



Flight

The Journal of the Canadian Owners and Pilots Association

JUNE 2021

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ON THE COVER: Chris Heintz, also pictured above in 2001 at his Zenair design office, with the CH 750 in 2006. (Photos provided by Zenith Aircraft Company)

COPA Flight

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BUYER BEWARE



Buying and selling private aircraft is on the rise, partly due to the pandemic I'd say. Renting an aircraft has been difficult, if not impossible at times, and pilots like myself decided it was time to become an aircraft owner. I'm still on my journey, but it is soon coming to a close. Aircraft owners have shared their journeys, mostly positive, but some have not been so lucky.

There is a lot to know before you even decide the type of aircraft you want. We have certified, owner-maintenance, limited, amateur built, ultra-light, aircraft kit or even foreign. But I have to say that once you have decided which one is right for you, it becomes exciting. But it also becomes important for you to start your homework. Not to toot the COPA horn too loudly, but reading our Guide on Buying an aircraft is a must. So, if you are a Canadian Citizen, permanent resident (landed immigrant) or a Canadian Corporation, you are qualified to own a Canadian registered aircraft!

You've done your search, and now, you found the one - how exciting! I know, you just want to go get it, fly it home and never look back. However, this is where your homework will pay off, and protect you - kids, listen up, even grown-ups do homework and there is a reason for it!

First, make sure you check off the list of what you need to know before

considering the purchase. You'll need the aircraft registration, serial number, TTAF, SMOH, type of fuel, years and hours on prop, aircraft condition, avionics, location, logs, etc. This should be your first interaction with the seller (a complete list is in the COPA Guide).

Then you need to conduct the pre-purchase inspection to review paperwork, aircraft condition and ADs. We recommend using an AME, preferably the one you'll be using once you own it, but if that's not practical, ask around for a suggestion (this will add to the cost) and it shouldn't be the one conducting the current annual. Snags can be negotiated off the price, but getting your money back is much harder! You'll want the journey log, technical records, record of last annual, current weight and balance, Certificate of Registration and the Certificate of Airworthiness. The latter will tell you what you what type of aircraft you are actually getting so make sure you look at it and you are aware of what it means. It's important, if not crucial, for you to know what you are getting. Your life can literally depend on it, which brings you to the last step before making an offer: Fly it before you buy it. If you can't, make sure someone you trust can.

Once you are happy with the results and the asking price, you are ready to make an offer. Making a conditional offer is common. You'll want a title and lien search, perhaps arrange for financing. If you haven't done so include a prepurchase inspection, and any other conditions you feel applicable. To secure the aircraft in the meantime, be prepared to put down a deposit - and don't forget your receipt!

Okay, it's time to be excited again! You've done your homework, you put it into practice and you are almost, that's right, almost ready to be part of the passionate group of pilots who own their aircraft. I know I am. For now, you are an informed buyer and no longer need to beware. 🙌

ATTENTION À L'ACHETEUR

L'achat et la vente d'un avion privé sont en hausse, en partie en raison du COVID. La location d'un avion a été rendue quelque peu difficile, voire impossible parfois, et les pilotes, comme moi, ont décidé qu'il était temps de devenir propriétaire d'un avion. Je suis toujours en cheminement, bien qu'il touche bientôt à sa fin, mais certains m'ont partagé leur parcours, la plupart du temps positif, mais certains n'ont pas eu autant de chance.

Il y a beaucoup de choses à savoir avant même de décider du type d'aéronef que vous voulez. Nous avons des avions certifiés, des avions entretenus par leur propriétaire, des avions limités, des avions amateurs, des ultra-légers, des kit ou même des avions de l'étrangers. J'avoue dire qu'une fois que vous avez décidé lequel est pour vous, cela devient passionnant. Toutefois il devient également important pour vous de faire vos devoirs. la lecture du Guide COPA d'achat d'un aéronef est indispensable. Donc, si vous êtes citoyen canadien, résident permanent ou une société canadienne, vous êtes qualifié pour posséder un aéronef immatriculé au Canada !

Vous avez fait vos recherches, et maintenant, vous l'avez trouvé. Comme c'est excitant ! Je sais, vous avez envie de l'acheter sur place, de le ramener à la maison et de ne jamais regarder en

arrière. Cependant, c'est ici que vos devoirs vont porter leurs fruits et vous protéger (les enfants, écoutez bien, même les adultes font des devoirs et il y a une raison à cela !)

Tout d'abord, assurez-vous de cocher la liste de ce que vous devez savoir avant d'envisager l'achat. Vous aurez besoin de l'immatriculation de l'appareil, du numéro de série, du TTAF, du SMOH, du type de carburant, des années et des heures d'utilisation de l'hélice, de l'état de l'appareil, de l'aviation, de l'emplacement, des registres, etc. Cela devrait être votre première interaction avec le vendeur (la liste complète est dans le guide).

Ensuite, vous devez effectuer l'inspection afin d'examiner les documents, l'état de l'appareil et les AD. Nous vous recommandons de faire appel à un TEA, de préférence celui que vous utiliserez une fois en possession de l'appareil, mais si ce n'est pas possible, demandez à votre entourage de vous suggérer quelqu'un et il ne doit pas être celui qui effectue l'inspection annuelle actuelle. Les problèmes peuvent être négociés sur le prix, mais il est beaucoup plus difficile de se faire rembourser ! Vous aurez besoin du carnet de route, des dossiers techniques, du dernier rapport annuel, du poids et du centrage actuels, du certificat d'immatriculation et du certificat de

navigabilité. Ce dernier vous indiquera le type d'avion que vous achetez, alors assurez-vous de le consulter et de savoir ce qu'il signifie. Il est important, voire crucial, que vous sachiez ce que vous achetez. Votre vie peut en effet en dépendre, ce qui vous amène à la dernière étape avant de faire votre offre : faites-le voler avant de l'acheter. Si vous ne pouvez pas le faire, assurez-vous que quelqu'un en qui vous avez confiance le peut.

Une fois que vous êtes satisfait des résultats et du prix demandé, vous êtes prêt à faire une offre. Il est courant de faire une offre conditionnelle. Vous voudrez faire une recherche de titres et de privilèges, peut-être prendre des dispositions pour le financement, si vous ne l'avez pas encore fait, inclure une inspection préalable à l'achat, et toutes autres conditions que vous jugez applicable. Pour sécuriser l'appareil en attendant, soyez prêt à verser une consignation (et n'oubliez pas votre reçu !).

Ok, il est temps d'être à nouveau enthousiasmé ! Vous avez fait vos devoirs, vous les avez mis en pratique et vous êtes presque, et oui, seulement presque prêt à faire partie du groupe de pilotes passionnés qui possèdent leur propre avion ! Je sais que je le suis. Pour l'instant, vous êtes un acheteur averti et vous n'avez plus besoin de vous méfier ! 🛩️

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AVIATION

RENAISSANCE DE L'AVIATION GÉNÉRALE À ST-JEAN-CHRYSOSTOME

BY JONATHAN BEAUCHESNE, DIRECTEUR, COPA POUR LE QUÉBEC

Au cours du mois de mars dernier, une nouvelle a éclairci le ciel de plusieurs pilotes. En effet, il fut annoncé que l'aéroport de St-Jean-Chrysostome (CSG5) retrouvait sa vocation d'aviation générale !

À la suite de la cessation des opérations de parachutisme il y a environ deux ans, l'aéroport se devait de se donner un nouveau départ.

Grâce à un changement d'administration coordonné, l'aéroport vise à retrouver ses lettres de noblesse auprès de la communauté des pilotes de l'aviation générale. L'objectif est que l'endroit devienne un emplacement aérien de choix dans l'Est du Canada.

Pour créer ce pôle d'attraction, de nombreux services sont actuellement offerts et d'autres sont à venir. Pour les amateurs d'aérocamping ou de camping sous l'aile, une aire d'hébergement est déjà en place avec trois services (aqueduc, égout, électricité).

Un petit bâtiment sanitaire est égale-



▲ Pour les amateurs d'aérocamping ou de camping sous l'aile, une aire d'hébergement est déjà en place.

ment dans les plans. L'aéroport vient d'ailleurs d'être ajouté au répertoire des aérodromes d'aérocamping (voir www.aviateurs.quebec/ms/djipibi).

De plus, des espaces de hangars, avec et sans bureaux, sont disponibles. Il est également souhaité qu'une école de pilotage vienne éventuellement s'installer afin de créer au quotidien une vie de communauté à l'aéroport.

À terme, l'objectif est de créer un point

de rassemblement dynamique destiné à l'aviation générale. Pour ce faire, des projets sont actuellement en réflexion concernant le restaurant de l'aéroport, l'installation d'estrades visant à créer des interactions et échanges entre les amateurs de photographie aérienne (spotters) et les pilotes ainsi que la mise sur pied éventuelle d'un Club COPA !

L'aéroport est doté de deux pistes en très bon état (3300' asphalt et 2700' gravelle compactée) et le retour des opérations hivernales est envisagé.

Ce faisant, l'aéroport deviendra une destination convoitée 12 mois par année. De plus, le prix du carburant (100LL et Jet-A) y sera compétitif et sans surcharge d'avitaillement.

Pour toute information, n'hésitez pas à contacter le nouveau gestionnaire, Dominique Briand, au dom_bh@hotmail.com.

Inscrivez-vous également à la page Facebook de l'aéroport et faites tourner votre hélice jusqu'à CSG5. Vous y serez accueilli à bras ouverts. 🇨🇦

REVIVAL OF GENERAL AVIATION IN ST-JEAN-CHRYSOSTOME

PAR JONATHAN BEAUCHESNE, COPA, DIRECTOR FOR QUEBEC

During the month of March it was announced that St-Jean-Chrysostome airport (CSG5) was regaining its General Aviation vocation. Following the end of parachuting operations about two years ago, the airport needed a fresh start. Through a coordinated change of administration, the airport intends to regain its attractivity with the GA community. The goal for the site is to become a go-to destination in Eastern Canada.

To create this level of attraction, many services are currently offered, with more to come. For fans of camping under the

wing, an accommodation area is already in place with three services (aqueduct, sewer, electricity). A small sanitary building is also in the plans. The airport has just been added to the province's Aviateurs aerocamping aerodrome directory. In addition, hangar spaces, with and without offices, are available.

More projects are being evaluated concerning the airport restaurant and the installation of platforms for arial photography enthusiasts, as well as the possible establishment of a COPA Flight!

The airport has two runways in very

good condition (3300' asphalt and 2700' compacted gravel) and the resumption of winter operations is being considered. Moreover, the price of fuel (100LL and Jet-A) will be competitive and without out-of-hours surcharge.

For more information, contact CSG5's new manager, Dominique Briand, at dom_bh@hotmail.com. He is grateful for the warm welcome offered by the aviation community. Do not forget to sign up for the airport's Facebook page and spin your prop to CSG5. You will be welcomed there with open arms. 🇨🇦



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PONOKA FLYING CLUB BUYS LABRIE FIELD AIRPORT

BY DAVE WATSON, FLIGHT 187

The Ponoka Flying Club (COPA Flight 187) in September 2020 purchased the Ponoka Industrial (Labrie Field) airport (CEH3) from the Town of Ponoka, which is located in central Alberta between Edmonton and Red Deer. Although the Ponoka Flying Club (PFC) didn't become a COPA Flight until 2014, it has existed since 1962. The airport was founded by Joseph Hector Labrie and purchased by the town in 1968, when it was named Labrie Field in his honour.

After significant discussions between PFC members and the Town of Ponoka, an agreement was reached which resulted in PFC purchasing the airport to operate it as a non-profit society. The Town and the County of Ponoka both continue to offer moral and financial support.

Today, in addition to the resident

owners, the airport is host to air traffic from near and far. It sees many medevac flights in and out of two hospitals within close proximity. Town amenities such as hotels and restaurants are a very short courtesy-car-drive away. The airport is also used by fans and competitors when the Ponoka Stampede is in town during the last week of June (one of the five largest rodeos in the world).

Ponoka Airport has a range of conveniences for the GA community, including:

- GNSS approaches to 360 ft LPV minimums, rwy 16/34;
- CANPASS airport of entry (one of only five airports in Alberta);
- Prompt runway and taxiway snow clearing;
- Heated terminal building;
- Heated fuel shack, with 100LL and Jet

A available via credit card;

- Courtesy car (Town of Ponoka is 1.5 km);
- On-site web-enabled camera; and
- AME on site for maintenance.

PFC has developed a business plan that includes offering subdivided and titled hangar lots for lease or purchase. Since PFC is a non-profit, every dollar raised goes directly back into airport infrastructure. Planned improvements are to extend the runway by 700 ft and to install an Automated Weather Observing System to encourage air traffic that may prefer a longer runway or require lower approach minimums. Once the current lots have been sold or leased, there is room for expansion. PFC has also hired an airport manager to oversee the day to day operations of the airport. 🇨🇦

REGIONS MARITIMES

MCCARTHY ELECTED TO COPA BOARD

The COPA Board of Directors would like to welcome and congratulate Stephen McCarthy on his election to represent New Brunswick, Prince Edward Island and Nova Scotia on the COPA Board, alongside Brian Pinsent. In May 2021, COPA held a by-election to replace Debbie Brekelmans, who



resigned from the Board this spring.

We would like to thank Brian Pound and Bruce Spears for putting their names forward and running for the Board as well. We would also like to thank COPA Flight Captains Cameron Boekhoff, Gordon Mahaffy and Earle DePass for volunteering to be observers of this by-election. 🇨🇦

MCCARTHY ÉLU AU CONSEIL D'ADMINISTRATION DE LA COPA

Le conseil d'administration de la COPA souhaite souhaiter la bienvenue et féliciter Stephen McCarthy pour son élection pour représenter le Nouveau-Brunswick, l'Île-du-Prince-Édouard et la Nouvelle-Écosse au conseil d'administration de la COPA, aux côtés de Brian Pinsent. La COPA a organisé une élection partielle pour remplacer Debbie Brekelmans, qui a démissionné du conseil ce printemps.

Nous tenons à remercier Brian Pound et Bruce Spears d'avoir proposé leurs noms et de se présenter également au conseil d'administration.

Nous tenons également à remercier les capitaines de bord de la COPA, Cameron Boekhoff, Gordon Mahaffy et Earle DePass, pour s'être portés volontaires pour être les scrutateurs de cette élection partielle. 🇨🇦

THE CHAT TEAM RETIRES PHOTOS BY GUSTAVO CORUJO

The Canadian Harvard Aerobatic Team announced its retirement after 20 years. Formed in 2000 as a civilian aerobatic team, the Canadian Harvard Aerobatic Team, known as CHAT, performed across Canada and the U.S. It began flying with three Harvard aircraft, before adding a fourth in 2014.

As described by This is Flight, a website dedicated to airshow coverage, the CHAT shows typically included classic formation aerobatics, bomb bursts, opposition passes and solo aerobatics. The pilots include Pete Spence (lead), Dave Hewitt (wingman), Kent Beckham (wingman) and Marco Rusconi (slot).

After years of bringing history to life, the team members put out a message to thank its fans: "CHAT extends a warm thank you to our airshow friends and family for a fantastic 20 years. Your pro-



▲ Formed in 2000, the Canadian Harvard Aerobatic Team performed at hundreds of air shows across the United States and Canada.

fessionalism and hospitality has been greatly appreciated. We want to thank our sponsors, past and present, for their support in our mission of bringing history to life.

"Thank you to our fans, young and old, for your interest in our team and our mission. Your support allowed our team



▲ CHAT was formed in 2000 as a three-aircraft routine. A fourth Harvard aircraft joined the team in 2014.

and the entire airshow industry to do what we love to do. Pete(#1), Dave(#2), Kent(#3) and Marco(#4) would also like to extend a thank you to the CHAT ground support team: Eugene Loj(#5), Dylan Hewitt(#6), Eric Dumigan(#7) and all others who served the team, for their dedication." 🇨🇦



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These reports are taken in part from Transport Canada's CADORS website.

ONTARIO REGION

A privately registered Cessna 150M from Kitchener/Waterloo, ON (CYKF) to Toronto/Oshawa, ON (CYOO), orbiting inside the CYOO control zone, changed its squawk code to indicate a radio failure, at which time the tower reached out to establish whether or not it was a complete radio failure or just a transmission failure. The pilot called the tower cab from their cell phone to indicate that they were able to receive. A circuit entry route was established over the phone.

PRAIRIES & NORTHERN REGION

A privately registered Pipistrel Taurus from Whitecourt, AB (CYZU) to White-

court, AB (CYZU) landed on Runway 29 at 1948Z with its landing gear up. The runway was closed until 2028Z. The Airport Manager (APM), the area control centre (ACC) Shift Manager (SM), the Flight Information Centre (FIC), the Technology Operations Coordinator (TOC), the Unit Manager, and Technical Services (TS) were advised. No injuries reported.

PACIFIC REGION

A privately registered Cessna 150H from Fort St. John, BC (CYXJ) to Fort St. John, BC (CYXJ) was forced to pull up early on a low-and-over due to an overtaking Beech 1900D from Prince George, BC (CYXS) to Fort St. John, BC (CYXJ) that was arriving on Runway 12 behind the Cessna 150H. Multiple traffic updates were passed both ways. [The Beech

1900D] had the Cessna 150H, which was already on final and at a lower altitude, in sight and chose to continue, instructing the Cessna 150H to overshoot rather than conforming to the established traffic pattern.

QUEBEC REGION

A Beech 1900D from Natashquan, QC (CYNA) to Sept-Îles, QC (CYZV) was cleared, and read back, to descend to 6,000 feet. The aircraft was observed on radar at 5,300 feet and in descent. The air traffic service (ATS) unit responded.

ATLANTIC REGION

At Saint John, NB (CYSJ), a privately registered, amateur-built Bowers FlyBaby 1A was on final for Runway 32 when a pair of geese flew across the threshold for Runway 32 near the ground level, causing the aircraft to conduct a go-around as a precaution. The aircraft continued flying circuits at CYSJ following this event.

RÉGION DE L'ONTARIO

Un Cessna 150M, d'immatriculation privée, de Kitchener/Waterloo (CYKF), ON, à Toronto/Oshawa (CYOO), ON, qui décrivait des orbites dans la zone de contrôle de CYOO, a changé son code d'affichage pour indiquer une panne radio, moment auquel la tour l'a contacté pour savoir s'il s'agissait d'une panne radio complète ou juste d'une panne transmission. Le pilote a appelé la cabine de tour depuis son cellulaire pour préciser qu'il pouvait recevoir des transmissions. Une route d'entrée dans le circuit a été établie au téléphone, et l'aéronef s'est joint au circuit et a atterri en toute sécurité.

RÉGION DU PRAIRIES ET DU NORD

Un Pipistrel Taurus, d'immatriculation privée, de Whitecourt (CYZU), AB, à Whitecourt (CYZU), AB, a atterri piste 29 à 1948Z avec son train rentré. La piste a été fermée jusqu'à 2028Z. Le gestion-

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naire d'aéroport (APM), le gestionnaire de quart (SM) du centre de contrôle régional (ACC), le centre d'information de vol (FIC), le coordonnateur des opérations technologiques (TOC), le gestionnaire d'unité, et les Services techniques (TS) ont été informés. Personne n'a été blessé. Aucun autre impact sur l'exploitation.

RÉGION DU PACIFIQUE

Un Cessna 150H, d'immatriculation privée, de Fort St. John (CYXJ), BC, à Fort St. John (CYXJ), BC, a dû remonter au début d'un survol à basse altitude à cause d'un aéronef qui dépassait, un Beech 1900D, de Prince George (CYXS), BC, à Fort St. John (CYXJ), BC, qui arrivait sur la piste 12 derrière le Cessna 150H. Plusieurs mises à jour du trafic transmises dans les deux sens. Beech 1900D avait en vue le Cessna 150H, qui était déjà en finale et à une altitude moins élevée, et a choisi de continuer, en donnant l'instruction au Cessna 150H de remettre les gaz plutôt que de respecter le circuit de trafic établi.

RÉGION DU QUÉBEC

Bien qu'il ait reçu l'instruction d'obtenir un code transpondeur avant d'entrer dans la zone de contrôle de Montréal/St-Hubert (CYHU), QC, un Robinson R66 a été observé au radar à l'intérieur de la zone. De plus, C-GTPG a atterri sans autorisation à Montréal/St-Hubert Hélicraft.

Un Cessna 152, de Montréal/St-Hubert (CYHU), QC, à Montréal/St-Hubert (CYHU), QC, a été observé sur la voie de circulation Romeo, qui roulait vers la piste 06R sans avoir contacté le contrôle sol. Aucun impact sur l'exploitation.

Un de Havilland DHC-8-106, de Val-d'Or (CYVO), QC, à Waskaganish (CYKQ), QC, a circulé au sol et, une fois en position, a indiqué devoir faire un essai au sol avant sa course au décollage. À la suite de l'essai, CRQ261 a précisé devoir revenir au terminal en raison d'un problème lié à l'essai et un besoin de maintenance. Aucun impact sur l'exploitation.

Un Beech 1900D, de Natashquan (CYNA), QC, à Sept-Îles (CYZV), QC, a reçu et relu l'autorisation de descendre à 6 000 pi. L'aéronef a été observé au radar à 5 300 pi et en descente. Intervention des services de la circulation aérienne (ATS). Aucun impact sur l'exploitation.

REGION DE L'ATLANTIQUE

À Saint John (CYSJ), NB, un Bowers FlyBaby 1A, et de construction amateur, était en finale piste 32 lorsqu'un couple de bernaches a traversé le seuil de la piste 32 en volant, à hauteur d'homme, et l'aéronef a alors remis les gaz par mesure de précaution. 🦆

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TAKE OFF AND TURN BACK TOOLS

UNDERSTANDING THE IMPOSSIBLE TURN IN PREFLIGHT PLANNING

Very few pilots have experienced *the impossible turn* procedure on take off. The impossible turn, focuses on the ability of a pilot and aircraft to be able to execute a 180 degree (or more) turn and safely land on a runway after the failure of the aircraft's engine during take off and climb out. In flight training, student pilots are taught to fly and land straight ahead if an engine failure occurs below 500 feet AGL. Depending upon the age of the aircraft, its aerodynamic capabilities, the effectiveness of the engine and the skill and proficiency of the pilot, a turn back to the airport at any altitude may not lead to a satisfactory result. Glider pilots are trained to perform this maneuver, once a pre-planned altitude has been reached, and successfully land downwind. Glider pilots are intensely aware of altitude, distance from airport and the aerodynamic efficiency of their glider.

The AOPA Air Safety Institute's 30th *Joseph T. Nall Report*, notes, that during a 10-year period from 2009 to 2018, there were 1,263 reported accidents during the take off and climb phase of flight, with 211 fatalities. Of these reported accidents in 2018, 42 were loss of control and 31 were stalled or settled on take-off, resulting in 18 fatalities.

In a powered aircraft, following an engine failure, low to the ground, pilots are not required to demonstrate their ability to immediately lower the nose to best glide speed, and then perform an efficient 180 degree turn back to the runway. While in a turn, at a 45 to 60 degree angle of bank, with the amount of g force increasing, the aircraft's stall speed will increase. If a pilot is not proficient, this leads to a classic,

stall-spin low to the ground, typically resulting in a loss of life. The actual speed and angle of attack where the stall occurs is dependent upon many factors (Vs1 is with gear and flaps up and power off). The aircraft's weight will impact the stall speed. As the load factor increases as in a bank, the stall speed will increase. At a 60 degree angle of bank, the load factor is 2 g, resulting in an increase of stall speed by 1.41 times. Moving the centre of gravity of the aircraft aft ward will increase the stall speed by as much as 5 kts.

Training and practicing an engine failure at altitude, say 5,500 feet AGL, using 5,000 feet AGL as the hard deck, and using a road to simulate the runway, pro-

preflight planning (not to be used in the cockpit) to calculate the minimum safe altitude, based upon current weather conditions, pilot proficiency, aircraft details and the airport's runways. The tool also shows the best glide paths to alternate runways for various altitudes after loss of power.

Marshall began working on the software in 2019. It grew out of his desire to test the aircraft he flew at his flight school, a Piper Cherokee 28-140. With a CFI on board, operating near max gross weight, the aviators tested different bank angles and airspeeds, documenting the resulting altitude loss, and ability to glide back to the runway. Marshall developed

At a 45 to 60 degree angle of bank, the aircraft's stall speed will increase. If the pilot is not proficient, this leads to a classic stall-spin low to the ground.

vides a safe environment to practice *the impossible turn*. With a proficient flight instructor (CFI) aboard, who has time on your aircraft type, the simulation can take place using a variety of configurations, e.g. full gross weight, cross wind, high wind velocity, gusty wind conditions, flap configuration, gear up, gear down, rate one turn, 30/40/50 degree turns, variable time to recognize the engine failure, time to best glide speed, etc. This technique will help you refine the altitude lost in the turn, but may not tell you if your aircraft can glide back to the runway once turned around, after the climb out.

An EAA working group, collaborating with Rick Marshall, founder of Inflight Metrics, has been working on a software tool, which could be used during

a technique to record the turnback at a safe altitude and append the recorded turnback and glide to the actual takeoff data, giving the pilot a 3D visualization of the round trip over their airport. Over many test flights, in this specific Cherokee, Marshall found that at no altitude could they make a 180-degree turn, after loss of power, and successfully make it back to the airport. Simply put, this Cherokee did not have sufficient climb angle together with gliding range. To gain altitude, the aircraft travelled further away from the airport, making it impossible to glide back after loss of power and turn-back.

Currently, the EAA and Inflight Metrics are encouraging pilots to record and test their own aircraft and submit the data to

InFlight Metrics. This will help further validate the flight models and let the pilots discover their aircraft's ability to make the runway. You can download the procedure on their website to record your turnback (www.inflightmetrics.com). In return, you will receive a report showing your turnbacks over your airport, along with aircraft's flight characteristics.

During his initial research, Marshall found that, according to NTSB data over five years, 47 per cent of those pilots who attempted the maneuver stalled the aircraft, resulting with a uncontrolled flight into the ground and a 70 per cent fatality rate. Yet, through surveys given to over 1,000 pilots, Marshall found that most pilots believe that at 800 to 1,000 feet AGL they would be able to make it back to a 4,000-foot runway. From the recorded flight data received to date, Marshall has discovered other aircraft that could not make it back to a 4,000-foot runway with no wind. Many of the factors affect-

ing the ability to return to the runway are inherent in the aircraft's design.

A successful turnback requires the pilot to immediately lower the nose after loss-of-power, followed by a well-executed 45-degree bank turn (without stalling). Practicing the maneuver with the engine at idle, will create muscle memory so that the pilot's reactions are honed and the time from power loss to maneuver execution is minimized (startle time). Precious altitude is lost during the first three to five seconds, while the pilot recognizes the failure, and attempts a restart.

Mark Brooks, an CFI flying out of Toronto Buttonville Municipal Airport (CYKZ), with a student pilot in a Diamond Aircraft DA40NG, found that the student pilot had a 50 per cent success rate in performing the exercise. DA40 flight data test cards, sent by a pilot to InFlight Metrics, found that 600 feet was lost in the turn and in eight out of eight cases and could not make it back to the runway.

Hopefully, most pilots won't experience a loss of power on climb out. Depending upon altitude and suitable landing sites in front of your flight path, the incident can result in no injury. With urban growth impeding upon airport flight paths, sometimes, there is no good alternatives, leaving the pilot to choose between buildings versus a turn back, both high-risk options.

The average pilot, may not have revisited his/her aircraft's POH, reviewed the aircraft's numbers, and has not routinely tested and honed their airmanship skills in order to be able to execute *the impossible turn* successfully and land back at the airport without incident. There are many variables which must be taken into consideration, but practicing *the impossible turn* in a controlled environment, is a teaching experience, that when an engine failure occurs, is priceless. Check out my *PlaneTalk* podcast on Apple, Google, Spotify and at www.PlaneTalk.ca. 🇨🇦



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DIAGNOSING YOUR AIRCRAFT CURRENT

HANDLING ELECTRICAL SYSTEMS AND THEIR FAILURES IN GENERAL AVIATION AIRCRAFT

“**H**EY! - When did that red light come on? Unfortunately, some of us have probably been there: A beautiful day and cruising along without a care in the world, even as the pandemic rages on below. Up in the air with our sleek craft, we are feeling great. Heck, just flying for currency and to get the condensation boiled out of the oil feels great. Magnificent really!

Suddenly, scanning inside the cockpit, your eyes are drawn to a small red light on the dash - High/Low Voltage. What we do in the next few moments can determine the conclusion of the flight. Older GA aircraft were often designed and built with a minimalist approach and may not provide sufficient indicators and sensors for the early warning of looming problems. Do we know why that light is glowing? Do we know if it is a failed Alternator or Voltage Regulator (VR), or what? What should we do next? Once we get past this moment of panic, how can we diminish risk of failure and improve our flight safety?

Let's assume for this article that you are single-pilot and not flying a modern aircraft with a full suite of sensors and warning systems. Heck, even newer advanced ultralights and amateur-built aircraft are often equipped with owner-installed, sophisticated system monitors that enable audible alerts and pop-up displays to give early warning of impending problems. These pilots should have no excuses for not knowing details of component health.

Those of us flying older certified aircraft such as Cessna or Piper that are in some ways limited by the aircraft's original design, don't have a lot of options beyond the basic electrical system components that were fitted at the factory and remain there in accordance with the original aircraft design and Certificate of Airworthiness. There are some costly options that can be made by way of Supplemental Type Certificate systems or components, but not everyone has the money or time to go that route. So, for most, we only have the little red light, with its enigmatic character, an ammeter, a Master Switch and a couple of circuit breakers. Combined, these sensors and switches give you a basic indication of system health and little to no warning of failure. Let's analyze what we have and see what our Pilot Operating Handbook (POH) or Aircraft Flight Manual (AFM) tells us about our electrical system.

Okay - let's open your POH or its equivalent and please turn to the schematic of your electrical system; and don't forget to



▲ Many GA aircraft will not have a suite of warning systems and it is critical to calmly react to what indicators you have.

open your checklist to the emergency pages on electrical system failure. First thing we need to review is that our aircraft source of electrical power is our battery, either 12 volt or 24 volts. The battery is the *source* for power to *all* electrical services in our mighty aircraft and it is also *the* system's *storage* device. Most of you are probably running a 14 volt system. The remainder are running 28 volts. That number is the voltage rating of your *charging* (or replenishing) source, typically this is a belt-driven or gear-driven alternator. The difference between the battery rating and the charging source rating is to account for resistance in the circuit and internal resistance in the battery. The 14 volt system absorbs about 1.5 volts and about 3 volts in a 24 volt system as current passes through it from the alternator to the battery.

Sitting between the battery and the alternator is the VR. With this control device we also have an *ammeter* instrument. The VR these days is often a solid-state device that monitors the electrical current flowing out of the battery and sending the correct amount of voltage and amps (current) from the alternator to bring the battery back up to its optimal voltage. Digressing for a moment, we should also remember that when the Alternator is operating, it is putting out its rated voltage and current *all the time*. To keep a stable electrical environment, the

VR is clamping the alternator and shunting the excess voltage and current (almost the full output) of the alternator most of the time. It manages the condition of the battery and the flow of voltage and current with digital precision for long periods. But the VR is not 100% reliable.

With manufacturers buying circuit boards and components from the lowest bidder and doing limited testing of the finished product before it's put in your aircraft, post-installation failures in the first few hours can occur. As the VR shunts electricity to ground in the heat, dirt and vibration of the engine compartment those components start to break down, even though they are solid state. VR failures can occur as they age and before they get to their expected life in service. When the VR becomes unstable, we get intermittent problems that might go unnoticed or undiagnosed. Have you noticed that our little red light low/high voltage light doesn't always reset when we do our Alternator check during post-start check? Have we had to reset the alternator side of the *Big Red* Master switch inflight, once and then not again for several flights?



If you have had to use either of these soft reset features of your simple electrical system, then quite probably there are other issues in the VR, or possibly the alternator, trying to get your attention. Do we need to panic, rebuild our system, or change out the VR? Probably not yet. But it would be a very proactive step to log and track these events, with specifics such as duration of flight, ambient temperature, did the problem reoccur during that flight.

Our *ammeter* mentioned earlier is for many of us the one instrument that we have for monitoring electrical system health. Its task is simple: Indicate the direction of flow and the rate of flow, AMPS. It is marked with equal simplicity "+" on one side of center and "-" on the other side. "Plus" indicates a net positive current flowing from the alternator to the battery. Neutral or zero indicates no flow (actually there is a small flow when running). "Minus" indicates that there is a net negative flow, a *drain* from the battery. Leave the alternator offline for a few minutes after start the next time you fly and we will see the negative

flow on the ammeter. We may also see a low-voltage light, and if equipped, we will also have an annunciator light telling us that we have a problem. Put the alternator back online before you take-off and the light and indicator should extinguish and we should also see a positive indication on the ammeter. If all that happened then our system is ready for flight.

We started saying that our little red light was rather serious. Now that we understand how our electrical system works, we need to understand the importance of *time*. The duration of illumination will determine how serious the situation is. How long has that Low/High Voltage been on? Five minutes or a few seconds. Most of these lights are not placed in a conspicuous spot and can be missed easily. Since our ammeter indicates flow, how displaced is the needle? If it's showing significant displacement on the negative side, we can assess that we are running out of power quickly. Since our aircraft battery was designed to be light weight and only enough storage capacity to get the engine started under ideal conditions, these batteries cannot support our typical electrical loads for long! There are formulas that can be used to calculate the life expectancy of your battery based on known loads but let's say that if we shed some load, we probably have around 30 to 45 minutes. Since we don't know exactly how low the light has been illuminated and we haven't been able to restore electrical power by resetting the VR or the alternator field (CB reset) circuit we need to divert *now*. We also need to advise and remember to *aviate, navigate and communicate* - and take a deep breath.

Ideally there is a suitable aerodrome within 10 to 15 minutes of flight. If it is farther away then we need to shed our load down to the bare minimums right now and maybe even go NORDDO to save our Battery for communications and lights when we land. Do you have a cell phone to call the nearest ATC facility? Can we get permission to come in without a transponder or radio? When the battery drops offline the cockpit will get very quiet and dark unless you have alternate sources such as headlamps and hopefully you brought along that backup battery powered radio too. 🛩️



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GESTION DU SYSTÈME ÉLECTRIQUE ET DE SES PANNES DANS LES AÉRONEFS DE L'AVIATION GÉNÉRALE

Tiens - depuis quand ce voyant rouge est-il allumé? Voilà une question que malheureusement certains d'entre nous se sont déjà posés, par une belle journée de vol paisible à l'abri des soucis du monde. Vous voliez peut-être en compagnie d'une personne d'une autre « bulle », chacun portant respectueusement son masque. Bref, tout vous semblait parfait, et le moteur tournait bien rond - magnifique!

Soudainement, alors que votre regard balayait le poste de pilotage, vos yeux ont été attirés par un voyant rouge sur le tableau de bord : basse/haute tension (High/Low Voltage). Ce que nous allons faire dans les prochains instants déterminera la suite de notre vol, et je parle en connaissance de cause. La COPA se soucie de votre fidèle aéronef, construit il y a cependant plusieurs années, lorsque les avions d'aviation générale (AG) étaient conçus et construits avec une approche minimaliste, ne comportant pas toujours tous les indicateurs et les capteurs nécessaires pour vous avertir rapidement de problèmes imminents. Savons-nous pourquoi ce voyant est allumé? Indique-t-il que l'alternateur ou le régulateur de tension est défectueux? Quelle est la prochaine étape? Et, encore plus important une fois le moment de « panique » traversé, comment puis-je atténuer le risque de défectuosité et améliorer la sécurité de mon vol?

Pour les fins de cet article, supposons que vous êtes le seul pilote à bord, et que vous ne pilotez pas un avion moderne équipé d'une suite complète de capteurs et de systèmes d'alerte. Même les ultralégers récents et les aéronefs de construction amateur s'avèrent souvent équipés de systèmes de surveillance sophistiqués installés par le propriétaire, lesquels émettent des alertes sonores et affichent des messages pour avertir le pilote de problèmes imminents. Les pilotes de tels aéronefs ne devraient avoir aucune excuse pour ne pas connaître l'état de ses différents composants.

Ceux d'entre nous qui pilotent des aéronefs certifiés plus anciens - tels que les aéronefs Cessna ou Piper dont la conception originale se révèle limitée à certains égards - ne disposent pas de beaucoup d'options au-delà des composants du système électrique de base installé à l'usine, conforme à la conception originale de l'aéronef et à son certificat de navigabilité. Certaines options coûteuses peuvent être réalisées au moyen de systèmes ou de composants de certificat complémentaire STC. Mais ce n'est pas tout le monde qui dispose de

l'argent et du temps pour procéder à cette mise à niveau. Ainsi, pour la plupart des gens, le tableau de bord se compose du « petit voyant rouge » énigmatique, d'un ampèremètre, d'un interrupteur général et de quelques disjoncteurs. Ensemble, ces capteurs et interrupteurs donnent une indication de base de l'état du système et peu ou pas d'avertissement de panne. Analysons maintenant la situation à la lumière de notre manuel d'utilisation d'aéronef ou manuel de vol.

Que peut-il nous apprendre sur notre système électrique? Rendons-nous à la page du schéma électrique. Nous consulterons également la liste de contrôle d'urgence en cas de pannes du système électrique.

Étant donné que la batterie de notre aéronef a été conçue pour être légère et avoir une capacité de stockage suffisante pour démarrer le moteur dans des conditions idéales, elle n'est pas faite pour supporter les charges électriques habituelles bien longtemps!

La première information à obtenir est la tension de la source d'alimentation électrique de notre aéronef : 12 volts ou 24 volts. La batterie s'avère la SOURCE d'alimentation de TOUS les systèmes électriques de notre aéronef. Elle se veut aussi LE dispositif de STOCKAGE du système. La plupart d'entre vous utilisent probablement un système de 14 volts. Les autres utilisent un système de 28 volts. Ce nombre représente la tension nominale de votre source de CHARGE (ou de réapprovisionnement). Généralement, la charge est assurée par un alternateur entraîné par courroie ou par engrenage. La différence entre la valeur nominale de la batterie et la valeur nominale de la source de charge tient compte de la résistance du circuit et de la résistance interne de la batterie. Dans un système de 14 volts, environ 1,5 volt est absorbé par le système (environ 3 volts dans un système de 28 volts) lorsque le courant le traverse de l'alternateur à la batterie.

Entre la batterie et l'alternateur se trouvent le régulateur de

tension et l'ampèremètre. Le régulateur de tension moderne est un dispositif à semi-conducteurs qui surveille le courant électrique généré par la batterie, et qui achemine la bonne quantité de tension et d'ampères (courant) en provenance de l'alternateur pour ramener la batterie à sa tension optimale. Il est important de garder en tête que lorsque l'alternateur fonctionne, il génère sa tension et son courant nominaux TOUT LE TEMPS. Pour maintenir un milieu électrique stable, le régulateur dérive la tension et le courant excédentaires de l'alternateur (presque la pleine production) la plupart du temps. Il gère l'état de la batterie et le flux de tension et de courant avec une précision numérique pendant de longues périodes. Néanmoins, un régulateur de tension n'est pas fiable à 100 %.

Avec certains fabricants qui achètent des circuits imprimés et des composants au prix du « plus bas soumissionnaire » – et qui effectuent des tests limités du produit fini avant qu'il ne soit installé dans votre aéronef – des défauts post-installations peuvent survenir dans les premières heures de fonctionnement. Alors que le régulateur de tension dérive l'électricité vers la terre dans la chaleur, la saleté et les vibrations du compartiment moteur, ces composants s'avèrent durement sollicités, même s'il s'agit de semi-conducteurs. Des défaillances du régulateur de tension peuvent survenir à mesure qu'il vieillit, avant l'échéance de sa durée de service utile. Lorsque le régulateur de tension devient instable, nous pouvons faire l'expérience de problèmes intermittents, lesquels peuvent passer inaperçus ou être difficiles à diagnostiquer. Avez-vous remarqué si votre petit voyant rouge basse/haute tension ne s'éteignait pas toujours lorsque vous vérifiez l'alternateur au moment de la vérification après démarrage? Avez-vous dû réinitialiser le côté alternateur du gros interrupteur général rouge une fois en vol (sans avoir à le refaire pendant longtemps)?

Si vous avez dû utiliser l'une de ces fonctionnalités de réinitialisation logicielle de votre système électrique simple, il y a fort à parier que d'autres problèmes du régulateur de tension, ou peut-être de l'alternateur, essaient d'attirer votre attention. Est-il justifié de paniquer? Devons-nous reconstruire notre système ou changer le régulateur de tension? Probablement pas encore. Mais il serait assurément avisé et proactif d'inscrire les conditions entourant ce genre d'irrégularités, y compris la durée du vol et la température ambiante, si le problème en venait à se reproduire pendant ce vol.

L'ampèremètre dont il a été question précédemment est pour beaucoup d'entre nous le seul instrument dont nous disposons pour surveiller l'état du système électrique. Sa tâche s'avère simple : indiquer l'intensité et le sens du courant électrique en ampères. Sa présentation est aussi simple : présence d'un « + » d'un côté et d'un « - » de l'autre, avec une position neutre au centre. « Plus » indique un courant positif net circulant de l'alternateur vers la batterie. Neutre (ou zéro) indique qu'il n'y a aucune circulation de courant (même si, en fait, il y a un petit passage de courant lorsque le moteur tourne). « Moins » indique qu'il y a un courant négatif net (qui DRAINE

la batterie). À titre d'expérimentation, mettez votre alternateur hors tension pendant quelques minutes après le démarrage de votre moteur la prochaine fois que vous sortirez. Vous constaterez un courant négatif sur l'ampèremètre. Vous pourriez aussi voir s'allumer le voyant basse tension (Low Voltage) et, si votre aéronef en est équipé, voir s'allumer un voyant annonciateur indiquant la présence d'un problème. Remettez l'alternateur sous tension avant le décollage, et les deux voyants devraient s'éteindre. L'ampèremètre devrait également tendre vers le « Plus ». Si la procédure donne ce résultat, c'est signe que votre système fonctionne normalement.

Nous avons pourtant commencé par dire que ce « petit voyant rouge » s'avérait plutôt inquiétant. Maintenant que nous comprenons comment fonctionne notre système électrique, nous devons comprendre l'importance du TEMPS pendant lequel le voyant demeurera allumé, puisque c'est cet aspect qui déterminera la gravité de la situation. Depuis combien de temps votre voyant basse/haute tension est-il allumé? Cinq minutes ou quelques secondes? La plupart de ces voyants ne sont pas placés dans un endroit bien en vue. Il est donc facile de ne pas les remarquer. Puisque l'ampèremètre indique un courant négatif, l'aiguille en indique quelle amplitude? Si son déplacement du côté négatif se révèle considérable, nous pouvons supposer que nous serons bientôt à court de courant. Étant donné que la batterie de notre aéronef a été conçue pour être légère et avoir une capacité de stockage suffisante pour démarrer le moteur dans des conditions idéales, elle n'est pas faite pour supporter les charges électriques habituelles bien longtemps! Il existe des formules qui permettent de calculer la durée de vie de votre batterie en fonction des charges connues, mais disons grosso modo que si nous perdons une certaine charge, il nous reste probablement entre 30 et 45 minutes d'autonomie. Puisque nous ne savons pas exactement depuis quand le voyant est allumé, et que nous n'avons pas été en mesure de rétablir l'alimentation électrique en réinitialisant le circuit du régulateur de tension ou le champ de l'alternateur (réinitialisation du disjoncteur), nous devons dévier MAINTENANT. Nous devons également informer, et nous rappeler les mots d'ordre : VOLER, NAVIGUER et COMMUNIQUER... et prendre une profonde inspiration.

La situation idéale serait qu'un aéroport approprié se trouve à une portée de dix à quinze minutes de vol. S'il est plus éloigné, nous devons immédiatement réduire notre charge au strict minimum, et peut-être même voler NORDO (sans radio) pour économiser notre batterie pour les communications et les feux lorsque nous atterrirons. Si vous avez un téléphone cellulaire, vous pourriez vous en servir pour appeler le contrôle de la circulation aérienne (ATC) la plus proche. Pouvons-nous obtenir la permission de faire une approche sans transpondeur ni radio? Une fois la batterie à plat, le poste de pilotage deviendra très silencieux et sombre. Espérons que vous avez prévu apporter du matériel d'urgence comme une lampe frontale et une radio alimentée par une pile de secours. 🛩️

BUILDING THE ZENITH

HOW AERONAUTICAL ENGINEER CHRIS HEINTZ REALIZED HIS
AVIATION DREAM IN CANADA
BY MICHAEL HEINTZ

Aeronautical engineer Chris Heintz was a life-long advocate for the advancement of recreational flying, to make it accessible for those who had the dream and desire to pursue flight. Through his light aircraft designs, and the company that manufactures them, he had a huge impact on the sport aviation industry before passing away at age 82 on April 30 at his home Southern France.

Chris was the first of four children born to Erwin and Magda Heintz in Strasbourg, France. His father was a pioneering scientific researcher and his mother an ophthalmologist. Surrounded from early childhood by strong personalities, exploring minds, science, creativity, a Waldorf education and a natural desire to help others, Chris' adventure-filled childhood and youth is full of fun anecdotes of him trying to build things like canoes that sank and go-karts with no brakes. In those simpler times of no television or internet, but of war and other hardships, Chris and his family had to relocate several times. He learned how to adapt at an early age, a capacity that would greatly help him in the future when he moved to Canada.

With the war over, Chris was barely out of his teens when he was first introduced to the wonders of flight in the mid-1950s. It was just a quick introductory flight in a two-seat aircraft, but that was all it took. From that point on, his dream became to design and build airplanes that anyone could own and fly. He completed his professional aeronautical training at one of Europe's most prestigious engineering schools, the ETH in Zürich, Switzerland. His first job as an aeronautical engineer found him at Aerospatiale, as a member of the top-level design team working on the Concorde jetliner. As a next step on his career path, Chris accepted a position with Avion Pierre Robin, a well-established and reputable manufacturer of wood and fabric low-wing aircraft (Jodels).

Within a few years, Chris had designed two all-metal designs that would be certified and produced for many years to come. Hundreds of these aircraft (HR 100 and HR 200) would eventually find their way into flying schools and aeroclubs



▲ Chris Heintz in 2006 with his prototype STOL CH 750. The Zenith aircraft platform is now in the workshops and hangars of more than 10,000 builders worldwide.

throughout Europe. This was getting closer to Chris' original dream, but, at that point, flying in Europe became more controlled and restricted. Having designed and built his own personal two-seater (the Zenith CH 200) during his spare time at Avion Robin, and having noted the keen interest in fellow pilots who saw it and flew it, he recognized an opportunity. Shortly thereafter, Chris and his wife, Annemarie, sold everything they owned and took their five children (and the Zenith) to Canada – a land of wide-open spaces and many pilots.

After arriving in Canada in January 1973, Chris worked for two years at De Havilland Aircraft of Canada (in Toronto) with the engineering crew for the Dash-7 (tail section). While there, he noticed a number of fellow employees with a particularly elevated passion for aviation. After work, they would

meet to tinker, design, build, and even fly their own creations. The group even had formal meetings: it was the local Chapter 41 of EAA, the Experimental Aircraft Association.

Chris flew his prototype Zenith CH 200 to his first Oshkosh Fly-In that summer. Again, the high level of interest in his all-metal design greatly motivated him and he immediately began translating the drawings (blueprints) and construction manuals for the aircraft. It wasn't long before plans-owners ("scratch-builders") called again to ask about the availability of selected parts to help them build their own Zeniths. So Chris began cutting and bending aluminum parts in the basement of his family home in Richmond Hill, a northern suburb of Toronto, while his good friend Gerry Boudreau started welding steel assemblies in his garage nearby. When Chris' basement became too crowded a year later, he re-assembled a recycled two-car garage of his own in the backyard, to work in.

When Chris first attempted to incorporate the start-up venture as Zenith Aircraft in the summer of 1974, the "Zenith" name was deemed too-widely used by the clerk processing the application; Chris then simply took the first letters of both words and re-submitted Zenair LTD - 47 years ago! When Chris and Gerry had outgrown their respective garages, they rented a commercial building in the town of Nobleton. This would become home to Zenair for the next 10 years and the birthplace for the CH 100 series, the CH 300 and the Zipper ultralight series. Wooden Zenair propellers were manufactured there, as well as the first all-aluminium Zenair floats. The first CH 600 "Zodiac" was also built in Nobleton, as was the prototype STOL CH 701. With regular parts production ever increasing and all these prototypes being developed under the same roof, shop space soon got very tight - again.

With the unfortunate passing of Gerry (from cancer) and the advent of new ultralight regulations in Canada (which allowed the manufacturing of ready-to-fly aircraft), it was time to look for a new, larger home for the company, preferably on an airport... Land was found on the Huronia Municipal Airport in Midland, Ont., and Chris immediately set out to design and build the structure that, to this day, houses Zenair's manufacturing main facilities, as well as engineering, bookkeeping and sales offices (and more).

Throughout the company's growth and development, Chris made sure to always remain true to his original dream: To offer a range of simple and affordable, easy-to-fly (kit) airplane designs suitable for amateur builders and recreational pilots. Over the years, Zenair produced kits for several single-seat aircraft, two, three and four-seat aircraft, low-wing and high-wing designs, ultralights and, more recently, certified and LSA (Light Sport Aircraft) aircraft. When his son Sebastien launched Zenith Aircraft Co. in Mexico, Missouri (1992), he too adopted his father's vision, and focused on designs that fit the new Light Sport (LSA) category for Sport Pilots.

Until his retirement, Chris attended the Oshkosh Fly-in every summer to display and promote his latest designs and in-



▲ Checking the CH 750 Cruiser fin in 2017, Chris Heintz completed his aeronautical engineer training at ETH Zurich.

novations. To demonstrate his passion in developing "quick and easy-to-build" airplanes, Chris pioneered the concept of assembling an entire aircraft during a one-week event - and flying it on the last day! Amazingly, he and his team accomplished this and "wowed" crowds a number of times at the Oshkosh (first in 1974) and also at Sun'n Fun and at several other venues - all with different models of his designs.

Under Chris' watchful eye and guidance, the brand he founded and developed has today become one of the most reputable in the industry; and his family-run business is one of the best established and most experienced light aircraft kits manufacturers in the world, with many of his designs produced in the U.S. by Zenith Aircraft Company. In recent years, Chris Heintz (CH) designs have become the number one brand of light-sport aircraft (based on actual new aircraft registrations in the U.S.), and Heintz designs continue to be popular around the world, as kit and light sport aircraft, especially well suited for short runways and off airport operations.

More than 10,000 builders worldwide already have a Heintz-designed aircraft in their workshop, their hangar or on the flight-line. Chris has also reached and educated thousands more through his hundreds of lectures, magazine articles, newsletters, or his book *Flying on Your Own Wings*, first published in 2010, shortly after his retirement. In his book, Chris methodically outlines and shares the wide array of aeronautical knowledge needed to successfully design and build a light aircraft. Still in perfect alignment with his lifelong dream to allow anyone to build and fly their own aircraft, he follows the noble adage that it is better to teach someone to fish than to just sell them a fish. It is this persistent and selfless dedication to promoting recreational aviation that led the government of his native France to recently award Chris the country's rarely given and prestigious Medal of Aeronautics for his lifetime of achievements and contributions to aviation. 🇫🇷

THE FLTPLAN GO APP

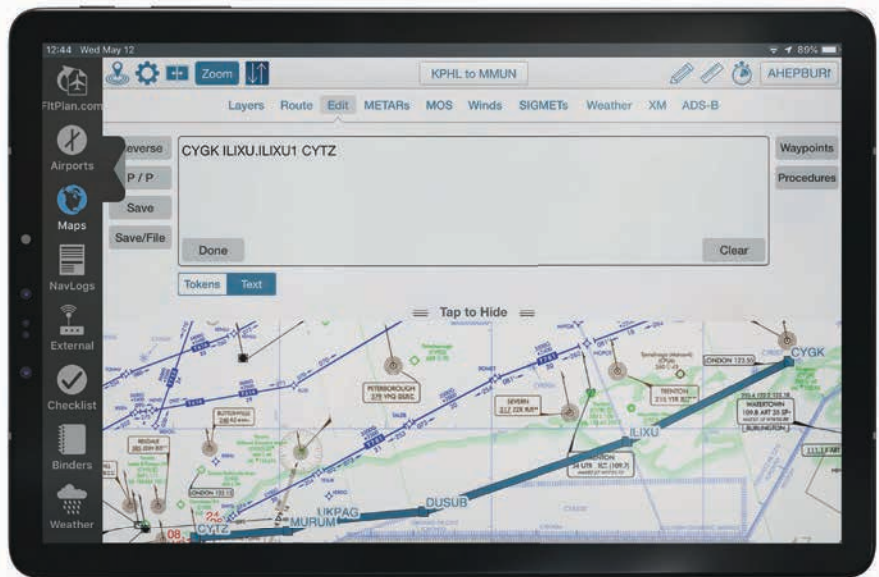
HOW TO MAKE THE MOST OF NEW TABLET BASED
FLIGHT PLANNING TOOLS

BY G. ALAN HEPBURN

Recent advances in tablet computers have resulted in electronic charting becoming the norm in the majority of General Aviation cockpits. In November 2020, NAV CANADA discontinued the publication of the paper version of the Canada Air Pilot (CAP). While the demise of VFR and IFR en-route charts is apparently not imminent, these are also readily available using a number of Electronic Flight Bag (EFB) products running on tablet computers, and even on cell phones.

The most popular products in North America are Jeppesen's Mobile Flight Deck, xz, ForeFlight and FltPlan's GO app. Mobile Flight Deck is the most expensive of them, aimed at international operators and offering extensive international coverage, together with a uniform proprietary presentation across all countries. For operations confined to North America, it tends to have priced itself out of the market, so the other three tend to be the choices for most GA operators. I started off with ForeFlight, which is available by subscription.

When FltPlan started offering subscription-free Canadian charting, I switched to that product. While it tends to lag ForeFlight in capabilities slightly, FltPlan meets my needs as a VFR and IFR light aircraft pilot very well. Garmin Pilot is a relatively recent addition and also subscription based. I have little knowledge of its capabilities, but as you might expect, it offers particularly good integration with Garmin's avionics prod-



▲ Useful tools on the Maps page include a ruler to measure distances, a Course Deviation Indicator (showing displacement left or right of your flight planned track), and a Heads-Up Display.

ucts. In 2018, Garmin acquired FltPlan.com, but states the latter's subscription-free services would remain so. So far, Garmin has stuck to its promise and also improved the integration of GO.

FltPlan has been around since 1999, well before EFBs appeared. It now claims to be "the largest flight planning company in North America." Initially, it provided a web-based service. ForeFlight introduced its tablet-based app in 2007 and looked like it would quickly dominate the EFB market. No doubt that prompted the introduction of the FltPlan GO app in 2013. It runs on Android and iOS platforms and provides a plethora of add-

ons, some of which involve a subscription. Of the latter, the only one I have ever considered is its eAPIS interface. Other less expensive standalone products are available for that need.

Perhaps because of its history as a web-based service, the functions available through FltPlan are still split between its website and the tablet-based app. Indeed, if all you were interested in was flight planning, you could forget the app. The first thing you have to do is create a (free) account on the website Fltplan.com. Once your account is set up, you can access flight planning and other functions using your computer, but from



CHARTING A NEW PATH FOR GA: ADDING DRONE MEMBERSHIP OPTIONS

In 2017, you - *our members* - signaled in our nationwide survey the need to welcome the drone community into our membership and into aviation. As the remotely piloted aircraft systems (RPAS) industry has matured, we have continued to monitor the file closely. Today, we are pleased to announce new drone membership options. What does this mean for existing COPA members? You get access to all the same benefits and education materials. That means you, a valued COPA member, will receive free or discounted drone training resources. Getting curious? Visit copanational.org/RPAS to learn more!

TRACER UNE NOUVELLE VOIE POUR L'AG : AJOUTER DES OPTIONS D'ADHÉSION POUR LES PILOTES DE DRONES.

En 2017, vous - *nos membres* - avez signalé dans notre enquête nationale la nécessité d'accueillir la communauté des drones parmi nos membres et dans l'aviation. À mesure que l'industrie des systèmes d'aéronefs télépilotés (SATP) a mûri, nous avons continué à suivre le dossier de près. Aujourd'hui, nous avons le plaisir d'annoncer de nouvelles options d'adhésion pour les pilotes drones. Qu'est-ce que cela signifie pour les membres actuels de la COPA ? Vous avez accès à tous les mêmes avantages et au même matériel éducatif. De plus, vous, en tant que membre estimé de la COPA, recevrez des ressources de formation sur les drones gratuites ou à prix réduit. Vous êtes curieux ? Visitez copanational.org/voler-avec-des-drones pour en savoir plus !



then on, you will probably use the FltPlan.com tab on the app to do this. At this point, you will probably want to set up your aircraft type(s), registrations, performance data and navigational equipment that will be used for flight planning.

Move to your tablet in an environment where you have internet access and install the app. The first thing you will want to do is download the maps. The Download/Maps tab offers you High and Low IFR, Sectionals (VNCs), and VFR and IFR area charts. The charts match the paper charts, and are available for Canada, the U.S., and a few other areas. You can also download instrument approach procedures by state/province, a number of reference documents, and the AFD (airports/facilities directory, which in Canada becomes the Canada Flight Supplement). Given that you will be using electronic charts, you may want to download the chart user guides, which contain the marginalia normally instantly accessible on a paper chart. IFR drivers will also want to download the CAP GEN.

The app provides extensive access to weather data, but there is a significant shortcoming: The access to Canadian graphic forecast products is essentially non-existent. So, before you create a new flight plan on FltPlan, you will want to visit an aviation weather site like Flightplanning.navcanada.ca, paying particular attention to the graphic information like Graphical Area Forecasts, Upper Winds, etc.

In the air, you will be able to monitor your progress on either the enroute chart or the IAP.

Now you are ready to create your first flight plan. Don't worry, it will not be filed until you say so. Since charts are not readily accessible on the website, look over your proposed route on the tablet "Maps" page. Since fuel prices often determine a Scotsman's intermediate stops, you might also want to display these, if you are so inclined.

Now, click the FltPlan.com website tab, then "Create Flight Plan", and enter your departure and destination identifiers. Click "Create Flight Plan" at the bottom of the page, and you will be taken to the detailed flight plan page where you enter your route waypoint by waypoint. If you are filing VFR, and often also IFR, your route will be "Direct".

That got me thinking, what if you are going from Toronto to St. Catharines VFR, and don't want to fly over water? If you're filing over the phone, the FSS is quite happy to accept Skyway Bridge, but none of the EFB apps will accept that. The best you can do is flip briefly to the IFR chart, find a waypoint about the right place - "OLAMO" would be a good one in my example, or "MUXIG", which shows up on the VFR Toronto Terminal Area Chart, would also work - and add it to the route. You could also file direct and put "RMK/VIA SKYWAY BRIDGE" in Box 18.

They certainly won't like 4325N/07950W, which I am sure the electronic planner would be willing to accept. The website presents you with some previously filed routes, which you can copy to your own route if you wish. Then enter the time off, endurance, souls on board, altitude, alternate, etc.

The one beef I have always had with FltPlan is that there is no option other than local time for the departure time. I can't say how often my clearance has not been there when I got the local time wrong flying across the country, particularly in Saskatchewan, which has no daylight savings time.

Once you have everything the way you want it, "Click Here for Navlog". You will get just that: A table of waypoints, distances, estimated elapsed times and headings. It has used your previously entered aircraft data to calculate times enroute, fuel burn, etc. You can click "Route Map" to see your route superimposed on the current weather radar map, and "ICAO Flight Plan" to see the ICAO entry form. If you are happy with what you see, "Save" it, which takes you back to the Flight Plan homepage. You are now ready to check the "File" box, and your flight plan will be filed two hours before departure, or within three minutes, if that has already passed.

At this point, your route and NavLog are on the website, but not yet on your tablet. With this app, you always have to remember that you are dealing with two rather loosely connected environments - the website and the app on your tablet. Nothing moves from one to the other without you initiating the transfer.

Back on the "Maps" page of the tablet, you can import your route by going to the departure-destination box at the top centre of the page, clicking it, clicking the "Refresh" icon, then selecting the route you just entered on the website. You'll then see your planned route on the map, and in the "Edit" window.

It's possible to send routes from your tablet to the webpage. You can drag the route on the map to a new waypoint, or edit the waypoints in the "Edit" window, but you then have to "Save and File" the amended route. You are offered two options, the web or the app. If you select "Web", you are taken back to the website, where you will have to add the non-route data before it can be filed. If you opt for "App", you can enter the non-route data right in the app, but when you then click "Save and File", the "File" flag will be checked, so you do not have to go in to the website and check it. Yes, I learned this the hard way!

Back on the tablet, you can click the "NavLogs" tab, and refresh that list. The available NavLogs will be presented. To import your latest one, click it and you will be presented with a fairly complete briefing, including the NavLog, departure and destination airport diagrams, NOTAMs, and text weather for your departure, destination, alternate, and a number of enroute points. As noted above, there is no Canadian graphic weather, which is why we first got it from AWWWS.


With your NavLog and route refreshed, you are ready to head out to the airplane, where you likely do not have Internet access. In the cockpit, if you are not using the GPS in your tab-

let, you will need to link to your onboard source of GPS info, using the “External” tab. Add it to the pre-start checklist. Make sure your position shows up on the map. Select the chart you want, typically VNC or Victor Low, using Maps/Layers.

Copy your clearance. If it matches what you filed, and you have the Garmin FlightStream Bluetooth interface, you will be able to download it to your Garmin 4xxW/5xxW or 6xx/7xx navigator. Otherwise, you will have to do it manually. In the air, you will be able to monitor progress on either the enroute chart or the IAP.

By changing layers, you can flip from the VNC to the Victor Low chart, which is a lot better than when you had two paper charts to juggle. You can overlay the instrument approach procedures on the enroute charts, but I prefer to go to “Airports”, select, “Procedures”, and view them on their own.

Other useful tools on the Maps page are a ruler, to measure distances, a Course Deviation Indicator (showing displacement left or right of your flight planned track), and a Heads-Up Display, which brings up a ribbon containing several user-selectable data fields, such as ground speed, GPS altitude, distance/time to next waypoint (see the header screenshot at the start of the article), and so on. In lieu of a ruler, users of VFR charts should remember that one minute of arc in latitude equals 1 nautical mile. IFR charts don’t have clear enough latitude marks for this to work very well.

Again, unless you have the Garmin FlightStream 210 installed, any amendments to your clearance will have to be made on both the GPS navigator and your tablet. South of the border, you can display ADS-B weather and traffic on the app. The other important tab is “Airports”. You use this to call up an airport diagram, reference the AFD/CFS, and access instrument approach procedures. The latter are simply the NAV CANADA charts. There are also tabs to give quick access to such things as frequencies. 

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FEDERAL BUDGET AVIATION IMPACTS

OTTAWA'S PROPOSED LUXURY TAX WILL HAVE NEAR
AND LONG TERM CONSEQUENCES

BY PHIL LIGHTSTONE

On April 19, 2021, Canada's Federal government released its first budget in two years. In 2019, the Liberal party's fiscal plans included a new luxury tax designed to tax Canada's wealthiest individuals through automobile, boat and aircraft purchases. In 2020, the Federal government was distracted with fighting the COVID-19 pandemic and, as such, deferring the release of a budget.

The 2021 Federal Budget implements a luxury tax on General and Business Aviation private aircraft purchases. The details of the proposed luxury tax can be found starting on page 658. In a nutshell, the luxury tax will: Attract tax on new private aircraft purchases; a 10 per cent tax on the purchase price in Canadian dollars; or 20 per cent of the purchase price after the first \$100,000 (whichever tax amount is less); is collected and remitted to the government by the seller of the aircraft; and the new tax attracts HST/GST. Interestingly, the tax bar for boat purchases is set at \$250,000. The new aircraft tax is expected to come into effect on January 1, 2022. However, it may be retroactive to April 2021. More details, definitions and time lines will be forthcoming once the changes to the tax act are released. The Federal government estimates that the new luxury tax on cars, boats and aircraft tax will generate \$604 million over five years starting in 2021/2022.

Aircraft which come into scope of the new luxury tax are new private aircraft. Out of scope of the luxury tax are large aircraft typically used in commercial activities, such as those equipped for the carriage of passengers and having a certified maximum carrying capacity of more than 39 passengers. Smaller aircraft used in certain commercial activities (such as public transportation) and aircraft used by Canada's police, military, air ambulance, and rescue services are out of scope of the tax. However, the budget does not define what a new aircraft is, whether that means new to the Canadian aircraft registry, new to the purchaser or a brand new aircraft with no historic owner. Hopefully, the intention of the Federal government is the latter. There are still a number of outstanding questions which over time will be addressed.



▲ Ottawa's proposed luxury tax does not define what a new aircraft is, creating a range of issues with the \$100,000 cap, which older aircraft can easily eclipse.

The tax will be applied at the final point of purchase. In the case of an aircraft being imported into the Canada, the tax will be applied and collected at the border. The seller or lessor of the aircraft is responsible for the collection and remittance of the tax. The tax is payable upon purchase or importation regardless if the aircraft is purchased outright, financed or leased. Of note, GST/HST is applied to the final sale price of the aircraft, inclusive of the new tax. Depending upon the province which the aircraft is registered, this could add an additional 13 per cent tax (to the luxury tax), essentially tax on tax, increasing the luxury tax to a maximum of 20.26 per cent.

As an example, a GA pilot purchasing a factory new Cessna 182, will face an additional burden of roughly \$77,000 (dependent upon the U.S. exchange rate at the time of importation). Anna Pangrazzi, Sales Manager of Leggat Aviation, Textron Aviation's Cessna/Beech exclusive eastern Canadian sales agent, explains, "I have been working with a prospective purchaser for the purchase of a new 2022 Cessna 206, who will see the purchase price increase by \$230,000 based upon

the total tax burden, of which \$80,000 is the new luxury tax. I'm expecting the purchase not to close due to the additional financial burden. The addition of an 11.3 per cent tax on top of the existing 13 per cent HST will destroy the market for new aircraft in Canada."

The reaction from leaders within the Canadian aviation sector has been swift. Christine Gervais, President and CEO of the Canadian Owners and Pilots Association wrote, "We at COPA are concerned that this new personal tax will impede the number of pilots being able to own an aircraft, as many are purchased through a cost-share model due to the rising costs of ownership. The more onerous the cost of ownership becomes, the less pilots will fly thus affecting the essential business and traffic that our aerodromes and local communities rely on. This is a troubling trend which our vulnerable airport system has already been experiencing in the last decade, but especially this past year. The recent launch of various air navigation service provider studies aimed at reducing critical services at several small and medium sized airports directly links to this growing challenge. Without a pilot's freedom to fly, our network of airports may experience an inordinate amount of harm due to a dramatic decrease in aircraft activity. The equivalency placed on a \$100,000 car to an aircraft of the same value as being a luxury is incorrect. While there are hundreds of conventional and hybrid green automotive brands selling in Canada below the threshold of \$100,000, there are virtually no new aircraft or helicopters selling in Canada for less than \$100,000. There is an abundance of new boats that can be purchased for less than \$250,000. A basic single engine piston aircraft sells today for amounts in excess of \$500,000 (e.g., a Cessna 172 Skyhawk used in basic flight training) and are already taxed. The \$100,000 threshold placed on new personal aircraft is a highly unrealistic one and adding a 10 per cent tax to items that are already taxed is inequitable. This creates the erroneous perception that a specific item (in this case a personal aircraft) is deemed a luxury which is unfounded and impetuous."

Anthony Norejko, President and CEO of the Canadian Business Aviation Association (CBAA), characterizes the new aircraft luxury tax as a tax which will generate a low amount of

net new revenue (tax) to the federal government, but with a high cost. Capital will flow to the easiest direction, suggesting that Canadian individuals and corporations will consider registering their aircraft in the US, Ireland or other countries which have more lenient tax structures. Norejko explains, "This action is unfair and unsupportable as Canadian taxes such as GST and applicable PST are already applied to the purchase of these aircraft and the personal use of an aircraft is already recognized as a non-deductible taxable benefit to the individual. Moreover, the Income Tax Act does not specify or limit the type or size of aircraft: an airplane of any size can be used for business purposes. There is no other way to interpret this proposed tax but to see it as a gesture without real benefit to Canadians. The reality is that the only people who will be affected by the tax are the communities and businesses that rely on air service, and they are anything but wealthy. This tax is just a distraction from the real work that has to be done to get our economy moving."

Individuals may choose to utilize U.S. trust companies, to register their aircraft on the U.S. registry ("N"). Although the aircraft is technically not imported into Canada, it may be subject to HST and GST upon entering Canada. As Canadian corporations and individuals register their aircraft in the U.S., an unintended outcome is Transport Canada losing regulatory oversight of aircraft operating in Canadian airspace. Further, the Canadian aviation ecosystem will lose high margin professional services, as Canadian AMEs are limited in terms of the FAA's regulatory requirements.

It's challenging to calculate the financial impact of the luxury tax. A search of Transport Canada's aircraft registry indicates that 228 and 209 factory new aircraft were added to the registry in 2019 and 2020, respectively. Transport Canada does not track the purchase price of an aircraft. As such, it is difficult to determine the true marginal tax contribution of new private aircraft. Of the 228 aircraft, 29 were Bombardier BD-700 series jet aircraft, which may have been placed on the registry for Bombardier's internal purposes. Some people argue that this tax is a slippery slope toward layering an additional tax onto all aircraft transactions, including purchases and rentals. ✈️



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TOTALLY ICED UP AND FALLING OUT OF THE SKY

FLYING TO EXTREMES, MEMORIES OF A NORTHERN BUSH PILOT
BY DOMINIQUE PRINET

The following excerpt is from the book *Flying to Extremes, Memories of a Northern Bush Pilot* by Dominique Prinnet, published by Hancock House, Surrey, BC, 2021. This excerpt is shortened and edited by the original editor for the book, Audrey McClellan.

We had spent 24 hours fishing at a camp near Bathurst Inlet on the Canadian Arctic Coast and were now returning to Arctic Circle Lodge, on the northeast corner of Great Bear Lake, a four-hour flight. In my Gateway-Aviation Otter on floats, I was carrying ten Americans, all their gear, and tubs of Arctic char. The weather was awful, and we were flying in the clouds.

After half an hour, light frost covered the windshield, soon followed by another layer of thin ice. Wave after wave, the ice built up quietly. It was adding weight, increasing drag, and also reducing thrust and lift by distorting the plane's shape. A conspiracy of cold and moisture!

The plane started to descend from 10,000 feet. I increased the engine power, slowly so as not to wake up the sleeping fishermen. A few minutes later I had to increase power again. When the throttle was at full power and the propeller at almost fine pitch, I dropped



▲ Dominique Prinnet in front of a DHC-3 Otter in July 1969.

the flaps a bit to increase the lift of the wings, then a little more, a little more, until the flaps were in take-off position. The ice continued building up and the plane started descending on its own. There was nothing I could do. At a rate of 100 feet per minute, it would give me plenty of time to meditate before we hit the ground.

I sent out several Mayday messages, but nobody seemed interested. The long radio antennas must have been covered in ice. We were now descending at 300 feet per minute, which gave us about 20 minutes of peace and quiet.

I tried to relax since I had nothing to do.

We would hit the tundra at 120 mph. Or perhaps the rocks. Unless, of course, we did not see anything at all and crashed directly into the side of a hill. If we hit the tundra with our pontoons, the Otter would slide a little, stop abruptly and flip over onto its back. The plane would be bent out of shape, and the passengers would find themselves hanging, head down, suspended in their seats amidst a hodgepodge of luggage, fish, and gear. A hundred gallons of fuel would start to run from the inverted tanks.

I felt guilty and turned to the passen-

gers, as if to ask for forgiveness. But they looked perfectly happy, dozing away peacefully. For them, this was simply a long, monotonous journey. They surely thought they had an excellent pilot.

But their excellent pilot was feeling useless. I would have preferred to have problems to solve. There was nothing to see outside, and nothing to do inside but blindly fly the plane.

I wondered if I should make an announcement: Ladies and gentlemen, this is your captain. I regret to inform you that our plane is completely covered in ice and we are inexorably descending toward the tundra. In 15 minutes, we'll hit the ground in the fog at cruising speed. Please ensure that your seat belts are fastened, say your prayers, and wish your neighbours luck. I could picture their dismay. Some would remain calm and ponder the vagaries of distant travels and the surprises of life. Others would rush to the back of the plane to look for something on which to write their last thoughts, and this crowd movement would upset the delicate balance of my plane. It was best not to say anything.

I could only wait. We were now 3,000 feet above sea level, and about 1,500 feet above the ground, losing altitude at the rate of 400 feet per minute. I had been flying manually on instruments for an hour, and we had been descending for 25 minutes. I was tired. The aircraft



▲ Flying in July across Great Bear Lake with two aluminum boats for American sports fishermen at Arctic Circle Lodge. During this flight, the Otter was barely maintaining altitude at climbing power.

was heavy and flying poorly. When we reached 1,800 feet above sea level, a little above the hills, I straightened up in my seat. We had reached the end of our journey and would be arriving soon. Strangely, I still did not feel any fear.

I saw the cloud below the plane darken, becoming almost black. Here we go, this is it, the ground is coming.

Reflexively, I pulled on the wheel to absorb the impact and ducked my head. The plane was still a little manoeuvrable thanks to our high speed, and its descending trajectory became more rounded as I pulled. Through the window, for a split second, I saw the tundra whizz past just under the floats. Visibility was almost zero, but some of us might survive: the ground looked pretty flat and we had not hit anything yet. I pulled further on the wheel, very gently, to finish the landing. I wish I could have seen the look on my passengers' faces as they wondered what was happening.

Suddenly we came across a strip of rocks, large grey blocks strewn across

our path. I was furious. What bad luck! These rocks would crush us.

The engine was at full throttle, the propeller in fine pitch, and the flaps partially down, but the aircraft continued to slow and drop. The passengers must have sensed that this full-throttle, high-speed landing was not normal. Through the lowered window I saw a surface of water emerge from the fog beyond the rocks. We were crossing the edge of a lake or river. I thought, "The back of the floats will hit the last rocks, and we're going to topple into the water." The plane came down a little, and I once again pulled the wheel, but it wouldn't go back any further.

We hit the water at high speed and, surprisingly, not too hard. I pulled the throttle lever back to slow the plane before we hit any rocks that might be in front of us. It was hard to tell how much water there was, since visibility was zero.

The plane slowed down and almost came to a halt. We had not hit anything.



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Amazing! But I could feel the back getting heavier, and I saw the heel of the floats sinking into the water. The floatplane, overloaded with ice, was tipping backward and was about to sink tail-first. Really, you never got a break in this business.

I increased the engine power to move the aircraft quickly across the surface. I could see only water and fog, so I asked my neighbour to stick his head out his window and guide me along the shoreline, if he could still see it. Seconds later he called out, "On the right, there's a small beach." A quarter turn to starboard, and I beached the plane. We were going fast and the arrival was a little abrupt, nose up on the beach. My passengers could not have been impressed.

The flight was over. We had arrived. I had no idea where, but it did not matter. We were on a lake, facing a pretty little beach in the tundra. I couldn't see anything on my side because of the frost on the windshield and the thick fog on the water, but my neighbour was staring at something through his open window.

"What are you seeing?" I asked.
"I was looking at the tents," he replied.

At this point, nothing surprised me anymore. He could have told me there were cows grazing, or a young girl riding a bicycle, and it would have seemed perfectly normal to me. I leaned out the window. Indeed, about metres from us, at the top of the shore above our little beach, two white tents were pitched. I started laughing.

Now that it was over, the incongruity of this flight delighted me: the absurdity of the blind descent in our plane covered in ice, and our amazing fall onto the corner of an unknown lake lost in the fog, landing us by a lovely quiet beach, in front of the local cafe, a thousand miles from the nearest settlement. It was always the nonsense, the highly improbable sequence of events, that was the most amusing.

At that moment, one of the tents

opened and a bearded face appeared. The sound of the running engine must have caught his attention.

Just then a passenger, who was probably wondering what we were doing, clambered over the fish tubs and bags blocking the aisle and came toward me. She was smiling. "Have we landed at the lodge?"

"Oh, no, ma'am. We still have at least 150 miles to go."

"So where are we?"

I had absolutely no idea. Looking at the bearded man, I smiled back at my passenger: "The weather is so bad that I thought we could stop for a moment to have some coffee."

"What a great idea," she replied, her face lighting up. "I was thinking I'd like to stretch my legs. Can we get off now?"

"Of course, ma'am. Give me one or two minutes to let the engine cool down and shut it off. And stay close to the camp. You can't see anything. Even the seagulls are travelling on foot."

Because of the thick ice on the pontoons, I invited the passengers to follow me through the cockpit door and down the pilot steps along the strut. There was a solid half inch of clear ice everywhere, and hanging on was a challenge. Once on the float, there was still a five-foot jump to reach the sand.

It took hours for the ice to melt and the weather to clear. We spent the night in what turned out to be a geologist camp, telling fishing tales and having a great time. I had to discuss rocks and minerals forever before the two geologists finally pulled out their map so I could discretely figure out where we were.

At 5 a.m. there was a solid overcast with a 200-foot ceiling, but unlimited visibility over relatively flat terrain. It was great fun to fly safely so close to the ground. We buzzed the lodge by 6:30 a.m., arriving just in time for breakfast. The passengers were thrilled with their fishing trip and delighted with the smooth flight and the coffee break. I never told anybody the truth about that unscheduled stop. 🐻

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FEATURED LISTINGS FOR JUNE 2021



1977 CESSNA 185 F Amphib, Wipline 3730 TTSN 5937, IO520D 808TTSO, TOH 219, 6 new Cyl. McCauley 3 blade TTSN 124, Garmin 496, SL40, GTV321A, 406 ELT, Digital Fuel, EGT CHT, LR Tanks, Rosen Visors. Contact 705-220-5854.



FOR SALE at Boundary Bay Airport, CZBB Cessna 185 E Amphib Serial 185-1207. Asking \$250,000 obo. 3519 Total hours. 306 since rebuild 1966. Rebuilt in 2008 extensively after sunk at dock. Extensive rebuilding of floats, control, cables, etc., during past 10 years. Wing extensions, Robertson STOL, Edo 3500 Amphib Floats and all stock wheel gear included. Many new navigation, lighting and electrical additions. Contact Owner at 604-833-7096.



2018 ROTORWAY TALON, TTAf 26 hrs. All special flight restrictions removed. Recent 25 hr. maintenance and inspection performed. This Talon has a Supercharged, fuel injected engine with redundancy of critical systems including ECU's, fuel pumps and ignition systems. This aircraft was expertly built with many options; Helicopter blades electronically tracked and balanced for smoothest flight, MGL Enigma EFIS, duplicate critical analog gauges, Artex 345 ELT, full avionics package, electrical breakers, powder coated frame, tail rotor shaft drive, supercharger with automatic belt tensioner, AP Cog Belt Drive with hydraulic belt tensioner are only a few of the many options. Please visit rotorwaycanada.com for a more comprehensive list, see a picture of the list at www.CanadianPlaneTrade.ca or call Kelly 780-542-1122. Asking \$89,000 US.



2000 SOCATA TB20, only 1329 TTAf with carbon-fibre cockpit for enhanced headroom and cabin volume! Recent Avionics Upgrades incl GTN750 GPS and GTS800 Traffic and much more on our website! All logs! 1092# Useful Load! 1/2 Share available, based in Arnprior, ON, \$130,000 USD. Contact Apex Aircraft, www.apexaircraft.com or 905-477-7900.



2015 CHALLENGER II XL65 TTSN 31 hrs. Rotax 582, BRS Safety System, X-Com 760 C/W Intercom, Garmin Aera 660, Upgraded Seats also other extra's. \$42,000.00 Contact: 780-213-0741 or ikonflyguy51@gmail.com.



MARANDA AMF-S14D AIRCRAFT - TT 155, O-320 with McCauley propeller, Built in 1988, 1850lbs GWT/1202lbs EWT, Great 648lbs useful load, Full refurbishment just completed, new interior 9/10, exterior 9/10, new hardware wherever possible, fuel tanks refreshed, and pressure tested, new firewall, mixture cable, engine mount re-conditioned, engine borescope with overhauled Bendix mags, carburetor, alternator, oil filter, overhauled instruments with 406 ELT, CW CAR571 Alt/Enc 24 mth test, AME annual/inspection May 2021. Contact jlybrodeur@hotmail.com.



1964 PA-28-235 CHEROKEE, Engine 330 since Can OH, 3956 TTAf, 9/10 interior and paint. Eddy current will be completed. Recent annual. More pics online. Asking \$82,500. Additional avionics available at very competitive price. Contact MGK AERO 204-324-6088.



2012 CHALLENGER II ADVANCED ULTRALIGHT - 40.74 hrs., Rotax 582, 65 hp., 17-gal gas tank, upgraded 6" Aluminum Wheels. Extra tie down hooks and custom made wing covers. Asking \$32,000.00 Neg. Contact Emile 780-826-1170.



1980 PEZETEL M18 DROMADER. TT 982, Annual Nov 2018 TTSO 0, Pezetel prop TTSO 0, April 2018, Based in St Thomas ON. 60,000 USD. Phone BC 250-738-0056.



1980 CESSNA A185F with new Wip 3000 floats, 75 SMOH, New paint, Leather Interior and Garmin Panel! \$425,000 US. Call Anna 416-399-5247.



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2008 Mooney Acclaim, 1069 TTAf, FIKI, G1000/GFC700 AP	... \$420,000 USD	1978 C172N, 24680TT, 970SM, Commercial! KX155 NAV/COM!	... \$70,000 CAN
2002 DA20 C1, 3526TT, 'O' SMOH, Fresh Annual!	... \$200,000 USD	1974 Navajo Panther, 8360TT/5525SM, GTN750/650, STECA/P, ADSB	... \$265,000 USD
2000 Socata TB20, 1329 TTAf, Major Garmin Glass Upgrade! 1/2 share avail.	... \$130,000 USD	1974 172M, 1571TT, 733SinceThielertConv/DieselEngine!	... \$100,000 USD
2000 Husky A1B Whip 2200 Amphib, Wheel Gear 443 TTAf, G430	... \$174,900 USD	1972 C421B, 7095TT, LowEngineTimes, O'Props, G530WAAS/PAI/2004!	... \$159,000 USD
1991 Mooney 201, 10054TT, 801SFRM, NewProp/13, King Digital!	... \$105,000 USD	1970 M20C, 4766 TT 1129 SM, Fresh Annual & Prop Overhaul!	... \$75,000 CAN
1981 C182RG, 7728 TT, 1769 SM, GTN750 Touch Screen GPS!	... \$152,000 USD	1968 Nangchang C1-6A, Features Many Spares/Tools! Fresh Annual May/21	... \$ 74,500 USD
1981 Cessna 414A, 4925TT, 1204 SM, RAMVII, Garmin530/430!	... \$399,900 USD	1966 TwinComanche CR, 7816TT, 1446/O SMOH, G430, Many Mods!	... \$99,500 USD
1981 Duke B60, 4507TT, 1092 L&R, G530W, KFC-250 IFCs, Winglets!	... \$218,000 USD	1946 JS CLUB.w/PAII STC's, 5450TT, 550SMOH,	... \$53,000 CAD
1981 T182RG, 4488TT, 747 SMOH, 530W, 430W, STEC 50! CALL!	... \$181,000 USD	1943 Grumman G44 'Widgeon' 8929TT, 418SM, GTN750, Summer Ready!	... \$275,000 USD

Call Bruce Musgrave (416) 948-2973 for Complimentary Bluebook Appraisal!

FEATURED LISTINGS FOR JUNE 2021



1946 PIPER J3 CUB. C-85-8F. 2658 TTAf, 273 since bottom end refurbishment and new Slick mags, 128 since new cylinders in 2017, new Sensenich wood prop 2014, recover in Stits and Polytone 2006, 243 since rebuild in 2006, new exhaust stacks 2017, metal spar. Located near Calgary, AB. Call or email for higher quality photos - 403-998-2125, bkoal@shaw.ca.



1968 PIPER CHEROKEE PA28 235B - TTSN 4595 hours, Lycoming O-540 235hp SMOH 1190 hours (2000 TBO). Annual completed October, 2020. CS Hartzell 36" fresh 11/20 overhaul Empty weight 1647 lbs. Max Gross Weight 2900 lbs. Contact 780-897-0938.



VICEROY 4-SEASON HOME WITH AIRSTRIP AND HANGAR - \$749,900. "WhistleWing" private 14 acre 2400' plus grass strip runway. 3 bedroom, open concept home. 40' x 40' hangar with hydro and cement stone floors. Short walk to Kushog Lake Marina for all your water recreation desires. Contact for more details: 705-457-2414 or forsale@royalpage.ca.



1957 CHAMPION AIRCRAFT SEAPLANE, Certified, 100 hp., 3622 AF, 762 Eng., seaplane door, light weight starter and alternator, ELT 400, new windscreen. Fuselage recovered 2017, Wings 2011. Asking 60,000 can. Contact Alvin 807-768-4681 or ahauk@tbaytel.net.



2000 ZENITH ZODIAC 601 UL Advanced Ultralight asking \$39,500. Powered by a 80 HP Rotax 912 UL, maintained by a certified Rotax technician with approximately 485 hours on engine and airframe and regularly flown. Contact marvinkalchman@gmail.com or call 647-406-5792.



PA-12-150 (ALASKAN MODS) 1330 on new engine, Borer Prop, PA-18 Extended Gear, Clev. Brakes Left Door (Both Gullwing), V.G.s , Extended Baggage, Metal Interior, Full Gyro Panel, Atlee Dodge L/R Fuel. Good Fabric, rejuvenated 2018, Available on Baumann 2100 Floats (hatches)and Skis. Super Performer. Certified Aircraft. Contact Pier 613-678-0123 or sales@csplane.com



2005 FLIGHT DESIGN CTSW one-third partnership share for sale. \$27,000. 1244 hrs TTSN. 16 hrs SMOH. Fully equipped, all -composite design. Based at Carp airport (CYRP). Share costs with two highly experienced partners. Email: deagle@hotmail.com.



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1980 TU-206G. TT 3685, 415 SFRM, 9 SPOH. GNS 430, S-TEC 50, 3500A AMPHIBS, RSTOL, LR FUEL, BUBBLE WINDOW, ALL LOGS. CALL FOR PRICE.



2006 8-GCBC SCOUT, TT 434, SMOH 434, SPOH 434 M.T PROP, GMA-340, GNS-530, PK-2300B FLOATS, KEHLER W/SKI'S PRICE REDUCED!



1975 C-185 TT 5303, SMOH 898 SPOH 139. G5, G696, JPI BUBBLE WINDOW, EDO 3500A, STOLKIT, VG'S WING X. 249K CAD

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1963 C-180F TT 5733, SMOH 160 (2018) SPOH (2018) NEW PAINT 2017, WHEELS, EDO 2870 FLOATS. CALL FOR PRICE.



1978 C-172 HAWK XP TT 3574, SMOH 800 (210HP) SPOH (2012) G500, GTN 750, GTX 327 WIP 2350, WING X, S-STOL 235K CAD



1999 C-206H, TT 1000, SMOH *1.7*, SPOH *1.7*, 3 BLADE MCCAULEY, AUTO PILOT, WIPLINE 3450A, WING X CARGO DOOR. CALL FOR PRICE.

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CORRECTION NOTICE

IN THE MAY ISSUE THE INFORMATION REGARDING THE 2006 CHALLENGER WAS INCORRECT. THE AD STATED THAT THIS AIRCRAFT HAS A HISTORY OF HARD LANDINGS, WHICH IS INCORRECT.

2006 CHALLENGER II Advanced ultralight, TTSN 125 hrs, Rotax 503, 50hp, oil injection, cabin heat kit, brand new skies never installed, XPDR mode C, ASI (mph/kts), ALT, VSI, Precision compass, CHT, EGT, TBI. Complete interior finish (wall, floor, seats) new never installed, full covers of ultralight, 15 gal gas tank, strobes, Nav & landing lights, 2 sets of wheels (original & tundra), professionally painted aerothane paint, always hangered during winter, NDH \$29,000 neg. Roger 514-647-6033 or rodrig1927@hotmail.com



1974 CESSNA 185F - TTA5625.4 TT50H 10-520-D12109.8, TTSN Hartzell 3 bld prop 164.2 (new 2016), 2960 Floats with hatchets / C3200 wheel skis, Engine monitor, Wing extensions, Tanis Heat kit, New fuel tanks 2017, 198.9 hrs on new cylinders. Fresh Annual. Contact 807-728-2410 or 807-728-0203.



2013 MAGNI M24 ORION VIP GYROCOPTER TTSN 225 hrs, Rotax 914 Turbo, 115 hp, cabin heat kit, seatbelts 4 points, Carbon propeller cone, Mast fairing, 2 sets of wheels (Original & tundra), protection cover (New), EMS fuel sensors, Tanis preheat system, strobe/nav lights each side & behind mast, landing light, dynon skyview, XPDR mode S, VHF Funkwerk ATR833 OLED with dual watch, backup ALT & ASI, Compass, Locking gas cap AND MORE. Always hangared, NDH, \$135,000. Roger 514-647-6033 or rogd1927@hotmail.com



1994 DIAMOND HK36R C-GBPA SuperDimona Serial: 36.339 Powered Glider, Reliable Rotax engine 912-A2 80 HP (2009) 244 SMOH, Electric Variable prop (2017) 28.9 Hrs SOH, - LR tank (80 ltrs), Glider 28:1, Regularly Flown- ADs completed and upto date. Always hangared. Like new. Annual due may 08 2020. Long equipment list. 9.7/10 in and out. To be seen. \$136,000.00 CDN. Contact: Guy Lapierre- 418-655-8864, lapierre.guy@videotron.ca or Simon Paquet- 418-208-8596, Info@simonpaquet.ca



1950 FLEET CANUCK 8340 TTSN, C-90 290 SMOH Fresh annual, Hangared, Wheels, Floats, Skies. Owner has put over 1,000 hrs on AC in 21 years Selling for health reasons \$44,500. Call Jack 705-297-0586.



1995 BUSH CADI with Rotax 912, 373 hours TT, 3 blade warp drive, ground adjustable prop. New Radiator, new oil cooler, new exhaust, new paint, and new shock cords. Comes with wheels and Federal 1500 skis, cabin heater and Icom radio. Very room and comfortable! Contact 705-561-3675.



ULTRALIGHT TRIKE DTA COMBO 582 for sale - This is a DTA combo 582 ultralight trike that I bought new in 2011. It's equipped with a Rotax 582 (blue head) DCDI, electric and hand starter, DUC Windspoon carbon fiber propeller, DTA Magic wing with dual control, MGL E-1 and ASX-2 avionics (altimeter, air speed, flight log, trip counter, atmospheric pressure, RPM, Hobbs meter, flight timer, EGT, CHT, battery voltage), 70 liters fuel tank with gauge. Also included Lynx micro pilot communication system Lynx helmet (2), Lynx headset (2), garmin aera 510 GPS. Always stored in hangar, very well maintained and flown every year. 178 hours since new. For more information please contact Louis Bellefeuille 418-953-1759.



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EDO 1400 FLOATS with PA11 Cub gear. Good condition, certified, with data tags and documentation. \$11,000. More than \$15,000 invested. Contact dfarenburg@gmail.com or 902-749-8547.



KRUCKER 1400 STRAIGHT ALUMINIUM FLOATS. 14 feet length, no leakable seams or rivets. Ideal for home builds, ultralights etc. Previously installed on J6 Karatoo. One water rudder installed with second possible. Contact 416-455-0257.



1943 BEECHCRAFT D175 STAGGERWING PROJECT, Airframe: 1312 H, P&W R985-AN3-14B: 483 H SMOH. Prop: Hamilton Standard 2D30 Hub: 0 H since O/H. A/C is complete but disassembled. 85K\$US OBO, David Uloth, tel: 514-435-0955, goodvibes88@hotmail.com.

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2007 CTSW FLIGHT DESIGN – One owner, fully loaded with: Dynon panel (EFIS-D100, EFIS-D120), GPS (AvMap EXP-1V), BRS parachute, Transponder (Garmin GTX 327), Radio (Garmin SL40), Autopilot, ZAON portable collision avoidance system, 3-axes adjustable trim, Rotax 912 ULS 818 TT Engine soft-start module, Tundra tires Inflight adjustable prop, Complete set of Bruce's custom covers, 2 headsets. Annual completed September 2020 at Rotax Aircraft Engines Vernon. \$89,000. Contact gramlays@gmail.com.



ZENAIR ZODIAC CH601 HD – Rotax 912UL 80 HP, TTSN 1044; GSC Three blade propeller, TTSN 54.8; Icom IC-A200 Transceiver; KT76A Bendix/King Transponder A/C; much more. Housed at St. Andrews CYAV; Ready to fly; 21 K; Only serious inquiries 204-632-7957.



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2017 AUTOGYRO CAVALON - \$155,000 - FOR SALE - Factory built. A1 condition. Parked in hangar and maintained by an M1 commercial aircraft engineer. TTSN 239 hrs. Rotax 914 turbo of 115 hps. Dual command. Heated cabin and heated leather seats with lombard support. Dynon skyview 10 inches screen (flight instruments, navigation, mapping and gps). Dual com radio and transponder. Beautiful metallic grey color. Annual inspection carried out and all service bulletin. Contact 438-520-7847.



2007 QUAD CITY CHALLENGER II ADVANCED ULTRALIGHT C-IZAR, Rotax 582 oil injection, cabin heat, Puddle Jumper amphibious floats and wheels/wheel pants, Icom A6 radio, Garmin Aera 560 touchscreen GPS, SPOT satellite trace, Trig TT-21 Mode C transponder, upgraded 17 gal fuel tank, Turbulence Aviation interior, belly bag and full exterior coverings. 275hrs TTAF, engine 213hrs TTSN. Excellent condition, hangar kept at CYAV (Winnipeg). A beautiful plane which has been a joy to own. Asking \$42,000. Email to gkennedy@gmail.com.



2011 CHALLENGER ADVANCED ULTRALIGHT XL65 built in 2013 by Toronto aerosport and owner tt 85 hrs fresh inspection rotax 582 65hp oil injection water cooled winter rad kit carb heat cabin heat puddle jumper floats. \$35,000. Contact Barry 705-340-2161 or beewillis53@hotmail.com.



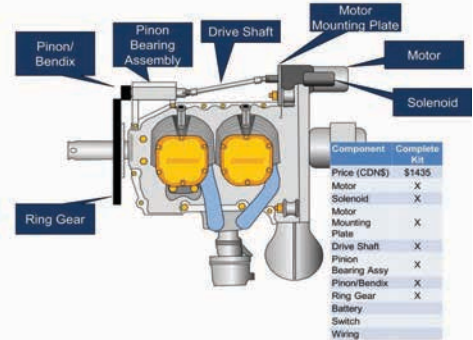
1973 MAULE M5-220C, 1486 TTSN, Franklin 220HP, 461 SMOH, 155 SPOH, on Edo 2440 floats, (wheels included) radio, intercom, LR tanks. Fabric, paint, headliner 2008, \$102,000CA, Call Blair 819-459-3284, blair@birconsulting.ca

Buyers are encouraged to check with original manufacturers to ensure structural and airworthiness requirements are met.



2006 ADVANCED CHALLENGER II ULTRALIGHT, TTSN 125 hrs, Rotax 503, 50hp, oil injection, cabin heat kit, brand new skies never installed, XPDR mode C, ASI (mph/kts), ALT, VSI, Precision compass, CHT, EGT, TBI. Complete interior finish (wall, floor, seats) new never installed, full covers of ultralight, 15 gal gas tank, strobes, Nav & landing lights, 2 sets of wheels (original & tundra), professionally painted aerothane paint, always hangared during winter, NDH \$29000 CDN neg. Roger 514-647-6033 or rodg1927@hotmail.com

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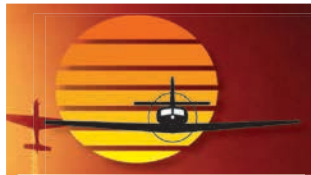


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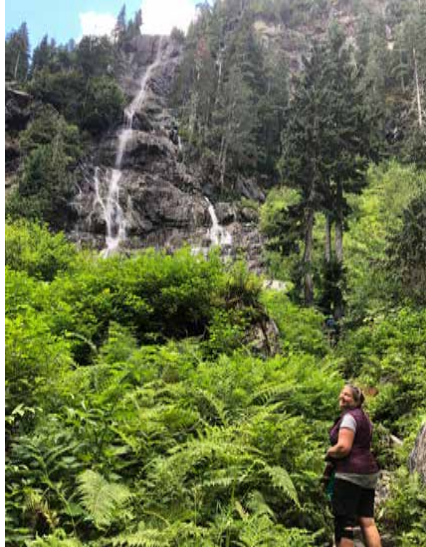
BY BRYAN WEBSTER

After the busiest season on record for my company Aviation Egress Training, as with many in aviation, our entire world changed in March 2020.

After a few weeks of bewilderment my wife Patti and I decided that there were two ways of handling the situation: We could curl up into the fetal position and wait out the storm, or get out there and embrace the world with cautious optimism. Once Aviation Egress Training (AES) was put on hold, we ditched the computer and cell phones in trade for discovering as many remote lakes as possible. For this we utilized our 1947 Luscombe 8E "Pretty Girl", which is cheaper to operate per kilometre than our drive to the airport.

Before long, our good friend Steve with a similar model Luscombe joined in directing us to hidden gems within a days flight of home base. Most of the lakes were teeming with a variety of fish to be caught in solitude which only the back country can offer. One stop included a large floating dock in the middle of the lake, plus canoe. Camping out on an airport has merit, but waking up on a floating object in pristine waters while enjoying a dip before coffee simply cannot be beat.

Fast forward to mid-summer and a new energy had awakened us, so we opted for a more vigorous approach to the outdoors. After flying over many mountain passes then later perusing the local parks and recreation maps, we decided to backpack into some wonderful West Coast forests. Della Falls looked interesting from the air, so on with the backpacks and away we go over a grueling trail which dates back to gold mining in the late 1890s. These beautiful falls – the highest in Canada – pour down a vertical drop from a crystal blue lake thousands of metres above. From our



▲ With their business impacted by the pandemic, Bryan and Patti Webster took the time to explore a range of remote BC wilderness by air.

campsite at the bottom, we opted for a day hike to another Alpine Lake which was very refreshing for swimming and well worth the effort. What amazed me was the fact that early day gold seekers had climbed straight up that same switch-back trail, where only a mule could navigate, complete with equipment.

After the best part of a week in solitude, we headed home only to find our world was still on hold. So how about another backpack adventure. This time we headed for Cape Scott on the north end of Vancouver Island about a days drive from Victoria. History of this particular five day wander in the woods dates back to early immigration in the late-1800s, followed by World War II when a radar station was built on site.

Today, this same concrete structure is utilized for marine safety in the form of a lighthouse complete with two caretakers and numerous buildings. The trail was originally hand cut by Dan-

ish settlers who were offered land to help populate the then desolate area, which unfortunately did not last long for numerous reasons. The military later required access to this region for a Willies jeep road, which was later built and is mostly still there, although gets extremely muddy. The beaches, however, are worth the hardship, rivalling anything you might find anywhere in the world. After camping out on incredible sandy shores with waves always washing in, we wondered why would a person would not just stay here forever. Of course, you are in a park and the freeze-dried foil packs will be gone well before the rains return.

But on the flight home, it is decided a float flying adventure will be next, as our cell phones confirm Egress Training is still at an all time low. This time, a local outdoor fly-in event closer to home with a few family and friends is on the docket and, luckily, weather co-operates as in the past few months.

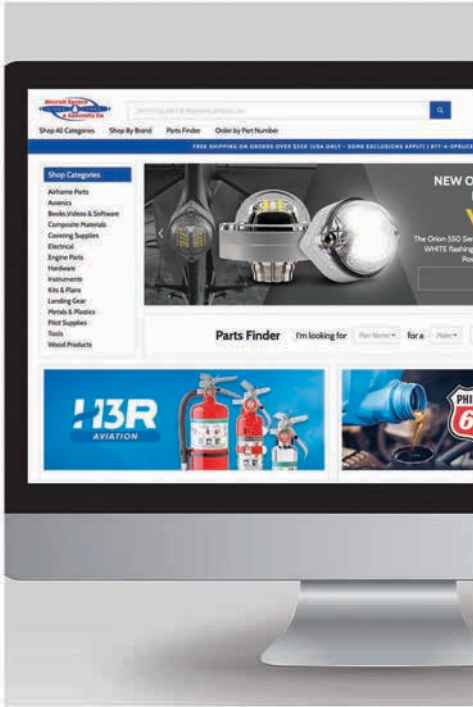
For pilots who are not fortunate enough to participate in bringing aviation to children, its hard to describe what an effect first flight has on a young person. Now looking back to the previous spring, our on going pandemic has turned each one of our world's upside down and everyone of us will have different stories to tell once it is over.

No doubt many of us have been adversely effected medically or economically, so who knows what the future will bring as only time will tell. During the previous winter, and given time available, I was able to research and develop a few of my pet projects pertaining to float plane safety, which are now nearing completion. Once they have been tested and accepted, I will follow up with details on why aviators may be interested in applying them. 🙌



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