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The Journal of the Canadian Owners and Pilots Association

FEBRUARY 2021

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## DIAMONDS OF THE SKY

Inside Canada's GA Powerhouse

TRAFFIC NOTIFICATION SYSTEMS  
NARROWING THE GAP OF PILOT SKILLS

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**ON THE COVER:** After receiving EASA Type Certification in September 2020, Diamond Aircraft expects the new DA50 RG to earn approval from Transport Canada by late-2021, shortly after the aircraft itself begins production at the company's all-important facility in London, Ontario. (Photo: Diamond Aircraft)

## COPA Flight

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# MEET YOUR COPA NATIONAL TEAM



**Please meet the amazing team that keeps COPA's engine running and propeller spinning. The contribution of these devoted individuals, who work tirelessly on advancing and promoting COPA's various initiatives, undoubtedly influence the success of our beloved association.**



## Meet Tanya Storing

Tanya is COPA's Manager of Finance and Member Benefits and has been with COPA for 20 years.

This is what devotion looks like!

Tanya began her career with COPA as our Membership and Database Administrator. Many members will recognize her as the person behind the registration desk at the annual COPA Conventions since 2001.

She has worn many hats over her 20 years at COPA and now she manages COPA's day to day financials and facilitates the procurement of member benefits. She enjoys spending her personal time at her cottage on the Ottawa river surrounded by her family.



## Meet Angela Storing

Angela is COPA's Administrative and Membership Coordinator. She has been the friendly

voice behind every call you make to COPA National since 2018.

The best part of Angela's job, according to her, is getting to know the members, whether on the phone while renewing a membership or in person at a COPA event.

Angela's background is in customer service and she believes in being kind and honest with everyone all while assisting you with your requests. From having no aviation experience, she has learned a lot about this industry in her time with COPA and a Private Pilot License is quite possible in her future.



## Meet Peter Campbell

Peter joined COPA in mid-October last year as our Director, External Relations. Peter comes

with a wealth of experience that spans more than 50 years covering General Aviation (GA) and the military (RCAF helicopter and jet pilot).

Prior to joining COPA, Peter's GA experience extended over 10 years as a flight instructor at the Ottawa Flying Club and as its CFI in the two years preceding his COPA arrival.

In addition, Peter has extensive RPAS experience as a RCAF RPAS/UAV pilot, serving missions in Kandahar. Peter is humble but his experience is inspiring and I'm certain that he'd be more than willing to share a few good stories over a pint or two.



## Meet Sharon Cheung

Sharon Cheung joined us at the start of the New Year as the Director, National Programs. She

brings with her extensive experience in stakeholder relations and engagement.

Sharon previously managed national stakeholder relations files relating to RSC NOTAM, RPAS, space-based ADS-B, CFPS, aeronautical studies, and airspace changes at NAV CANA-

DA. Sharon's primary responsibilities will include building new programs and evolving existing COPA initiatives. Additionally, Sharon is a part-time instructor in the post-graduate Brand Management program at Algonquin College, is a woodworking enthusiast, and would like to add PPL contender to her list of hobbies in the coming year!

---

*"Peter has extensive RPAS experience as a RCAF RPAS/UAV pilot, serving missions in Kandahar... his experience is inspiring."*

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## Meet Carolina Izaguirre-Campos

Carolina is COPA's newest team member and joins us as our

Communications Coordinator.

Carolina was born in Caracas, Venezuela, and came to Canada over 15 years ago to study English and Psychology at Carleton University in Ottawa. After 10 years in the field of psychology, she decided to start a new adventure at Algonquin College, where she completed a two-year Public Relations program. Carolina is cheerful, energetic and full of refreshing innovative ideas. She spends her free time volunteering within the Latin Community and at women shelters in the Ottawa area. Her favorite quote is "Your dreams can come true once you've crossed the fear line".

As you can see, your COPA team is comprised of remarkable individuals who look forward to advancing, promoting and preserving our Canadian freedom to fly, both for you and with you. 🙌

# RENCONTREZ VOTRE ÉQUIPE NATIONALE DE LA COPA

**Faites connaissance de cet équipe extraordinaire qui fait tourner le moteur et l'hélice de la COPA. La contribution de ces personnes dévouées, qui travaillent sans relâche à l'avancement et à la promotion des diverses initiatives de la COPA, influence sans aucun doute le succès de notre chère association.**



## Rencontrez Tanya

**Storing.** Tanya est la gestionnaire des finances et des avantages aux membres de la COPA.

Elle est à l'emploi de la COPA depuis 20 ans. Voilà à quoi ressemble la dévotion !

Tanya a commencé sa carrière avec la COPA en tant qu'administratrice des adhésions et de la base de données. De nombreux membres se souviendront d'elle comme la personne derrière le bureau d'inscription aux congrès annuels de la COPA depuis 2001. Elle a porté plusieurs chapeaux au cours de ses 20 ans avec la COPA et maintenant elle gère les finances quotidiennes et facilite l'obtention des avantages aux membres. Elle aime passer son temps personnel à son chalet sur la rivière des Outaouais, entourée de sa famille.



## Rencontrez Angela

**Storing.** Angela est la coordinatrice administrative et des adhésions. Elle est la voix amicale

derrière chaque appel que vous faites au bureau national, et ce depuis 2018.

La meilleure partie de son travail, selon elle, est d'apprendre à connaître les membres, que ce soit au téléphone lors du renouvellement d'une adhésion ou en personne lors d'un événement de la COPA. Angela a une formation en service à la clientèle et elle croit qu'il

faut être gentil et honnête avec tout le monde tout en vous aidant à répondre à vos demandes. N'ayant aucune expérience de l'aviation, elle a beaucoup appris sur ce domaine au cours de son passage à la COPA et il est fort probable qu'elle obtienne une licence de pilote privé dans l'avenir proche!



## Rencontrez Peter

**Campbell.** Peter nous a rejoint à la mi-octobre de l'année dernière en tant que directeur des

relations extérieures. Peter vient avec une riche expérience de plus de 50 ans dans l'aviation générale (GA) et militaire (pilote d'hélicoptère et de jet de l'ARC).

Avant de rejoindre à nous, l'expérience de Peter dans le domaine de l'aviation générale s'étendait sur plus de dix ans en tant qu'instructeur de vol au Ottawa Flying Club, dont il a été l'instructeur de vol en chef (CFI) au cours des deux années précédant son arrivée. De plus, Peter a une grande expérience du SATP en tant que pilote de SATP(UAV) de l'ARC, servant des missions à Kandahar. Peter est humble mais son expérience est inspirante et je suis certaine qu'il serait plus que disposé à partager quelques bonnes histoires tout en prenant petit coup!



## Rencontrez Sharon

**Cheung.** Sharon Cheung nous a rejoint au début de la nouvelle année en tant que directrice des

programmes nationaux. Elle nous apporte sa grande expérience des relations et de l'engagement des parties prenantes.

Auparavant, Sharon a géré les dossiers nationaux de relations avec les parties prenantes concernant les

NOTAM du SRC, le RPAS, l'ADS-B satellitaires, le CFPS, les études aéronautiques et les changements de l'espace aérien à NAV CANADA. Les principales responsabilités de Sharon consisteront à élaborer de nouveaux programmes et à faire évoluer les initiatives existantes de la COPA. De plus, Sharon est instructrice à temps partiel dans le programme de gestion de la marque au Collège Algonquin, elle est une passionnée de menuiserie et aimerait ajouter une licence de pilote privé à sa liste de passe-temps dans l'année à venir !



## Rencontrez Carolina Izaguirre-Campos.

Carolina est le nouveau membre de l'équipe de la COPA et se joint à nous

en tant que coordinatrice des communications.

Carolina est née à Caracas, au Venezuela, et est venue au Canada il y a plus de quinze ans pour étudier l'anglais et la psychologie à l'université de Carleton, à Ottawa. Après dix ans dans le domaine de la psychologie, elle a décidé de se lancer dans une nouvelle aventure au Collège Algonquin, où elle a suivi un programme de relations publiques de deux ans. Carolina est joyeuse, énergétique et pleine d'idées novatrices et rafraîchissantes. Elle passe son temps libre à faire du bénévolat au sein de la communauté latine et dans les refuges pour femmes de la région d'Ottawa. Sa citation préférée est "vos rêves peuvent devenir réalité une fois que vous avez franchi la ligne de la peur".

Comme vous pouvez le constater, votre équipe COPA est composée de personnes remarquables qui se réjouissent de faire progresser, de promouvoir et de préserver la liberté de voler au Canada, pour vous et avec vous. 🇨🇦

# ALGHABRA AND BOHN, NEW CANADIAN AVIATION LEADERS

**Canadian Prime Minister Justin Trudeau on January 12 announced a range of cabinet moves, including the appointment of Omar Alghabra as the new federal minister of transport. Alghabra succeeds Marc Garneau, who remains in the federal cabinet as minister of foreign affairs. The cabinet shuffle was largely initiated by the cabinet departure of Navdeep Bains, minister of innovation, science and industry, who announced his decision to not to run in the next election.**

Alghabra was first elected as the Member of Parliament for Mississauga Centre in 2015, and also served as the Member of Parliament for Mississauga Erindale from 2006 to 2008. The Government of Canada notes he served as Parliamentary Secretary to the Minister

of Foreign Affairs (Consular Affairs) and to the Minister of International Trade Diversification, before becoming Parliamentary Secretary to the Prime Minister (Public Service Renewal) and to the Deputy Prime Minister and Minister of Intergovernmental Affairs in 2019.

A mechanical engineer by trade, Alghabra holds a Master of Business Administration and was a Distinguished Visiting Fellow with the Faculty of Engineering and Architectural Science at Ryerson University. He has worked in various roles with General Electric Canada, Enbala Power, and the Ontario Energy Board.


NAV CANADA on December 29 an-



▲ Omar Alghabra, Minister of Transport.

nounced the appointment of Raymond Bohn as President and CEO, effective Feb. 1, 2021, succeeding Neil Wilson who announced his retirement in Oct. 2019.

Bohn originally joined NAV CANADA in February 2000 and currently serves as Vice President and Chief Human Resources Officer. In this role, he is also responsible for strategic oversight

of the company's stakeholder relations program, customer service and organizational communications including employee and corporate communications, government and public affairs, media relations and translation/terminology services. 

## NOUVEAUX CHEFS DE FILE DE L'AVIATION CANADIENNE

**Le 12 janvier, le premier ministre canadien Justin Trudeau a annoncé un remaniement ministériel impliquant notamment la nomination d'Omar Alghabra au poste de ministre fédéral des Transports - succédant à Marc Garneau, nouveau ministre des Affaires étrangères.**

Ce remaniement ministériel découle en grande partie de l'annonce du départ du cabinet de Navdeep Bains, ministre de l'Innovation, des Sciences et de l'Industrie, lequel a signifié ne pas avoir l'intention de se présenter aux prochaines élections.

M. Alghabra a été élu pour la première fois député de Mississauga-Centre en 2015, et a également été député de Mississauga Erindale de 2006 à 2008.


Ingénieur en mécanique de formation, M. Alghabra est titulaire d'une maîtrise en administration des affaires, et il a été professeur invité émérite de la Faculté des sciences de l'ingénierie et de l'architecture de l'Université Ryerson. Il a occupé divers postes chez General Electric Canada, Enbala Power et la Commission de l'énergie de l'Ontario.

Le 29 décembre, NAV CANADA a annoncé la nomination de Raymond Bohn au poste de président et chef de la direction, succédant à Neil Wilson qui avait annoncé sa retraite en octobre 2019. Le nouveau PDG entrera



▲ Raymond Bohn en voie de devenir PDG de NAV Canada le 1er février 2021.

en fonction le 1er février 2021.

M. Bohn s'est joint à NAV CANADA en février 2000, et il occupe actuellement le poste de vice-président et chef des ressources humaines. À ce titre, il est également responsable de la supervision stratégique du programme de relations avec les parties prenantes, du service à la clientèle et des communications organisationnelles, y compris les communications avec les employés et l'entreprise, les affaires gouvernementales et publiques, les relations avec les médias et les services de traduction/terminologie. 



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# NANAIMO AIRPORT PLANNING FOR \$29M INVESTMENT

The Nanaimo Airport Commission on December 21 introduced a \$28.8 million infrastructure capital plan it is undertaking to help fuel the Central Island's economic recovery. The commission states this investment over the next five years will enhance Nanaimo Airport's (YCD) infrastructure to provide additional route development options, including Toronto, Edmonton, Kelowna and seasonal sun destinations.

"We're proactively embracing our leadership role as a key economic driver for the region," said Dave Devana, President and CEO, Nanaimo Airport. "Our investments will create jobs and opportunities with multiple economic spin-offs that touch all corners of the region we serve. Our new infrastructure

capital plan will help Nanaimo Airport and our region recover from the impact of the pandemic while ensuring the airport continues to meet the needs of leisure and business travellers for the next generation."

The Nanaimo Airport Commission adopted the 2021-2025 Financial Plan in late 2020, focusing on a budget that is based on a slow pandemic recovery with passenger traffic returning to 2019 levels by 2024. The commission, which operates as a non-profit corporation, notes no tax dollars are being used to fund airport operations. It generates revenue through passenger



▲ Dave Devana, President and CEO, Nanaimo Airport.

fees, parking fees and leases, with all net income reinvested in infrastructure improvements. Government grants have helped fund capital projects, such as the new Airport Terminal Building.

A statement from YCD explains the COVID-19 pandemic presented the airport with the most-difficult financial challenges in its history. An estimated 181,072 passen-

gers will travel through its gates in 2020, down an estimated 63 per cent from the record 491,499 in 2019. As a result, the airport forecasts a \$1.4 million loss in 2020 compared to a \$3.75 million surplus in 2019. 📈

## L'AÉROPORT DE NANAIMO PRÉVOIT UN INVESTISSEMENT DE 29 M\$

Le 21 décembre, la Commission de l'aéroport de Nanaimo (YCD) a présenté un plan d'investissement quinquennal de 28,8 millions de dollars visant à améliorer les infrastructures et contribuer à la reprise économique de l'île de Vancouver.

La commission déclare que cet investissement vise aussi à ouvrir la porte à d'autres options de destinations comme Toronto, Edmonton, Kelowna et des destinations soleil saisonnières.

« Nos investissements créeront des emplois et des occasions générant de multiples retombées économiques, lesquelles toucheront toutes les régions que nous desservons. Notre nouveau plan d'immobilisations en infrastructure aidera l'aéroport de Nanaimo et notre région à se remettre de l'impact de la pandémie tout en veillant à ce que l'aéroport continue de répondre

aux besoins des voyageurs d'affaires et d'agrément pour la prochaine génération », a déclaré Dave Devana, chef de la direction de l'aéroport de Nanaimo.

La Commission de l'aéroport de Nanaimo a adopté le plan basé sur une lente reprise postpandémie avec un trafic de passagers revenant au niveau de 2019 d'ici 2024. La Commission, qui est exploitée comme un organisme à but non lucratif, souligne qu'aucun dollar des contribuables ne sert à financer les activités aéroportuaires. Ses revenus proviennent des redevances des passagers, des frais de stationnement et des baux. Tous les revenus nets sont réinvestis dans l'amélioration des infrastructures. Les subventions gouvernementales ont toutefois aidé à financer des projets d'immobilisations, comme le nouveau terminal de l'aéroport. 📈

## PIPER CERTIFIES PILOT 100

**Piper Aircraft received type certification from the Federal Aviation Administration for its Pilot 100 trainer aircraft, which was introduced at Sun-n-Fun in 2019. Launch customer American Flyers is scheduled to take delivery of eight 100i aircraft by the end of 2020.**

The Pilot 100i is an IFR-certified version of the Pilot 100 equipped for VFR flying. The new trainer aircraft family is a derivative of the Piper PA-28 line, which first reached the market back in the 1960s as the Cherokee.

The company states the new Pilot 100i rounds out its portfolio of training aircraft, which also includes the Archer TX, Archer DX, Arrow and Seminole. The Pilot 100i, priced under US\$300,000, features the Garmin G3X and 180 hp Lycoming IO-360-B4A engine, which offers 128 ktas. 📈



# INCIDENTS + ACCIDENTS

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

## ONTARIO REGION

**TSB Report #A2000099:** An amateur-built Glass Goose was initiating a local flight from Pembroke, ON (CYTA) with 1 pilot onboard. While on the take-off roll on Runway 35, the aircraft nosed up quicker and at a higher angle of attack than expected. The pilot applied a forward pressure on the control stick to compensate, resulting in a nose down attitude. The nose wheel struck the runway and the aircraft began to porpoise. On the third runway contact, the aircraft slid off the runway onto the grass surface. Emergency services deployed to the accident site and the airport closed Runway 35 until all the debris were re-

moved. The aircraft sustained substantial damage to the nose landing gear, cockpit, undercarriage and fuselage.

**An aircraft with a 1200 code** entered the Kitchener/Waterloo, ON (CYKF) zone, 5NM east of CYKF at 2100ft, without establishing contact or getting a clearance. UPDATE: Addition of aircraft registration. Narrative updated to read as follows: A Flight 6IX Incorporated Cessna 172P (C-FWAZ), with a 1200 code, entered the CYKF zone, 5NM east of CYKF at 2100ft, without establishing contact or getting a clearance. Shortly thereafter, contact was established.

## PRAIRIES REGION

**A Mississippi Air-Care Beech B200 (MA02)** from Winnipeg/James Arm-

strong Richardson, MB (CYWG) to Flin Flon, MB (CYFO) rejected its take-off due to an indication. UPDATE from Airworthiness: The aircraft, a Mississippi Air-Care Beech B200 (MA02), rejected its take-off due to a right-hand (R/H) torque indication that became erratic upon application of take-off power. The pilot contacted maintenance, and Mississippi aircraft maintenance engineers (AMEs) went to CYWG to inspect the aircraft. AMEs found damaged wiring on a wire bundle that passes through a bulkhead on the engine mount. The wiring was repaired, engine runs were completed, and the torque indication checked as serviceable.

## PACIFIC REGION

**TSB Report #A20P0094:** C-FMQG, a

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privately operated Cessna 206 aircraft, was conducting a flight from Anahim Lake, BC (CAJ4) to Bella Coola, BC (CYBD) with a sole pilot on board. While the aircraft was flying at approximately 2000 feet ASL, over the Dean Channel, the engine (Teledyne Continental TSIO-520-C) experienced a complete power loss. The aircraft was ditched into the channel near the mouth of the Dean River. Upon entry into the water, the aircraft began to sink and the pilot quickly exited. The pilot was wearing a manual inflation PFD, which they inflated upon exit from the aircraft. The aircraft then sank below the water surface while the pilot, wearing their PFD, swam to the shore line, where they were able to summon assistance from a nearby cabin. The pilot sustained minor injuries. An ELT signal was not received.

### QUEBEC REGION

**TSB Report #A20Q0103:** C-GXHW, a privately operated Cirrus SR22, was on a night flight under visual flight rules from Du Rocher-Percé (Pabok), QC (CTG3) to Quebec/Neuveville, QC (CNV9) with the pilot and 2 passengers on board. The aircraft made an approach for landing on Runway 06. Following touchdown, the aircraft rebounded and the pilot experienced instability in the aircraft. Deeming it best to take-off again, the pilot

performed a go-around. Following the go-around, the aircraft deviated to the left and banked to the right, despite the maximum deflection of the right rudder. The right wing touched the ground and the aircraft came to rest in the ditch on the north side of the runway. The occupants, who were not injured, were able to extricate themselves from the aircraft. A fuel leak occurred following a fractured fuel tank, but no fire occurred. The emergency locator transmitter activated on impact and transmitted the distress signal. Firefighters were deployed to the scene of the accident.

### RÉGION DE L'ONTARIO

**Rapport du BST no A2000099 :** Un Glass Goose, de construction amateur, s'apprêtait à effectuer un vol local depuis Pembroke (CYTA), ON, avec 1 pilote à bord. Lors de la course au décollage piste 35, l'aéronef s'est cabré plus vite et à un angle d'incidence plus prononcé que prévu. Le pilote a exercé une pression avant sur le manche de commande pour compenser, ce qui a entraîné une altitude de piqué. La roue avant a heurté la piste et l'aéronef a commencé à marsouiner. Lors du troisième contact avec la piste, l'aéronef a dérapé vers la partie gazonnée. Les services d'urgence se sont rendus sur les lieux de l'accident et l'aéroport a fermé la piste 35 jusqu'à

ce que tous les débris aient été enlevés. Le train avant, le poste de pilotage, le train d'atterrissage et le fuselage ont été très endommagés. Le pilote n'a été que légèrement blessé.

**Un aéronef avec un code 1200** est entré dans la zone Kitchener/Waterloo (CYKF), ON, à 5 NM à l'est de CYKF à 2100 pieds, sans établir de contact ni obtenir d'autorisation. Peu de temps après, le contact a été établi. MISE À JOUR : AOR 270801-V3 : Ajout de l'immatriculation de l'aéronef. Exposé des faits mis à jour comme suit : Un Cessna 172P (C-FWAZ), exploité par Flight 6IX Incorporated, affichant un code 1200, est entré dans la zone de Kitchener/Waterloo (CYKF), ON, à 5 NM à l'est de CYKF à 21 00 pi, sans établir de contact ni obtenir d'autorisation. Peu après, le contact a été établi.

### RÉGION DU PRAIRIES

**Un Beech B200, exploité par Mississippi Air-Care** (MA02), de Winnipeg/James Armstrong Richardson (CYWG), MB, à Flin Flon (CYFO), MB, a interrompu son décollage en raison d'une indication. Aucune urgence déclarée. Aucune assistance requise. MISE À JOUR de Navigabilité : Un inspecteur de la sécurité de l'aviation civile (ISAC) a étudié de près l'incident. L'aéronef, un Beech



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B200 (MA02), exploité par Missinippi Air-Care, a interrompu son décollage en raison d'une indication de couple à droite qui est devenue erratique lors de l'application de la puissance de décollage. Le pilote a communiqué avec la maintenance et des techniciens d'entretien d'aéronefs (TEA) de Missinippi se sont rendus à James Armstrong Richardson (CYWG), MB, pour inspecter l'aéronef. Les TEA ont trouvé un câblage endommagé sur un faisceau de câbles qui traverse une cloison sur le support moteur. Le câblage a été réparé; le moteur a été mis en marche et l'indication de couple a été vérifiée comme étant en bon état.

## RÉGION DU PACIFIQUE

**Le moteur d'un Cessna TU206C** (C-FMQG) de Down to Earth Enterprises, volant depuis d'Anahim Lake, en Colombie-Britannique (CAJ4), et vers Anahim Lake, en Colombie-Britannique (CAJ4), a cessé de tourner vers 1700Z, et le pilote a améri dans le chenal Dean, situé juste au sud de l'embouchure de la rivière Dean, à environ 1,5 NM au sud-sud-est de l'aérodrome abandonné de Kimsquit. Le pilote était seul à bord et n'a pas été blessé.

## RÉGION DU QUÉBEC

**Rapport du BST no A20Q0103** : un Cirrus SR22 (C-GXHW), exploité en privé, effectuait un vol de nuit selon les règles de vol à vue du Rocher-Percé (Pabok) (CTG3), QC, à Québec/Neuville (CNV9), QC, avec le pilote et 2 passagers à bord. L'aéronef a effectué une approche en vue d'un atterrissage sur la piste 06. Après le toucher des roues, l'aéronef a rebondi et le pilote a ressenti une instabilité de l'aéronef. Jugeant qu'il était préférable de redécoller, il a remis les gaz. À la suite de la remise des gaz, l'aéronef a dévié vers la gauche et s'est incliné vers la droite malgré la deflexion maximale du palonnier de droite. L'aile droite a touché le sol et l'aéronef a terminé sa course dans le fossé du

côté nord de la piste. Les occupants, indemnes, ont pu s'extirper de l'aéronef. Une fuite de carburant s'est produite en raison d'une fracture du réservoir, mais aucun incendie ne s'est déclaré. La ra-

diobalise de repérage d'urgence s'est déclenchée lors de l'impact et a transmis le signal de détresse. Des pompiers ont été dépêchés sur les lieux de l'accident. 🚒

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# A YEAR OF PROMISE

## HOW GA PILOTS CAN STRENGTHEN THE CANADIAN AVIATION COMMUNITY



▲ Nate Couchman and Jason Kot stand in front of a Piper Pacer on skis after landing in an Ontario farm field.

The snow was holding back in early January in Southern Ontario, providing us with back-to-back flying days. While we wait for the lakes to freeze over, and the official ski flying season to begin, my friend Nate Couchman decided to get some practice flights in on his Piper Pacer and landed at our family farm. With the aircraft on approach into our snowy backfield, my fiancé playing hockey on the frozen pond, and snowmobilers racing through the neighbouring trails I couldn't help but think to myself, "It doesn't get more Canadian than this."

We are so fortunate to live in this incredible country and to be members of this unique and adventurous flying community. Despite our highest hopes for the New Year, the reality is that

we will likely experience another year fraught with challenges as the world navigates through a changing political and economic climate with relation to the Covid-19 pandemic. What does that mean for GA pilots in Canada?

For many, it means rethinking those flights down south and maybe exploring closer to home. Although many of our favourite fly-ins take place in the United States, this is a great opportunity to strengthen our Canadian aviation roots and reach out to pilots in other neighbouring communities.

In this month's article, I'm going to focus on ways we, as members of COPA, can become more involved in Canadian aviation and fill this year with new experiences and interactions. Let's all make an effort to fly to those out of the way places, join the local flight



▲ Nate Couchman with his Piper Pacer, a special family aircraft he took over from his father

clubs for their monthly BBQs in the summer months, and be present in an age where most people have lost touch.

It's important that we put all our hearts and passion into this community, so that we create better experiences for ourselves and generations to come.

The Covid-19 pandemic has made it difficult to interact in person during lockdowns and through the winter months. Taking part in virtual meetings is a great way to stay connected and to meet pilots whom you may not have run into otherwise.

Flight 26, based out of Kitchener, Ontario, holds a monthly pilot decision-making meeting which is currently being held over zoom. Cardinal Aviation has an excellent podcast that talks about dozens of different aviation related topics and speaks to Canadian aviators about their experiences. The COPA website is a great resource for upcoming events; and Instagram and Facebook will also showcase different things coming up in the future.

If you've never been to the COPA National Fly-in, it's a great year to consider joining in on the fun. This year's event is taking place in St. Jean, Quebec, June 24 through to the 27. St. Jean is a beautiful city located on the northern tip of Lake Champlain and flying through the Laurentians enroute would be such a treat. Check out recent issues of *COPA Flight* for more details.

Last summer, the BC General Aviation Association (BCGA) had a spec-

tacular idea of hosting "Brown Bag Fly Outs" - a socially distanced picnic fly-out series. Keep up to date via their website [www.bcaviation.ca](http://www.bcaviation.ca) for this year's upcoming events.

Their focus on flying to under-used airports is important and something we should make an effort to do as GA pilots. Many airports are struggling right now and a really great way to support them is by purchasing fuel and showing the municipalities that they are being used.

It is my personal commitment to take part in more fly-ins, especially the ones that are a little out of the way, or a little inconvenient to reach; and to drag out every aviator I know while I'm at it. I want to immerse myself in Canadian flying culture, listen to stories and learn from the wealth of knowledge that each of you possess.

Please feel free to contact me and let me know about any upcoming events at your home field, or places you'd really like to fly to, that maybe you haven't before. I'll do my absolute best to attend as many aviation related events and document the impact they have on our community.

I'll be sure to keep you updated this year with upcoming events and cool places to fly to in my newsletter. If you're interested be sure to subscribe at [www.pilotannie.com](http://www.pilotannie.com). 📧



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# TRAFFIC NOTIFICATION SYSTEMS

## HOW TECHNOLOGY IS NARROWING THE PILOT SKILLS GAP

**One of the benefits of ADS-B (IN) to General Aviation is traffic and weather notification. Currently, there is no Canadian ADS-B mandate for GA and no ADS-B 978 MHz infrastructure (also known as UAT). UAT is a ground-based system used in the U.S. for traffic and weather data. There are other traffic alerting systems like BFG's Skywatch and Garmin's active traffic, but they are installed in a small percentage of aircraft and are exceptionally expensive.**

Before the days of portable GPS, tablets and Electronic Flight Bags (EFB), collision avoidance was based upon see and be seen and radio communications. These are all elements of good airmanship and pilot skills, but technology can help narrow the gap of the "other guys".

NewAce Corp. of Mississauga, Ontario, founded by Stephan Edelman and Jeroen van Beukering, has been working on a traffic alerting system. Edelman is a pilot with an engineering background, who during flight training narrowly escaped a mid-air collision in the circuit. That experience prompted him to develop the Nemo system, focusing on collision avoidance for flight schools.

From a traffic perspective, the solution is comprised of three parts: A Nemo base station, which can also provide weather (see my Plane Tech article in the August 2020 *COPA Flight* edition); NemoScout portable device; and optionally NemoScout App installed on the pilot's smart device. The Nemo system has the capability to broadcast up to the minute weather information from a variety of weather sources. Edelman's goal is to deliver to airborne aircraft



▲ The NemoScout aircraft to aircraft radio data network extends the tracking coverage of each equipped aircraft.

ADS-B, Flarm/OGN (glider), limited mode-C and NemoScout traffic data using a consolidated ground station.

NemoScout data is stored in the cloud and advises flight-school staff of any near misses. Edelman explains, "Based upon eight deployed airports, the data is showing one near miss every 10 days." Nemo base stations are now installed at nine airports in Ontario: Arthur (CPC3); Brampton (CNC3); Brantford (CYFD); Burlington (CZBA); Grimsby (CNZ8); Guelph Airpark (CNC4); Kitchener/Waterloo; Lubitz Field (CLB2); Parry Sound (CNK4); and St. Thomas (CYQS) - with more on the horizon. To date, the bulk

of the NemoScouts are used in flight-school aircraft.

NemoScout is a small portable device that creates a mesh network between other NemoScout-equipped aircraft and Nemo base stations, typically located at airports. NemoScout, about the size of a matchbox, integrates a flight data recorder, altimeter, AHRS, GPS, LiPo battery, Bluetooth, an ISSED/FCC license free radio and microSD data card. NemoScout aircraft to aircraft radio data network extends the tracking coverage of each equipped aircraft.

NemoScout's airborne range for collision avoidance monitoring is up to 12 nm (forward), six nm (rearward) and 50 nm to a Nemo base station (2,800' or greater altitude). The currently deployed base station network provides a tracking coverage area over 100,000 km<sup>2</sup>.

Included in the kit is the NemoScout transponder, suction cup, charging cable, audio Y cable, swivel adhesive mount, 8 GB microSD card and retails for an introductory price of US\$199 plus shipping and taxes. NemoScout's App supports iPhone/iPad and Android smart devices. The audio Y cable allows a standard headset to be integrated into the NemoScout for delivery of verbal collision alerts.

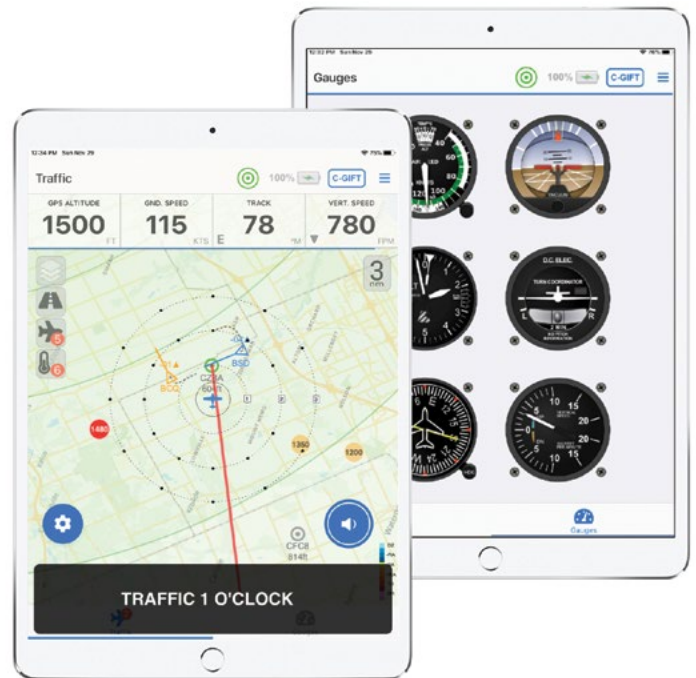
NemoScout provides situational awareness for aircraft in the circuit, in cruise and in a flight-training area. It provides the pilot with traffic avoidance visual and aural alerts of other NemoScout and ADS-B, Flarm/OGN transponder equipped aircraft. Included in the App is an obstacle database which will provide visual and audio alerts for

most manmade obstacles in excess of 200' AGL. Dennis Simo, CFI, Spectrum Airways, reports, "NemoScout augments mark one eyeballs and position reports for full situational awareness."

Most flight schools using the Nemo system have installed large LCD monitors in their dispatch area, displaying NemoScout-equipped aircraft on a map. From a customer service perspective, student pilots can see their assigned aircraft returning to the airport, helping to manage their time expectations. Operationally, the system provides flight schools with more efficiencies as instructors monitor the solo progress of their students. Telephone calls from Flight Service Stations for aircraft over due on flight plans are quickly dealt with thanks to the real-time tracking that the Nemo system delivers. With flight data recorded to the Nemo Cloud, flights causing noise complaints can be reviewed and the real data woven into the conversation with the neighbour.

The NemoScout App includes a moving map, traffic page and AHRS driven six pack. The App has an emergency mode, which when activated, signals other NemoScout-equipped aircraft operating within range to track, store and periodically announce the position of your aircraft, in real time. This approach helps reduce the sense of isolation for a pilot during the course of an emergency, allowing other pilots and instructors to help.

▶ NemoScout provides the pilot with traffic avoidance visual and aural alerts of other ADS-B, Flarm/OGN transponder equipped aircraft.



NemoScout utilizes BLE to communicate with a mobile device or tablet creating a peer-to-peer connection. To deal with multi end point connectivity (MEPC), Edelman created the NemoGDL90 USB dongle which allows multiple mobile devices to connect to a single NemoScout.

This has a number of practical benefits: many smart devices can connect to the NemoScout; converts NemoScout data to GDL90 format, allowing EFBS like ForeFlight or Garmin Pilot to use NemoScout's WAAS GPS, traffic and weather service; the size of a USB memory stick; and no configuration required (plug and play).

NemoScout is compatible with CloudAhoj, a flight analysis and debriefing tool used by many flight schools and instructors. CloudAhoj, when combined with stored AHRS data, is an invaluable tool during the post-flight ground briefing with students.

Fundamental to every flight is a successful departure and landing. See and be seen is a critical component, but with so much going on in the cockpit, a momentary distraction could lead to a mid-air collision. Innovators like NewAce provide cost effective tools to keep pilots safe. Checkout the PlaneTalk podcasts with Stephan Edelman on Apple, Google, Spotify and at [PlaneTalk.ca](http://PlaneTalk.ca).



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# INSIDE THE AVIATION INSURANCE MARKET

## UNDERSTANDING WHAT REMAINS OF THE HARD MARKET

**T**he year 2021 has one important job - to be better than 2020. As I write this article, we're almost half way through January and the proverbial "light at the end of the tunnel" provided by the anticipated vaccine rollout, seems to have dimmed in most parts of Canada as COVID-19 daily cases hit record levels.

As the world is struggling to navigate the financial and emotional fallout of a worldwide pandemic, the insurance market continues to undergo its own challenges with shrinking capacity, increased premiums, non-renewals, limited appetite for new business and extremely cautious underwriting. In the insurance industry, we call this a "hard market".

What started around 36 months ago in the aviation sector, the hard market is being felt in most lines of insurance. In simple terms, it occurs when losses outpace, or are suspected to outpace, insurance premiums. This is certainly the case in aviation. Other areas that are experiencing similar symptoms include: Property Insurance, Directors and Officers Liability and Cyber Liability, among others.

Last month I had the opportunity to speak to Underwriters from three different Canadian aviation insurers. I asked each to crystal ball the remaining duration of the hard market. Based on their responses, ranging from 18 months to five years, it remains unclear. What is clear, however, is that this hard market, combined with COVID-19, is extremely taxing for our Canadian aviation clients.

Bloomberg reported that total revenues for our nation's largest airline declined 86 per cent from third quarter of 2019 to 2020. COVID-19 has had the same crushing impact on general aviation. From remote fly-in fishing to unri-

valed back country heli skiing, Canada is a utopia for tourists looking for that once in a life-time outdoor adventure and relying on air travel to get there. According to Stats Canada, travelers from U.S. and other foreign countries was down 95.3

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*What started around 36 months ago in the aviation sector, the hard market is being felt in most lines of insurance.*

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per cent in Sept. 2020 compared to Sept. 2019. Equally impacted are several charter operators whose businesses have all but been halted due to the closure of the U.S./Canadian border, and the 14-day mandatory quarantine for any Canadian returning from abroad. In some cases, these operators are projecting revenue declines of 50 to 75 per cent.


FBO and airport revenues are also markedly off compared to prior years as they struggle to deal with a significant reduction in traffic and fuel output; caterers, cargo handlers, and other suppliers to the industry have been forced to lay off employees; and there's been a general slowdown of many peripheral businesses serving aviation.

On a positive note, despite initial shutdowns in the spring, most flying schools across the nation bounced back to full capacity with the appropriate measures in place to protect their employees and clients from the virus. Private aircraft owners continued to fly domestically throughout most of 2020. Notwithstanding, neither is immune to the impacts of a

hard market, including increased premiums, reduced limits, higher deductibles, or other changes and restrictions.

Arguably, the hard market started to see as slow recovery in early 2020, but this has since been stalled by the ongoing impact of COVID-19. Insurers have given back sizeable premiums over the past 10 months, despite ongoing losses. Regrettably, and to make matters worse, we are facing yet another lockdown in several parts of Canada. Despite this, it was reassuring to hear from one Underwriter that "it's vitally important that as an industry, we find the right balance between sustainability of the insurance marketplace and sustainability of our clients' businesses". Similarly, it is imperative that the industry strike the right balance between the need to improve loss performance and the affordability of insurance for private aircraft owners, including COPA Members.

At Magnes, we recognize that if the insurance market continues at this pace for another two years, it could well result in our customers reducing their insurance spend through self-insurance or other risk management methods or worse, selling their aircraft. We are in daily communication with Insurers to ensure we are finding ways to manage the losses and keep insurance affordable. In pursuit of this shared goal, we applaud COPA's efforts, and any Canadian pilot for that matter, in their initiative to improve the safety and proficiency of flying, thereby improving loss performance by reducing the risk of accidents.

The Magnes Group is the endorsed broker for COPA's VIP Insurance program. For more information please contact our toll-free number at 1855-VIP-COPA (1-855-847-2672) or email us at [vipcopa@magnesaviation.com](mailto:vipcopa@magnesaviation.com). Stay safe. 



# LE MARCHÉ DE L'ASSURANCE AVIATION

## LIRE LA FIN DES TEMPS DIFFICILES DANS UNE BOULE DE CRISTAL

**L**a résolution incontournable de 2021 : surpasser 2020 ! Au moment où j'écris cet article, nous sommes presque à la moitié du mois de janvier, et la proverbiale « lumière au bout du tunnel » anticipée par le déploiement du vaccin semble avoir perdu de l'intensité dans la plupart des régions du Canada, alors que les cas quotidiens de COVID-19 atteignent des sommets records.

Et Tandis que le monde a du mal à gérer les retombées financières et émotionnelles d'une pandémie n'épargnant aucune région du globe, le marché de l'assurance continue de faire face à ses propres défis d'affaiblissement des capacités, d'augmentation des primes, de non-renouvellement, d'attrait limité pour les nouvelles affaires et de souscription extrêmement prudente. Nous, dans le secteur de l'assurance, appelons cette situation un « marché difficile ».

Ce marché difficile - qui a commencé il y a environ 36 mois dans le secteur de l'aviation - se fait maintenant sentir dans la plupart des types d'assurance. En termes simples, cela se produit lorsque les pertes dépassent ou sont soupçonnées dépasser les primes d'assurance. C'est certainement le cas de l'aviation. Le mois dernier, j'ai eu l'occasion de parler aux souscripteurs de trois assureurs canadiens oeuvrant dans le secteur de l'aviation. J'ai demandé à chacun de lire leur boule de cristal pour estimer la fin des temps difficiles. Leurs réponses - variant de 18 mois à 5 ans - m'ont laissé perplexe. Ce qui est très clair cependant, c'est que le marché difficile, combiné aux aléas de la COVID19, a constitué un cocktail extrêmement éprouvant pour nos clients de l'aviation canadienne.


Bloomberg a rapporté que les revenus

totaux de la plus grande compagnie aérienne de notre pays ont diminué de 86 % du troisième trimestre 2019 à 2020. Les revenus des exploitants de services aéronautiques et les aéroports s'avèrent aussi nettement inférieurs à ceux des années précédentes, alors qu'ils doivent composer avec une réduction considérable du trafic et de l'approvisionnement en carburant.

Sur une note positive, malgré les premières fermetures au printemps, la plupart des écoles de pilotage du pays ont retrouvé leur pleine capacité, en appliquant les mesures sanitaires prescrites pour protéger leurs employés et leurs clients contre le virus. De même, les propriétaires d'avions privés ont continué de voler au pays pendant la majeure partie de 2020. Néanmoins, ni l'un ni l'autre n'est à l'abri des impacts d'un marché difficile, se traduisant notamment par des primes accrues, des limites réduites, des franchises plus élevées ou d'autres

importantes au cours des dix derniers mois, malgré des pertes continues. Malheureusement, et pour aggraver les choses, nous sommes confrontés à un autre confinement dans plusieurs régions du Canada. Malgré cela, il était rassurant d'entendre un souscripteur dire « qu'il est d'une importance vitale en tant qu'industrie de trouver le juste équilibre entre la durabilité du marché de l'assurance et la durabilité des activités de nos clients ». De même, il est impératif que l'industrie trouve le juste équilibre entre la nécessité d'améliorer les pertes de performance et l'accessibilité de l'assurance pour les propriétaires d'aéronefs privés, y compris les membres de la COPA.

Chez Magnes, nous sommes d'avis que si le marché de l'assurance continue à ce rythme pendant encore deux ans, cela pourrait bien conduire nos clients à réduire leurs dépenses d'assurance en se tournant vers l'autoassurance ou vers d'autres méthodes de gestion du risque ou, pire encore, à vendre leurs avions. Nous sommes en communication quotidienne avec les assureurs pour trouver des moyens de gérer les pertes et garder l'assurance abordable. Dans la poursuite de cet objectif commun, nous saluons les efforts de la COPA en tant que regroupement et de tout pilote canadien en tant qu'individu dans leur initiative visant à améliorer la sécurité et les compétences de pilotage, améliorant du même coup les pertes de performance en réduisant les risques d'accident.

Groupe Magnes est le courtier approuvé du programme d'assurance aviation VIP de la COPA. Pour plus d'informations, veuillez communiquer sans frais au 1 855 VIP-COPA (1 855 847-2672) ou nous envoyer un courriel à [vicopa@magnesaviation.com](mailto:vicopa@magnesaviation.com). Soyez prudent ! 

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*Ce marché difficile - qui a commencé il y a environ 36 mois dans le secteur de l'aviation - se fait maintenant sentir dans la plupart des types d'assurance.*

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changements et restrictions.

On peut soutenir que le marché difficile a commencé à s'adoucir au début de 2020, mais les impacts de la COVID-19 sont venus miner tout espoir de progrès. Les assureurs ont remboursé des primes



# DIAMONDS OF THE SKY

## INSIDE THE CANADIAN POWERHOUSE OF THE GENERAL AVIATION INDUSTRY

BY JON ROBINSON

**D**iamond Aircraft Industries GmbH is now the number-two manufacturer of new piston-engine aircraft, globally, and aiming to wrestle away the top spot from Cirrus Aircraft within the next three years. This potential to put more Diamonds in the sky is fueled in large part by the company's Diamond Aircraft Industries Inc., North America (DAI North America), operation in London, Ontario.

Headquartered in Austria, Diamond GmbH also leverages a growing facility in China's Wanfeng Airpark, where its new corporate owners reside, as well as the aviation's leading diesel engine plant Austro Engine GmbH, founded in 2007 to exclusively power Diamond's carbon-fibre airframes – burning jet fuel, instead of low-lead avgas – along with some incredible industrial Remotely Piloted Aircraft Systems like Schiebel's CAMPCOPTER S-100.

To put the importance of the London facility into perspective, however, consider the Wiener Neustadt plant in December 2020 celebrated building its 500th single-engine DA40 NG, whereas DAI North America has now made more than 1,350 of the same aircraft. The Type Certificates for the DA40 (both the NG and Lycoming models) and multi-engine DA62 were moved to Canada in 2016. The London plant already held rights to produce the DA20, including its current exclusive build of the DA20-C1 now accounting for more than 700 delivered aircraft – among more than 1,100 DA20s built in Canada.

The DA42 is the only Diamond plane not being produced in Canada, as well as the new DA50 RG, which in September 2020 received its first Type Certification from EASA. By the end of 2021, however, Diamond plans to establish a new production line in London to build the DA50 RG, featuring retractable gear, a highly anticipated arrival

▲ The new DA50 RG weighs just over 1,200 pounds and is rated for a fuel consumption of only 34.1 litres per hour (or nine U.S. gallons) at maximum range.

expected to mirror certifications from both the FAA and Transport Canada.

### LONDON AND THE FLEET

DAI North America's presence in London measures 220,000 square feet, in addition to two 20,000-square-foot hangars, sitting on 55 acres of owned land with a taxiway and through-the-fence access agreement with London International Airport, as well as the Diamond Flight Centre and Katana Kafe located at the runway end of Blair Blvd. There is plenty of room to accommodate more production in London, but the new DA50 RG line will fit nicely into its existing footprint as Diamond prepares to increase its reliance on Canada and eat into Cirrus' market share.

“Where Cirrus really had us beat was the high-performance single targeted at the private or owner-flown market; and we have two new models that compete very aggressively in the DA62 and new DA50 coming down the pipe,” says Scott McFadzean, CEO, DAI North America, noting these two models provide Diamond with a portfolio stretching from private owners to charter operations. McFadzean has spent almost 20 years with DAI North America, progressing through a number of roles, before his promotion as CEO in January 2018.

“We have private customers and business owners, but they were typically buying a DA40 to learn how to fly or it was their first airplane, because it is so docile and forgiving,” he says. “It’s a great airplane to learn to fly in; and to take your family in and be completely safe. But typically people will want to move up to a larger, faster airplane at some point and we didn’t really have that option in the Diamond portfolio.”

With the DA62 and DA50, McFadz-

▼ Scott McFadzean, CEO, Diamond Aircraft Industries Inc., North America, in London, Ontario.



ean explains no competitor in General Aviation can serve all of the different segments like Diamond, from a two-seat VFR trainer and four-seat, single-engine IFR airplane for training, as well as the DA42 Twin, to the seven-seat “flying SUV” DA62. The five-seat DA50 RG, which during its 2017 introduction was envisioned to include six- and seven-seat variants, shares family ties with the twin-engine DA62.

“The DA50 takes everything that we have done so well on the DA62 and matches it up into a single-engine configuration, with the same cabin and cockpit, just obviously with an engine on the nose versus [two] hanging off of the wings,” McFadzean explains, comparing their modern design to trends in the automotive sector. “It creates or fills a niche we see [growing] in General Aviation... People want to have space to carry more, travel further and have that luxury, convenient and comfortable private travel experience.”

With its all-carbon-composite airframe, the jet-fuel burning DA50 RG weighs just over 1,200 pounds and is rated for a fuel consumption of only 34.1 litres per hour (nine U.S. gallons) at maximum range - 750 nautical miles (1,389 kilometers). Leveraging a six-cylinder, 300-horsepower Continental CD-300 diesel engine, with dual redundant FADEC, integrated gearbox and propeller governor, the DA50 RG is rated for a max speed of 181 KTAS and 20,000-foot ceiling. The aircraft features Garmin G1000 NXi avionics, gull-wing doors and a cargo door, and double-slotted flaps for high lift and strong slow-speed behaviour in flight.

“Diamonds are a luxury brand and, historically, the capital purchase prices are slightly more than that of our competitors,” McFadzean explains, noting the importance of considering Total Cost of Ownership and cost per flight hour. “When you get into parts costs, maintenance costs, those are all fairly comparable. But then you get into fuel savings and that is where we really run away with it, because we’re burning not only 40 per cent less fuel, if you’re



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talking about the same horsepower gasoline engine, but also fuel that's typically \$1 to \$2 cheaper per gallon."

### SAFETY AND SALES

Diamond a few years ago started an aircraft trade-in program, which ultimately led to its Certified Pre-owned business model, where the factory will replace all parts that are less than 70% life limit, typically give the plane fresh paint and new interior, zero-time prop, and renewed factory warranty. McFadzean explains trade-in activity typically matches TBO timelines, when owners might consider overhauling an engine. "Maybe they want the new airplane, but can't quite afford it yet," McFadzean says. "It gives them a lower entry point into an airplane that's been completely refurbished by the factory and goes out the door looking like new."

Diamond is now moving away from its factory-direct sales model, once again taking on a distribution approach in North America. "We feel customers are best served with one dedicated person or company that can walk them through the buying decision," McFadzean says. "They'll help them deal with the trade, as well as take care of any of their servicing and parts or training needs. It's really a one-stop shop for the customer to give them that higher level of service a dealership can offer."

DAI North America in November 2020 reached a renewed agreement



▲ Leveraging a six-cylinder, 300-horsepower Continental CD-300 diesel engine, the DA50 RG is rated for a max speed of 181 KTAS and 20,000-foot ceiling.

with Aviation Unlimited to serve as its exclusive partner in Canada. Founded in 1983, Aviation Unlimited specializes in high-performance, technically advanced, owner-flown aircraft - serving as one of Canada's longest continuously operating General Aviation companies. Headquartered at Oshawa Executive Airport, Aviation Unlimited is a Transport Canada AMO based out of Hangars 1 and 2 at Buttonville Municipal Airport. "Aviation Unlimited has been

a strong partner of ours in the past... We're very happy to have them serving the Canadian market," says McFadzean. "They are going to represent the brand very well."

One of the greatest strengths of the Diamond brand is safety, largely based on designing its initial platform more recently than most OEMs, using modern resources and what McFadzean again describes as modern automotive concepts. He outlines Diamond's phi-



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▲ Celebrating their renewed partnership in late-2020 are (left to right): Trevor Mustard, Aircraft Sales Manager, Diamond Aircraft North America; Solly Capua, President, Aviation Unlimited; Isaac Capua, VP, Aviation Unlimited; Scott McFadzean, CEO, Diamond Aircraft North America; and Annemarie Heikenwalder, Aircraft Sales Manager, Diamond Aircraft North America.



losophy of active and passive safety. “Active safety for us means how do we prevent the accident from happening in the first place; and that’s about aerodynamics and flight characteristics, so that when you fly a Diamond and you approach a stall, or you’re even in a fully developed stall, you do not have any nasty wing drops or coffin corners,” McFadzean explains, as an example. “It’s a very docile stall and you have full aileron control through the stall. It gets a bit mushy, but you can turn and control the airplane.”

McFadzean explains Diamond’s handling characteristics provide active safety throughout all phases of flight, aided by a design with unobstructed views in the canopy and steel control rods that do not stretch or degrade over time.

“Probably the most revolutionary thing Diamond did was to put tremendous focus on protecting the fuel,” he says, as an example of the company’s passive safety measures to address a reality that not all accidents are prevent-

able. “We designed a carbon-capped, dual wing spar and put aluminum fuel cells in between the spar with TSO stainless-steel braided fuel lines, none of which run through the cabin.”

McFadzean explains Diamond also leverages a 26 G safety cell, a design borrowed from the evolution of Formula One to protect the cockpit. He also points to Diamond’s longstanding development with Garmin, beginning with the DA42 serving as the launch aircraft for the G1000 avionics system.

“Now we’re into G1000 NXi on new aircraft and we continue to certify and unlock a number of very interesting features,” McFadzean says, describing glass-cockpit advantages for situational awareness. “We’re getting to the point where we’re showing all of the wires, telephone wires, power lines, in

real time on moving maps. We have 3D Audio where you can tell the direction of the voice... It will say, ‘Traffic, same altitude, two o’clock’ and the voice will come from two o’clock so that your head automatically turns. We’re trying to keep people from burying their heads in the cockpit.”

Even as advances found in the DA50 RG and DA62 allow Diamond to push into new Business Aviation segments, DAI North America’s importance to General Aviation is not lost on McFadzean. “It’s really the foundation of all things aviation. No pilot can fly anything until they start here,” he says. “The other thing that often gets overlooked in GA is just the ultimate kind of flexibility... Having a personal time machine and the ability to go anywhere you want.”

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# Aircraft Total Cost OF OWNERSHIP

FROM FIXED TO VARIABLE COSTS, HOW TO EVALUATE YOUR NEXT AIRCRAFT PURCHASE

BY PHIL LIGHTSTONE

**A**ircraft ownership can be expensive based upon the type of aircraft. Affordability can be achieved through partnerships or purchasing an older basic aircraft, allowing pilots of all economic brackets to enjoy the benefits of ownership. Andre Robillard of Toronto, who owns a C172RG in a partnership explains, "Ownership can be affordable and you don't have to be rich to own. It's really about rethinking how you spend your disposable income."

Aircraft Total Cost of Ownership (TCO) can be lumped into two categories, fixed and variable. Variable costs are those associated with usage such as fuel and oil. Fixed costs are those which occur regardless of the number of hours flown, occurring annually, every two years, and every 10 years. Occasionally there are extraordinary costs, which are difficult to be foreseen and costs can increase year over year. For example, during 2020, insurance premiums increased between 20 and 30 per cent. During the past 10 years, technology has added new costs, such as annual application subscription costs. The financial numbers outlined below are estimates in Canadian dollars, excluding taxes and shipping and may vary based upon geography and aircraft model/type. As you create a working budget, select an aircraft that will fit into your acquisition and operating budgets.

TCO can be impacted by the aircraft you purchase and the quality of the pre-purchase inspection. Picking the



right aircraft, both in terms of the make/model aligning to your mission (and budget) and specific aircraft, will impact the costs you incur during the first few years of ownership. The pre-purchase inspection should yield a list of deficiencies which require remediation, falling into three categories: Regulatory (Airworthiness Directives), safety (Service Bulletins) and nice to have, such as panel upgrades. A budgetary report should be included in the pre-purchase report, providing line by line cost estimates. This will help quantify the true purchase price of the aircraft, allowing you to make a wise purchase decision.

Consider establishing a maintenance fund, where money is set aside for each hour that the aircraft is flown. The maintenance fund would include engine, prop, and wear and tear. For example,

▲ The Cirrus SR20 is rated for 215 horsepower, max cruise speed of 155 kts, max operating altitude of 17,500 feet, and a max range of 709 nm at 55 per cent of power.

an average engine overhaul, could cost \$50,000. With an engine Time Before Overhaul (TBO) of 2,000 hours, that's \$25.00 per hour toward your hourly engine reserve. Knowing when to overhaul helps defer capital costs to the appropriate time. How pilot/owners operate their aircraft should be considered in terms of extending the aircraft's engine life. There is no regulatory requirement, however, to overhaul an engine at a specific time frame.

There are many different types of engine overhauls, with different costs. Extending the number of hours past rec-

ommended TBO, will extend the time horizon of a large expenditure.

Fixed costs include airport tie down/hanger, insurance, regulatory fees, annual inspections, professional services fees, subscriptions, U.S. Customs and Border Protection fees, IFR certification fees, and banking fees - to name a few. For those holding their aircraft in a provincial or federal corporation, accounting and legal fees can range from \$1,000 to \$4,000 or more per year, based upon the complexity of your aviation corporation and how much of the record keeping you do (as opposed to providing a shoe box of receipts). Annual subscriptions include flight scheduling software, avionics databases, maintenance software, electronic log books like PlaneLogix and Airbly, and aircraft maintenance services like Savvy.

Non-annual fixed costs are those which are either time or date related; and also include regulatory compliance costs. For example, the Canadian Aviation Regulations (CARs Standard 625 Appendix C) includes a 10-year propeller inspection and overhaul rule (based on manufacturer's guidelines). A typical overhaul budget is \$2,000 per blade, but that can go up as the complexity of the propeller (and governor) increases. During the prop overhaul process, the shop could find that your prop is cannot be overhauled, and must be replaced. A three-bladed prop, with governor could cost as much as \$15,000. Magnetos require overhaul at 500 hours, which could cost \$800 or more. In 2020, Transport Canada regulated the requirement for a 406 MHz ELT, which could cost up to \$2,000 for an average piston aircraft.

Variable costs include fuel, oil, landing fees, air navigation fees, call-out fees, de-icing fees, and overnight parking. Cost of fuel can vary depending upon the specific airport. In Southern Ontario, 100LL can vary by \$.59 per litre. Oil and filter changes are typically changed every 25 to 50 hours of flight, depending upon your personal view to engine maintenance. Investing into oil analysis (typically \$65) can help guide you in the engine decision-making process.

TCO can be reduced through a variety of mechanisms. The CARs allow for owners to conduct specific maintenance including (but not limited to) oil changes, spark plug maintenance, tire changes, and light bulb replacement. The Canadian average for AME hourly rates is roughly \$90 per hour. The cost of an oil change at a Toronto AME for a Cessna 172 is \$400. Flying 100 hours a year, and following the engine manufacturers recommendation for oil change durations (25 hours), you could pocket up to \$720 per year by saving the labour costs.

Purchasing that new technology gadget or aircraft upgrade can add costs, while delivering new functionality, which is completely optional based upon budget. Vortex generators and heads up displays are good examples. Other upgrades may include: Paint, interior, electronics, panel, engine and airframe. Performance improvement components are designed to improve the speed of the aircraft, using the same power settings while reducing fuel consumption. Knots to You and LoPresti manufacture a number of airframe components like flap and aileron gap seals designed to improve the aerodynamics of the aircraft. You should consider that the performance improvement may increase the value of the aircraft at the time of sale.

Investing capital into your aircraft can be viewed as protecting the aircraft, both from value and life expectancy perspectives. Adding a Graphic Engine Monitor will display and record critical engine operating parameters, such as exhaust gas temperature (EGT) and

cylinder head temperature (CHT) and aid in the leaning process. CHT and EGT temperatures will rise as the engine is leaned, which will reduce the amount of fuel consumed (GPH). Correctly setting the engine will dramatically reduce GPH and reduce flight cost per hour. The Commander 114B which I fly, on take off (full throttle, full prop and mixture rich) will consume 24 GPH. At cruise, leaned out, the aircraft burns (on average) 14 GPH. Based upon current 100LL prices, that's a savings of \$22.30 per hour, when I lean the engine properly. Based upon flying 100 hours per year, that's a total savings of \$2,230.

To help reduce costs consider a partner or adding a block timer to the aircraft. Partners and block timers will reduce your financial obligations. Partners reduce your capital and fixed costs. Like marriage, it's easy to get into a partnership but difficult to get out. On the other hand, block timers that contribute to the operating costs are easier to add and remove, but typically do not contribute to capital expenditures.

Aircraft ownership opens a Pandora's Box of decisions, emotions and financial responsibilities. Offsetting the financial costs is the pride of ownership and the ability to have unfettered access to an aircraft. Aircraft ownership can be affordable, based upon type, location and sharing through partnerships and block time arrangements. Some pilot/owners have had the good fortune to own many aircraft during their lifetime, while others have just one become part of the family, which is priceless. 🇨🇦



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## FLIGHT SIMULATION

# DESKTOP SIM, HELP OR HINDERANCE

### COMBINING THE WORLDS OF DESKTOP SIMULATORS AND FLIGHT TRAINING

BY STEVEN GARNER

**Toward the end of November 2020, the weather cleared enough that I was able to complete my lifelong dream of becoming a pilot. Now that my primary training is over, I have been reflecting on the role that my desktop flight simulator played in assisting or hindering my training. I completed my PPL in a year and a half (even with COVID-19) and in 68 hours. This is roughly average so did the desktop simulator help?**

The question is largely rhetorical since it is impossible to know how I would have performed if I did not have the simulator. Having said that, I think I have a pretty good sense of what worked and what did not work for me. For others, the results might be different based on the way you learn. In the end, perhaps my experience will show a glimpse of what a desktop simulator can do to assist with your flight training.

I began flying PC flight simulators when Microsoft Flight Simulator came out in the early 1980s. Even then, I thought the technology was amazing and it has since evolved to become spectacular. Using flight simulators for so many years I thought would provide a measurable advantage when I began the real thing. To my surprise, this was not entirely the case.

When I sat in the cockpit for my first lesson everything looked familiar, but I was not wholly prepared for how the feel of flight would throw me off. It took me a while to get the hang of it and I soon realized a real plane is actually



▲ Steven Garner in late 2020 proudly displays his newly minted licence.

quite a bit easier to fly than the simulated version. For example, trimming an aeroplane in the simulator is extremely difficult but the real one is not. Moreover, the lack of peripheral vision in the simulator makes landing difficult although virtual reality really helps here.

Perhaps the biggest drawback I felt was that I had to spend time unlearning bad habits. In the simulator, I flew a plane that had no carb heat. In the real plane I would often forget it. In the simulator I would often pitch using trim first and referencing the vertical speed indicator rather than pitch visually then trim to maintain attitude. Checklists – who needs those in the simulator.

Once I got into flight training and learned how to do things correctly, I started to use the simulator less as a

PHOTO: PROVIDED BY STEVE GARNER

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toy and more as a practice tool. I found it useful for developing muscle memory and checklist discipline. It was amazingly useful when I did cross-countries as the simulated environment was accurate enough to provide the same views you have on real approaches, everything looked very familiar.

By far the biggest benefit is for instrument training. Once I put the hood on, I find very little difference between flying the real aeroplane and the simulator. I'm locked into the pure visual cues that you work from when flying on instruments and the experience is exactly the same in the simulator, apart from the motion. This then makes the simulator a fantastic tool for maintaining instruments skills.

Perhaps the most amazing development in home flight simulators is virtual reality (VR). If you can get used to the headset, nothing beats this immersive experience and peripheral vision you gain. VR provided just enough realism to make practicing landings in the simulator practical. Perhaps the most startling aspect is you start to get a sense of motion in VR which you do not have when just flying by a monitor. The first time I took off in VR, I could have sworn I was actually lifting off the ground!

So, did my PC simulator help me with training? I caught onto instrument flying almost immediately and that was aided through my simulator experience - no doubt in my mind. Using the simulator outside of VR likely tripped me up on some things, but VR was a game changer. I find myself using the simulator more to practice my skills and check out new airports and, at times, I can truly forget I am in a simulation with current VR.

There are two leading choices for VR flight simulation, X-Plane and Microsoft Flight Simulator 2020. Both are great, but I am finding Microsoft is providing a rich visual fidelity in VR that is a joy. My simulator setup: Windows 10 PC Intel Core i7-8700 CPU @ 3.20GHz; 16 GB RAM; GTX 1070 Graphics Card; Windows Mixed Reality headset, Samsung Odyssey; Logitech G Saitek PRO Flight Rudder Pedals; and CH Flight Sim Yoke. 🎮

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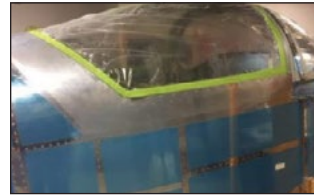
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The following are common abbreviations used in Canadian Plane Trade classified advertising. When counting an ad for insertion charges, each abbreviation is one word. When more than one abbreviation is shown, first given is preferred.



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  
FREMAN,  
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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Gene Hembree is our buyer. Please contact him at 330-698-0280 ext.224 [gene@preferredairparts.com](mailto:gene@preferredairparts.com)

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# MY JOURNEY TO THE FLIGHT DECK

BUILDING A LASTING PASSION FOR THE WORLD OF AVIATION

BY ALLISON COUCH

**I have always been attracted to aviation. Probably because of my father, who was an Aircraft Maintenance Engineer and is the biggest aviation enthusiast. My incredible journey in this industry began when I was a young girl growing up in Singapore. I was born in Montreal, but at a young age my family moved half way around the world when my father was transferred. From being around industry professionals, attending airshows, and sitting in the jump seat of a Boeing 747 as a child, I knew I had found my passion.**

Following my high school years, I studied Aviation Management at Georgian College. After graduation I worked for air ambulance service provider Ornge Air as an aerodrome conformance specialist, overseeing the inspection and maintenance of more than 80 helipads across Ontario. Wanting to be up close to working airplanes, however, I moved into maintenance planning at Skyservice Business Aviation, where I learned much about the world of business aviation. Working full time, I was also able to take-up flying lessons and earn my Private Pilot's Licence. I was subsequently bit by the travel bug and joined Emirates Airlines in Dubai as a flight attendant. I wanted to see the world, and more importantly, needed to build-up my savings to continue commercial flight training. I took advantage of the time in Dubai to further my education and obtained a Master's Degree in Aviation Management.

I've been privileged to travel the world to more than 70 countries, to places I did not even know existed. This international experience taught me how to work as an integrated team member with colleagues from a multitude of cultures. My fondest memories are from Jordan where I spent a week travelling the country with the ladies from the Arabian section of The Ninety-Nines.

I met an amazing group of accomplished female pilots, from all around the world, full of enthusiasm and passion for the industry and with a strong camaraderie of support and wisdom for aspiring young professionals. It was encouraging and, in 2019, I made the hard decision to leave my career as a flight attendant, eager to complete my commercial pilot training. I packed my bags, returned to Canada, and enrolled full time in the Integrated Airline Transport Pilot Licence (IATPL) program at Brampton Flight Centre.

I also joined Women in Aviation and The Ninety-Nines, both great organizations that support, encourage and mentor female pilots; and indeed support all women wishing to enter



▲ Allison Couch with a Cessna 172 G1000 preparing for her CPL at Brampton Flight Centre.

any career field in aviation. I met some incredible women who have been there for me, through every step of my career. I even served a term as president of the Upper Canada Chapter for Women in Aviation International. Becoming a commercial pilot can be a fulfilling and rewarding career, but it takes discipline, commitment and hard work to achieve your aspirations. Flight school is very intense and expensive, with the IATPL program consisting of both hands-on flying along with hundreds of hours of ground school instruction.

The program is comprised of five phases, including: 1) Private Pilot License, 2) Commercial License and Night rating, 3) Multi-engine rating, 4) Instrument rating, and 5) Airline Transport Pilot training. With a planned completion for the first quarter of 2021, I am now in the final phase preparing for the ATPL exams which are on the horizon and fast approaching, along with Multi-Crew Coordination training.

A key piece of advice I would offer anyone interested in becoming a pilot is the sooner you get started, the better. I would also encourage anyone with an aviation interest to become involved in organizations that offer vital support to start and grow your career. And do not forget, there are numerous scholarship opportunities available that can lessen the financial burden of not only flight training. Also... always, always, always network with your peers and others in the industry. In fact, it was networking that gave me the amazing opportunity as co-pilot on a PC-12NG to get a real taste of flying international routes on a turbine powered aircraft. 🌍

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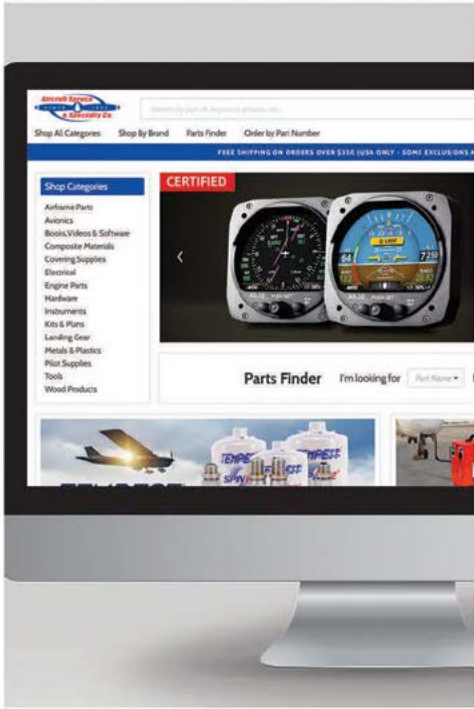
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