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**ON THE COVER:** Photographer Eli Pasquali captures Geoff Koots and Ian Cosco with their DHC Beaver on wheels in Whitehorse, Yukon, where the young pilots continue to drive a unique business model around remote IFR and VFR flight.

**COPA Flight**

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**Back in December, I was privileged to attend a by-invitation-only viewing, from the comfort of my home, of the SpaceX Falcon 9 launch with the SXM-7 satellite on board, from Cape Canaveral Air Force Station. What was so special about this launch is that this satellite is a SiriusXM payload.**

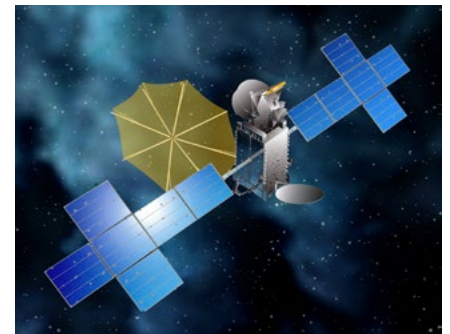
Although not exactly like being there in person, the countdown was nerve-wracking on two separate occasions. The original rocket launch was scheduled for Friday, December 11, and the countdown clock stopped at T-30 seconds remaining. It was then called off due to ground issues. The second launch attempt was scheduled for December 13 and, this time, SpaceX's Falcon 9 rocketed into space safely delivering SXM-7 to orbit and returned to land successfully. It was the seventh flight for this rocket's first-stage booster!

What does this mean for General Aviation and why on earth am I writing about this? We all know that SiriusXM provides superior satellite weather information (with a paid subscription) throughout your flight, which maximizes situational awareness. In Canada, however, the reach was far from ideal, covering the southern region with satellite signal strength at this border region being limited.

SXM-7 will provide continuous, reliable delivery of SiriusXM's information services and will expand SiriusXM's coverage area in Canada and the Ca-

ibbean. The geostationary satellite will deliver the highest power density of any commercial satellite in orbit, sending more than 8,000 watts of content to the continental U.S., Canada, Puerto Rico and the Caribbean, increasing the power and reach of the signal for SiriusXM.

SXM-7 weighs almost 7,000 kg and is built on a Maxar 1300-class platform, the world's most prevalent geosynchronous spacecraft platform. The satellite is designed to provide service for more than 15 years. Maxar has previously built a total of seven satellites for SiriusXM, including its first-generation Sirius satellites that launched in 2000 and its second-generation Sirius satellites that launched in 2009 and 2013. SXM-7 joins XM-3, XM-4, XM-5, FM-5, and FM-6 in SiriusXM's active satellite fleet. SXM-7 and SXM-8 together will replace XM-3 and XM-4, extending SiriusXM's satellite delivered services through at least 2036.



As in the previous year, COPA is extending its affiliation with SiriusXM. Members who purchase any new SiriusXM aviation subscription between January 1, 2021, and December 31, 2021, will receive a complimentary one-year COPA membership; or a credit towards their next membership renewal.

The importance of aviation weather information is of the utmost importance and having this information available to you at your fingertip throughout your flight is something that is worth endorsing. Thank you SiriusXM for this effort to better the service, but more importantly to increase coverage in Canada. 🇨🇦

## BONNE ANNÉE!

**Au mois de décembre dernier, j'ai eu le privilège d'assister, par invitation seulement et dans le confort de ma maison, au lancement du Falcon 9 de SpaceX avec le satellite SXM-7 à bord, depuis la station aérienne de Cap Canaveral. Ce qui était spécial dans ce lancement, c'est que ce satellite est une charge utile de SiriusXM.**

Bien que pas comme être là en personne, le compte à rebours a été éprouvant pour les nerfs, et ce, à deux reprises! Le lancement initial de la fusée était prévu pour le vendredi 11 décembre et l'horloge du compte à rebours s'est arrêtée à T- 30 secondes restantes. Il a ensuite été rappelé en raison de problèmes de terrain. La deuxième



tentative de lancement était prévue pour le 13 décembre et cette fois, le Falcon 9 de SpaceX s'est lancé dans l'espace en toute sécurité pour livrer le SXM-7 en orbite et est revenu à terre avec succès. C'était le septième vol pour le premier propulseur de cette fusée!

Qu'est-ce que cela signifie pour l'Aviation générale et pour l'amour du ciel, pourquoi écris-je à ce sujet? Nous savons tous que SiriusXM fournit de l'information météorologique satellitaire supérieure (avec un abonnement payant) tout au long de votre vol, ce qui maximise la connaissance de la situation. Toutefois, au Canada, la portée était loin d'être idéale, couvrant la région sud avec la force du signal satellite dans cette région frontalière étant limitée.

SXM-7 fournira une livraison continue et fiable des services d'information de SiriusXM et élargira la zone de couverture de SiriusXM au Canada et dans les Caraïbes. Le satellite géosta-

tionnaire fournira la plus forte densité de puissance de tous les satellites commerciaux en orbite, envoyant plus de 8 000 watts de contenu aux États-Unis continentaux, au Canada, à Porto Rico et dans les Caraïbes, augmentant ainsi la puissance et la portée du signal pour SiriusXM.

Le SXM-7 pèse près de 7 000 kg

et est construit sur une plateforme de Maxar 1300, la plateforme spatiale géosynchrone la plus répandue au monde. Le satellite est conçu pour fournir un service de plus de 15 ans. Maxar a déjà construit un total de sept satellites pour SiriusXM, dont ses satellites Sirius de première génération lancés en 2000 et ses satellites Sirius de deux-

ième génération lancés en 2009 et 2013. SXM-7 rejoint XM-3, XM-4, XM-5, FM-5 et FM-6 dans la flotte active de satellites de SiriusXM. SXM-7 et SXM-8 remplaceront ensemble XM-3 et XM-4, prolongeant les services de livraison par satellite de SiriusXM au moins jusqu'en 2036.

Comme l'année précédente, COPA étend son affiliation avec SiriusXM Aviation Canada. Les membres qui achètent un nouvel abonnement SiriusXM Aviation entre le 1er janvier 2021 et le 31 décembre 2021 recevront un abonnement gratuit d'un an à la COPA, ou un crédit pour leur prochain renouvellement d'adhésion!

L'importance de l'information météorologique de l'aviation est de la plus haute importance et avoir cette information à portée de main tout au long de votre vol est quelque chose qui vaut la peine d'appuyer. Merci, SiriusXM pour cet effort visant à améliorer le service, mais surtout à accroître la couverture au Canada. 🇨🇦



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# TSB REPORT ON FATAL COLLISION HIGHLIGHTS THE RISKS OF VFR FLIGHTS IN ADVERSE WEATHER

The Transportation Safety Board of Canada on December 10, 2020, released investigation report A19Q0128 about a July 2019 fatal collision with terrain, stating the accident highlights the risks of continued Visual Flight Rules flights in adverse weather conditions.

TSB explains the report determined that flying in a degraded visual environment likely led to the pilot experiencing spatial disorientation and the aircraft subsequently colliding with terrain.

Detailing the event, TSB explains, that on July 29, 2019, at 15:55 Eastern Daylight Time, a Beechcraft Bonanza V35B aircraft registered in the U.S. departed Wittman Regional Airport, Wisconsin, U.S., for a daytime Visual Flight Rules (VFR) flight to Danbury Municipal Airport, Connecticut, U.S., with only the pilot on board.

Shortly after takeoff, TSB explains the aircraft began to deviate north of the planned route and subsequently flew into Canadian airspace. At 19:12, while in the vicinity of a line of rain showers, thunderstorms and lightning, TSB explains the aircraft entered a right turn, descended rapidly and collided with terrain approximately seven nautical miles northeast of Senneterre, Quebec.

At 23:31, the Joint Rescue Coordination Centre (JRCC) in Trenton, Ontario, was notified of a missing aircraft and initiated search-and-rescue operations. The accident site was found four days later, on August 2. The pilot was fatally injured and the aircraft was destroyed. There was no post-impact fire and no signal was detected from the aircraft's emergency locator transmitter.

The flight profile and weather data suggest, according to the TSB, that the pilot deviated more than 350 nautical miles north from his intended flight path in an attempt to bypass or outrun a moving line of thunderstorms and lightning. Numerous heading deviations and corrections



▲ The occurrence aircraft's flight path (green line) and planned direct track (orange line) from Wittman Regional Airport to Danbury Municipal Airport.

all proved unsuccessful, according to the TSB, in either crossing the line of weather or regaining a suitable track toward the original destination.


TSB states the commitment to the original plan indicates that the pilot's decision making was likely affected by plan continuation bias, which led him to continue a VFR flight in adverse weather conditions. TSB concludes the final flight path also suggests that the pilot likely experienced spatial disorientation from a visual or vestibular illusion and, as a result, the aircraft entered a spiral dive and collided with terrain.

TSB notes the investigation also highlights that if pilots do not have recent experience flying in instrument meteorological conditions, they may not possess the skills and proficiency required to do so, increasing the risk of loss of control and accident.

It was also determined, through TSB's investigation, that the knowledge level of ADS-B, including space-based ADS-B, was limited within the search-and-rescue (SAR) community. At the time of the occurrence, JRCC Trenton was aware that ADS-B technology had been available in

Canada since March 2019, but also that not all aircraft operating in Canada were equipped with this technology. As a result, JRCC did not include ADS-B data in its data requests to NAV CANADA.

As such, TSB states if SAR authorities do not access or use data from emerging technologies, such as space-based Automatic Dependent Surveillance-Broadcast (ADS-B), in a timely manner, there is a risk that following an accident, potentially life-saving search-and-rescue services will be delayed. In this particular case, however, TSB notes the accident was not survivable. TSB continues to explain, that eventually, access to space-based ADS-B data helped in reducing the search area, locating the downed aircraft, and allowing the TSB to reconstruct the flight path.

Since this accident, TSB notes the Department of National Defence SAR stakeholders were made aware of an ADS-B aircraft locating emergency response tracking service and the requirement to specifically request ADS-B data. Coordinators now routinely include such queries, according to TSB, when investigating overdue or missing aircraft. 

# LE RAPPORT DU BST MET EN ÉVIDENCE LES RISQUES MORTELS DU VFR PAR MAUVAIS TEMPS

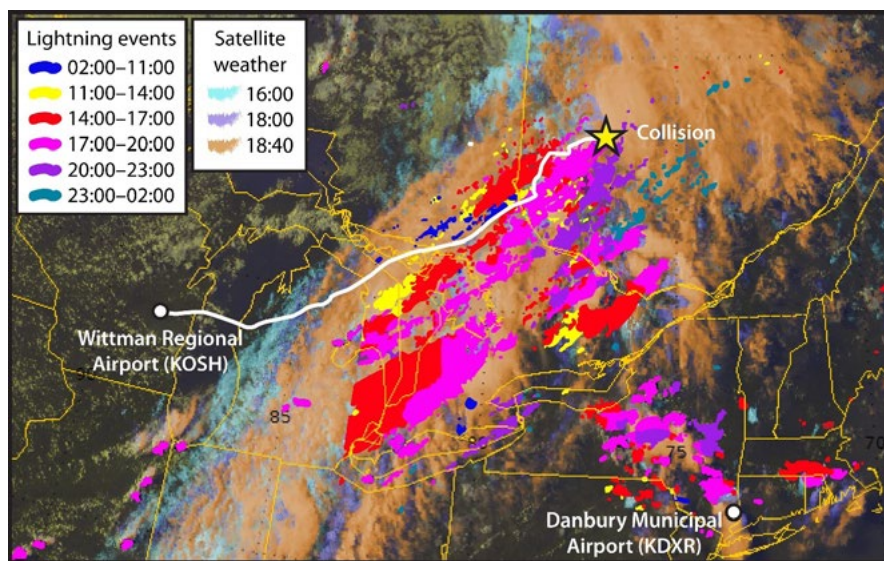
Le 10 décembre 2020, le Bureau de la sécurité des transports (BST) du Canada a publié le rapport d'enquête A19Q0128 sur la collision mortelle d'un aéronef avec le relief, mettant en évidence les risques du vol à vue (VFR) dans des conditions météorologiques défavorables.

L'accident est survenu en juillet 2019. Le BST explique que le rapport a permis de déterminer que le fait de voler dans des conditions visuelles détériorées a probablement créé une désorientation spatiale au pilote, laquelle aurait provoqué l'écrasement de son appareil.

En guise de reconstitution, le BST mentionne que le 29 juillet 2019 à 15 h 55 (heure avancée de l'Est), un avion Beechcraft Bonanza V35B immatriculé aux États-Unis a décollé de l'aéroport régional de Wittman au Wisconsin (États-Unis) pour un vol de jour selon les règles de vol à vue à destination de l'aéroport municipal de Danbury au Connecticut (États-Unis), avec seulement le pilote à bord.

Peu après le décollage, poursuit le BST, l'aéronef a commencé à dévier de sa trajectoire vers le nord pour pénétrer dans l'espace aérien canadien. À 19 h 12, alors qu'il se trouvait près d'un front d'averses, d'orages et d'éclairs, le BST indique que l'aéronef a effectué un virage à droite, est descendu rapidement et a percuté le relief à environ 7 milles nautiques au nord-est de Senneterre au Québec.

À 23 h 31, le Centre conjoint de coordination de sauvetage (JRCC) de Trenton en Ontario a été avisé qu'un aéronef avait disparu, et il a entrepris des opérations de recherche et de sauvetage. Le lieu de l'accident a été découvert quatre jours plus tard, soit le 2 août 2019. Le pilote a été tué dans



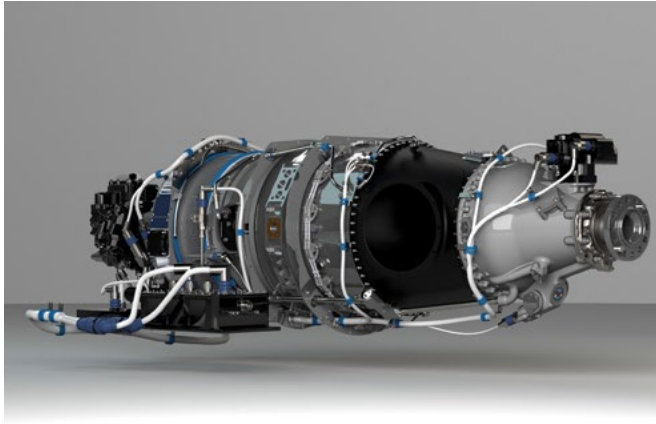
▲ Trajectoire TFlight superposée à des images satellites visibles multispectrales au moment de l'événement, le 29 juillet 2019.

l'accident et l'aéronef a été détruit. Aucun incendie ne s'est déclaré après l'impact et aucun signal provenant de la radiobalise de repérage d'urgence de l'aéronef n'a été capté. Le profil de vol et les données météorologiques suggèrent, selon le BST, que le pilote a dévié de plus de 350 milles nautiques au nord de sa trajectoire de vol pour tenter de contourner ou de dépasser une ligne mobile d'orages et d'éclairs. De nombreux écarts de cap et corrections se sont tous avérés infructueux, selon le BST, soit pour traverser la ligne météorologique, soit pour retrouver une trajectoire convenable vers la destination initiale.

Le BST déclare que l'engagement à l'égard du plan initial indique que la prise de décision du pilote a probablement été affectée par la tendance à s'en tenir au plan, laquelle l'a amené à poursuivre son vol en mode VFR dans des conditions météorologiques

défavorables. Le BST conclut que la trajectoire de vol finale suggère également que le pilote ait probablement subi une désorientation spatiale due à une illusion visuelle ou vestibulaire et, par conséquent, l'aéronef a amorcé un piqué en spirale pour entrer en collision avec le relief. Le BST note aussi que l'enquête révèle que si les pilotes n'ont pas d'expérience récente de vol dans des conditions météorologiques aux instruments, ils peuvent ne pas posséder les connaissances et les compétences requises pour le faire, ce qui augmente le risque de perte de contrôle et d'accident.

Il a également été déterminé, dans le cadre de l'enquête du BST, que le niveau de connaissance de l'ADS-B (système de surveillance dépendante automatique en mode diffusion) – y compris le système ADS-B spatial – était limité au sein de la communauté de recherches et sauvetage (SAR).



▲ Primarily developed in Canada, the PT6E-67XP turboprop engine was introduced in late 2019 featuring an Electronic Propeller and Engine Control System with Full Authority Digital Engine Control (FADEC).

## PRATT & WHITNEY CANADA PT6 MILESTONE

**Pratt & Whitney on December 2 announced that the 50,000th PT6 turboprop engine rolled off the production line, achieving what the company describes as an exceptional milestone in general aviation.**

The company notes, that with the new PT6 E-Series engine now in full production, powering the Pilatus PC-12 NGX, the numbers of PT6 in the field continue to grow. “From the first application more than 50 years ago, the now iconic PT6 engine turns possibilities into realities for our customers around the world on more than 130 different applications today,” said Irene Makris, VP, sales and marketing at Pratt & Whitney. The PT6 first flew out of Toronto’s Downsview Park in May 1961.

The company describes the PT6 turboprop engine as a proven choice for demanding, high-cycle/high-power applications in single- and twin-engine aircraft. The engine fleet’s current flying population is more than 25,000 units and it has accumulated more than 410 million flight hours – more flying time than any other engine in this segment.

The 2019 launch of the PT6 E-Series included what Pratt & Whitney described as the first turbine engine in the general aviation market to offer a dual-channel integrated electronic propeller and engine control. The engine was primarily developed by Pratt & Whitney’s Canadian arm, which, before the start of the pandemic, included around 1,500 specialized positions at two primary R&D centres in Longueuil, Quebec, and Mississauga, Ontario

## NAV CANADA LAYS OFF ANOTHER 180 WORKERS

**NAV CANADA in mid-December outlined more restructuring efforts impacting approximately 180 jobs across the country, including both operational and technology staff.**

The private, non-profit corporation stated the reductions were made based on a detailed review of historical air traffic, the current environment, and longer-term traffic forecasts. NAV CANADA has now eliminated approximately 900 jobs, or 17.5 per cent of its workforce, since the beginning of the COVID-19 pandemic.

“The restructuring is critical as NAV CANADA continues to safely and responsibly streamline its operations to adapt to today’s realities,” said Neil Wilson, CEO, NAV CANADA.

On November 27, NAV CANADA released its traffic figures for the month of October 2020, as measured in weighted charging units for enroute, terminal and oceanic air navigation services, in comparison to the same month of the prior fiscal year. Traffic in October 2020, according to NAV CANADA’s figures, decreased by an average of 59.5 per cent compared to the same month in 2019. This marks a slight improvement from figures released in the previous month, when comparing September 2020 to September 2020 with an overall traffic decrease of 62.6 per cent. In mid-December, NAV CANADA then released its traffic figures for November 2020, which saw a decrease of 53.4 per cent compared to the same month in 2019. At the start of November, the company also began to provide ATC service at Red Deer Regional Airport, CYQF.

Since the beginning of the pandemic, NAV CANADA explains its phased approach to drive down expenses has included the elimination of executive positions, management salary and bonus program reductions, changes to part of the pension plan applicable to management, ending terms of temporary employees, agreements with unions to suspend programs, early retirement incentives, and a reduction of all non-essential activities. 📌

The control tower at Montréal-Pierre Elliott Trudeau International. ▶

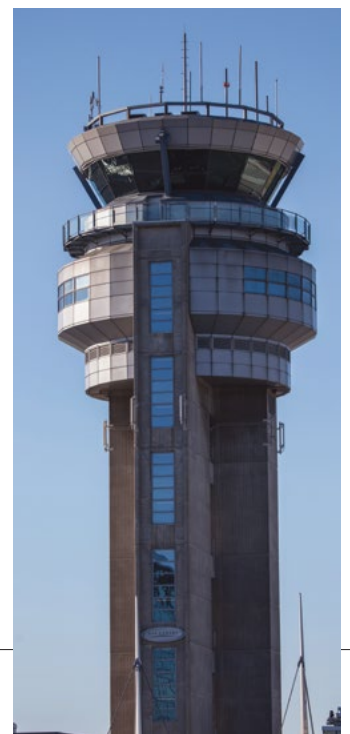


PHOTO (L-R) : PRATT & WHITNEY; NAV CANADA



# INCIDENTS + ACCIDENTS

The following reports are taken in part from Transport Canada's CADORS website, with minor editing for clarity.

## ONTARIO REGION

**Upon departure, a 12084546 Canada Inc.** Piper PA-28-140 (C-FULZ) from Quebec/Neuville, QC (CNV9) to Ottawa/Carp, ON (CYRP) was sighted twice (at 2228Z and 2233Z) in the Class C airspace of the Quebec/Jean Lesage, QC (CYQB) tower, without having received prior authorization. No impact on operations.

**A privately registered JMB Aircraft** VL-3 Evolution/E-1 from Ottawa/Rockcliffe, ON (CYRO) to St. Mathieu-de-Beloeil, QC (CSB3) entered the Class C airspace of the Montreal/Mirabel, QC (CYMX) terminal, eastward, without having established any communications. No impact on operations.

## PRAIRIES REGION

**A privately registered Cessna 180H** from Lloydminster, AB (CYLL) to Lloydminster, AB (CYLL) called in to the flight service station (FSS) by phone to the north of the field and advised they were "no radio" (NORDO) and inbound for landing. The FSS provided the aerodrome advisory over the phone. The aircraft landed at 2219Z. No operational impact.

**A United Parcel Service Boeing 767-300** (UPS491) from Calgary, AB (CYYC) to Sioux Falls, SD (KFSD) had to brake to avoid a coyote on Taxiway Alpha.

**A Calgary Flying Club Cessna 172M** (C-GWMB) from Calgary/Springbank, AB (CYBW) to Calgary/Springbank, AB (CYBW) was given runway heading 5500 feet. The aircraft was observed turning at 5200 feet. Potential conflict with an L R Helicopters Inc. Robinson R44 II (C-FPNR) from Calgary/Springbank, AB (CYBW) to Calgary/Springbank, AB (CYBW) inbound from the

southwest at 5000 feet descending to 4500 feet.

**A laser attack was directed at a Saskatoon Board of Police Commissioners** Cessna 182T (C-FSPS) from Saskatoon/John G. Diefenbaker, SK (CYXE) to Saskatoon/John G. Diefenbaker, SK (CYXE) while the aircraft was 3NM South of CYXE. The laser illumination report submitted by the pilot of C-FSPS indicated that the Tactical Flight Officer (TFO) of the police aircraft observed a red laser strike. The flight crew donned laser protective eye wear. The TFO located the suspect after subsequent flashes from the red laser. The suspect was apprehended by a police ground unit.

**A privately registered, amateur-built** Denny Kitfox S5 from Edmonton/Gartner, AB (CFQ7) to Edmonton/Ville-neuve, AB (CZVL) flew within the wake turbulence of a Sunwest Aviation Ltd. Fairchild SA227-DC (C-GSAF/CNK214) from Calgary, AB (CYYC) to Edmonton, AB (CYEG) without a wake turbulence cautionary.

## PACIFIC REGION

**The pilot of an American, corporately registered** Cessna U206E (N9428G), on a transborder flight from Burlington/Skagit, WA (KBVS) to Victoria, BC (CYYJ), departed KBVS and did not activate their flight plan (FP) via the United States flight service station (FSS). The pilot assumed that once they were talking to the CYYJ terminal, the flight plan was automatically opened. The CYYJ tower controller informed the pilot that they are responsible for ensuring that their FP is open before leaving United States airspace. No operational impact.

## NORTHERN REGION

**At 1808Z, a privately registered Cessna 172M** from Yellowknife, NT (CYZF) to Yellowknife, NT (CYZF) reported

at Taxiway Delta to perform touch-and-go's. The aircraft was mistakenly thought to be located on Taxiway Kilo, when it was in fact on Delta. The aircraft was given taxi instructions to taxi onto Juliet and then contact the tower when holding short on Juliet. At 1810Z, the aircraft was observed taxiing down Bravo, which they were not authorized to do. No impact to operations.

**An American, corporately registered** Cessna 172S (N8920T) from Iqaluit, NU (CYFB) to Nuuk, Greenland (BGGH) departed at 1524Z from Runway 34, IFR, and initiated a turn before talking to Air Traffic Control (ATC), while being on the standard instrument departure (SID). N8920T did not respect the SID CYFB5 authorization (course deviation: the aircraft turned East when the SID requested to keep the runway heading for RADVEC). N8920T had received and correctly re-read the SID authorization from CYFB. Attempts were made to contact the pilot in order to correct the situation, but they were already calling the Montreal Area Control Centre (CZUL).

## QUEBEC REGION

**On approach to Runway 28 at Gaspé/** Michel Pouliot, QC (CYGP), a Government of Quebec de Havilland DHC-8-315 (C-GURM/QUE40-M) from Sept-Îles, QC (CYZV) to Gaspé/Michel-Pouliot, QC (CYGP) experienced problems with the area navigation (RNAV) and had to perform a go-around to redo a very high frequency omnidirectional range (VOR) approach for Runway 28. QUE40-M landed without further problems at 1508Z.

## RÉGION DE L'ONTARIO

**Au départ, un Piper PA-28-140** (C-FULZ), exploité par 12084546 Canada Inc., de Québec/Neuville (CNV9), QC, à Ottawa/Carp (CYRP), ON, a été aperçu à deux reprises (à 2228Z et à

2233Z) dans l'espace aérien de classe C de la tour de Québec/Jean-Lesage (CYQB), QC, sans avoir reçu d'autorisation au préalable. Aucun impact sur l'exploitation.

**Un JMB Aircraft VL-3 Evolution/E-1**, d'immatriculation privée, d'Ottawa/Rockcliffe (CYRO), ON, à Saint-Mathieu-de-Beloeil (CSB3), QC, est entré dans l'espace aérien de classe C du terminal de Montréal/Mirabel (CYMX), QC, vers l'est, sans avoir établi de communications. Aucun impact sur l'exploitation.

## RÉGION DU PRAIRIES

**Une attaque au laser a été dirigée** contre un Cessna 182T (C-FSPS) exploité par Saskatoon Board of Police Commissioners, de Saskatoon/John G. Diefenbaker (CYXE), SK, à Saskatoon/John G. Diefenbaker (CYXE), SK, alors que l'aéronef se trouvait à 3 NM au sud de CYXE. Rapport d'incident aéronautique : Le rapport d'illumination laser soumis par le pilote de C-FSPS indiquait que le responsable des vols tactiques (TFO) de l'aéronef de la police avait observé une attaque au laser rouge. L'équipage de conduite a utilisé des lunettes de protection anti-laser. Le TFO a localisé le suspect après des éclairs ultérieurs de laser rouge. Le suspect a été appréhendé par une unité de police au sol.

**Un Boeing 767-300, exploité par United Parcel Service (UPS491)**, de Calgary (CYYC), AB, à Sioux Falls (KFSD), SD, a dû freiner pour éviter un coyote sur la voie de circulation Alpha.

**Un Cessna 172M (C-GWMB), exploité** par Calgary Flying Club, de Calgary/Springbank (CYBW), AB, à Calgary/Springbank (CYBW), AB, a reçu un cap de piste de 5 500 pieds. L'aéronef a été observé en train d'effectuer un virage à 5 200 pieds. Conflit potentiel avec un Robinson R44 II (C-FPNR), exploité par L R Helicopters Inc., de Calgary/Spring-

bank (CYBW), AB, à Calgary/Springbank (CYBW), AB, en rapprochement du sud-ouest à 5 000 pieds en descente vers 4 500 pieds.

**Un Denny Kitfox S5, d'immatriculation** privée et de construction amateur, d'Edmonton/Gartner (CFQ7), AB, à Edmonton/Villeneuve (CZVL), AB, a volé dans la turbulence de sillage d'un Fairchild SA227-DC, exploité par Sunwest Aviation Ltd. (C-GSAF/CNK214) de Calgary (CYYC), AB, à Edmonton (CYEG), AB, sans avertissement de turbulence de sillage.

## RÉGION DU PACIFIQUE

**Le pilote d'un Cessna U206E (N9428G)**, d'entreprise et de propriété américaine, effectuant un vol transfrontalier de Burlington/Skagit (KBVS), WA, à Victoria (CYYJ), BC, a décollé de KBVS et n'a pas activé son plan de vol (FP) via la station d'information de vol (FSS) des États-Unis. Le pilote a supposé qu'une fois qu'il parlerait au terminal CYYJ, que le plan de vol serait automatiquement ouvert. Le contrôleur de la tour de CYYJ a informé le pilote qu'il lui incombait de s'assurer de l'ouverture de son FP avant de quitter l'espace aérien américain. Aucun impact sur l'exploitation.

## RÉGION DU NORD

**Un Cessna 172S (N8920T), d'entreprise** et de propriété américaine, d'Iqaluit (CYFB), NU, à Nuuk (BGGH), Groenland, a décollé en IFR de la piste 34 à 1524Z, et a amorcé un virage avant de parler au contrôle de la circulation aérienne (ATC), tout en étant sur le départ normalisé aux instruments (SID). N8920T n'a pas respecté l'autorisation SID CYFB5 (déviation de cap : l'aéronef a viré vers l'est lorsque le SID indiquait de maintenir le cap de piste en direction de RADVEC). N8920T avait reçu et relu correctement l'autorisation SID de CYFB. Des tentatives ont été faites

pour contacter le pilote afin de corriger la situation, mais le pilote était déjà en contact avec le Centre de contrôle régional de Montréal (CZUL). Aucun impact sur l'exploitation. (L'enregistrement en double AOR 269223-V1 a été supprimé après la fusion des informations)

**À 1808Z, un Cessna 172M**, d'immatriculation privée, de Yellowknife (CYZF), NT, à Yellowknife (CYZF), NT, a indiqué qu'il était sur la voie de circulation Delta pour effectuer des posés-décollés. On avait pensé à tort que l'aéronef se trouvait sur la voie de circulation Kilo, alors qu'il se trouvait en fait sur Delta. L'aéronef a reçu des instructions de circuler sur Juliet, puis de contacter la tour en attendant à l'écart de Juliet.

## RÉGION DU QUÉBEC

**En approche piste 28** à Gaspé/Michel-Pouliot (CYGP), QC, un de Havilland DHC-8-315, exploité par le gouvernement du Québec (C-GURM/QUE40-M), de Sept-Îles (CYZV), QC, à Gaspé/Michel-Pouliot (CYGP), QC, a eu des problèmes avec la navigation de surface (RNAV) et a dû remettre les gaz pour faire une approche avec le radiophare omnidirectionnel à très haute fréquence (VOR) piste 28. QUE40-M a atterri sans aucun autre problème à 1508Z.

## RÉGION DU MARITIMES

**Lors de la vérification extérieure**, l'équipage de conduite d'un Bombardier CL-600-2D24, exploité par Jazz (C-FCJZ/JZA8630), d'Ottawa/Macdonald-Cartier (CYOW), Ontario, à Halifax/Stanfield (CYHZ), Nova Scotia, a trouvé des restes d'oiseaux sur l'aile de l'aéronef. La piste sur laquelle a atterri l'aéronef a été inspectée et aucun reste n'a été trouvé. L'équipage de conduite et le gestionnaire d'aéroport de service ont été informés. Aucun impact sur l'exploitation. 🇨🇦



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# DRESSING FOR SUCCESS

## CLOTHING AND EQUIPMENT FOR THE UNANTICIPATED LANDING

**W**hen a pilot dresses for success, we are referring to a how we prepare for our flight, either local or to a distant destination. Dressing includes more than the items covering our bodies. We are talking about the safety equipment and survival items that should be and could be with pilots for their flights. Flight planning extends well beyond checking the weather and NOTAMs. We need to Dress to Survive.

Canadian Aviation Regulations (CARs) tell us there are several items that must be carried onboard at all times. Two safety items are mandatory: A first aid kit, that is recertified annually, and a fire extinguisher, again, also recertified annually. The carrying of what we typically describe as Survival Kits are open to some interpretation. The Air Information Publication (AIP) used to have maps that depicted “sparsely settled” and mountainous regions.

The AIP now says: A sparsely settled area is no longer a defined area. The pilot or air operator must decide which survival equipment is to be carried on board the aircraft in accordance with the regulations. But what are these regulations? CARs 602.61 spells it out very well.

The regulation requires a pilot to carry enough aircraft survival equipment on board to ensure the survival on the ground of each person on board, taking into consideration the geographical area, the season of the year, and the anticipated seasonal climatic variations. The survival equipment must be able to provide the means for starting a fire, providing shelter, providing or purifying water, and visually signalling distress.

The good news is these rules do not apply to the same group that do not need to carry a 406 ELT. This means that many of us do not need to carry a surviv-



▲ Peter Campbell is COPA's new Director of External Relations.

al kit for local flights of less than 25 nm from our starting point. But now that a vaccine is imminent, some of us are planning for next summer, wanting to go to the great COPA National Fly-In and Aviation Exhibition in Saint-Jean-sur-Richelieu, Quebec, in June; or the EAA AirVenture Meet in Oshkosh, Wisconsin, in July.

On trips like these, what should we be carrying to comply with CARs 602.61? The AIP authors have listed four broad planning factors: Flight Planning; Weather; Navigation; and Emergencies. Having traversed this great country more than once, in light civil aircraft and military helicopters, I believe these factors are well covered. More importantly, this online document really gets to the point on pages GEN 1-21 through to GEN 1-24, in Table 1.5.1 Survival Equipment. The information is provided as follows: Provide Shelter; Make Fire (All Seasons); Signal for Help (All Seasons); and Purify Water (All Seasons).

The table specifies what is required for each of Canada's main geographical regions, including: BC, West Coast and Interior; Prairies Below Timberline; Ontario to East Coast Below Timberline; Newfoundland; and North of Tree Line.

I would recommend that you consid-

er these words very wisely, as the AIP is providing more than mere suggestions about what needs to be carried on your planned adventure.

With your shopping list in hand, it's now time to consider how we fit the required items into a kit that is organized, packed and as portable as possible. Now the questions become: How do we dress? What season will it be when we go? How much room do we have with our survival packs ready?

As a former marathon runner and an active, until this year, long-distance motorcycle rider, I can tell you it's all about layers and modern miracle fabrics, such as GORETEX and other high-tech garments that reflect heat, wick away body moisture, and pack up into very small spaces. Let's also not forget the wonders of merino wool and even leather products for high-wear areas.

Canada is a vast country with beautiful places to visit and see from the air, from departure airfields to our destinations. As COPA members, we should want to exercise our freedom to fly not just locally but also nationally. Being prepared for those longer trips takes thorough planning that goes well beyond figuring out what airports we are using and what hotels or campgrounds we are staying in as we make our aeronautical adventure a reality. We need to take seriously the required risk mitigation for the improbable event that could happen on route. We need a well-prepared survival kit that meets the needs described above and makes us compliant with CARs 602.61.

Keep an eye out for upcoming NOTAMs and other COPA newsletters for key information as we begin to roll out COPA Safety Seminars in 2021. 📍

**BIO: Peter Campbell, Director of External Relations, le nouveau Directeur des relations externes, COPA.**

# S'HABILLER POUR LA RÉUSSITE

## VÊTEMENTS ET ÉQUIPEMENT POUR L'ATTERRISSAGE IMPRÉVU

Lorsque nous nous « habillons pour réussir », nous faisons référence à la façon dont nous nous préparons pour notre vol, local ou vers une destination lointaine. L'habillement comprend plus que les articles qui couvrent nos corps. Nous parlons de l'équipement de sécurité et des articles de survie qui devraient et pourraient être avec les pilotes pour leurs vols. La planification des vols va au-delà de la vérification de la météo et les NOTAM! Nous devons nous habiller pour survivre!

Le RAC (Règlement de l'aviation canadien) nous dit qu'il y a plusieurs articles qui doivent être transportés à bord en tout temps. Deux éléments de sécurité sont obligatoires : une trousse de premiers soins qui est recertifiée annuellement; et un extincteur qui est également recertifié chaque année. Le port de ce que nous décrivons généralement comme des « trousse de survie » est ouvert à une certaine interprétation. La publication d'information aérienne (AIP) contenait autrefois des cartes illustrant les régions « peu peuplées » et montagneuses. L'AIP dit maintenant : une « zone peu peuplée » n'est plus une zone définie. Le pilote ou l'exploitant aérien doit décider quel équipement de survie doit être transporté à bord de l'aéronef conformément à la réglementation. Quels sont ces « règlements »? Le RAC 606.61 l'explique très bien.

Le règlement oblige un pilote à emporter à bord suffisamment d'équipement de survie pour assurer la survie au sol de chaque personne à bord, compte tenu de la zone géographique, de la saison de l'année et des variations climatiques saisonnières anticipées. L'équipe-

ment de survie doit pouvoir fournir les moyens de partir un feu, de fournir un abri, de fournir ou de purifier de l'eau et de signaler visuellement la détresse.


La bonne nouvelle est que ces règles ne s'appliquent pas au même groupe qui n'a pas besoin de transporter une ELT 406. Cela signifie que beaucoup d'entre nous n'ont pas besoin d'emporter une trousse de survie pour les vols locaux de moins de 25 NM de notre point de départ. Mais maintenant qu'un vaccin est imminent, certains d'entre nous planifient pour l'été prochain, voulant aller au Rendez-vous aérien et l'exposition d'aviation COPA Saint-Jean-sur-Richelieu, Québec en juin ou au EAA AirVenture à Oshkosh, Wisconsin au mois de juillet.

Lors de voyages comme ceux-ci, que devrions-nous emporter pour nous conformer au RAC 602.61? Les auteurs de l'AIP ont énuméré quatre grands facteurs de planification : la planification des vols; la météo; la navigation; et les urgences. Ayant traversé ce grand pays plus qu'une fois, à bord d'avions civils légers et d'hélicoptères militaires, je crois que ces facteurs sont bien couverts. Plus important encore, ce document en ligne explique très spécifiquement aux pages GEN 1-21 à GEN 1-24 dans le tableau 1.5.1 Équipement de survie, les informations sont fournies comme suit : Fournir un abri; Faire un feu (toutes saisons); Signaler à l'aide (toutes saisons); et Purifier l'eau toutes saisons).

Je vous recommande de considérer ces mots très judicieusement, car l'AIP fournit plus que de simples « suggestions », sur ce qui doit être apporté sur votre aventure planifiée! Avec votre liste d'achat en main, il est maintenant temps de réfléchir à la manière dont nous intégrons

les articles requis dans une trousse organisée, emballée et aussi portable que possible. Maintenant, la question est : comment s'habiller? Il sera quelle saison quand nous partirons? Comment de place avons-nous maintenant que nos trousse de survie sont prêtes?

En tant qu'ancien marathonien et jusqu'à cette année, un motocycliste de longue distance, je peux vous dire que tout est question de couches et de tissus modernes « miracles » tels que le GORE-TEX et d'autres vêtements de haute technologie qui réfléchissent la chaleur, évacuent l'humidité corporelle et peuvent rentrer dans de très petites espaces. N'oublions pas non plus les merveilles de la laine mérinos et même des produits en cuir pour les zones à forte usure.

Réfléchissons à ce que nous avons appris ici aujourd'hui. Le Canada est un vaste pays avec de beaux endroits à visiter et à voir depuis les airs, ainsi que des voyages depuis l'aérodrome de départ vers la première destination et les suivantes. En tant que membres de la COPA, nous devrions vouloir exercer notre liberté de voler non seulement localement, mais aussi au niveau national. Pour se préparer à ces longs voyages, il faut une planification minutieuse qui va bien au-delà de la détermination des aéroports que nous utilisons et des hôtels ou terrains de camping dans lesquels nous séjournons alors que nous faisons notre aventure aéronautique une réalité. Nous devons prendre au sérieux l'atténuation des risques requise pour l'événement improbable qui pourrait se produire en chemin. Nous avons besoin d'une trousse de survie bien préparée qui répond aux besoins décrits ci-dessus et nous rend conformes au RAC 602.61. 

# PILOT GIFT EXCHANGE

## THE AVIATION COMMUNITY COMES TOGETHER TO SPREAD HOLIDAY CHEER AFTER A DIFFICULT YEAR

**2**020 - Where do I begin? After a challenging year, with the aviation sector being hit with its biggest job losses in history, pilots all over the world were left feeling disbanded. A lifetime of dedication in pursuit of a career and often their passion, gone overnight. With a failing economy, and a specialized skill set, finding other opportunities is difficult. While we hope things will get back to normal quickly, the prospect is unlikely. We must all hunker down for a difficult few years as the aviation industry slowly comes back to life. The holidays this year are likely to be more somber for many, with so much change and hardship. Most of us are eager to put the difficulties of 2020 behind us and maybe even spread some holiday cheer.

In November, I posted on social media asking if anyone would be interested in taking part in an aviation community gift exchange. I expected a half dozen people to respond, excited at the prospect of getting a small group of people together and creating a care package for someone I didn't know. To my surprise, the response was astounding. More than 200 pilots, mechanics and aviation enthusiasts responded, each stating they would be interested in participating. The messages rolled in from all over the world; from Amsterdam to Cape Town and from New York City to Melbourne. My inbox was flooded overnight with messages from pilots who, despite enduring one of the most difficult years, still wanted to give.

An email list was quickly created and I went into action, planning the biggest gift exchange I had ever been a part of. A majority of the aviation community members who reached out lived in Canada, the U.S. and Europe. I decided to split



▲ More than 150 people from around the world signed up for this year's inaugural gift exchange.

the exchange into a European section and a North American section, which would alleviate some of the extra costs of sending packages across the Atlantic Ocean.



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Three female pilots living in Europe, who I have been in touch with for years, took on the role of organizing the European exchange while I captained the North American effort. After a couple of weeks, gathering emails and organizing logistics, we had 119 people signed up for the North American gift exchange and 30 signed up in Europe. With nearly 150 signed up in total, I could not help but feel proud that my little idea had caught fire and that my desire to do something nice for someone else was shared by so many others.


Many participants included meaningful things in their packages, such as their favourite book, local treats, stickers and more. Danika Baldwin based in Soldotna, Alaska, received the books *Stick and Rudder* and *Flight of Passage*, Trent Olsen from Cape Breton, Nova Scotia, received a Casio watch. Roberto Freire from Centreville, Ohio, received a box full of aviation books, Clever Propeller coffee and a Piper Cub sign. Matt Grosz from Toronto, Ontario, received a box of goodies from the Yukon which included stickers, fireweed tea and more.

As each package arrived at its destination and pictures were posted of the thoughtful gifts each of the participants had received, my heart began to glisten. Word of the ex-

change spread quickly and companies like Embraer reached out offering up some swag for those participating.

Aside from exchanging gifts, this project created a sense of community and brought aviators together from all over the world. Some participants have made connections with their secret Santas and even plan to stay in touch in hopes they might get a chance to meet each other one day. For me, that is the greatest reward. Creating long-lasting friendships and helping others do the same especially through times like these.

It is interesting to me how an idea can catch fire, how your thoughts and ideas can inspire action in other people. We are so lucky to be a part of this incredible community filled with passionate, caring people who are eager to share their time, knowledge, experience and in this case presents. More than 150 aviators exchanged gifts in this year's gift exchange and were so happy to be able to share some joy through the holidays. With such an incredible response and excitement, I look forward to hosting another exchange next year, hopefully growing our network even further.

If you would like to be included in a 2021 Aviator Gift Exchange, sign up for my newsletter at [Pilotannie.com](http://Pilotannie.com). 





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# LEVERAGING IFR

HOW TO MAKE YOUR FLYING SAFER BY SYSTEMATICALLY  
REDUCING CHANCES OF LOC-I

BY PERRY WILSON

**In articles number one and two of this series, we focused on spirals, stalls and spins. Now let's look at how IFR flight can become safer by systematically reducing the chances of both types of LOC-I, as well as Controlled Flight Into Terrain (CFIT).**

IMC Departures, Approaches and Missed Approaches result in many LOC-I and CFIT tragedies. These procedures are safe and easy if pilots follow systematic routines, practise them often, plan/brief the procedures in advance, and expect the approach will end in a missed approach. Otherwise, having to suddenly do a miss is a surprise that can de-stabilize the miss or even cause LOC-I.

Too often the departure is hurried, leading to errors in headings, fixes and altitudes. We need to prepare more than usual for takeoff into low IMC, mountainous terrain and all night ops. My best friend was a passenger in a Citation LOC-I. It crashed within eight minutes of takeoff from CYLW in the mountains at night into IMC, killing all onboard (See TSB Report A16P0186). Two months later, another Citation had a LOC-I crash into Lake Erie three minutes into its night departure from KBKL, all six perished.

Read the SID aloud to yourself, check climb gradient requirements versus your anticipated VS. Brief the takeoff aloud, including altitudes for transition to instruments and for AP activation. Double check you have the flight plan and departure properly loaded and activated, and pre-set the course, runway heading, cleared altitude, VS, flight director's (FD) climb attitude, elevator trim, frequencies in standby, etc. If you have a copilot, your cockpit resource management (CRM) should be different, using questions, re-



sponses and confirmations back and forth. You may choose to delay AP activation when sharing the workload. (See CRM/SRM: [usa.gov/18ioRba](http://usa.gov/18ioRba); UND Aero-Cast videos #24-26 on YouTube; and [youtube.com/watch?v=NOOEamtA08c](http://youtube.com/watch?v=NOOEamtA08c).)

Just before takeoff, state aloud what you will be doing to avoid LOC-I. For example, "I will minimize aileron use, keep my feet on the pedals, applying some right rudder at liftoff and keep IAS>100kias. I will watch AI/FD, airspeed, heading, course-line, altitude with brief glances outside. At 200 feet AGL, gear/flaps up, I'll go on instruments. No matter how much it may feel that I should bank or change pitch, I will concentrate on what the instruments show, not what I feel. At 400 feet AGL, I will press the CWS button and verify that it centres the FD, confirm the AP shows HDG/PITCH armed, activate AP, verify it is handling the aircraft properly, then set AP to IAS=120kias and continue scanning/cross-checking."

▲ Pilots can now view the Glide Range Ring on both GTN Xi and TXi Series Flight Displays.

I teach approach/miss briefings to be done on a sticky-notes and then placed on the panel - saves looking for data on chart. If cold temperature altitude corrections are required, put those on the note. Verify (from note) and say each altitude you are pre-setting for. On a -28C Alberta night, I did not take the time to do the cold temperature altitude corrections, and was criticized by Garmin for being too low on the final segment of the approach in IMC. Since then I've been more diligent with cold temperature corrections.

With gear down at glidepath intercept, pre-set the heading bug, altitude and VS for the miss. Brief aloud your actions at MDA or MAP for the miss. For example, "Runway not in view: maintain 186 degrees/2300 feet, power up, clean up, climb to 5100 feet, activate miss,

PHOTO: GARMIN



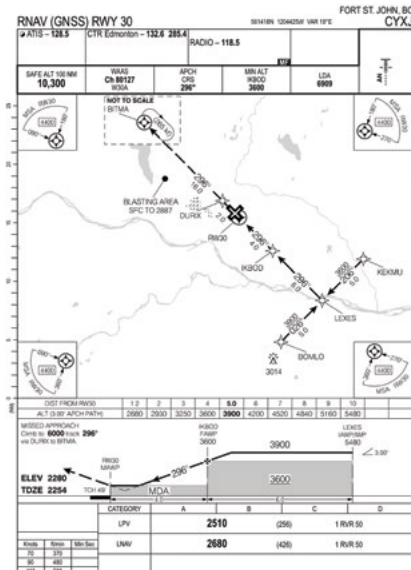
GPS-direct SNOWY, AP=NAV-GPSS/IAS=120kias, hold, right turns.”

Runway in view: configure for landing; stay on glidepath to avoid obstacles (at night, distances seem shorter-pilots get low). Do the departure/approach/miss with practised habits of planning, setups and constant instrument scan and you will avoid LOC-I and CFIT accidents.

Autopilots and LOC-I: In IMC or night a copilot and CRM enhance safety. Or, use single-pilot resource management (SRM) and a digital AP system with emergency “level” button. Used properly, modern APs will take you to 200 feet AGL DA, exactly on final, and fly the miss. Airlines do it this way. You must know exactly how to use avionics, instruments, pre-selects and AP modes as an integrated system. Over-reliance on automation causes deterioration of hand-flying instrument skills, which you will need some dark and stormy night, so hand-fly often.

If a sharp vertical shear jolts you up or down, the AP will disengage; the beeps mean “Your airplane”. I was once enroute to Atlanta, picking up light rime ice which the boots handled. An ice-bridge formed between the elevator horn and the stabilizer. The AP commanded nose-up trim due to a small altitude loss. The immobile elevator produced no climb. Once trim was almost full nose-up, the AP disengaged as the elevator broke free and the aircraft jerked into a fast climb. That mistake taught me to hand-fly when in icing to prevent ice-bridges.

If you climb in VS mode, your IAS will



▲ The systematic use of a flight glide plan can help reduce risks for both LOC-I and CFIT.

decline at altitude as the AP trims nose up until you stall unless your AP has flight envelope protection unless you notice the problem first. IAS mode is safer for climb and descent, keeping you at proper climb speed, and for descent you can set it <Va to avoid turbulence damage. Training and practice will make you an AP guru. And when you also hand-fly under the hood to maintain skills, you can still program the AP, but leave the AP disengaged while you manually follow the FD’s commands.

If you have questions about LOC-I, please email me at drperry.wilson@gmail.com.

## ITEMS TO HELP PREVENT LOC-I ACCIDENTS

1. Calculate your aircraft’s V<sub>dmm</sub> (Defined Minimum Maneuvring Speed) = 1.404 x clean stall speed V<sub>s1</sub>, and mark it on your airspeed indicator with a label and arrow.
2. Modify or replace your hood so it blocks every sliver of peripheral view.
3. Brief details of IFR approach; write them on a sticky note and put it on the panel.
4. Portable electronic AHARS (Stratus, Stratux, Sentry) to feed AI and DG display in mapping app (Foreflight, FitPlanGo, etc.) in case of vacuum/AI failure, or LOC-I inverted.
5. Mount a portable EFIS to your windscreen (Dynon D1) as backup AI.
6. Install vortex generators (VGs) to lower the aircraft’s stall speeds (and V<sub>mc</sub> in twins).
7. Angle Of Attack (AOA) system can be installed in Canada if STCed for your aircraft, or without STC if your AME considers it an uncomplicated installation. See “Teachable Moments” on RichStowell.com.
8. Install panel-mount EFIS (Garmin G5 or GI275, U-Avionics AV30, Aspen E5).
9. Install digital AP (Avidyne, Garmin, S-Tec) with “level” button in case of LOC-I; and flight envelope protection even if you don’t press that button. 🙏

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# PROTECTING VALUABLE AIRCRAFT DOCUMENTS

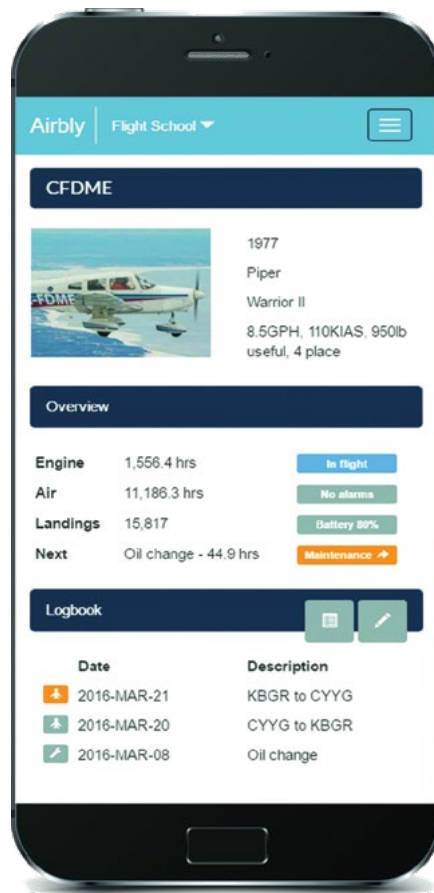
## MAKING THE MOVE TO DIGITAL LOGBOOKS TO PROTECT YOUR ASSETS

**Between 30 and 50 per cent of the value of older aircraft lays in the technical and journey logs. Certified aircraft have many time- and date-sensitive components, such as magnetos, vacuum pumps, propellers, fuel hoses and airworthiness directives. If the aircraft's logbooks are lost, stolen or unreadable, costs may be incurred before actually needed. At the time of sale of the aircraft, the value of the logbooks rises to the surface.**

For a newer airplane, the task of piecing together the contents of lost logbooks may only take a few weeks of effort. However, for aircraft from the 1970s, with many owners and maintenance shops involved, this may be almost impossible. Early in my flying career, I had my car broken into and my personal logbook stolen. Fortunately, I had a photocopy of it.

Much like computer backups, a strategy should be employed to safeguard the aircraft's data. For old-school pilot/owners, a photocopier is the cornerstone of the strategy. With the advent of smart phones, an image of the journey log can be taken on a weekly or monthly basis. Consider photocopying the journey log monthly, semi annually or at the annual, onto 11 x 17-inch (also known as tabloid) paper. If you do not have access to a large-format photocopier, consider retailers like Staples.

During the annual, do not forget to copy the technical logs and component forms (e.g. FAA 8130). When flying in the U.S., I have the maintenance shop provide a few copies of its entries on a sticker to facilitate updating the technical log. Fast



forward to 2020, there are aviation-focused IT companies that have created Cloud-based solutions to automate the creation of electronic logbook entries.

Airbly Inc., of Charlottetown, PEI, has created a solution to automate the creation of the Journey Log. Using satellite communications, a battery-powered appliance called the Phoenix Aircraft Monitor (PAM), key fobs, the Cloud and an app, flight entries are automatically created every time the aircraft is flown. Each

flight's data is stored in the Airbly Cloud and locally on your smart device, which meets Transport Canada's requirements.

The heart of the system is the PAM, which is about the size of a cigarette package, designed to be placed on the glare shield. The lithium ion battery should deliver roughly 100 hours of flight time. The PAM has on-board GPS, satellite tracker, gyroscope, accelerometer, temperature and battery level sensors. The PAM notes engine on/off times based upon vibration analysis and wheels up/down times based upon a complex algorithm considering air-speed, rate of climb/descent, vibration analysis and aircraft stability.

The first-time setup of Airbly is pretty straightforward. Airbly ships the PAM pre-configured for your aircraft. For fleet owners, each aircraft has its own PAM. Pilots and aircrew are provided with a unique key fob, which identifies them to the PAM. Simply attach your fob to your flight bag, essentially a set-it-and-forget-it operation. Once your Airbly account is created a few house-keeping tasks are required like setting up pilot and maintenance profiles; adding the aircraft's current time; and adding in maintenance reminder records.

Recurring maintenance records are easily added like magneto overhaul hours; propeller overhaul date; airworthiness directives; oil change; IFR cer-



IMAGES: AIRBLY

tification; ELT battery replacement, etc. As the aircraft's hours or date comes near to each recurring maintenance item, an email is sent to remind the owner of the upcoming event. Maintenance and avionics shops can log into the aircraft's account and add a maintenance record. Supporting file uploads, the shop can upload a digital image of its "sticker". Rather than printing the Word file onto a sticker, the shop can simply save the file as a PDF and upload it to Airbly. The maintenance record has the date, owner, flight time and description of the work done. Annual subscription plans start at \$169 with a one-time fee of \$449 for the Phoenix Aircraft Monitor and \$29 for each additional Crew FOB.

PlaneLogix was founded in 2014 by Rob Wilkes and Will Goldstein focusing on U.S. logs. The impetus to create their Cloud aircraft record keeping solution occurred after Rob's A&P temporarily lost his aircraft's logbooks. An aircraft owner has a number of options to get their data into the PlaneLogix system: DIY through scanning the documents and adding each record; sending the scanned documents to PlaneLogix for data entry; or sending a paper copy directly to PlaneLogix.


PlaneLogix has more than 1,000 aircraft using its system, with many owners driving their aircraft records to PlaneLogix's office in North Carolina. Pre-COVID19, 99% of its customers were shipping their aircraft records, while post-COVID19, 99% are entering their data themselves. Today, the system is entirely Web-based, however. Apps for iOS and Android devices are under development.

Airbly and PlaneLogix have created seamless integration (API) allowing data to flow from Airbly to PlaneLogix. When a new flight is created in Airbly, it is automatically and securely transferred into PlaneLogix, updating the times. Once the historic data has been entered into the PlaneLogix system, API integration takes care of the times.

As part of a general-aviation focused system, PlaneLogix provides reporting, statistics, documents squawks, tracks

recurring maintenance, aircraft scheduler (maintenance and flights), and document library (POH, Aircraft Parts Catalog, etc.). PlaneLogix has six pricing plans from free to US\$489.95 per year.

Aircraft records tell a story about the history of the aircraft, how well it has been maintained and its general condition. The more detailed the records,

the more valuable the aircraft becomes. Protecting this history is not only good stewardship (after all, with older aircraft, we are just caretakers), but may deliver future rewards, which are priceless. Checkout the conversation with Will Goldstein, co-founder PlaneLogix on the *PlaneTalk* podcast, on Apple, Google, Spotify and at [www.PlaneTalk.ca](http://www.PlaneTalk.ca). 



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BUSH  
FLYING



# GROWING TINTINA

A NEW GENERATION FINDS ITS PASSION FOR FLYING IN THE YUKON  
BY JON ROBINSON

Ian Cosco and Geoff Koots in 2017 invested in Yukon-based Tintina Air, providing the two young pilots with the opportunity to build an aviation business around their passion for bush flying in Northern Canada. Dave Sharp, who holds more than 15,000 hours in the air, founded Tintina in 2010 and presented a succession plan to Cosco, Koots and long-time bush pilot Freddie Feldman.

Today, the four co-owner pilots, along with director of maintenance, Matt Wolynuck, are growing Tintina as a unique charter operation with an extensive knowledge of bush-strip locations and conditions. Based out of both Whitehorse and Dawson City, the Tintina team flies single- and multi-engine, including wheel, float and ski-equipped aircraft, to some of the most remote, off-strip locations throughout the Yukon, Northwest Territories, Northern British Columbia and Alaska.

"Dave started with the idea that he could go into more aggressive strips [and] that has held true for Tintina," says

Cosco, who recently took on the role of General Manager for the company, while continuing to serve as its Approved Check Pilot. "We go into some strips some other companies won't, because we have the experience and different safety measures."

Tintina now has eight aircraft in its fleet and the team is focused on developing a new business model for single-pilot IFR bush flying, in addition to VFR. "We provide both, which keeps us on our toes," says Cosco. "We do a lot of flying where we're half IFR, and then you have a scud run through the mountains to get into a strip."

Cosco, age 33, grew up in a family of pilots flying floatplanes and into the bush. Northern aviation has always been a primary part of his life. After spending nine years as a professional freestyle skier, reaching the World Cup circuit, Cosco earned his Commercial Pilot's Licence in 2014 through BCIT's Flight Operations program. With the addition of Underwater Egress Training and Wilderness Survival Certificates, Cosco in early 2015

▲ Geoff Koots and Ian Cosco invested in Whitehorse-based Tintina Air in 2017.

became a First Officer on the Super King Air with Alkan Air out of Whitehorse. He would then go on to fly the BE20 for Carson Air before returning to Whitehorse to join Tintina Air in April 2017.

Now serving as Chief Pilot for Tintina, Koots, age 32, was not born into a flying family but found a natural passion for flight when he started lessons in his last year of high school. He stuck with it, quickly completing a range of pilot ratings. Koots then moved from his small home town just outside of Red Deer, Alberta, to take a ramp job in Fort Simpson, Northwest Territories, with Wolverine Air.

Koots recalls how the job opened up his eyes to the 703-charter world and he returned next summer to fly a Cessna 206 for Wolverine. "It was a great place to learn with a lot of experienced people; and then I had an opportunity to come to Whitehorse," says Koots. "I jumped at it and I've been here ever since."

Koots began flying for Whitehorse

PHOTO: ELI PASQUALI

Air Services and then, in the summer of 2012 at Dawson City Airport, met Dave Sharp who was hauling fuel drums out to his Beaver. By next Spring, Koots joined Tintina.

“The work that we do, and our fleet, is what drew me to Tintina Air. When I first started here, we had two Beavers on wheels and that really caught my interest,” says Koots. “There are not too many wheeled Beaver operators in the country... The places we go and the interesting flying we do was definitely a big draw for me to come here.”

Koots is rated to fly all of Tintina’s aircraft, which typically generate 80 to 85 per cent of the company’s annual revenue through the months of July to September. A lot of this flying is done for mining companies that need to access – and have supplies brought into – difficult locations.

Koots estimates around 75 per cent of the company’s revenue comes from the mining and exploration sector, which has helped provide stability for Tintina through the COVID-19 pandemic.

“We were expecting things to be really slow but mining and exploration still continued on, so we had a good year,” says Cosco, noting that the season started later than usual, but, perhaps driven by a spike in the price of gold, really took off before fall. “Once it started, we were flat out for three months.”

Tintina also provides services for hunting and outfitting operations, sightseeing and glacier tours, rafting groups,

film crews, government/tourist charters, and everything in between. Because the team was busy with mining and exploration work this season, however, flying into remote locations, they were somewhat separated from witnessing the impact of the pandemic, even as they were aware of other members from the Yukon’s tight-knit aviation community struggling under the weight of COVID-19.

“We have solid relationships with our clientele and as they grow, we will grow with them. I’m really optimistic about the future,” says Cosco. Koots adds that metal prices are still relatively strong and that next year should be a bumper year for exploration in the Yukon, particularly if vaccines are effective. “Drills are already spoken for, projects for next summer, which is pretty rare,” he says.

Tintina was flying into off-strip runways through all of September this year, and into mid-October, dealing with the harsh weather the envelopes the region during the fall – noted by both Koots and Cosco as actually being more difficult to fly in than winter conditions. For its exploration and mining clients, Tintina typically flies for more than an hour into base-camp locations. The team is often busy cutting down sprouting trees on their clients’ unpublished strips. “Saplings can do a lot of damage when you’re doing 70 knots,” says Koots.

With a high number of takeoffs and landings in this environment, Tintina’s aircraft take more of a beating than a typical charter operation, making its mainte-

nance capabilities critical. Tintina’s AMO was slower this year, but the benefits of holding a certified maintenance operation has provided great benefits since the company added a 10,000-square-foot hangar in 2018. The investment also increased its overall aviation presence in the region, not to mention how it provided a more hospitable working environment during the Yukon’s long winter months. The AMO team, which just finished painting one of Tintina’s older Navajos, has a full schedule into early 2021.

The AMO operation is led by Wolsynuck with the recent addition of Mitch Sheppard. In addition to being a certified AME, Wolsynuck himself is an experienced GA pilot flying a 1957 Super Cub C-FLRK on wheels and serving as a board director on the Yukon Chapter of COPA. This Chapter, Flight 106, focuses on issues uniquely critical for the region’s general aviation community, such as safety and the maintenance of airport infrastructure and services. Even the smallest airports provide an enormous amount of economic and social impact to the region in terms of employment, emergency services, moving goods and connecting people. Tintina Air’s new core of aviators is adding influence and knowledge to this infrastructure.

“We make sure everyone at Tintina knows we are a team and we all need to work together,” says Cosco. “This has worked out very well for us. We now have a young ambitious crew that is eager to learn and grow together.”

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# THE FUTURE OF ELTS

## TRANSPORT CANADA STRENGTHENS REQUIREMENTS FOR EMERGENCY LOCATOR TRANSMITTERS IN GENERAL AVIATION

BY PHIL LIGHTSTONE

The primary purpose of an aviation Emergency Locator Transmitter (ELT) is to locate an aircraft in distress. In Canada, the process to manage a distress call was executed 1,032 times in 2017, saving 49 lives. Roughly 7% of those ELT activations were real. In 2009, the international Cospas/Sarsat system abandoned monitoring beacons on 121.5 MHz, in favour of 406 MHz beacons.

Initiating the Search and Rescue (SAR) process happens when one or many events occur, a flight plan is not closed, ATC or a high flyer hears a 121.5 MHz beacon, a 406 MHz beacon is seen by the satellites, or a Personal Locating Device (PLD) service provider contacts SAR. A study conducted by Defence Research and Development Canada reports that the search area of a 121.5 and 406 MHz ELT is 1,260 km and 13 km, respectively. Transport Canada reports that approximately 13,000 Canadian aircraft have legacy 121.5 MHz ELTs, but this is decreasing slowly each year.

In Nov. 2020, Transport Canada



▲ The Artex ELT 345 transmits on 406 MHz and 121.5 MHz.

amended CARs (605.38) to mandate for 406 MHz ELTs be installed in aircraft operating in Canadian airspace. This requires Canadian commercial and business aviation operators to have one or more fixed ELTs that transmit simultaneously on 406 MHz and 121.5 MHz installed no later than Nov. 25, 2021; and all other in scope aircraft no later than Nov. 25, 2025. The 406 ELTs must be registered with the Canadian Beacon Registry (CBR). There are a number of

exemptions: Gliders; balloons; airships; ultra-light aeroplanes; gyroplanes; flight school aircraft do not require an ELT if their aircraft operate within 25 nm of the departure aerodrome; and skydiving operations when conducting activities also within 25 nm. There are a number of other exceptions, typically focusing on flight testing and new aircraft. Foreign registered aircraft operating in Canadian airspace must have either a 406 MHz ELT or portable 406 MHz beacon on-board by November 25, 2021. Penalties for non-compliance range from \$1,000 to \$15,000.

ELTs are designed to be independent of the aircraft's systems, including the electrical system. ELTs have an internal battery, fixed antenna mounted on the top of the aircraft, coax cable between the ELT and antenna, a manual activation switch and a G activation switch. Options include a remote activation switch (typically installed in the cockpit), portable ELT antenna, internal GPS, combination GPS/ELT antenna, and external GPS integration. ELTs can be

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installed into vintage aircraft that do not have electrical systems. Some ELTs with portable antennas are designed to be removed from the aircraft, activated and used as a survival ELT. A number of manufacturers offer two- or three-wire remote control panels. A two-wire panel allows an existing 121.5 ELT's aircraft wiring to be used, reducing installation time and costs. Most 406 ELTs either have an onboard GPS receiver or can be hardwired into an existing panel mounted GPS navigator. ELTs without GPS will deliver location accuracy to three km within three hours, while a 406 MHz ELT with GPS will deliver 100 metre accuracy within one minute. The Cospas/Sarsat system has three types of satellites (low, medium and high earth orbit), all receiving 406 MHz ELT signals. The new MEOSAR satellites will receive a 406 data burst and within minutes have a location fix to within 100 metres. The Cospas/Sarsat system has many layers of redundancy. If a mountain or bluff is blocking your view to the GEOs, then the MEOs and LEOs still have you covered. If a LEO is not directly overhead, the GEOs and MEOs have you covered.

Manufacturers like Artex, Kannad, ACK Technologies, Pointer, and Emergency Beacon Corp. produce 406 ELTs built to support the Canadian technical service orders. Hardware costs start at \$780, with installation taking a few hours (or more) of shop time depending on the options and installation complexity.

For an average GA aircraft, a budget of \$1,500 would be a good start. Typical 406 ELT batteries require replacement every five years (versus two years on legacy 121.5 ELT batteries), which may vary based upon manufacture. Typical cost of battery replacement and testing is roughly \$500, depending upon the manufacturer and the avionics shop. Interestingly, Artex will replace your Artex ELT if you ever use it in an emergency.


Effective Aug. 1, 2019, testing requirements have changed, requiring a performance test every two years and an operational test every 12 months. Two-year performance testing must be conducted by an avionics shop that has the proper ELT testing equipment. The annual operations test can be completed by the pilot/owner. During the first five minutes of any hour, press the ELT's activation switch for no more than five seconds. If your ELT is registered with the CBR, you will receive an email documenting the test. Don't forget to place the test results into your technical logs and journey logbook. If you inadvertently activate your ELT, contact SAR or ATC as soon as possible. Artex has Web-based testing tools, which allow avionics shops to test and record Artex ELTs (406Test.com) and a pilot/owner tool (406Link.com). The Transport Safety Board reports it has found ELTs that were not properly installed at crash sites. Adding a review of the ELT's installation and an ELT test during annual

inspection would ensure this lifesaving technology is working properly.


Personal Locating Beacons (PLBs) utilize 121.5/406 MHz frequencies to communicate with the Cospas/Sarsat system and are registered with the CBR. PLBs are attached to your flight jacket or belt, and remain off until required to summon SAR. As with an ELT, the on-board battery has a specific lifespan and must be replaced, typically every seven years. The Artex PLB is about the size of a hockey puck, has an onboard GPS, 121.5/406 beacons, high intensity LED strobe light, waterproof to 15 metres and will operate for more than 24 hours when activated - a great belt-and-suspenders approach. Retail price is \$385.

Beacon information held in the CBR is maintained by the National Search and Rescue Secretariat. Online access to the registry allows owners to register new beacons or update information. You can add or update information via mailing or by faxing a completed registration form or by calling the CBR. The registration information must be updated annually or when aircraft ownership changes.

Affordable technology allows a well-equipped aircraft and pilot to turn a SAR event into a positive outcome. Understanding the technology and ensuring your ELT is properly installed and tested, backed up by secondary technology, is not only good airmanship but fulfills the pilot's responsibility to passengers, crew and their families. 📶



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## PREMIER VOL DANS UN CHASSEUR BIPLAN DE LA GRANDE GUERRE

PRÉPARATION DU RENDEZ-VOUS AÉRIEN 2021 DE LA COPA À SAINT-JEAN

PAR RICHARD LEGAULT

**Le Nieuport 12 était un appareil biplan français de reconnaissance, de combat et d'entraînement utilisé par la France, la Russie, la Grande-Bretagne et les États-Unis pendant la Première Guerre mondiale. Avec l'aide de mon petit groupe de passionnés, pendant quatre ans, nous avons construit une réplique de cet avion. Il est maintenant temps de le piloter.**

### ESSAIS DE ROULAGE

Par précaution pour un nouvel avion, on effectuera de nombreux taxis à grande vitesse pour se familiariser avec l'avion. Je compare cela à un cow-boy apprivoisant son nouveau cheval. Mes assistants et moi avions l'impression d'être des pionniers en aviation comme les frères Wright. À la différence que nous avons utilisé un peu de technologie moderne. Nous avons acheté deux caméras Mobius pour tableau de bord. Nous les avons accrochés à des entretoises pour filmer différentes zones stratégiques telles que les extenseurs du train d'atterrissage principal, les freins et la zone de la roue arrière pour lesquelles aucune statistique n'existait.

Mon premier taxi fut un peu épeurant.

J'ai utilisé nos voies de circulation asphaltées. J'ai environ 1500 heures sur un avion à roue de queue, principalement avec mon Aeronca Champ, mais ce nouvel engin avait un palonnier sensible avec une très petite roue arrière faite maison et des freins un peu étriqués. Après plusieurs modifications et essais, je suis arrivé à avoir une meilleure gestion des freins. Puis vinrent les essais à des vitesses plus élevées en évitant de lever la queue. Lors du premier essai, la roue arrière a fondu. Notre caméra a révélé qu'elle s'était coincée et avait frotté sur l'asphalte. Après tout, nous avons utilisé une roue de patin à roues alignées. Nous avons donc installé une roue en plastique solide fabriquée par mon ami ingénieur Sylvain qui avait réalisé l'assemblage de la roue arrière pivotante. C'était beaucoup mieux mais un peu bruyant. Je dois dire que j'ai toujours eu du mal à lutter contre la tendance de l'avion à osciller sur l'asphalte, au point d'éprouver quelques petites boucles (loops) au sol. Toutefois, ce problème n'existait que sur les voies de circulation à surface dure.

Par la suite, j'ai décidé d'effectuer des taxis à grande vitesse sur le côté en herbe des voies de circulation. Sur l'herbe, il n'y avait plus aucune tendance à l'oscillation. La caméra nous a montré que la petite roue arrière se maintenait droite à cause de l'herbe. J'ai pensé qu'il était temps de tenter de lever la queue de l'avion. Surmontant mes peurs, j'ai mis les gaz à fond et j'ai pu lever la queue, puis j'ai réduit les gaz doucement pour



▲ Richard Legault (droit) avec son Nieuport 12 lors de la cérémonie d'armistice à Montréal en 2018.

rouler sur les roues principales jusqu'à ce que la roue arrière revienne au sol. Il y avait un contrôle parfait, sans pratiquement aucune oscillation.

### PREMIER VOL

Après de nombreuses heures de taxis à grande vitesse, réparties sur plusieurs semaines et après la vérification de la fiabilité du moteur, le moment était venu de me décider d'effectuer le premier vol. Le 17 novembre 2016 était une journée d'automne fraîche mais la brise était parfaite. J'ai choisi une bande de gazon qui est normalement utilisée l'été par les planeurs des cadets de l'air. L'orientation est 11/29 et le vent était droit sur le nez à environ 8 nœuds. Mes amis étaient prêts avec des caméras mais je leur ai dit que je pourrais décider d'abandonner si mon instinct me disait d'effectuer d'autres essais. Je me suis positionné sur la piste 29 et j'ai effectué un autre taxi à grande vitesse, puis j'ai fait demi-tour et je suis revenu au point de départ. J'ai appelé la tour et j'ai dit que j'allais y aller et que si tout était ok ce serait pour un circuit à gauche. On m'a répondu que l'aéroport était à moi ... aucun trafic signalé. Après avoir vérifié mes ceintures de sécurité, réaligné mon écharpe et mon casque ... je me suis dit que c'était maintenant ou jamais. J'ai mis la manette des gaz au fond, la queue s'est soulevée rapidement et quelques centaines de mètres plus loin, les roues ont quitté le sol et je me suis retrouvé en vol.

Plusieurs mois avant le vol, j'avais contacté une personne qui avait construit un Nieuport 12 dix ans auparavant. Son nom est Rick Giles à Chicago. Il avait le même avion du même concepteur mais utilisait un moteur de moto Yamaha Virago 1100cc converti. Il m'a gentiment donné de bons conseils pour la finition de la construction de mon avion, mais il a souligné



qu'avant le premier vol, je devais l'appeler et être prêt à prendre des notes. Je l'ai fait quelques mois avant le vol et il m'a expliqué des choses telles que:


1 - Cet avion a un gouvernail sans stabilisateur vertical. Il y a environ 7 pouces de gouvernail à l'avant de son pivot. Par conséquent, lors de l'application du palonnier dans un virage, le gouvernail aura tendance à rester dans la même direction. Vous devez penser à le ramener sinon vous serez rapidement surpris et vous vous retrouverez en vrille.

2 - Il a souligné la nécessité de garder les yeux sur la bille pour être sûr de ne pas faire de glissade. Il a dit avoir vu le premier vol de l'un de ses amis. Après un virage sur la gauche, en montée, l'avion a continué à s'incliner et s'est engagé dans une vrille jusqu'au sol. L'avion fût détruit, heureusement, le pilote s'en est sorti avec seulement quelques égratignures. Il a également déclaré qu'il avait lui aussi eu peur au début. Il a senti que l'avion amorçait une glissade mais il a réussi à faire la correction à temps. Rick a effectué plus de 200 heures sur son Nieuport avant de le vendre.



Donc, de retour à ma première montée, tout allait bien jusqu'à ce que, à 600 pieds, je commence délicatement un virage à gauche au moyen des ailerons et du palonnier. J'ai commencé à pomper de l'adrénaline en essayant de redresser après

le virage pour le prochain segment de montée. Je sentais le vent, qui était à ma droite, pousser sur les ailes inclinées ne me permettant pas de les remettre à niveau. L'avion ne réagissait pas assez vite et restait incliné.

J'ai pensé aux conseils de Rick et je me suis dit: « Bon sang, est-ce que je suis aussi en train de tomber dans le même piège? » ... J'ai continué la bataille avec les palonniers et le manche à balai, j'ai même mis mon bras droit à l'extérieur du cockpit de toute sa longueur pour aider à me redresser et alors que je tournais sous le vent, l'avion a commencé à se stabiliser. Me voyant hors de danger, je me suis dit maintenant que je devrais rapidement atterrir et j'ai commencé à me détendre un peu. Ce moment de détente m'a donné le temps d'analyser et de planifier mon atterrissage. Je voulais éviter de tourner le dos au vent. J'ai donc fait quelques lacets peu prononcés vers le vent et cela m'a fait zigzaguer volontairement. Puis vint la tour qui n'arrêtait pas de m'appeler pour connaître mes intentions car je ne respectais pas un circuit normal. Grâce à mes écouteurs de type bouchons d'oreille, je pouvais bien entendre la tour, mais le bruit dans le cockpit était si fort que les gens de la tour ne pouvaient pas m'entendre. Je me suis dit : sécurité avant tout. Oublie la tour et concentre-toi sur l'atterrissage. Ayant finalement atteint la dernière étape, j'ai entamé ma descente et hop,



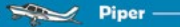






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# RÉGIONS DU QUEBEC

je touchais le sol avec un atterrissage en douceur et j'ai fait un arrêt parfait.

Une fois de retour au hangar, j'ai été accueilli par des acclamations mais je n'étais pas du tout d'humeur à fêter. Alors que j'enlevais mon casque, mon aide le plus âgé m'a dit avec un grand sourire "wow il vole super bien non?" Je l'ai regardé dans les yeux et j'ai dit "pas exactement ... nous allons avoir quelques révisions à faire sur les commandes."

Encore une fois, avec les deux jolies petites caméras HD Mobius, nous pouvions voir une partie du problème. Le déplacement des ailerons n'était que d'environ un pouce avec mon manche à plein sur le côté. Nous avons constaté que les câbles de commande des ailerons n'étaient pas assez serrés. De plus, nous avons constaté que la course du gouvernail était limitée par ses butées. Donc, avec de nouveaux réglages des ailerons et du gouvernail, j'ai pu effectuer un autre vol avant l'arrivée de l'hiver ... et cette fois-là, ça s'est très bien passé.

## MISSION ACCOMPLIE

Avec ce premier vol ayant lieu le 17 novembre 2016, nous pouvions dire que nous avons atteint notre objectif : la réapparition du Nieuport 12 de l'escadron N62 « Les Coqs » après exactement cent ans, mission qu'on avait établie quatre ans auparavant.

L'été suivant, nous avons assisté à diverses rencontres aériennes et événements: Les Faucheurs de Marguerite à Sherbrooke QC, le Festival de Montgolfières St-Jean en août, ainsi que plusieurs autres. Mais l'événement le plus important a été le survol le 11 novembre 2018 lors de la cérémonie de l'armistice tenue à Montréal. C'était vraiment le 100e anniversaire de la fin de la Première Guerre mondiale.

Notez que ces vieux avions avaient beaucoup de trainées causées par beaucoup de haubans, le train d'atterrissage, les doubles ailes et un capot avec une grande ouverture; tout cela ralentit rapidement l'avion après avoir coupé les

gaz. Ce n'est certainement pas un planeur. Le pilote doit maintenir la puissance ou baisser le nez pour maintenir la vitesse jusqu'à ce qu'il soit près de toucher le sol. Le pilote vole à partir de la banquette arrière, une zone très venteuse. Le passager lui est assis à l'avant et sa position expérimente peu de turbulences.

En raison de sa réponse lente aux commandes, ce n'est pas un biplan acrobatique, mais il se comporte très bien par vent de travers. Je n'ai connu aucun problème à affronter des vents traversiers à l'atterrissage de 90 degrés et 20 nœuds. Nous avons installé un trim avant de recouvrir l'avion, mais nous l'avons finalement enlevé car il n'était d'aucune utilité. Lors du RVA et Expo National 2021 COPA qui aura lieu fin juin à Saint-Jean, je pourrai parler plus en détail de l'histoire de cet avion et sur la façon de réussir à faire voler un chasseur de la Première Guerre mondiale à partir d'une « bonne idée de retraite ». Ceci est une invitation. 🛩️

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## FIRST FLIGHT IN A WWI BIPLANE FIGHTER

PREPARING FOR THE 2021 COPA NATIONAL FLY-IN IN SAINT-JEAN

BY RICHARD LEGAULT

**The Nieuport 12 was a French biplane reconnaissance, fighter aircraft and trainer used by France, Russia, Great Britain and the United States during World War I. Later production examples were built as trainers and served widely until the late 1920s. With the help of my small group of enthusiasts we constructed a replica over a four-year period. Now it is time to fly it.**

### TAXI TRIALS

As precaution for any new aircraft, one will perform many high-speed taxis to get acquainted with the plane. I compare this to a cowboy taming his new horse. My helpers and I felt like we were reliving the Wright Brothers days of pioneering. One difference is that we used a bit of modern tech. We bought two Mobius dash cameras and hooked them to struts to film different strategic areas, such as the main landing gear bungees, brakes and the tail wheel area for which no statistics existed.

My first taxi was a bit scary. I was using our asphalted taxiways. I have about 1,500 hours on tailwheel aircraft, mainly with my Aeronca Champ, but this craft had a sensitive rudder bar with a very small homemade tailwheel and skimpy brakes. After several modifications and trials, I was getting better brake management. Then came trials at higher speeds without raising the tail. On the first trial the tailwheel melted. The camera revealed that it had jammed and scrubbed the asphalt. Mind you, we had used only a roller blade wheel. Next, we progressed to a solid plastic wheel made by my friend and engineer Sylvain, who had made the swiveling tailwheel assembly. This was much improved but a bit noisy. I have to say I was always struggling to fight its tendency to sway on the asphalt, to the point of

experiencing a few small ground loops. But this issue was present only on hard surface taxiways.

Then I decided to perform high-speed taxis on the grass side of the taxiways. There was no swaying tendency on the grass. The camera shows that the small tailwheel was scorching the grass therefore maintaining it straight. So, I figured it was time to raise the tail. Overcoming my fears, I pushed the throttle full and raised the tail, slacked the throttle and just rolled on the main wheels until the tailwheel returned to the ground. There was perfect control, with practically no oscillation.

### FIRST FLIGHT

After many hours spread over many weeks of high speed taxiing, tail ups and checking engine reliability, the time came when I talked myself into performing the first flight. November 17, 2016, was a chilly Autumn day but the breeze was just right. I chose a grass strip that is used by the air cadets for gliders. Orientation is 11/29 and the wind was straight in at about 8 knots. My friends were positioned with cameras and I told them that I might decide to abort if my guts told me to just make other runs. I positioned

myself on runway 29 and performed another high-speed taxi run, then made a 180 and taxied back to the start. I called the tower and said I may take it up and, if so, it would be for one left-hand circuit. I was told the airport was mine - no traffic reported. After checking my safety belts, realigning my scarf and helmet, I told myself, "it is now or never." Throttle full, the tail raised fast and within a few hundred feet the wheels left the ground and up I went.

Several months before the flight I contacted Rick Giles of Chicago, who built a Nieuport 12 over a decade ago. He had the same plane from the same designer, but used a converted Yamaha Virago 1100cc motorcycle engine in the nose. He gave me great finishing tips but also stressed that before the first flight I should call him again and be ready to take notes. I did this a few months before the flight and he explained a few things, including how this plane has a flying rudder with no vertical stabilizer. There are about 7 inches of rudder that is forward of its pivot post. Therefore, when applying the rudder bar for a turn, the rudder will tend to stay in that direction. You have to bring it back or else it will surprise you and wind up in a spin.



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# REGIONS QUEBEC

Secondly, Giles stressed the need to keep my eyes on the ball to make sure I'm not slipping. He said he saw one of his friends' first flights and after a left bank into a climb he continued to bank and started to spin, hitting the ground and destroying the plane. He luckily walked out with only a few scratches. Giles also said he too became scared at the beginning as he was felt the plane slipping sideways and corrected in time. Giles had more than 200 hours on his Nieuport before he sold it.

So, back to my first climb out, it was all okay until I started a delicate left turn with ailerons and rudder at 600 feet. I began pumping adrenaline trying to straighten it after the turn for the left leg of climbing. The wind was on my right and I felt it pushing the banked wings thus not allowing me to bring them level. The plane was not reacting fast enough, and it remained banked. I thought of Giles' advice and asked, "Hell, am I falling into the same trap too?" I continued the battle with the rudder bar and stick, even putting my right arm full length outside the cockpit as an automatic effort to help straighten and as I turned downwind, the plane began to level out. Seeing myself out of danger I wanted to land fast and begin to relax a bit. This relaxation gave me time to analyze and plan my landing.

I wanted to avoid turns away from the wind. So, I made a few shallow turns towards the wind and that caused me to zigzag voluntarily. Then came the tower which kept calling me for my intentions

because I was not respecting my normal circuit. Thanks to my earplug type earphones, I could hear the tower well but the noise in the cockpit was so loud and drafty that he could not hear me. Then I said this is safety first, forget the tower and concentrate on landing. Having finally reached the final leg, I started my descent and, presto, I was touching the ground on a soft wheel landing and made a perfect stop.

Back at the hangar, I was greeted with cheers, but I was not at all in the mood for it. As I removed my helmet, my older helper said with a large smile, "Wow she flies great heh?" I looked him in the eyes and said, "Not exactly - we'll have some examining to do on the controls."

Again, with the two cute little HD Mobius cameras, we could see part of the problem. The aileron travel was only about an inch with my full stick sideways. We found the aileron control cables were not tight enough. Furthermore, we found the rudder travel was limited by its stoppers. So, with aileron and rudder adjustments I was able to make another flight before the winter set in - and that time it went very well.

The mishap I experienced was, after all, part of being the test pilot of your own plane. One will expect to have flying issues on the first flight. It is what testing is all about!

## MISSION ACCOMPLISHED


With the first flight being November 17, 2016, we could say we met our centennial goal of an appearance of the Nieuport

12 in the N62 "Les Coqs" squadron, mission established four years ago.

The following summer we attended various air meets and events: Les Fauces de Marguerite in Sherbrooke, Quebec, and the St-Jean balloon festival in August, plus several others. But most the important event has been the fly over on November 11, 2018, during the Armistice ceremony held in Montreal - the 100th anniversary of the end of WW1.

Note that these old planes had a lot of drag caused by the multiple flying wires, landing gear, double wings, and a cowling with a large opening; all these will slow the plane quickly once throttle is pulled back. This is definitely not a glider. The pilot must maintain power or put the nose down to keep speed up until close to touchdown. The pilot flies from the rear seat, a very drafty area. The passenger sits up front and his cockpit has little turbulence.

Because of its slow control response, this is not an aerobatic biplane, but it handles very well in crosswinds. I have experienced 90-degree, 20-knot gusting crosswinds on landing with no issues. We did install a trim for the elevators before covering but removed it last year as I did not need to use it. Since first flight, I have changed the radio from a handheld to a fixed Becker radio and added a Terra transponder and both of these instruments consume very little voltage from the battery.

At the Copa 2021 National Fly-in scheduled for late June in Saint-Jean, I will be able to talk in more detail about the history of this great airplane and how we managed to get a WW1 fighter flying from a "retirement good idea". This is an invitation. 

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## PILOTS NEED TO BE VIGILANT AT BUTTONVILLE

BY PHIL LIGHTSTONE AND MARK BROOKS

**General aviation traffic at some airports in the Toronto area is on the increase and now above pre-pandemic levels. The Toronto Buttonville Municipal airport (CYKZ), once slated for re-development, remains open for the foreseeable future and is quite busy. NAV CANADA closed the control tower at Buttonville at the beginning of 2019. The Class C airspace transitioned into Class E airspace, including a Mandatory Frequency Area (MF) without Advisory. Buttonville became an uncontrolled airport inside the complex and constrained airspace of Canada's largest city.**

At Buttonville, 2020 has seen a unique mix of jet, turboprop, helicopter and piston aircraft, supporting everything from flight training to charter flights to emergency services. Safety is still one of the Buttonville Flying Club's (COPA Flight 44) number-one concerns to ensure that pilots operate safely in this new environment.

Buttonville's operating environment is unique in Canada, requiring a bit of flight planning for those pilots unaccustomed to the airspace. With the airport elevation at 650 feet, circuit altitude at 1,650, the top of the airspace at 2,000 feet, and a MF Area without advisory, many standard procedures are not applicable. As an example, over flying the field at circuit altitude plus 500 feet is not possible unless communicating with Toronto Terminal. Aligning to the airport's good neighborhood policy, left-hand circuits to runway 15 are prohibited.

Aircraft entering an MF area must make the following radio calls:

- Report before entering the MF area and, if possible, at least five minutes prior to entering the area with position, altitude, estimated time of landing and arrival procedure intentions;
- Report joining the circuit, giving the aircraft's position in the circuit;




- Report when turning downwind;
- Report when on final;
- Report when clear of the runway; and
- Make radio calls as short and concise as possible.

TAF weather forecasts are discontinued and the METAR was changed to a limited weather information service (LWIS), reporting wind direction, wind speed, outside air temperature, dew point and altimeter setting – for example, LWIS CYKZ 201800Z AUTO 31016G24KT M17/M24 A2989.

LWIS weather is not supported by many EFBs and aviation weather applications. However, AeroWeather does support LWIS when a premium in app subscription ("First" or "Captain") is purchased. NAV CANADA's real-time weather page is found at: <http://atm.navcanada.ca/atm/iwv/CYKZ>. The ATIS (127.10 MHz) delivers a message that the tower is closed and does not deliver LWIS information. LWIS information is provided by NAV CANADA's London

Flight Information Centre when on the ground or in the air within the vicinity of CYKZ on frequency 123.15 MHz.

Pilots unaccustomed to operating in a challenging airspace environment, might wish to take a more experienced pilot with them for their first flight into Buttonville. As a tip: Today's modern audio panels support split comm's whereby the pilot in command communicates using Com 1 and the co-pilot communicates using Com 2. This simple approach to cockpit resource management makes flying into Buttonville easier.

A review of the CFS and the Buttonville Flying Club's VFR and IFR procedures documents ([ButtonvilleFlyingClub.com](http://ButtonvilleFlyingClub.com)) prior to flying into the airport ensures that the pilot in command is operating in the MF Area safely. The Million Air FBO at Buttonville has a number of crew cars which itinerant pilots are welcome to use. With many restaurants and retailers nearby, Buttonville remains a primary general and business aviation destination. 



FEATURED LISTINGS FOR JANUARY 2021



**2007 CTSW FLIGHT DESIGN** One owner, fully loaded with: Dynon panel (EFIS-D100, EFIS-D120), GPS (AvMap EXP-1V), BRS parachute, xpr (Garmin GTX 327), radio (Garmin SL40), autopilot, ZAON portable collision avoidance system, 3-axis 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. \$98,000. Email: gramlays@gmail.com.



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AC ..... air condition  
A/C ..... aircraft  
AD ..... Airworthiness Directive  
ADF ..... automatic direction finder  
A&E ..... airframe & engine  
alc. .... alcohol (as in alc. prop)  
AP ..... auto(matic) pilot  
ATS ..... automatic throttle system  
ASI ..... airspeed indicator  
360CH ..... 360 channel radio  
720CH ..... 720 channel radio  
CG ..... centre of gravity  
CHT ..... cylinder head temperature  
Comm/com ..... communications  
Cont ..... Continental (engine)  
CS ..... constant speed propeller  
DG ..... directional gyro  
DME ..... distance measuring equipment  
EGT ..... exhaust gas temperature  
ELT ..... emergency locator transmitter  
Enc Alt ..... encoding altimeter  
FBO ..... fixed base operation  
FD ..... flight director  
FREMAM,  
FREM ..... factory remanufacture  
GEM ..... graphic engine monitoring  
GPH ..... gallons per hour  
GR ..... glide ratio  
GS ..... Glideslope  
HP ..... horsepower  
HSI ..... horizontal situation indicator  
IFR ..... instrument flight rules  
ILS ..... instrument landing system  
3LMB/MB ..... 3 light marker beacon  
LOC ..... localizer  
LRF ..... long range fuel (capacity)  
Lyc ..... Lycoming (engine)  
MB ..... See 3LMB  
MK ..... Mark (model of equipment)  
MPH ..... miles per hour  
NAV ..... navigation  
NAV/COM ..... navigation/communications  
NDB ..... non-directional beacon  
NDH ..... no damage history  
OAT ..... outside air temperature  
OBO ..... or best offer  
O/Oxy ..... oxygen  
P&W ..... Pratt & Whitney (engine)  
RMI ..... radio magnetic indicator  
RNAV ..... area navigation  
SCTOH ..... since chrome top overhaul  
SCMOH ..... since chrome major overhaul  
SFREMAN/  
SFRM ..... since factory remanufacture  
SMOH ..... since major overhaul  
SPOH ..... since prop overhaul  
STC ..... supplemental type certificate  
STOH ..... since top overhaul  
STOL ..... short take off & landing  
T&B ..... turn & bank  
TBI ..... turn & bank indicator  
TBO ..... time between overhauls  
TT ..... total time  
TTAE or  
TTE ..... total time aircraft engine  
TTAF or  
TTA ..... total time aircraft frame  
TTSN ..... total time since new  
VFR ..... visual flight rules  
VHF ..... very high frequency  
VOR ..... very high frequency  
Omni-Range  
xpdr ..... transponder



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# THE CONCORDE ARRIVES IN OTTAWA

BY BERNIE RUNSTEDLER

**Every winter in Ottawa we have a celebration for several weeks in the coldest, darkest part of February. We call this Winterlude, which always runs under a theme. Back in 1989, the theme was Cheers to the UK and someone came up with the brilliant idea to hire the British Airways Concorde.**

For a mere \$1,200 each, they would bring 100 people aloft. You could sip as much champagne as you wanted while you flew up to the North Pole at Mach 2 (twice the speed of sound). Since the flight was not that long (about 3 hours), no meal would be served but, there were ample amounts of hors d'oeuvres to devour. Designed and developed in the 1960s, jointly by British Aircraft Corporation in England and Aérospatiale in France, the Concorde was the first supersonic transport (SST) airplane to go into service. Construction began in Feb. 1965 on the first two prototypes Concorde 001, in Toulouse, France, and 002 at Filton, England. The first hurdle they faced was "How fast should it go?". Speeds, up to Mach 3, were tossed around but, when the engineers looked at the kinetic heat caused by the air friction and the extra costs for heat resistant alloys to compensate for this, they decided to limit the maximum speed to Mach 2.2. (Even at this speed, the aircraft grows in length by one foot on a transatlantic flight. The skin temperature reaches 100oC. If it gets to 125oC, you have to slow down to 1400 mph)

How fast was it really? Occasionally, CF 101 Voodoo fighters from CFB Bagotville, Quebec would take-off on an exercise to intercept them. The Concorde was too fast and were asked to throttle back to allow the Canadian Armed Forces jets to catch them. In the early 1970's, flight testing and sales demonstration flights were carried out. There was a lot of interest in this sleek, sexy new aircraft. Seventy orders were placed; even Air Canada put in an order for four aircraft. Finally, scheduled service was inaugurated in January 1976. By this time, the increasing cost of the airplane, it's carbon footprint and the noise it made, had reduced the orders to just the nine aircraft BAC and Aérospatiale had ordered. Not a single aircraft was ever sold commercially.

Another huge factor affecting sales was fuel consumption. The capacity of the Concorde was 26,350 imperial gallons (a train tanker car holds about 25,072 imperial gallons). This was the time of oil embargos on the western countries associated with the OPEC oil crisis. In all fairness, I think the only flights that made any money for the Concorde was the



▲ The Concorde, beginning the first SST passenger-carrying service in 1976, had a maximum speed of Mach 2.04 (2,179 km/h), more than twice the speed of sound.

London- New York run. A large number of airports wouldn't welcome Concorde, citing stringent noise regulations.

Flight number 4,590, on July 25th, 2000. The chartered flight from Paris to New York City hit some Foreign Object Debris (FOD) on the runway while taking off. The ensuing crash killed all 109 people on board, as well as four on the ground. They made some safety changes and, even though this was the first and only fatal crash in the history of Concorde, they could not attract the much-needed passengers. Although it was significantly faster, it was not comfortable. The cabin was only 8 foot 7 inches wide and 6 foot 5 inches tall. About the same as a Bombardier Q400. A round trip ticket between London and New York City was around \$8000 in 1997. The last flight occurred in October 2003.

The Ottawa flight was very enticing but, at the time, I was starting a family and trying to buy a house. I didn't have 1200 cents, never mind \$1200. However, being a pilot, and having the Concorde in my neighbourhood, was too tempting to miss. I was at the airport from the time it touched down, until the time it took off. It made a heck of a lot of smoke, but I don't remember a lot of noise. I never heard if they made it to Mach 2; and I have my doubts about them seeing the north pole from 60,000 feet. But it was awe inspiring to see. When I fly into Heathrow, at the east end of the field is parked a Concorde. I understand that it has been totally gutted and only the shell remains. To me, it still looks majestic. 🙏

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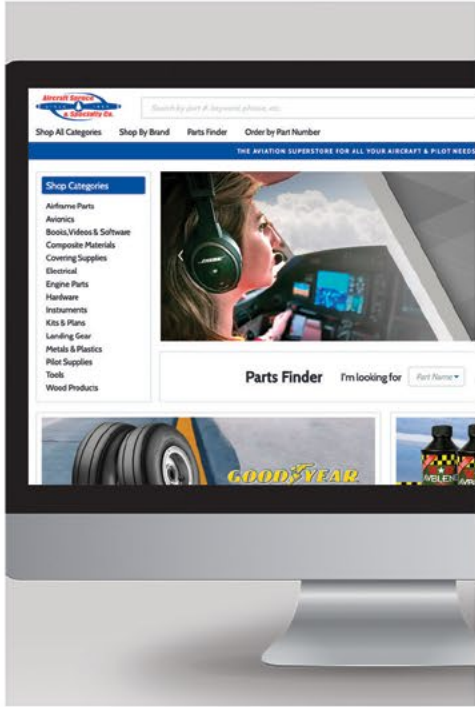
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