizations adjacent to the 10,000-foot runway. Unlike dining establishments at most domestic and international airports, the Flight Deck provides free clientele parking. Bissonnette and Dunsmore also created the incredible Flight Deck Burger.

"The Flight Deck Burger's our specialty and the first of its kind anywhere," explains Dunsmore. "We make them on our premises with selected sauces and also prepare home-cooked foods. We've al-

ready applied for a liquor licence as well and we've been told the Flight Deck's prices are much lower than most airport restaurants." Garland Airport considers air services, such as Voyageur Airways and Canadore College's School of Aviation satellite campus, as permanent residents. Three cargo airlines arrive daily and CATSA staff, ground handlers and aircrew regularly drop by the Flight Deck. The airport's management team of 10 year-round employees, visiting dignitaries and multi-national professionals welcome the new restaurant.

Light aircraft pilots of FedEx's Cessna 208 Caravans and private airplane tourists take time at the Flight Deck. COPA Flight 23 members often meet for impromptu gatherings and support



▲ The Flight Deck enjoyed its grand opening on March 31, 2023.

a Discover Aviation program from the transportation hub's facilities. Everyone considers Shelley and Tracy's efforts as more than developing "...just a place to have cup of coffee." ✈️



* Images are renderings

The Municipal District of Willow Creek is dedicated to improving and maintaining the airport's infrastructure and as part of this ongoing commitment, a new tarmac topcoat will be applied to our main runway.

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WHALE STRIKES

THE CHALLENGES OF FLYING LOW LEVEL ON THE WEST COAST

Low-level operations are weird – and fun. An old industry *joke* is that seaplane and helicopter pilots are afraid of heights. I would have you know, I resemble that implication. As a seaplane pilot with helicopter time (notice I did not say a helicopter pilot with seaplane time!), I will admit that I am very comfortable flying at 20 feet (and, no, that is not a misprint). But low-level operations do present *moments* that make FL240 look good. How do I write up a whale strike?

In preparation for writing my *Go Around* column, I first decide on the theme. Then I start looking for photos. I have thousands of photos (old print variety and digital), as I have always carried a camera of some sort when I fly. But for some reason, when flying in ground effect, I am not interested in taking photos. I'm odd like that. But my memories are super-high-definition. I also decided to talk to some of my colleagues about their experiences and, let me tell you, their stories could fill a year of *Go Arouns*. It seems that just about all of us low-level, wetcoaster pilots have



▲ Float pilots often find low cloud and tall masts are often found together, posing significant risk to pilots.

looked up at an airborne whale. No – I am not making that up.

Whales love to breach. When you see a Humpback whale completely out of the water, it is mind altering. Orcas are the best at it (if you exclude Spinner Dolphins). Orcas seem to love out-of-water time. Back in the very early “noughties”, I was tasked with flying freight and people to Rivers Inlet. Departing YVR (or more accurately AM9) in a DHC-2 Mk1 on a low cloud day with two passengers, freight and all tanks (including tips), I set course NW. This is a flight of 248 SM in a straight line. But due to weather, this would be in the 300 SM range. At Rivers, I refuelled only the belly tanks, as I anticipated a refuel at Port McNeill. I was without passengers from McNeill to Vancouver.

The run from Rivers to McNeill was low, but the departure from McNeill was lower, as the weather had deteriorated. Leaving McNeill with full tanks (again including tips), I found myself being restricted to low and slow along Johnstone Strait. Oh well – here we go again, just another day in the office, but at least it was calm. As I progressed down the strait, I became aware of churned up water. Boat wake. Hmm, big boat wake. Hmm, that's prop churn. This is a big boat and then I am right over his wake. Let's slide right, and give ourselves some room, as I'm thinking “cruise ship”.

Minutes later, I passed her. All I saw were the lower portholes. And that's when the fun happened. An Orca decided to get some air time. Right in front of me. There was no time to react. I went through it's spray, the engine kept running, so I kept going. At Campbell River, the cloud base lifted enough for me to get to about 200', so I relaxed and continued for home. A couple of weeks later though, I didn't miss. Only this time the poor whale was merely trying to catch a breath.

The landing at Victoria Harbour was a normal East bound. Off the step, I reached to lower the water rudders. At this point, the

PHOTOS: MIKE SATTLER



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Beaver lurched up and right, then dropped. It felt like I had hit a boat wake. But there were no boats nearby to cause such a large wake. I dropped off my passengers, and pointed the Beaver toward the outer harbour, only to notice there were boats everywhere now; and all in the takeoff/landing area. Calling Victoria Harbour Radio, they informed me that a Grey Whale was in Area Alpha. I – casually – asked if there were any “marks” on it? They informed me that marine operators were reporting a large mark on its back. I sheepishly informed Harbour Radio that it may have been me. They informed me that was what the Water Taxi guys saw. They actually saw the whale surface under me, so there was no chance of me avoiding contact. But what if Tower is helping you avoid contact?

When you fly in controlled airspace, even under VFR, the folks in the tower always do their best to provide guidance for traffic separation. That great little hint that traffic is “at my one o'clock and six miles” gives me a fighting chance of “Yep, I see them” or words of that variety. When you find yourself at low-level though, that assistance can make all of the difference.

Many years ago I was flying a Beaver from the Southern Gulf Islands of BC to Vancouver Harbour. Tower asked me to confirm my altitude. I responded, that on the current altimeter setting, I was at 10 fathoms. “That,” they said, “explains the minus-100 on the mode C”. Shortly afterwards, tower advised me of traffic,



▲ Cumulus Granitus is often found inside Cumulus Nimbus, or Stratus, as seen in the above photo.

my “three o'clock, tracking west” with a suggested heading being provided. Following directions given, I turned and promptly passed a tug boat. A couple of minutes later, there was new traffic, my “10 o'clock, tracking east”, “suggest heading...” at which point I passed another tug boat. Tower was totally heads up and was steering me around boats to keep everyone safe. About 15 years later, I met the controller who was my guardian that day. He remembered it as clearly as I do still. I hugged him.

Personally, I think he just did not want to deal with the paperwork. Afterall, how would he report that one to Transport, as a “Tug boat strike”. 🛩️

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HOW MUCH TECH

MAKING MISSION SENSE AND CONTROLLING COMPLEXITY IN THE COCKPIT



▲ Commander 114B panel with Garmin radio stack and legacy King KN DME.

For those pilot/owners who do not have the luxury to buy a new aircraft with full glass panel, ADS-B OUT, de-icing, TCAS, and so on, the list of upgrades to legacy or vintage aircraft can be endless. Every year, manufacturers take advantage of the FAA's Non Required Safety Enhancing Equipment (NORSEE) equipment that is not required by any U.S. Federal regulation, in an effort to measurably increase safety. There are currently nine manufacturers with NORSEE certifications, which allows specific technology to be permanently installed onto the aircraft.

With aircraft values increasing over the past three years, one might argue that investing into avionics or other upgrades may yield at least a 100 per cent return on your investment when selling the aircraft. Other upgrades are mandatory, such as 406 MHz ELTs. General Aviation operators have until November 25, 2025, to be 406 MHz ELT equipped.

Aircraft upgrades can be divided into the following categories: paint; glass; interior seating; interior plastics and headliner; flat instrument panel; engine and propeller; power; avionics; internet connectivity; and infotainment. Safety focused technologies include: BRS's ballistic parachute system; four point harnesses; and airbag equipped safe-

ty belts. Upgrade investments can be further divided into the following: Aesthetics; time sensitive, such as engine and propeller overhauls; replacement of faulty components; preventative maintenance; and whizbang. Pre-pandemic, the conventional rule of thumb was a return on investment of roughly 50 per cent. Depending upon the specifics of your parking, painting the aircraft may see a diminishment of the quality of the paint by five per cent per year for aircraft tied down in the elements. A Cessna 182 friend of mine noted that keeping his aircraft parked outside in a tiedown would save him roughly \$400 per month – or \$48,000 over 10 years. At that time, the cost to paint a Cessna 182 was roughly \$15,000. The savings of tiedown versus hanger would allow him to repaint his aircraft every 3.2 years. The aircraft was never painted during his ownership and while the aircraft was equipped with sunshades, the fabric interior did not fair well. I'm curious if the new owners have invested into new paint and interior.

With an endless number of aircraft upgrades, how much is too much? Does the migration from steam gauges to glass provide that much gain to justify the investment. While the costs of a full panel

upgrade will vary based upon the specifics of the aircraft and location of the upgrade (a US avionics shop), the final cost will typically run easily into US\$100,000. Outside of pride of ownership, will the migration from steam gauges to glass panel provide \$100,000 worth of value to the pilot/owner? Or should the pilot/owner consider upgrading to a newer aircraft? Evolving the aircraft's panel to support portable aviation devices makes a lot sense. Installing TSO'd USB power charging ports to power your smartphones, tablets, ADS-B GPS IN, and other devices is a great example of a technology that will be used on every flight providing a practical and inexpensive add on. As the number of portable devices carried by pilots and passengers increase, the demand for charging ports will increase. In 2014, we installed our first USB dual port TSO'd charging port. In 2023, this has grown to six ports.

In today's economy, with the value of some older aircraft escalating, investing US\$100,000 into your 1975 vintage aircraft may deliver a false economy. Aluminum appears to have an infinite life, but aircraft components may age more rapidly, such as bearings, bushings, pulleys, brake lines and hoses. Many components are date stamped like fuel and oil hoses. For GA aircraft, some components like propellers have a mandatory 10-year inspection requirement. Magnetos have a 500-hour inspection and repair cycle, but for GA aircraft this is at the discretion of the aircraft owner. While magnetos have wearable parts, should the GA aircraft owner defer the inspection and repair to 600 or 700 hours (if it's not broken, don't fix it)? Mike Busch of Savvy Aviator contends that child mortality syndrome causes good engines to have issues during the first 100 hours of an engine overhaul. If a high-time engine (let's say 2,200 hours) has high compressions and is burning a quart of oil every 10 hours, should it be overhauled? Or should the overhaul be deferred until one of the previous conditions warrants the engine being overhauled? This allows the investment into the overhaul process to be deferred until some future date.

Recently I had a conversation with a 200-hour pilot looking to acquire his first aircraft. He was looking at a 1977 Rockwell Commander. The owner listed it at US\$99,000, with 250 hours (\$25 per hour \$6,250, \$38,750) TSO, Garmin stack (US\$30,000), newer paint and interior (US\$25,000). The upgrades total US\$93,750. If the aircraft was a Cessna 172, we would argue that the seller would be able to make back 100 per cent or more of his upgrade investment. In this case of the Commander, the prospective purchaser is deferring or eliminating future upgrades except for an autopilot, and propeller (2024 the propeller reaches the 10 year inspection need, presenting an overhaul or possible upgrade to a 3-bladed propeller).

I recall taking a flying-club member for a flight in the Commander. He pulls out his iPad, external GPS ADS-B portable and a Garmin 696. The Commander is equipped with dual Garmin GPS/NAV

Coms and my Dual X160 GPS, I think that his equipment was a bit overkill, taking up room in his somewhat confined quarters, especially for our 20-minute hop for breakfast. The amount of tech used during your flight should align to your mission without adding complexity in the cockpit and on the ground.

Tech management is about the time and resources invested into keeping the hardware and software up to date. As an example, popular Electronic Flight Bags like ForeFlight and Garmin Pilot and the tablets (which those apps run on) require management to ensure operating systems are up to date; batteries are optimally charged; thermal management is considered (especially during summer months); EFB is up to date, as well as databases and your training on the EFB app. Training on the tech is important. In the IT world, we have an 80/20 rule. Twenty per cent of the users use 80 per cent of the features and functionality.

Consider also your state of readiness and training on tech used in the cockpit, such as a portable handheld transceiver. ensure the aircraft is equipped with a panel mounted antenna connection point to allow the handheld to connect to the external COM antenna (greatly improving the range); headset adapter is attached to the handheld for quick connectivity from the pilot's headset; push-to-talk button allows the pilot to aviate when using the handheld; and batteries are charged with access to a spare alkaline battery pack. Preparation of your tech ensures that an event like an electrical failure is not compounded by faulty backup technologies. Testing backup tech when airborne ensures it works and flexes muscle memory.

Knowledge of your technologies often allows for a pilot's response to an inflight event or emergency to be a non-event. A positive outcome to an inflight event is priceless. 🙏

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AVIATION ICE AND SNOW

CELEBRATING 40 YEARS OF WINTER SPEED IN LAC LA BICHE

BY LAURA MCLEAN

For the past 40 years, apart from a few missed years due to poor weather and restrictions, volunteers and organizers have come together to host the wildly successful Winter Festival of Speed in Lac La Biche, Alberta, roughly two hours north of Edmonton. The event is a unique and exciting experience bringing together the worlds of aviation and winter sports.

I was lucky enough to make the trek from Ottawa, Ontario, to attend the festival, where I was immediately invited to drive out on to the frozen lake to meet COPA Director Ken Zachkewich. The lake was set up in several sections, including a place for a vintage snowmobile display and rides, a trapping pavilion, axe throwing booth, an area for the ice carving demonstrations, a cabane à sucre and three racetracks – one for a participant rally race, a second for the Western Canadian finals of car ice racing, and another for the Straightline Snowmobile Racing Association drag race. At the very end of the setup, I pulled up to



▲ COPA director for Alberta Ken Zachkewich with the association's communications lead Laura McLean.

the runway and parking area. Dedicated volunteers had worked hard to put together an incredible runway that spanned 4,500 feet by 120 feet, four taxiways, a dedicated helipad and a 600-by-200-foot parking area. At one point, the parking area was overflowing with aircraft. Over the entire weekend, 89 aircraft, including five helicopters, flew to the Winter Festival of Speed from all over Alberta, landing on an ice runway.

The thrill of seeing so many planes and helicopters flying overhead, circling and landing on the ice was unlike anything I've experienced. When pilots landed, they made their way over to the fires for hot dogs, beans and to receive their official certificate deeming them an Ice Pilot of Lac La Biche. On Saturday, I experienced my first flight in a small aircraft thanks to Ken Zachkewich. He took me up – twice – in his Piper Cherokee and, after the nerves of the initial take off passed, I was able to see the true size of the festival set up and Lac La Biche is from above. On the second flight, I agreed to experience negative Gs and I will not forget the feeling for a long time. After landing and exiting the aircraft, it is safe to say that I was hooked.

Spending time in Lac La Biche, getting to meet COPA members and aviation enthusiasts from all over Alberta, amid the beauty of winter in Canada, even as it reached minus 20-degrees on a frozen lake, I was able to see what General Aviation is all about. It is people coming together to form community, sharing their love for aviation and inspiring others.

Whether you are an aviation enthusiast, a winter sports fan, or simply looking to get out and experience something new, I highly recommend adding Lac La Biche's Festival of Speed to your travel plans. If standing on a frozen lake in minus-20-degree weather isn't really up your alley, there's always the summer float plane splash-in on September 9, 2023. The town, the people and the region's aviation community will certainly convince you to return for another visit. 🛩️

PHOTO: ROB JAAP

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GLACE ET NEIGE

CÉLÉBRONS 40 ANS DE SPEED À LAC LA BICHE

PAR LAURA MCLEAN

Au cours des 40 dernières années, à l'exception de quelques années manquées en raison de mauvaises conditions de glace, de covid, etc., les bénévoles et les organisateurs se sont réunis pour organiser le Winter Festival of Speed à Lac La Biche, en Alberta, à environ deux heures au nord d'Edmonton, qui a connu un succès retentissant. Cet événement est une expérience unique et passionnante qui réunit les mondes de l'aviation et des sports d'hiver.

J'ai eu la chance de faire le voyage d'Ottawa, en Ontario, pour assister au festival, où j'ai été immédiatement invité à me rendre sur le lac gelé pour rencontrer le directeur de la COPA, Ken Zachkewich. Le lac a été aménagé en plusieurs sections, dont un endroit pour l'exposition de motoneiges anciennes et les manèges, un pavillon de piégeage, un stand de lancer de hache, un endroit pour les démonstrations de sculpture sur glace et sur neige, une cabane à sucre et trois pistes de course - une pour un rallye pour les participants et leurs véhicules personnels, une deuxième pour les finales de l'Ouest canadien de la course de voitures sur glace et la dernière pour la course d'accélération de motoneiges avec la Straightline Snowmobile Racing Association. À la toute fin de l'installation, je me suis arrêté à la piste et à l'aire de stationnement. Des bénévoles dévoués avaient travaillé dur pour mettre en place une incroyable piste de 4500 pieds x 120 pieds, 4 voies de circulation, un héliport dédié et une aire de stationnement de 600 pieds x 200 pieds. Le premier jour de l'événement a commencé un peu lentement, mais au fur et à mesure que le temps se réchauffait et que le soleil apparaissait, de plus en plus d'avions ont commencé à arriver. À un moment donné, l'aire de stationnement débordait d'avions.

Pendant tout le week-end, 89 avions, dont cinq hélicoptères, sont venus de toute l'Alberta pour voir le festival et, surtout, pour atterrir sur une piste de glace. Je suis toute nouvelle dans le monde de l'aviation, et cet événement a été extraordinaire. Le spectacle des avions et des hélicoptères qui survolent la glace, tournent autour d'elle et y atterrissent ne ressemble à rien de ce que j'ai connu. Lorsque les pilotes atterrissaient, ils se dirigeaient vers les feux pour manger des hot-dogs et des haricots et pour recevoir leur certificat officiel de pilote de glace du Lac La Biche. Samedi, j'ai même eu l'occasion de faire mon premier vol dans un petit aéronef grâce à Ken Zachkewich. Il m'a emmené (deux fois !) dans son Piper Cherokee et, une fois passée la nervosité du premier décollage, j'ai pu voir la taille réelle du festival et apprécier la richesse de la nature de la ville de Lac La Biche vue d'en haut. Lors du deuxième vol, avec la confiance d'un pilote plus ex-

périmenté, j'ai même accepté d'expérimenter des G négatifs et c'est une sensation que je n'oublierai pas de sitôt. Après l'atterrissage et la sortie de l'avion, je pense que l'on peut dire que j'étais captivé.

En passant du temps à Lac La Biche, en rencontrant des membres de toute l'Alberta et en découvrant la beauté de l'hiver au Canada - par moins 20 degrés sur un lac gelé - j'ai pu voir ce qu'est l'aviation générale. Ce sont des gens qui se rassemblent pour former une communauté, partager leur enthousiasme pour l'aviation et inspirer d'autres personnes à s'impliquer.

Je vous recommande fortement d'ajouter le Lac La Biche en février à vos plans de voyage ! Et si le fait de se tenir sur un lac gelé par moins 20 degrés n'est pas vraiment dans vos goûts, il y a toujours le splash-in estival d'hydravions qui aura lieu le 9 septembre 2023. 🛩️

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RED ENGINE BEAVER

LOOKING TO THE FUTURE WITH SEALAND AVIATION

BY WARWICK PATTERSON

In the early 1980s, the coastal waters of British Columbia were abuzz with float planes as they serviced the logging and fisheries industries. On Vancouver Island, Bill Alder saw an opportunity. He watched all of these businesses sending their aircraft over an hour south to Vancouver for maintenance. In 1981, with his tools in his pickup truck, Alder established the fledgling Sealand Aviation at the freshwater marina in Campbell River.

"At that time there were a lot of float planes in Campbell River," recounts Alder. "Every logging company had two or three. Almost overnight, I was swamped with all the business I wanted."

In the years since, Sealand has become synonymous with the De Havilland Beaver, having designed and engineered several modifications along with restoring many of them back into service. With more than 70 people on staff, the hangar campus at the Campbell River airport hums with activity. Nearly half of the airworthy Beavers have the Sealand cabin extension, and they have just delivered their 200th Alaska Door kit. Alder admits things were less bogged down in bureaucracy and paperwork in those days, especially when the regulators found out who his DAR (Design Approval Representative) was for the cabin extension project.

"I was pretty green at the time and I didn't know anybody who was a DAR," says Alder. "Somehow I got connected with Dick Hiscocks - he designed the Beaver! Dick charged me \$100 to do the engineering. When we expanded it and put the Alaska Door in, that engineering cost me \$100,000."

▲ Pilots Greg Koopman and Jim Watson in April 2023 reached 25 hours on Sealand's RED Aircraft powered Beaver.

LEGENDARY POWER SHIFT

The classic rumble of a Beaver comes from its legendary R-985 Wasp Junior radial engine. In just five more years (2029), this engine will celebrate its 100th Birthday. So, it's no surprise that curious engineers have been exploring replacement engine options to keep the bush pilot's workhorse in operation. There is the obvious PT-6 turbine conversion, but that comes with a hefty bill. Over 15 years ago, Sealand was already exploring alternate engine options in cooperation with Trace Engines, which was a continuation of the liquid-cooled V8 Orenda OE600 program. Somewhat disillusioned with the project, a chance encounter at Oshkosh with Germany's RED Aircraft and its diesel V12 led to the path they are on today.

Inspired and derived from the diesel Le Mans-winning race car engines, the twin turbocharged, aluminium block V12 engine is a work of art. It pumps out 550 horsepower, 100 more than the radial Beaver. The single FADEC control lever in the cockpit might confuse the traditional bush pilot though.

"The innovations it has made a lot of sense when you start flying it," says Alder. "It's basically two inline 6-cylinder engines sharing a crankshaft and the oil. Its FADEC and electrically controlled. Everything is redundant. You can turn half the engine off."

While running on half an engine won't be a standard procedure, if you blow a radiator or have another issue, the engine half that's giving you problems can be isolated and you'll still get home cruising at 110 mph. However, the real sales pitch for

PHOTOS: WARWICK PATTERSON

the conversion comes down to economics.

"It's not going to be particularly cheap to install it, but way cheaper than a turbine," enthuses Alder. "The fuel consumption is just incredible. During testing, at 60 per cent power, we're cruising at 148 mph which is the bottom of the yellow arc, and we're burning about 18 gallons an hour. Now, suddenly the aircraft is going faster than it would normally go, burning less fuel, plus the payload is going to go up. Basically, what you've got is an airplane that will operate for the same cost as a Cessna 206 and pack three times as much."

The other bonus is that diesel fuel is far cheaper and more readily available than av-gas, especially in remote areas. Unless you ordered drums of fuel a season in advance, there are places a Beaver cannot go in the north.

As of April 2023, the plane had just finished flying off its first 25 hours with Sealand's Greg Koopman and Powerplant DAR, Jim Watson, at the controls.

"The engine is certainly every bit of what I expected, and more," says Watson. "The pilot operation simplicity of a diesel engine is more like a turbine. The start and in-flight operation are much more simple than the R-985. No priming or secondary engine controls. Just push and hold the start switch, and it'll start – simple as that."

The next phase of testing will include putting the aircraft on floats and embarking on the type approval process with Transport Canada.

"The FADEC system and dependency on electricity to control the engine is fairly new to GA airplanes, so we need to agree on the basis of certification," explains Watson. "Transport Canada is very positive about moving forward with advanced designs and environmentally friendly systems."

The team at Sealand is optimistic, but also realistic in how much work is still to be done. The coming year will see extensive certification testing, including hot and cold environments. Transport Canada STC approval for the Sealand conversion kit for the RED engine installation is expected in early 2024. As the R-985 nears its centenary, the roar of the Wasp might soon be joined by the thrum of V12-powered Beavers as they continue to link the communities and industries of Canada for decades to come.

ELECTRIC FLIGHT TRAINING

While Sealand Aviation might not be going the electric route for the Beaver just yet, their flight training department, Sealand Flight, is already taking steps to embrace that future. They are the second flying school in Canada, and the first in BC, to be selected by Transport Canada to evaluate electric aircraft.

"Our current syllabus in Canada is very cut and dried, and is designed for internal combustion engines," explains Nancy Marshall, General Manager. "What they want us to do is provide input into changes to the syllabus."

For starters, the regulations as a whole need to be examined. Aircraft currently need oil pressure and fuel gauges, for example, which do not apply to electric systems.

"People haven't even found these things yet," continues Mar



▲ Bill Alder and Nancy Marshall with Sealand Aviation's RED engine powered Beaver.

shall, "but we're going to start tripping over them. The regulations have to change, and the training has to change, before we can get people flying electric aircraft."

The act of starting an electric-powered flying school is also a challenge due to the infrastructure needed. With their school based in Campbell River with hubs in Powell River, Courtenay, and Qualicum, the goal is to have energy facilities at each location so they can perform cross country flights. Installing high-output chargers can come with a big price tag if other community partners and hydro providers do not jump on board. Marshall hopes that these charging stations can be used for both public aircraft and cars, and that BC Hydro might see this as a green initiative to support.

Sealand's Chief Flight Instructor, Ian Lamont, is soon heading to Europe to take delivery of a Pipestrel Velis Electro which is an established electric trainer in other parts of the world. They take about an hour to fully charge between flights, so the plan is to eventually have multiple aircraft available.

"I would like to see these replace all the 172s in our fleet. The maintenance costs and aggravation of things like magneto problems would be reduced. Av-gas is also the last transportation fuel that contains lead. But, try to buy the alternative currently."

The other question that Sealand and other flight schools will help solve is how students can transition from operating electric to internal combustion aircraft. Whether that takes the form of a separate permit or if both types of aircraft will need to be used during training remains to be seen.

As the environmental pressures on aviation and other fuel-burning industries mount, it is forward-thinking partnerships formed between Transport Canada and innovative front-line operators such as Sealand that will help bridge the knowledge and regulatory divide. 🛩️

Requiem for THE CIRCLING APPROACH

A LONG-STANDING FEATURE OF IFR FLIGHT IS BECOMING HISTORY
BY ALAN HEPBURN

In the March/April issue of *COPA Flight*, I noted that the transition to Area Navigation (RNAV) has had a profound influence on planning the route of an IFR flight. This article will look at another long-standing feature of IFR flight that is in the process of being relegated to history by the move to RNAV – the circling IFR approach.

Most approach procedures used to include a *Circling* line of minimums, as a single approach often had to accommodate landing on more than one runway.

The idea was that, if an approach was not published to the runway on which you wanted to land, you could descend to the published circling minimums, then maneuver visually to align yourself with the landing runway before continuing descent. Typically, other than in mountainous country, circling minimums required a ceiling of about 600 feet above the airfield, and visibility of 1 1/2 to two miles. That's not too much higher than typical non-precision approach minimums, and significantly below VMC minimums of 1,000 feet and three miles applicable in controlled airspace, so there were many occasions when a circling approach was a useful asset. It was not without risk, however.

To carry out this procedure at minimums, you had to fly a very tight pattern just below the cloud base, with visibility and altitude half those used for a VFR circuit, so it was about the riskiest thing you could do under IFR, particularly for faster aircraft. Being able to fly a straight-in procedure is undoubtedly safer. When RNAV approaches were first introduced, circling minimums were also published for them. But providing a separate straight-in RNAV approach to a given runway typically only requires that the necessary survey be carried out and Uncle Sam pays for the GPS signal. As time went by, an increasing number of runways got an RNAV approach at each end. In 2019, a point was reached when circling minimums ceased to be published for many traditional aids approaches, and for the vast majority of RNAV approaches in Canada. A Notice of Change described the criteria for removal of circling minimums.



▲ The move toward RNAV is impacting the circling IFR approach.

For some approaches, only circling minima are published. This is the case when the alignment of the final approach course differs from the runway heading by more than 30°, or the gradient of the final approach exceeds 400 feet per nautical mile. Instead of having a runway number in the procedure name, these procedures have a letter. See, for example, the unrestricted RNAV approaches at Kamloops and Kelowna, BC. At these mountain airports, circling minimums are well above VMC. Circling minimums get you overhead the airport, after which you circle to land visually. At some flatlands airports, an obstacle on final approach dictates a gradient in excess of the 400 feet/mile limit or, for some traditional aids approaches, the aid is not on a runway centreline. In these cases, only circling minimums are published. An example is the VOR/DME A at Brampton. There, while the VOR radial is not precisely aligned with the runway, it is obstructions on final that dictate the need for circling-only minimums. You are not forbidden from landing straight-in off these approaches, but circling to land is the norm.

At a few runways, nearby airspace precludes having a straight-in RNAV approach. In Ontario this is the case for runway 32 at Brampton, runway 14 at Burlington Airpark, and Runway 35 at Pembroke. At Burlington and Brampton, the proxim-

PHOTO: © RIK / ADOBE STOCK

ity of the approaches at Pearson is the problem. At Pembroke, it's the restricted airspace CYR 511 that gets in the way. At these airports, you're going to have to circle if conditions dictate landing on the reciprocal runway to the one with the published approach. All three of these airports have Class G (uncontrolled) airspace below 700 feet AGL, in which VMC is clear of cloud and two miles visibility. It used to be one mile, but apparently that changed in the not-too-recent past. This isn't much different from typical circling minimums in flatlands country, so the removal of circling minimums at uncontrolled airports had little practical impact, since you can circle to land VFR once you are out of controlled airspace. In controlled airspace, the VMC requirements go up to 1,000 ceilings and three miles visibility, but at least in Ontario there's nearly always an RNAV approach from both ends of the instrument runway. So, in what is now predominantly an RNAV world, circling is seldom required.

At Burlington, where the only approach is the RNAV to runway 32, circling minimums are still published, permitting you to land on runway 14. The circling minimums are only 20 feet higher than the straight-in minimums to runway 32. At Brampton and Pembroke, traditional aids approaches still exist, and since that was one of the criteria for removing circling minimums, they were removed from the corresponding RNAV procedures. My aircraft, like many RNAV-equipped light aircraft, no longer has ADF or DME, so I cannot fly either of these traditional-aids approaches. The RNAV approaches are my only option.

At Pembroke and Brampton, you might ask if you can fly the RNAV approach to the published circling minimums for the traditional aid procedure, then circle to land as permitted by the traditional aids procedure. After all, the navaid is not required to fly the circling part of the procedure. The answer is on page 69 of the CAP GEN: "Absence of charted approach minima for a specific navigation type (i.e. LNAV/VNAV, circling, etc.) indicates the procedure type is not authorized to be flown." So if you do not have the necessary traditional aids aboard, all you can do is fly the straight-in RNAV approach to a runway until you are in Class G airspace, then if you have the required 2 miles visibility, break off the approach and land VFR on the opposite runway. The CAP GEN does not specifically authorize VFR circling, but it is presumably an option. Just because the VFR circling maneuver is legal does not mean it is without risk, however.

With exception of the steep/non-aligned exceptions discussed earlier, circling minimums are now mostly only published for a few traditional aids approaches, which themselves are on the verge of extinction, and which fewer and fewer aircraft are equipped to fly. There is no requirement to demonstrate circling on the IFR ride, so circling approaches have dropped them from the syllabus, at least at one major school where I checked. Thus, flying circling approaches will soon become an obsolete skill.

Given the consequent decline in familiarity with these procedures and the risk involved, perhaps the time has come to remove the circling minimums for all approaches, other than for the steep/non-aligned ones. At the very least, you should

consider raising your personal minimums for VFR circling to be significantly above the Class G limits of clear of cloud and two miles visibility. About the only time you might want to fly a traditional aids procedure (other than perhaps an ILS) is following loss of GPS, which today constitutes a rare in-flight emergency. As we've seen, this will only be possible for most light aircraft at the very few fields with a VOR-only approach (four in Ontario, for example). However, if following a loss of GPS, you are too far from an ILS to get a vectored approach, but are close enough to one of the few remaining VOR approaches, you are hardly likely to let the lack of circling minimums or DME stop you from getting down.

A recent edition of the TV show *Mayday* emphasized the fact that flying circling approaches is becoming an obsolete skill. The show described an Air China flight that was cleared for a circling approach to a runway in South Korea. The flight ended up in a controlled flight into terrain (CFIT) accident. The captain had no idea how to fly a circling approach. He took his Boeing 747 right through circling minimums and, despite frantic calls from his co-pilot to execute the missed approach, continued the descent. The first thing they saw were trees. Examination of the captain's training record showed that he had only done one circling approach in his entire career. That was on a simulator to a runway in Beijing. 🛩️

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PROTECTING AIRCRAFT ON THE GROUND

STRATEGIES TO SECURE YOUR INVESTMENT AND RESALE VALUE

BY PHIL LIGHTSTONE

Many pilot-owners will keep their aircraft in a hanger, but space is not only limited but costly, especially a heated hanger. Depending upon your budget, you may be relegated to a tiedown, either on the ramp or in the grass.

A perfect time to accessorize your new aircraft is when you purchase it. Adding accessories not only for its new home, but also for those cross-country trips to scenic locations (overnight trips). Begin with the basics designed to protect the

airframe including the canopy, pitot tube, air vents, cowl inlets and control surfaces. Control locks and flight surface locks are essential to protect the aircraft's cables, pulleys, bell cranks and hinges. I have seen some pilot-owners using the seatbelt in their Piper to lock the controls (generating full up elevator and left aileron). AirGizmos have these easy-to-use gust locks which are affordable at US\$39.95. Its Gust Locks are designed to quickly lock virtually any control surface securely, are brightly coloured and have an integrated flag reminding you to remove before flight.

Securing the aircraft in its tiedown location begins with good quality ropes (or chains) and proper anchors. Ideally, the tiedown areas have three-point anchors affixed to the ground. At my home airport, a microburst rolled through, picking up a few chocked Cessna 172s and placing them on their backs. I'm not a fan of chocking as a long-term solution. Carrying a portable tiedown kit is an essential accessory when travelling. There are bunch of them at Aircraft Spruce including: The Claw (\$168.75); FlyTies, designed for load capacities of 3,600 lbs (\$202.95); and Nelson Aircraft Tie-Downs (US\$138.95). Carrying a good hammer (The Claw kit includes one) is essential to drive the steel rods into the ground, and also pull them out.

It's always a good idea to travel with a set of chocks. At a recent \$100 hamburger outing, a flying club member left his C182 un-chocked. The ramp had a slight downgrade to it. During coffee, the C182 started to roll and just missed another parked aircraft. While it was amusing to watch him scramble, the outcome of hit-



▲ Patty Wagstaff, an accomplished aerobatics pilot, adds ground protections with a high visibility wing marker on her Extra 300/s.

ting a parked aircraft cannot be underestimated. Prochock designed a low-profile chock, using a sticky rubberized compound to minimize chock slip. Using a florescent high-visibility rope to attach the chocks to each other, they stand out on the ramp, especially during night operations. Owners can customize Prochock, adding their aircraft registration, name, date of solo, "stolen from Bill" or other notable words. Weighing in at two pounds, Prochock starts at US\$55.

I'm a big fan of protecting the aircraft's windows and windscreen, especially at airports in desert climates (blowing sand can play havoc with the windscreen). Thermal engine covers are great to keep the heat generated by an engine pre-heater in the engine compartment,



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during winter temperatures. There are a number of manufacturers of high-quality canopy and thermal engine covers including Bruce's Customer Covers and Aero Covers. The wrinkle with canopy covers is the placement of antennas and Outside Air Temperature probes which require cover customization to ensure a well-fitting cover. Most companies use Sunbrella, a breathable, water resistant, sun and mildew resistant material. An added benefit of Sunbrella, is keeping the inside temperature lower than the outside air temperature. This helps minimize the degradation which avionics, gyros, instruments, fabrics and plastics take. Key to getting a good fit is design, straps and buckles. Ideally the straps should be situated where they will not interfere with struts, probes, antennas or landing gear doors. Some manufacturers add in Velcro or zipper attached doors into their covers aligning with aircraft's luggage door or entry door.

If you are relegated to outside tiedown parking, wing and tail covers should be used during the winter to keep frost, snow and ice from sticking to the surfaces. Removing the covers can take some aerobatics when it's windy (especially on high wing aircraft), but should not add too much time to pre-flight. During the winter, they are an affordable alternatives to remove built up ice with an automotive style windshield scraper. For those without covers, consider storing in your baggage compartment de-icing fluid in a spray bottle. Generously spraying de-icing fluid onto contaminated surfaces can make the de-icing effort manageable. While expensive, AVLAB TKS anti-icing de-icing fluid costs \$24.00 (per gallon) when bought in a 55 gallon drum, versus \$51.75 for a single gallon. Why not get a few of your friends together and split a drum. You will be surprised how fast you can use up your TKS solution. For those de-icing equipped aircraft, which can

hold 2.9 gallons, purchasing TKS in bulk makes sense. Many airport FBOs offer de-icing services, but their equipment typically puts a lot of de-icing fluid onto an aircraft. In Canada, de-icing a Cessna 172 could take 10 to 15 gallons of fluid. Some FBOs charge \$50 for the first six liters and \$8 per liter thereafter. This could yield a cost of \$306 to \$458 per de-icing.

Have you ever driven by the airport during the winter and seen aircraft covered in snow and ice, sitting on their tails? Snow-load impacts to an aircraft's structure should not be underestimated. Calculating the snow load is based upon the following formula: 1.25 lbs per sq ft * depth of the snow * the wing and horizontal stabilizer area (will determine the weight of the snow). Using a Cessna 172 as an example, three feet of snow will add 7,830 lbs. Dividing the added weight of the snow, by the C172s maximum weight (2,500 lbs) generates the Gs which the aircraft will experience sitting



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on the ground. With the weight on the top of the wing, a wing loading of -3.12 G is realized (added weight/max gross weight). In the normal category, the C172 is rated for a maximum of -1.76 G. At -3.12 G, the C172 may see structural damage including damage to the wing or tail, hinges, pullies and cables. You can easily create a spreadsheet where you input

the accumulated snowfall and calculate the overloading.

Pitot tube and air intakes should be equipped with *Remove Before Flight* flags to ensure they are not missed during a preflight walkaround. Do not forget about fuel air vents, cowl and oil radiator plugs to help keep birds and mice out of the engine compartment.

Mud daubers seem to be attracted to fuel tank air vents, where they build nests. With a blocked air vent, suction can be developed in the tank as fuel is used, leading to fuel starvation or crumpled fuel tanks.

Towing your aircraft or refueling at an FBO is usually problem-free. There have been incidents where the FBO personnel misfuel the aircraft. Mike Busch recounts his now famous incident, where early in his flying career an FBO put JET-A into his Cessna 310, seeing the word "Turbo" on the side of the aircraft, confusing that with "Turbine". The net result was removal of all contaminated fuel and flushing the entire system with 100LL. Had Mike not come back to the aircraft while it was being fueled, he would not have known of the contamination, which could have led to both engines failing during flight. I have had more than one experience where the FBO's tug did not have the proper lugs to fit the Commander's nosewheel axel. This is not a problem at my home airport as its electro tug slides under the nosewheel. Carrying a tow bar helps when the FBO does not have the right tug or adapters.

Winter operations in Canada can see temperatures routinely below zero. Pre-heating your aircraft's engine before start is critical to maximizing time between overhauls. The urban legend suggests that starting a cold soaked engine is equivalent to roughly 500 hours of use. Heating the cabin allows steam-gauge-equipped gyros to spin up easier. Preheating technologies can apply heat to the oil sump, cylinders, battery and aircraft interior. Using smart technology, the system can ensure that the engine's internal temperature remains above the dew point, so that airborne moisture cannot deposit water droplets onto the metal surfaces, which would facilitate corrosion. Heating the aircraft's battery ensures it can deliver the most amount of cranking power, helping engine starts.

With the escalating costs of aircraft, keeping your aircraft safe on the ground not only helps to protect your investment, but it also allows you to maximize the aircraft's resale value. ✈️

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GIRLS TAKE FLIGHT AT OSHAWA EXECUTIVE

BY LESLEY PAGE

On Saturday April 29, the First Canadian Chapter of the Ninety Nines and the Durham Flight Training Centre hosted the annual Girls Take Flight event at the Oshawa Executive Airport. Approximately just six per cent of all pilots are women and we feel a big reason for this glaring statistic is the perception from a young age that flying or fixing airplanes is for men.

By inviting girls to the airport for an event filled with female pilots and other aviation and aerospace professionals, we hoped to spark an interest and showcase the career possibilities in aviation to young women from across Ontario. If they can see it, they can be it!

Even though the weather did not allow for discovery flights, the event was an amazing success. We had more than 1,300 visitors, and 36 indoor exhibits and activities all staffed by almost 250 people, as well as eight aircraft and other vehicles on static display.

Exhibits represented all aspects of the aviation and aerospace industries, including airlines, colleges, the military, engineering companies and many others. The RCAF brought an F-18 cockpit simulator that visitors could sit in. Other activities included a 360° virtual reality experience, wing rib building, a scavenger hunt, 'Talk Like a Pilot' and an introduction to airport circuit procedures.

Sponsored by COPA National, COPA Flight 70 members staffed a booth, administered the Scavenger Hunt and talked to attendees about COPA's mission. COPA's partner, Infinite Flight, demonstrated its flight simulator. Jeff Page of Flight 70 put in tireless hours in helping to organize the event.

There was a speaker program with six inspiring women talking about their careers in aviation and aerospace, including airline pilots, an air traffic controller, an aviation mechanic, an aerospace engineer, and a military pilot.

Porter Airlines brought a Q400 and Jazz brought a CRJ200 jet, which they opened up for tours and to allow participants to sit in the cockpit. In spite of the rain, there were lineups all day to get into those airplanes. And there were other aircraft and vehicles on the ramp, including classic airplanes, a helicopter, and a military armoured vehicle.

Our sponsors, exhibitors and the more than 100 event volunteers made it possible, with a very special thank you to Manny Rosario and Ken Ruffo of the Enterprise Aviation Group and Durham Flight Centre, as well as Stephen Wilcox, manager of the Oshawa Executive Airport.

Here is some of the feedback our team received from guests:



▲ COPA Flight 70 Captain Rick Nuhaus (left) with club treasurer Wayne Ellis on hand to support key aviation event in Oshawa.



▲ The combined booth of Air Canada, Air Canada Rouge and Jazz Aviation illustrated the growing diversity in aviation.



▲ Despite the rain during Girls Take Flight, attendees lined up for a turn sitting in the cockpit of Porter Airlines' Q400.

"We had an absolutely fantastic time at your event. Both of my children loved it. I enjoyed seeing all those women who are doing such amazing work. It is encouraging for my children to see that girls really can do anything!" 🛩️

PHOTOS (TOP TO BOTTOM): GUS AND CLARA CORUJO, JOHN DONALDSON, NICOLE DUFFY

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