

Clare Leavens Award • Joe Chase Award • Aviall High Achievement Award



AirMaintenance

UPDATE

The Magazine for Aircraft Maintenance Professionals



The rising use of
Sustainable
Aviation Fuel

Orders roll in for Airbus

PAMA
and AME
news

Transport Canada Approved for R/T



Publication Mail Agreement No. 0041039024
and Return Undeliverable Canadian Addresses to
Alpha Publishing Group (2004) Inc.
Unit 7, 11771 Horseshoe Way, Richmond, BC, V7A 4V4
email: amumagazine@outlook.com

February - March 2020
Volume 18/Issue 5

\$7.95

the **Amazon** stairclimber

the **AUTOMATED** lifting solution



- safe, dignified passenger transfer
- self-propelled: no lifting required
- versatile: used on commercial and corporate aircraft
- simple and easy to operate: training provided
- lifts 350 lbs. / 160 kg with the push of a button
- portable: use at base or take it with you

- compact and lightweight
- transports passengers quickly
- ensures fast and efficient turn times
- reduces risk of injury to staff and passengers
- unique, specialized design
- patented braking system



BKD Aerospace Industries Inc.

Call us for a quote or visit our website for more details.
Watch our online videos at www.bkdaerospace.com

Tel: (604) 247-2128
Fax: (604) 214-9825

info@bkdaerospace.com
Unit 7 — 11771 Horseshoe Way
Richmond BC V7A 4V4 Canada

Going electric: Project ACCEL

Rolls-Royce unveils
record book aspirations

Pick an industry, any industry, that produces internal combustion machinery and you'll find R&D departments busy planning electric platforms with an eye to near future production models. To end the year 2019, Rolls-Royce announced its ambition to build the world's fastest all-electric aircraft had taken an important step forward with the unveiling of the plane at Gloucestershire Airport. The company says its zero-emissions plane will make a run for the record books with a target speed of 480-plus kmh in late spring 2020.

The plane is part of a Rolls-Royce initiative called ACCEL (Accelerating the Electrification of Flight) and is a key part of the company's strategy to champion electrification. The project involves partners including electric motor and controller manufacturer YASA and the aviation start-up Electroflight.

ACCEL will have the most power-dense battery pack ever assembled for an aircraft, providing enough energy to fuel 250 homes or fly from London to Paris on a single charge. Its 6,000 cells are packaged to minimize weight and maximize thermal protection.

The propeller is driven by three axial electric motors and combined, they'll continuously deliver more than 500 horsepower for the record run. Even during the record run the all-electric powertrain delivers power with 90 percent energy efficiency (in comparison, a Formula 1 race car tops out at close to 50 percent energy efficiency). ■

Departments

- 4 Upcoming Events
- 6 STCs & New Products
- 7 Hiring
- 8 Industry Forum
- 26 AME Association and PAMA News
- 39 Classifieds
- 42 AMU Chronicles



Features

- Sustainable Aviation Fuel** 10
The rising use of SAF
- Transport Canada "Feedback"** 18
Service Difficulty Reports
- Orders Keep Rolling In** 24
Airbus hits new heights in aircraft sales
- A Broken Bracket** 32
Raising the Bar
Quad City Challenger II, C-IGKT, CH2-1199-1919

AMU is viewable online: subscribe and download at <https://amumagazine.com>

AirMaintenance Update

Unit 7, 11771 Horseshoe Way
Richmond BC V7A 4V4 Canada
phone: (604) 214-9824 • fax: (604) 214-9825

Published by Alpha Publishing Group (2004) Inc.

Publication Mail Agreement Number 0041039024
and Return Undeliverable Canadian Addresses to:
Alpha Publishing Group (2004) Inc.
Unit 7, 11771 Horseshoe Way
Richmond BC V7A 4V4 Canada

chrissee@amumagazine.com website: <https://amumagazine.com>

editor: John Campbell
art director: Cliff Vickstrom
publisher: Bill Carter

sales manager: Bill Carter
Advertising Inquiries: (604) 214-9824

production manager: Chrissie Auclair
circulation: Anne Gervin

Subscription Rates: 1 Year: \$40 2 Years: \$60
AirMaintenance Update is published 6X annually.
AirMaintenance Update may not be reproduced in
whole or in part in any form without the express written
permission of Alpha Publishing Group (2004) Inc.
Copyright 2016 Printed in Canada

Corporate Member of:



This publication neither endorses nor confirms the information contained within. The appropriate authorities should be contacted prior to commencing work on any aircraft or aircraft part or procedure.

Publications Mail Registration No. 0007198278

ISSN 1703-2318

Upcoming Events

Boeing addresses new 737 MAX software issue



News agency Reuters reported in late January that Boeing is addressing a new software issue discovered in Iowa during a technical review of the grounded Boeing 737 MAX, a development that could further delay the plane's return to service.

"We are making necessary updates," Boeing said in a statement. Officials at the planemaker said the issue relates to a software power-up monitoring function that verifies some system monitors are operating correctly.

One of the monitors was not being initiated correctly, officials said. The monitor check is prompted by a software command at airplane or system power up, and will set the appropriate indication if maintenance is required, company officials added.

As mentioned in 'Industry Forum' this issue, Boeing has halted production of the 737 MAX after two fatal crashes in five months killed 346 people. U.S. regulators are waiting for an update from Boeing on how they will resolve the issue. The FAA is now unlikely to approve the plane's return until March but it could take until April.

Also in January, the FAA and Boeing said they were reviewing a wiring issue that could potentially cause a short circuit on the grounded 737 MAX. Officials said the review is looking at whether two bundles of wiring are too close together, which could lead to a short circuit and potentially result in a crash if pilots did not respond appropriately.

(Filed by David Shepardson for Reuters.)

Advanced Transportation Manufacturing Summit

February 4 - 6, 2020
Toronto, Ontario
www.theoac.ca

25th Annual Manitoba

Aviation Symposium
March 5 - 6, 2020
Winnipeg, Manitoba
www.camea.ca

Yuma Air Show

March 13 - 14, 2020
Yuma, Arizona
www.yumaairshow.com

Aerospace Tech Week

March 18 - 19, 2020
Toulouse, France
www.aerospacetechweek.com

Tampa Bay Airfest 2020

March 28 - 29, 2020
Tampa Bay, Florida
www.tampabayairfest.com

ARAMC 2020

April 22 - 24, 2020
St. John's Newfoundland
www.atlanticame.com

MRO Americas

April 28 - 30, 2020
Dallas, Texas
www.mroamericas.aviationweek.com

Advertisers Index

APS Brakes / Aero Incorporated	9	Concorde Battery	25	MARSS	38
Aeroneuf Instruments Ltd	33	Eagle Fuel Cells Inc	22	NAASCO	36
BKD Aerospace	2	Gregorash Aviation	44	ProAero Engines Inc.	20
Canadian Aero Accessories Ltd	43	Harbour Air	13	Propworks Propeller Systems	16
Canadian Propeller Ltd	35	Hartwig Aircraft Fuel Cell Repair	37	Rapco Inc	5
Casp Aerospace Inc	21	HIRING: Employment / Help Wanted	7	Schweiss Bi-fold Doors	9

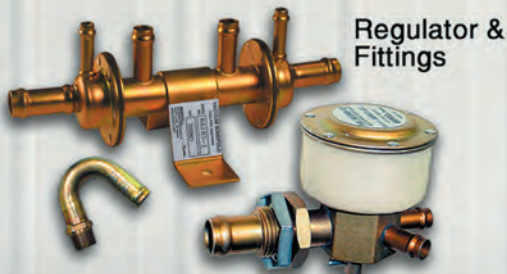
RAPCO, inc.



REPLACEMENT AIRCRAFT PARTS CO.

Rapco, Inc. can help you reduce maintenance costs...this is good for you and your customer. With the impact fuel prices have had on general aviation flying, and the resulting impact on maintenance facilities, everyone needs to find a way to decrease their operating costs, without sacrificing quality or safety. Rapco can help.

All Rapco parts are FAA-Approved, warranted better than the OEM, to save you and your customers money. Call now to see how we can help you - 1-800-527-2726



Visit: <http://www.rapcoinc.com/acappguides.html> for individual specific application guides for most popular aircraft

Request an e-card at www.rapcoinc.com



1-800-527-2726

RAPCO, inc.
REPLACEMENT AIRCRAFT PARTS CO.
www.rapcoinc.com

NO PLANE NO GAIN

visit www.noplanenogain.org

STCs & new products

New five-blade props are weight savers

Texas Turbine Conversions has received a Supplemental Type Certificate from the FAA for Hartzell Propeller's five-blade structural composite swept propellers for CASA 212 short takeoff and landing utility aircraft. These props replace original equipment Hartzell four-blade aluminum propellers, providing weight savings and more efficient aerodynamics resulting in quieter flight and higher performance. The new 112-inch diameter, five-blade Hartzell props with lightweight aluminum hubs incorporate durable carbon fibre structural composite blades with FOD resistant nickel-cobalt leading edges.



For information visit www.hartzellprop.com

Concorde battery needs no maintenance

Gulfstream G350 and G450 operators now have a second battery option available by using Concorde STC ST00890DE. The FAA STC approves installation of Concorde's Platinum Series RG-380E/46L lead acid batteries in place of original equipment lead acid batteries. The RG-380E/46L is fully sealed and no additional maintenance is required beyond periodic capacity checks to assure airworthiness. STC ST00890DE employs a battery tray insert that couples with the existing battery tray to accommodate the RG-380E/46L batteries without modification to the airframe. For information visit www.concordebattery.com



Smith & Wesson glasses offer lens options

With so many activities requiring impact protection, both at work and at home, workers want more than the average pair of safety glasses. Smith & Wesson safety glasses offer style, quality and comfort while protecting people during rugged activities and enabling them to exhibit their individuality both on and off the job. Smith & Wesson safety glasses also offer colorful frames, and a variety of lens options. While safety glasses are essential, people shouldn't have to look and feel as if they are wearing eye protection.



For information visit www.KCProfessional.com

Borescope supports multi-media functions

Vividia ET-39 industrial articulating videoscope borescopes are designed for industrial applications such as aerospace, aviation, and transportation. They have motorized joystick-controlled articulating with 360-degree bending probe, five-inch LCD touch screen, 3.9-mm-diameter probe tube and head and length of insertion tube can be 1.5 or three metres. The resolution of the probe camera is 400x400 pixels. The touch screen monitor has snapshot and video/audio record functions. It supports image process and analysis, HDMI output, WiFi and Bluetooth wireless transfer functions.



For information visit www.oasisscientific.com

Hi-vis hoses lay flat to reduce hazards

Coxreels' new high-visibility safety hose reels feature hybrid bright yellow hoses with a white glossy stripe. Hybrid hoses (PVC and rubber blend) offer similar performance to rubber with the weight of PVC, combining positive features of both hose types. They have increased hose flexibility, a working pressure of 300 PSI, and better low temperature behaviour, and lay flat for a reduced trip hazard potential. Hybrid hoses also feature a less sticky jacket surface than PVC for better stacking performance and an improved non-marring quality. For information visit www.coxreels.com



Cable stripper has removable V-block

Platinum Tools' new slit and ring fibre cable stripper is designed to slit and ring cables, buffer tubes and jackets on fibre optic cables with diameter ranges of 1.2 to 6.4mm. Additional features include a slitting V-block that is removable and reversible to accommodate various diameters, and an adjustable slit blade and ring blade for exact strip cut depth. The dimensions of this tool are: 2.7 inches (72.9 mm), 2.09 inches (52.97mm), 0.47 inches (12mm), while the weight is less than one ounce. Replacement blades are also available. For information visit www.platinumtools.com



To announce your STC or new product, email a JPG photo and a product description to amu.editor@gmail.com or chrissie@amumagazine.com

HIRING

FREE : HIRING ADS SECTION - Send us your .Pdf ad file, size 2.25" w by 2" h - We'll try to fit you in, on a first come first serve basis.



WE'RE HIRING!
TORONTO (YYZ)

- Bombardier CL605 Assigned AMEs
- AME-E (Avionics Technicians)
- Full-time Aircraft Groomers

MONTREAL (YUL)

- Full-time Aircraft Groomers

CONTACT US

Peter Hehn
 Human Resources Specialist
peter.hehn@innotech-exeacire.com



Now hiring! **Harbour Air Aerospace Services** has openings for qualified and aspiring aircraft maintenance engineers and technicians. Enjoy competitive compensation and perks, comprehensive health and wellness benefits, employee excellence awards and more while working with an award-winning team. Find current positions online at: harbourair.com/careers

Apply today to build your future with North America's largest seaplane airline and home of the world renowned ePlane!




Sealand Aviation is an established and innovative aircraft maintenance, modification and repair business located in the city of Campbell River, B.C. We have a base at the Campbell River Airport for wheel equipped aircraft, and at Tyee Spit to service float planes. We have an opening for a full time permanent licensed AME position.

For further information or to apply please email: hr@sealandaviation.com



Propeller Technician Trainee

Winnipeg, MB Full-Time, Permanent
 Seeking reliable and motivated individual to work on aircraft components & join our team.

Education:

- AME or Technical College Preferred
- Read, Write & Communicate in English

Work & Skills Experience Assets:

- Previous Job Experience in Aviation/Aerospace
- Mechanical & Technical Work Experience
- Interpret Aviation Manuals, Processes & Procedures

Please e-mail resume and references to: projects@canadianpropeller.com

We Are Hiring
 Apply to be a licensed Aircraft Maintenance Engineer at **Perimeter Aviation!**

To apply: Email your resume to HRadvisor@perimeter.ca



For more information visit:
www.perimeter.ca/careers



Join our growing team!
Aircraft Structural Repair Technician (MRO)

Join a dynamic, successful company. If you are incredibly motivated, and if "impossible" isn't in your vocabulary, then we have just the place for you! — **What you'll do:**

- Repair and overhaul airframe components in accordance with technical manuals (SRM, CMM, AMM, etc).
- Meticulously interpret technical manuals and work instructions.
- Follow M1 manuals, policies, and procedures to ensure safety, quality, and compliance with regulations.
- Inspect parts for damage and discrepancies and identify required parts, raw material, and hardware required to perform repairs.
- Work safely with colleagues and supervisor to ensure units are completed on-time according to plan, and document/sign-off all tasks.

Please send your C.V. to: hr@m1composites.com



If you would like to advertise in AMU's new Hiring Section, please contact chrissie@amumagazine.com

AMU is here to help you with your employment needs!

AIR CANADA CELEBRATES ARRIVAL OF AIRBUS A220



In mid-January Air Canada unveiled the newest member of its fleet, an Airbus A220-300, which the company says will reduce its carbon footprint through a 20 percent reduction in fuel consumption per seat. Built in Mirabel, Quebec, the Bombardier-designed aircraft continues Air Canada's fleet modernization. Passengers were welcomed aboard the A220-300 on January 16, on its maiden commercial flight between Montreal and Calgary. As more A220s enter the fleet, the aircraft will be initially deployed from Montreal and Toronto on existing Canadian and transborder routes such as to Ottawa, Winnipeg, Calgary, Edmonton and New York – La Guardia.

HARBOUR AIR MAKES FIRST ELECTRIC FLIGHT



Vancouver-based seaplane operator Harbour Air announced the successful flight of the world's first all-electric commercial aircraft. The flight of the ePlane, a six-passenger DHC-2 de Havilland Beaver magnified by a 750-horsepower magni500 propulsion system, took place on the Fraser River at Harbour Air Seaplanes terminal in Richmond (YVR South) just before the start of the new

year. Harbour Air CEO and founder Greg McDougall piloted the plane. Earlier in 2019, Harbour Air announced its partnership with magniX and the company's intention to build the world's first completely electric commercial seaplane fleet.

BOEING SUSPENDS 737 MAX PRODUCTION

Boeing says safely returning the 737 MAX to service is its top priority. Consequently the company announced it has now temporarily suspended production on the 737 program as the FAA and other global regulatory authorities work through the timeline for certification and the aircraft's return to service return to service.



Throughout the grounding of the 737 MAX, Boeing had continued to build new airplanes and there are now approximately 400 in storage. Boeing previously stated it would continually evaluate production plans should the MAX grounding continue longer than the company expected.

DIMMABLE WINDOWS FOR BOEING 777X



The Consumer Electronics Show in Las Vegas was the venue for Boeing to announce that new generation electronically dimmable aircraft windows will be offered as an option on the new Boeing 777X. The windows are built with electrochromic-based sunlight and heat features that eliminate the need for traditional window shades and lessen dependence on AC systems. EDWs allow passengers to selectively darken the aircraft windows as desired while still enabling them to view the scenery outside. The latest EDWs are capable of eliminating more than 99 percent of light at twice the darkening speed of previous windows.

STANDARDAERO SUMMERSIDE SETS RECORD



StandardAero's engine overhaul facility in Summerside, PEI finished 2019 on a high, inducting over 1,000 Pratt & Whitney PW100, PT6A and JT15D engines during the course of the year. This record figure was achieved following the recent expansion to the facility, StandardAero's commercial turboprop engine MRO Center of Excellence, which saw the site expand its shop floor area to over 226,000 square feet of leased space. The facility, located at the Summerside airport in Slemmon Park, also grew its workforce to approximately 500 employees as a result of the recent expansion.

FIRST A350 XWBs ARRIVE WITH TOUCHSCREEN DISPLAYS

Airbus has commenced deliveries to airlines of the first A350 XWBs equipped with new touchscreen cockpit displays. Of the cockpit's six large screens, three

can now become touch capable: the two outer displays plus the lower-centre display. This new method of input complements the existing physical keyboard integrated into the retractable table in front of each pilot and also the keyboard and trackball “keyboard-cursor control unit” located on the centre console. To date, around 20 airlines have selected the option for their new A350 XWBs.



FAI CANCELS 2022 WORLD AIR GAMES IN TURKEY



Fédération Aéronautique Internationale has chosen to cancel the 2022 World Air Games scheduled to be staged in Turkey due to the current difficult economic situation in that country. The FAI executive board says it will undertake an overall review of the event’s concept and format before deciding on any future edition of the Games. FAI activities include aerobatics, aero-modeling, airships, amateur-built and experimental aircraft, ballooning, drones, gliding, hang gliding, helicopters, manpowered flying, micro-lights, paragliding, paramotors, power flying, skydiving and all other aeronautic activities and space records.

AIRBUS TEAMS WITH ASTON MARTIN TO LAUNCH ACH130

The ACH130 Aston Martin Edition, the first offering from the recently an-


nounced partnership between Aston Martin Lagonda and Airbus Corporate Helicopters, was revealed early January at Courchevel in the French Alps. This special edition of the ACH130 helicopter comes equipped with a range of four interior and exterior designs generated by Aston Martin.



The helicopters are embellished with Aston Martin signature elements, starting with the iconic Aston Martin wings, which are embossed onto luxury leather features, positioned throughout the cabin. Further external liveries are available with other Aston Martin paint colours including Xenon Grey, Arizona and Ultramarine Black. ■

One Piece 800-746-8273

DOORS



- AVIATION
- AG DOORS
- SHOP DOORS
- BARN DOORS


HYDRAULIC

“One-Piece” DOOR

OR

BIFOLD

STRAP LIFT and auto latch



...Lift Straps 006

Say YES... to Strap-Lift Doors

Say NO to Cable Lift

SCHWEISSDOORS.com

“BlackSteel”[®]

The **PROVEN ORIGINAL**

HIGH PERFORMANCE STARTS WITH THE RIGHT PARTS

APS has designed a high quality brake disc that has established itself as the benchmark among aircraft brake discs. A true blend of strength and durability. CNC machined from a rigid one piece design these brakes are built to provide unparalleled performance. Heat treated to give it the “BlackSteel” appearance, with our “BlackSteel” name proudly engraved on the side; APS offers the ultimate in braking performance.



Contact us for a list of our distributors

618.797.3140
apsbrakes@apsbrakes.com
APSBRAKES.COM





The rising use of SAF:

BY TOM PARSONS

So, what is Sustainable Aviation Fuel and why should we care? Here, Air BP's Commercial Development manager Tom Parsons offers opinions.



Opposite: Delta Air Lines' A321 takes on a load of sustainable fuel. Above: Air BP delivers SAF.

seeking sustainability

The use of sustainable aviation fuel (SAF) is on the rise, but what is it exactly?

SAF stands for sustainable aviation fuel. It's produced from sustainable, renewable feedstocks and is very similar in its chemistry to fossil jet fuel. Using SAF results in a reduction of CO2 emissions compared to fossil jet fuel over the lifecycle of the fuel. Some typical feedstocks used are cooking oil and other non-palm waste oils from animals or plants; solid waste from homes and businesses, such as packaging, paper, textiles, and food scraps that would otherwise go to landfill or incineration. Other potential sources include forestry waste, such as

waste wood, and energy crops, including fast growing plants and algae. Air BP's SAF is called BP Biojet and is currently made from used cooking oil and other waste.

Why is SAF important?

Jet fuel packs a lot of energy for its weight and it is this energy density that has really enabled commercial flight. Today, there aren't any other viable options for transporting groups of people quickly over very long distances, so we're dependent on this type of fuel in aviation. A return flight between London and San Francisco has a carbon footprint per economy



Above: AirBP-Bergen0230.

ticket of nearly one ton of CO₂. That's the same as driving a diesel car 3,750 miles or 6,035 kilometres. With the aviation industry expected to double to 8.2 billion passengers by 2037, it is essential that we act to reduce aviation's carbon emissions and SAF is one way in which Air BP is doing that.

How much carbon (CO₂) does it save?

Sustainable aviation fuel (SAF) gives an impressive reduction of up to 80 percent in CO₂ emissions over the lifecycle of the fuel compared to fossil jet fuel, depending on the sustainable feedstock used, production method and the supply chain to the airport.

When did Air BP first test SAF?

In 2010 Air BP teamed up with Brazilian airline TAM (now LATAM) for a test flight using SAF.

Who does Air BP partner with to make SAF available?

Air BP has announced collaborations with two companies: in 2018 the company signed an agreement with leading renewable fuel producer Neste, which produces sustainable available fuel made from non-palm oil based used cooking oil and other wastes and residues. Through this collaboration we are developing new SAF supply chains.



Above: Bombardier delivers its first customer aircraft fueled with SAF to California-based Latitude 33 Aviation.

In 2016 Air BP created a strategic partnership with Fulcrum BioEnergy with an initial investment of \$30 million. The Californian company is building its first plant in Reno, Nevada, which will produce sustainable transport fuel made from household waste.

Fulcrum intends to construct additional facilities and ultimately plans to supply us with over 50 million US gallons of SAF per year.

Is it safe to use?

SAF can be blended at up to 50 percent with fossil jet fuel and all quality tests are completed as per a regular jet fuel. Once blended, SAF has the same characteristics as fossil jet fuel. The blend is then re-certified as Jet A or Jet A-1. It can be handled in exactly the same way as a regular jet fuel, so no changes are required in the fueling infrastructure or for an aircraft want-



**BUILD YOUR
FUTURE WITH**



Now hiring in Vancouver, BC
Openings for qualified and
aspiring aircraft maintenance
engineers and technicians!
Find current positions at
harbourair.com/careers



**EMPLOYEE
EXCELLENCE REWARDS**



**WORK WITH AN
AWARD-WINNING TEAM**



**COMPETITIVE
COMPENSATION & PERKS**



**COMPREHENSIVE
HEALTH & WELLNESS**





Above: Waste to wingtip. Below: In December 2019, Beluga ST started to use Sustainable Aviation Fuel in Hamburg. The sustainable fuel used for the Beluga fleet comes from used cooking oil.



ing to use SAF. In 2016, we were the first operator to commence commercial supply of SAF through an existing hydrant fueling system, at Norway's Oslo Airport, using BP Biojet.

Is SAF suitable for all aircraft?

Any aircraft certified for using the current specification of jet fuel is able to use SAF.

Who has Air BP supplied?

To date, Air BP has supplied SAF at 15 locations in five countries across three continents. Air BP's SAF has been used to fuel many different types of aircraft from small private jets to large passenger aircraft. We have a supply chain established in Sweden, from which we are supplying locations across the region. It was this supply chain that enabled us to fuel Braathens Regional Airlines for its 'Perfect Flight' back in May, which combined the latest in aircraft efficiency and the use of SAF to cut emissions by 46 percent compared to regular flights on the same route. We have also supplied SAF for Delta Air Lines and Airbus in the USA this year. In all, we have supplied around 20 different customers with SAF so far.

How does the cost of SAF compare to fossil jet fuel?

SAF is currently more costly than fossil jet fuel. That's down to a combination of the current availability of sustainable feedstocks and the continuing development of new production technologies. As the technology matures it will become more efficient and so the expectation is that it will become less costly for customers. We are seeing increased uptake of SAF as our customers and their passengers increasingly recognize and value the benefits of the emission reductions.

Is SAF really the key to making aviation greener?

SAF can drop straight into existing infrastructure and aircraft. It has the potential to provide a lifecycle carbon re-



Above: Air BP highlights Sustainable Aviation Fuel on the stand at NBAA-BACE.

duction of up to 80 percent compared to the fossil jet fuel it replaces. SAF will play a really important role in meeting the aviation industry's carbon reduction targets, however, we need to use all the options to reduce carbon that we have available.

There are several broad opportunities for carbon reduction across the industry such as more efficient aircraft design, smarter operations and the development of future technologies like

electrification. In that regard, Air BP was the first aviation fuel supplier to be independently certified carbon neutral for into-plane fueling operations at 250 Air BP locations in October 2016

So why aren't more airlines using SAF?

At the moment, production of SAF is limited as the higher cost for SAF is preventing wider uptake. Air BP is working on helping create more demand in the



Above: A 787 delivery flight from Seattle to Cairo last summer launched Boeing's program that offer operators the option to use sustainable fuel for flights home.

PROP WORKS
PROPELLER SYSTEMS

Overhaul • Repair • Sales

Winnipeg 1-888-679-2965
Edmonton 1-888-457-1910

Avia • Dowty • Hartzell • Hamilton Standard
Hamilton Sundstrand • McCauley • MT Propeller
Sensenich • Governors • Non-Destructive Testing

FACTORY TRAINED TECHNICIANS - EASA APPROVED
AMO #105-99

www.propworks.ca

short-term which will lead to more production and hopefully lower costs in future.

How can the growth of SAF be accelerated?

According to the Air Transport Action Group (ATAG), worldwide flights produced 895 million tons of CO₂ in 2018. There is real commitment from the industry to reduce the impact of aviation on the environment, but governments also need to create the right policies to accelerate the growth of SAF. Increasing production requires long-term policy certainty to reduce investment risks, as well as a focus on the research, development and commercialization of improved production technologies and innovative sustainable feedstocks.

On an individual level, some airlines are now providing passengers and corporate customers with the option to fund SAF blending directly in order to reduce emissions associated with your ticket, and we think these are really positive initiatives. The key to greater acceptance and deployment of SAF is reduction in costs. Over the long term, that will require investment in advanced technologies to process feedstocks more efficiently at greater scale and investment in the development of sustainable and scalable feedstock options. However, in the short-term, interim support from governments and other stakeholders through policy incentives is needed. This support needs to be part of a long-term framework to give investors the confidence to make the big investments required to grow supply. ■

Thinking of advertising in AirMaintenance Update?

Get the exposure you need for your
company or business.



Visit our website and download our
media kit to see our advertising rates
for AMU magazine and to advertise online.

www.amumagazine.com



TC's “Feedback”:

The following are selections of Canadian Aviation Service Difficulty Reports originally published as “Feedback” by Transport Canada.



Opposite: Garrett. Rotor assembly with rivets that had fallen out due to incomplete setting. **Above:** Teledyne. Cylinder with obvious head separation.

reports and comments

Report: GARRETT, TPE331-10UA-511G
Engine SOAP (spectrometric oil analysis program):
A proven maintenance tool

Subject:

The pilots reported that a chip light on the aircraft had illuminated during climb for 2 minutes and then went out. Maintenance was advised of the indication when the aircraft returned to base. The chip detector was inspected and a SOAP sample was taken. The sample was rushed out to a lab for inspection and the results revealed that an engine inspection

was required immediately. The engine was removed from the aircraft and forwarded to the turbine shop. The gearbox was disassembled and the torque sensor idler bearing was found to have failed.

Transport Canada Comments:

This report proves the effectiveness of good preventative maintenance and how an oil analysis program can help increase safety by preventing possible in flight emergencies and reduce operating cost by catching problems before they become catastrophic.



Above: Rolls-Royce. Bearing cavity with rubber plug left after previous repair.



**Lycoming & Continental
Piston Engines & Accessories**



**• Repair • Overhaul • NDT
• Aircraft Service**



1-800-667-0522

www.ProAeroAV.com

2965 Airport Rd., Kamloops, BC V2B 7W8

Report: GARRETT, TPE331-10
Incorrectly set turbine rotor rivets

Subject:

After routine maintenance at an outside repair station, the propeller was turned to prepare for propeller removal. It was observed that the engine would only rotate slightly due to part of the rotating group getting caught on something internally.

The engine was inspected and it was found that some of the retaining pins (rivets) holding the blades of the second stage turbine (Part Number 3102106-10) had fallen out. After some research it was noted that the rivets were out of dimensions per Honeywell manuals.

The engine is being inspected at an approved overhaul facility and the second stage turbine is in the process of being replaced.

Transport Canada Comments:

Attention to detail is of paramount importance when conducting complex maintenance tasks such as engine assembly. Manufacturers' recommendations must be followed (CAR 571 Standard 571.02). This is particularly important when the final assembly is hidden from view and not easily inspected. Fortunately this resulted in a ground incident rather than an inflight emergency.

Report: GENERAL ELECTRIC, CF34-3B1

Cracked fan blade pins causing high engine vibration

Subject:

During a ground power assurance check, abnormal fan (N1) vibration was noticed on the right hand engine. Inspection revealed severe damage on all the fan blades pins. Three of them were found in very bad condition.

Transport Canada Comments:

This unit is something that is called out for inspection in both the engine and airframe manuals however the airframe manual has lesser inspection requirements. Operators are reminded that when developing maintenance schedules, airframe and engine manufacturer requirements should both be considered.



CASP aerospace inc.
Since 1970

Aircraft Safety and Life Support Equipment
Repair • Overhaul • Exchange • Sales

Fire Protection
Oxygen Cylinder Assemblies
Crew Masks
Inflation & Pneumatic

Cartridges
Floor Covering
Securaplane Batteries, Camera and Security Systems

www.caspaerospace.com
98 Columbus Street, Pointe Claire, Quebec H9R 4K4
Tel: 514.630.7777 • Fax: 514.630.9999 • info@caspaerospace.com



Above: General Electric. View of engine tail cone after nozzle failure.



Above: Pratt & Whitney. Fuel tubes with Skydrol damaged O-rings.

The manufacturers' recommendations should be thought of as a minimum requirement; operator and industry experience should also be considered.

Report: GENERAL ELECTRIC, CF6-80C2B6
Engine failure due to liberated turbine nozzle

Subject:

Crew reported hearing a loud bang from the left engine. Engine vibration was apparent and the crew estimated loss of available power at about 20%. Flight was subsequently diverted.

Transport Canada Comments:

The engine teardown revealed that the stage three nozzle had failed. This particular part was the subject of a GE service bulletin (SB) 72-1354, which recommends replacement with an improved unit.

While manufacturer's SBs are not mandatory unless made so by an Airworthiness Directive, it is good practice to comply with them.

Report: PRATT & WHITNEY, PT6A-114A
Missing or forgotten bracket causes engine shutdown

Subject:

This engine was removed and shipped for repair after the crew

reported an in-flight shutdown on final approach, about half a mile from touch down. Efforts to restore power were not successful and a glide approach was successfully executed.

Upon examination of the engine, it was noted that the fuel pressure tube from the fuel control unit to the fuel flow divider had chafed through where it passes through the rear fire shield. The engine was received with this pipe loosely installed as the customer and all the hardware as well as the insulation plates had disturbed it and seals were not present for evaluation. It was also noted that the bracket, part number (P/N) 3027046, used to secure the fuel pressure tube coupling to the accessory gearbox "G" flange was not installed.

The root cause of the fuel pressure tube chafing on the rear fire shield was determined to be the fuel pressure tube bracket P/N 3027046 not being installed. This resulted in the fuel pressure tube not being correctly aligned and applying pressure to the rear fire shield seals. The seals eventually failed, allowing the tube to come into contact with the fire shield.

Transport Canada Comments:

It was not determined when this bracket was omitted. It is likely that it was missed during some maintenance activity such as an engine change or major inspection. Maintainers must be aware of build specifications and service bulletin status when installing an engine or when conducting maintenance. They must also ensure that the engine is in the correct configuration.



Above: General Electric. Damaged fan blade retaining pins.

FUEL CELLS

All Makes & Models - Piston - Turbine - Rotor - Jet

Quality and Safety.

New

OEM & PMA Replacements
 5 year warranty
 Quality Installation Kits
 FAA Certified TSO & PMA Mfg

Factory Overhauls

Exchanges & Major Overhauls
 5 year warranty
 Over 40 years of experience
 FAA Certified Repair Station

Valves

Stainless steel drain valve kits



Technical Support / Sales
800-437-8732

Tel: 715-479-6149
 Fax: 715-479-6344

Online Catalog
www.eaglefuelcells.com

© 2014 Eagle Fuel Cells-ETC, Inc.



Above: Pratt & Whitney. Broken fuel tube and chaffing on fire shield.

Report: PRATT & WHITNEY, PW123B
Fuel leak caused By Skydrol

Subject:

During aircraft turn around, a fuel leak was noticed on the number two engine. After investigation, maintenance found that transfer tube O-rings on all bottom engine fuel nozzles were chemically deteriorated by Skydrol. Further investigation revealed that the Skydrol came from the nacelle waste container, which was filled by a leak of the engine driven hydraulic pump shaft. The Skydrol was able to backtrack the drain pipe of the fuel nozzle during different flight attitudes of the aircraft, and chemically damaging the lower fuel nozzle transfer tube O-rings and causing a leak.

Transport Canada Comments:

This is not the first time Transport Canada has seen reports of Skydrol deteriorating seals and causing issues to other systems. Maintainers are reminded that even minor leaks must be investigated and corrected before they develop into major problems.

Report: ROLLS ROYCE – USA, 250-C300/A1
Forgotten plugs found in oil holes

Subject:

The gearbox cover was sent to our facility for overhaul. The power take-off (PTO) bearing cage was removed for machining of previous plasma repair.

The machinist noticed that both oil holes were plugged by plasma spray. Pictures were taken and the machinist removed old plasma on a milling machine. After the plasma was milled away, rubber plugs were found in holes from previous plasma repair.

Transport Canada Comments:

(No published comments on this report.)

Report: TELEDYNE CONTINENTAL, IO-550-D

Engine Components International (ECI) cylinder malfunction

Subject:

The pilot noticed a vibration from the engine while in flight and then ceased operations to return to base. Maintenance

personnel removed the engine cowlings and discovered the number one cylinder head had separated from the cylinder body with minimal oil found in the engine cowling.

The pilot reported no loss of engine oil pressure and all the engine gauges were operating within green operating ranges.

Transport Canada Comments:

Transport Canada was informed that this cylinder is affected by FAA Airworthiness Directive (AD) 2016-16-12 and was scheduled to be complied with within the prescribed time frame.

Operators are reminded that it is important to inform their local airworthiness authorities of such events so that the effective dates of ADs can be evaluated and if necessary be amended.

Report: TELEDYNE CONTINENTAL, IO-240-B

Corroded weld on oil sump causing leak

Subject:

The aircraft was snagged for an oil leak. Investigation found pinholes in the lower part of the oil sump close to the drain plug. The holes were in a weld that is visible externally, but that is for an internal support rod. The sump was replaced and the aircraft released with no leaks.

Transport Canada Comments:

Any components installed on aeronautical products that are not 'life limited' are operated 'on condition'. That is to say that the part must conform to its design specifications and be free of defects (cracks, excessive wear, corrosion etc.).

The manufacturer will normally set limits that the unit must fall within or else the part must be replaced. In the case mentioned above, this unit was an 'on condition part' and was deemed eligible for re-installation at overhaul.

The corrosion that caused the leak was either not present at that time or was missed due to the fact that it was difficult to see or internal in the weld.

Transport Canada reminds maintainers to be certain that parts are in conformance with their design specifications when inspecting them for re-installation. ■

SIKORSKY S-92A

FAA & EASA CERTIFIED DIRECT REPLACEMENT BATTERIES



FAA STC SR00917DE & EASA ESTC 10069610 offer Concorde's superior power and proven operation.

- Sealed lead acid batteries
- Lower cost per flight hour
- Reduced maintenance
- Hazmat Exempt shipping

CONCORDE *...the heart of your aircraft™*
CONCORDEBATTERY.COM
626.813.1234 | ISO 9001 + AS9100
Crafted for Quality in the U.S.A.



Above: Garrett. Engine SOAP Sample. Idler bearing race showing significant wear.

Western AME Association



Western AME

Nomination for Board of Directors: 2020 election of Directors and Officers

The Western Aircraft Maintenance Engineers Association Meeting for the Election of Directors and Officers, and Annual General Meeting will take place during the UPDATE 2020 Airworthiness Symposium March 19-20 at the Best Western Premier Calgary Plaza Hotel & Conference Centre in Calgary.

During the first meeting the election of Directors and Officers for the New Year, April 1, 2020 to March 31, 2021 will be held. Directors elected at this meeting will take office after the adjournment of the Annual General Meeting that follows.

The following positions are open for nomination:

- Director (six in total)
- Other Officer positions (Treasurer, Secretary, etc.) are elected by the Directors at the first board meeting after the Annual General Meeting.

If you are nominating or being nominated, be sure that the Nominating Committee receives your nomination paper before the start of the elections meeting. Please submit completed nomination(s) to WAMEA via one of the below methods.

In the event that you are unable to attend and wish to vote by proxy through another active member, please complete and submit the proxy form. Your proxy vote may be presented at the meeting by your appointee, returned to WAMEA:

ATTN: Nominating Committee Chairman
Western AME Association
202, 5405 99 Street NW Edmonton
AB T6E 3N8
Fax: 780-413-0076
Email: info@wamea.com

www.wamea.com

Atlantic AME Association



Association loses great friend

By Bob Parady

It is with great regret that I inform you of the passing of one of our founding members and longtime President, Ben McCarty. Ben passed away in August after a lengthy illness and will be missed by all of his aviation friends. Below is an excerpt from his obituary:

Ben has been very active in the Aircraft Maintenance Engineers Association being a founding member of the Atlantic Region Association, serving as its President until 2014. He was instrumental in getting the six regional Associations together and forming the Canadian Federation of Aircraft Maintenance Engineers' Association to suitably represent the AMEs at the national level. He has served as the Executive Secretary of this association several times. He also served on the technical committee of the Canadian Aviation regulation advisory committee to Transport Canada. He was very instrumental in having many changes made to proposals put forth by Transport Canada in the development and implementation of the new Canadian Aviation Regulations, which resulted in improved rules and procedures that are enjoyed by Canadian AMEs today.

Ben has been honoured with many awards during his aviation maintenance career including the Order of Canada 2019, The Standard Aero Award 1982 for outstanding aircraft maintenance performance presented by the Atlantic AME Association, The Canadian Owners and Pilots Association President's Award 1999 for outstanding contributions to private aviation in Canada and The Glen Goslin/Joe Price Memorial Award 2000 for outstanding service to the AME Associations. Ben also received The NAASCO Award 2002 for the outstanding AME presented at Winnipeg by the Central AME Association, The Transport Canada Aviation Safety Award 2004 for exceptional contribution to the promotion of Canadian Aviation Safety, and in 2005 Ben was inducted in the Canadian Aircraft Maintenance Engineer Hall of Fame.

In honour of the contributions Ben has made to the AME Association (Atlantic) and to the AMEs of Atlantic Canada, the Board of Directors has moved and passed a motion to rename the annual Bursary presented at the ARAMC to the Ben McCarty Annual Bursary.

www.atlanticame.ca

If you'd like to share your professional expertise with readers of AirMaintenance Update, contact our editor, John Campbell via email at: amu.editor@gmail.com



AME Association of Ontario

c/o Skyservice F.B.O. Inc., PO Box 160, Mississauga, Ontario L5P 1B1
tel: 1-905-673-5681 fax: 1-905-673-5681
email: association@ame-ont.com website: www.ame-ont.com



Aircraft Maintenance Conference

Save the Date! The Ontario Aircraft Maintenance Conference (formerly AME Conference) will be held on October 28-30, 2020. The event will be held at the Delta Hotel & Conference Centre in Toronto on Dixon Road. This conference is for everyone and anyone involved in aircraft maintenance including AMEs, technicians, buyers, consultants, stores personnel and more. Meet with over 70 suppliers, compete in a skills challenge for some exciting prizes, and learn from industry leaders with two days of presentations. More details to follow in future newsletters or check our website: www.ame-ont.com

If you are interested in presenting a technical session at this year's event, please message Cara: cara@precisionaerocomponents.com

Be on the Alert

Counterfeit fire extinguishers, marked with the names of well-known legitimate brands, like Kidde, are being sold in the US and Canada. They also carry a fake "UL" mark, falsely implying the devices have been tested by the Underwriters Laboratory, a leading safety testing organization.

For details on how to identify these fakes, see this posting from UL: www.ul.com/node/177251

— Submitted by Stephen Farnworth
For the Board of Directors

Pacific AME Association



PAMEA Fall Workshop was a great success

Thanks to Jazz Aviation for providing their Training Centre with three well equipped rooms. Thanks to Port Aircraft Interiors and KF Aerospace for sponsoring the food and drink break and some door prizes. With a good turn out of 45 people between BCIT students, active AMEs and retirees, there was a good mix of experience and knowledge to ask intelligent questions and spur good conversation. There were also a few new member sign-ups, membership renewals and Harbour Air joined as a Corporate Member.

A big thank you goes to our presenters Maxcraft Avionics for the popular ADS-B information and Q&A session, to the father of the Dirty Dozen Gordon Dupont at System Safety Services for his Human Factors course and to Transport Canada for sending an Inspector to talk about Service Difficulty Reports, from what is a SDR to filing it through the WSDRS. Thanks again to all who attended for a successful evening together. Next workshop is February 21-22, 2020.

www.pamea.ca

If you'd like to contribute your professional association's newsletter to AMU magazine contact our editor, John Campbell via email :



amu.editor@gmail.com



Central AME Association



25th Annual Aviation Symposium

When: March 5-6, 2020

Where: Canad Inns Destination Centre Polo Park
1405 St Matthews Ave., Winnipeg, Manitoba

Thursday

0745 to 0900 Registration & Continental Breakfast in Trade show area

0900 to 1630 Speakers & Presentations / Trade Show Open

1630 to 1830 Banquet Reception/Cocktails in the TYC Event Centre

1830 to 2100 Banquet in TYC

Friday

0745 to 0900 Registration & Continental Breakfast in Trade show area

0900 to 1630 Speakers & Presentations / Trade Show Open until 1400
(Booth tear down @ 1400)

Early Bird Pricing!

Save 10 percent when you register to attend the Symposium before February 6, 2020

One-day courses

(Pre-registration required, limited capacity)

Thursday March 5: Operational Excellence within an AMO / MRO

Organizations (Alex Carroll, Babcock). Attendees will receive a Lean Yellow Belt certificate on completion.

Friday March 6: Lycoming & Continental Engine Theory and Maintenance (Wayne Cathers - Aero Recip)

Speakers (Will be updated weekly)

Key Note Speaker- Pending

- Dean Barrett, TCCA- Ottawa-TCCA Regulatory Update
- Tom Bennett - TCCA -Winnipeg
- Jean Grenier TCCA- Ottawa - Airworthiness Directives and Service Difficulty Reporting
- Alex Carroll -Operational Excellence within an AMO / MRO Organizations
- Wayne Cathers - Lycoming & Continental Engine Theory and Maintenance
- Rusty Keagle - Brake Performance Flight Testing - GA brake Service Tips
- Jim Boyle - Aircraft Tire Safety, Selection and Maintenance
- Brian Dean -Threat and Error Management
- Rob McIntyre - Dale Carnegie
- Dave Newsand
- Grant Stevens - KF Aerospace VP of HR
- Bill Grassik

www.camea.ca

PAMA SoCal Chapter



Who we are

The purpose of SoCal PAMA is to promote a high degree of professionalism among aviation maintenance personnel; to foster and improve methods, skills, learning, and achievement in the field of Aviation Maintenance; to conduct local meetings and seminars; to publish, distribute, and disseminate news, technical bulletins, journals, and other appropriate publications dealing with the trade of Aviation Maintenance; to collaborate with other organizations in aviation in the queries of governmental agencies pertaining to maintenance rules and guidelines.

Why advertise on the SoCal PAMA Website?

- Supports SoCal PAMA
- Home Page Features Your Logo & Web Link
- Only \$50 for 12 Months
- New Features!
- Logo positions on the home page rearrange randomly upon refresh
- Chapter meeting sponsors receive one free spot on home page for 12 months
- 100% of advertising fees go towards maintenance of the SoCal PAMA website
- Contact Gail Erwin (PonyTailPilot16@gmail.com)

www.socalpama.org



Central Ohio PAMA

2020 Ohio Aviation Maintenance Symposium

Date and Time: Thursday, March 12, 2020, starting at 08:00 Eastern Daylight Time

Speaker(s): Numerous Aviation Professionals

Brief Description: The eight-hour day will consist of two separate sessions each hour giving attendees a choice of topics including: Regulations, NTSB Accident Investigator presentation, Field Approval Process, and Major/Minor Determination(s), Aircraft Fabric, Aircraft Batteries, Aircraft Ignition Systems, Human Factors presentation by D. Bill Johnson, FAA Chief Scientist, Recip Engine Troubleshooting, Understanding SDRs, and Wilderness Survival Training Applicable To Technicians. This listing is not all inclusive of scheduled presentations. Twenty-five aviation vendors will be on-site.

Attendance of this event meets the requirements of CFR 65.93 (a)(4) Attended and successfully completed a refresher course, acceptable to the Administrator, of not less than eight hours of instruction

A certificate of attendance will be issued to each individual at the end of the day.

Attendees will earn eight hours AMT credit. A & Ps without IA are invited to attend.

Directions to Venue: The Maintenance Symposium will be held on the fourth floor (elevators available) of the Columbus State Conference Building. Since Columbus State Community College will not holding classes the day of the symposium, all parking lots posted, as "Student Parking" will be available for use.

www.copama.org



PAMA Dallas – Fort Worth

About us

The DFW Chapter of PAMA is a non-profit association dedicated to promoting professionalism and recognition of the Aviation Maintenance Technician through communication, education, representation and support, for continuous improvement in aviation safety.

Since 1997 we have been coming together for a day of golf and fun in support of our local aspiring Airframe & Powerplant mechanics! Our annual PAMA DFW Golf Classic is a charitable event whose proceeds benefit scholarships for students pursuing a career in Aviation Maintenance at Tarrant County College. The chapter partners the Tarrant County College Foundation to offer a full scholarship to at least one student every year.

However, this goes beyond just the classes leading to the Airframe and Powerplant certificate. The scholarship pays for the tuition, student fees, textbooks, and all of the FAA examinations (written, oral

and practicals). These are all accomplished at Tarrant County College Northwest Campus, Aviation Department.

The cost for a full scholarship is approximately \$6,500. A selection committee set up by the college chooses the winner of the merit-based scholarships. The scholarship is open to anyone who meets the criteria.

Since the Foundation began administering this scholarship in 2009 we have collected over \$97,000 and awarded 16 full scholarships. These successes are possible with the support of our aviation community, so we are always looking for hole sponsors and major raffle donors to support this just cause.

Our mission to educate, train, and provide encouragement to our industry's aviation technicians does not waiver.

www.pamadfw.com

For your personnel needs, please take a look at AirMaintenance Update's new Hiring Section on page 7 of this issue. For more information, contact chrissie@amumagazine.com

Orders keep rolling in



A series of events have left Airbus alone once more at the top of the commercial aircraft sales leader list. Here's how that happened.

BY OIHAB ALLAL-CHÉRIF

After eight years of Boeing leadership, Airbus has again become the world's leading aircraft manufacturer. The European group surpassed 1,000 aircraft orders in 2019 and broke its record of aircraft delivered with 863 units. By comparison, Boeing delivered a mere 345.

The A320, launched in 1988, became the best-selling aircraft of all time, outnumbering the Boeing 737, which is 20 years older. In addition, from January 2020, Boeing suspended production of the 737 Max, once a bestseller but currently banned from

flying because of two crashes in October 2018 and March 2019.

According to Airbus commercial director Christian Scherer, Boeing's difficulties are not benefiting its European competitor – the firm's production capacity does not allow it to deliver new customers before four years. However, Airbus continues to accumulate orders, including from customers once loyal to Boeing. In addition, it is likely that the 10 percent tax on aircraft imports into the United States is a direct result of Boeing's troubles.



Above: Suppliers General Electric and Safran have been heavily affected by the 737 Max crisis, an aircraft exclusively equipped with the LEAP engine that they co-developed.

Suppliers General Electric and Safran have been heavily affected by the 737 Max crisis, an aircraft exclusively equipped with the LEAP engine that they co-developed. The joint subsidiary CFM International has negotiated with Airbus to increase the percentage of A320neo aircraft that use this engine to compensate for the losses associated with the 737 Max. Hundreds of European suppliers that also work for Airbus are also financially affected.

Relative successes for Airbus

Although 2019 was marked by the end of the A380, considered a commercial flop, Airbus has exceeded the symbolic mark of the 20,000 planes sold since its creation. The company also won many battles against Boeing last year. The A320, A320neo, A321, A321neo and A350 models are particularly popular with airlines. The A321 XLR is part of a sustainable development strategy: it consumes a third less of kerosene, which gives it a much greater radius of action and reduces costs per passenger.

United Airlines ordered 50 ultra-long-haul Airbus A321 XLRs for about \$6 billion. These aircraft are intended to replace Boeing 757s and are expected to enter service in 2024. Thanks to this innovative plane, which was presented by Airbus at the 2019 Paris Air Show, the company will be able to reduce significantly its carbon footprint and benefit from the long-range capabilities to add new destinations.

Cebu Pacific Air, the leading airline in the Philippines, confirmed an order for five A320neo and 10 A321 XLR on December 19, after having finalized another of 16 A330neo, which makes a total of 31 aircraft for approximately \$6.8 billion in 2019. This is nothing compared to the record order from one of the fastest-growing airlines in the world: the low-cost Indian company IndiGo. In October, it ordered 300 A320s, including several A321 XLRs, worth \$33 billion. When delivered, IndiGo will reach a total of 730 A320s, making it the largest customer for this model.

Airbus has also been selected by Qantas to operate the longest flight in the world: 20 hours to cover the 10,500 miles (17,000 km) between London and Sydney. In December 2019,

Airbus delivers 1,000th A320neo Family

A320neo unbeatable fuel efficiency



The most successful aircraft family ever

 **-50%**
reduction
in noise footprint
and NOx emissions
vs previous generation aircraft

-20% 
fuel burn per seat
vs previous generation aircraft

 **100+**
A320neo Family
customers

Altogether
IndiGo
has ordered
530 A320 Family
aircraft 

 **The world's
biggest**
customer and operator
for the A320neo Family

IndiGo fly to **22**
International
destinations within
17 different
countries



Above: To cope with the managerial dimension of the crisis, a financial expert, David Calhoun, was chosen to succeed the engineer Dennis Muilenburg as CEO of Boeing.

after launching a tender to the two manufacturers, Qantas announced that it was choosing the A350-1000 rather than the Boeing 777X.

Airbus's situation seems solid and the future looks bright. The group may hire between 1,500 and 2,000 people in France, and potentially 5,000 worldwide. The group has exceeded US\$100 billion in market valuation, Airbus shares rose 59 percent in 2019 and the company begins 2020 at the top of the French stock market index CAC40.

Still, Airbus's leadership position remains fragile. If the symbolic threshold of 1,000 aircraft ordered may seem satisfactory, it is already the sixth time that the group has exceeded it, and this remains well below the record set in 2013 with 1,503 orders. Production is struggling to keep up with sales, as the most popular models are victims of their success. Some current deliveries are late and the increase from 60 to 63 aircraft per month between 2019 and 2021 will not significantly improve things.

A multidimensional crisis for Boeing

Boeing is currently going through the worst crisis since it was founded in 1916. This crisis is deep, lasting and multidimensional. Above all, it is a reputational crisis, the group having entered a spiral of failures and an era of suspicion. Multiple charges of negligence and willful intention to deceive the authorities could be confirmed by internal documents transmitted to the US Congress in December 2019.

After two 737 Max crashes that left 346 dead, many passengers have completely lost confidence in the plane: 40 percent of travelers are ready to pay more or take less practical flights to avoid it. New theories question the safety of other software-independent parts of the aircraft.

The crisis is also technological: Boeing has had significant difficulties finding reliable solutions to the various dysfunctions of its planes. This in turn led to an industrial crisis: after severely slowing down the production of the 737 Max, Boeing stopped it completely in January 2020. Although 12,000 people work directly in the production of the 737 Max, Boeing does not plan to lay off workers for the time being. The consequences may be particularly difficult for the suppliers most dependent on Boeing to bear.

Boeing also faces a legal crisis: lengthy and costly lawsuits from victims and airlines could well further tarnish the company's image. The financial consequences are already considerable with 10 billion euros of cash provisioned to deal with the direct and indirect consequences of the crashes. If the manufacturer had US\$20 billion in funds a few months ago, it would consider increasing its debt by at least US\$5 billion to meet expected costs in the first half of 2020.

To cope with the managerial dimension of the crisis, a financial expert, David Calhoun, was chosen to succeed the engineer Dennis Muilenburg as CEO of Boeing from January 13, 2020. Muilenburg was severely criticized for his handling of the crisis and had to resign. Among other things, he was accused of not respecting the independence of air-transport regulatory authorities and not reacting quickly enough.

Major geopolitical issues

Naturally, Boeing's difficulties and Airbus' success are not to the liking of US president Donald Trump, who saw a large part of the GDP of the United States evaporate. The competition between the two has fueled the trade war between EU and US, which in October 2019 decided to apply a 10 percent tax on imports of European aircraft.

Airbus management denounces an unfair decision directly linked to the current fragility of the Boeing group. Highlights of this include the WTO siding with the US in an Airbus subsidy case, allowing US to target \$7.5B in EU imports; Airbus and Boeing must prepare for the entry into the market of a strong competitor. In 2017, the Chinese group Comac (Commercial Aircraft Corporation of China) and the Russian consortium UAC (United Aircraft Corporation) created the joint venture CRAIC (China-Russia Commercial Aircraft International Corporation) in order to launch aircraft they claim are as efficient as those of Airbus and Boeing, but less expensive.

For presidents Xi Jinping and Vladimir Putin, this alliance is part of a major strategic move toward Sino-Russian collaboration. The friendship between the two presidents has led them to join forces against the United States and the trade policy of the government of Donald Trump. The CR929 will be a direct competitor to the A350 and the B787. With a budget of US\$20 billion, this aircraft is scheduled to enter service between 2025 and 2028.

(Oihab Allal-Chérif is Business Professor, Neoma Business School in Paris, France. This article originally appeared January 17, 2020 on the website, theconversation.com/ca.) ■



AERONEUF
INSTRUMENTS LTÉE/LTD

REPAIR - OVERHAUL - CERTIFICATION - SALES
RÉPARATION - RÉVISION - CERTIFICATION VENTE



Transport Canada

AMO 27-91



EASA.145.7189

Since 1988
Depuis 1988































Now in Laval, located between Mirabel and Trudeau airports to better serve you !
Maintenant à Laval – Entre les aéroports Mirabel et Trudeau pour mieux vous servir !

Your solution for Avionics Maintenance

Votre solution en Maintenance d'Avioniques

Ground Equipment
Équipement au sol

600, 3^e Avenue, Laval, Québec, H7R 4J4
Tél: (514) 631-2173 Fax: (450) 627-2199
www.aeroneuf.com • info@aeroneuf.com



A Broken Bracket



A fatigue crack is tragically undetected during a routine inspection cycle.

On 29 July 2018, 2 privately operated Quad City Ultralight Aircraft Corporation (Quad City) Challenger II advanced ultralight aircraft equipped with amphibious floats departed Ottawa/Rockcliffe Airport (CYRO), Ontario, for a daytime visual flight rules cross-country flight to North Bay Airport (CYYB), Ontario. While en route, the 2 aircraft encountered strong winds and turbulence, and the pilots decided to land on the Ottawa River, near Mattawa, Ontario. During the landing, the occurrence aircraft (registration C-IGKT, serial number CH2-1199-1919) touched down hard. After a short lunch

break, the pilots inspected the 2 aircraft and then flew to CYYB without further incident.

On 30 July 2018, the 2 aircraft departed CYYB at 0932 and climbed to between 1800 and 2000 feet above sea level for the return flight to CYRO. At approximately 0950, the occurrence aircraft's right wing separated from the aircraft when it was over Talon Lake, Ontario, 14.3 nautical miles east of CYYB. The aircraft entered an uncontrolled descent and collided with terrain in a wooded area. A post-impact fire ensued. The pilot was fatally injured. The aircraft was destroyed by impact forces and the post-impact fire.

The pilot of the other aircraft overflew the occurrence site and landed on Talon Lake. At 0959, he met a local resident, who called 911 to report the accident. There was no emergency locator transmitter on board, and none was required by regulations.

Records indicate that the pilot was certified and qualified for the flight in accordance with existing regulations. He obtained a private pilot licence – aeroplane in December 2004 and had a valid Category 3 medical certificate. He had accumulated over 1330 total flying hours, with over 1230 hours on ultralights. The investigation found no evidence to indicate that the pilot’s performance was degraded by fatigue or other physiological issues.

Aircraft information

Quad City has been manufacturing Challenger ultralight kits since 1983. The Challenger is sold exclusively as a quick-build kit with several options, including engine upgrades, long or clipped wings, and single- or 2-seat cockpits. The aircraft can be equipped with wheels, skis, or amphibious floats. The company has sold over 4400 Challengers worldwide, including 608 in Canada.

Since the mid-1990s, most new Challengers in Canada have been registered with Transport Canada (TC) in the advanced ultralight category. At November 2018, of the 608 Challengers on the TC registry, 405 were in the advanced ultralight category, 195 were in the basic ultralight category, and 8 were in the amateur-built category.

The occurrence aircraft was manufactured and registered as an advanced ultralight in 2000. The occurrence pilot purchased the aircraft in May 2008.

It was a 2-seat, long-wing variant with a 29.5 foot wingspan. Depending on the season, the aircraft was flown on wheels, skis, or amphibious floats. At the time of the occurrence, the aircraft was

equipped with amphibious floats. The aircraft was also equipped with a heavy load saddle kit.

Lift strut attachment to the fuselage

The wings are supported by lift struts that are attached to the fuselage with 1½ inch preformed channel, U-shaped, aluminum alloy brackets. The brackets are attached to the lift struts using a bolt that passes through the bolt holes on each leg of the bracket and through a pre-drilled hole in the lift strut. The brackets and struts are then attached to the fuselage longeron using a bolt that passes through a bolt hole in the centre base plate of the bracket. Castle nuts or nyloc nuts are used to secure the bolts.

Heavy load saddle kit

The heavy load saddle kit was developed to provide the Light Sport version of the Challenger ultralight aircraft with greater lift and performance capabilities. It is a set of 2 spacers fitted to the fuselage longeron and provides a flat surface area at the attachment point with the bracket.

Maintenance

Advanced ultralights in Canada are required to be maintained in accordance with the manufacturer’s recommendations. According to TC’s Ultra-light Aeroplane Transition Strategy, manufacturers must provide owners with “a specified maintenance program that includes the

**Western Canada’s ONLY Factory Authorized Propeller Facility
for All Manufacturers**

Complete Overhauls, Repairs & Service

**Support of ALL
Aircraft Propellers**





CANADIAN
PROPELLER
& AIRCRAFT COMPONENTS

By selling all makes of propellers, we can assess the individual needs of customers and satisfy their specific needs.

Canadian Propeller is THE propeller service facility that is an Authorized Service Facility (ASF) for Hartzell, McCauley and MT Propeller.

New Sales, Service, Exchanges & Rentals








AMO 175-91 EASA 145.7253

Best Warranty in the Industry

Guaranteed Best Pricing

CONTACT US FOR INDUSTRY BEST PRICING ON NEW PROPS AND BLADES
1-800-773-6853 | 24/7 & AOG Technical Support | canadianpropeller.com

inspection schedule and the maintenance procedures [...] and Mandatory Action information issued by the manufacturer or TC and any corrective procedures for potential unsafe flight conditions.”

Aircraft owners are required to “maintain appropriate records for the aeroplane which must include scheduled maintenance, mandatory action, modifications and accident repairs.”

Quad City’s manufacturer-specified maintenance program includes 50-hour inspections and high-time airframe inspections. In June 2014, the occurrence aircraft underwent a high-time airframe inspection after it had accumulated 1047.4 hours total time since new, and was refurbished with several new parts, new fabric, and paint. When the aircraft was returned to service, the spar and strut brackets had been replaced, and the streamline fairings over the main lift struts were new; however, the struts themselves were the originals from 2000.

The Quad City Challenger Owner’s Manual lists the steps required to assemble the aircraft kit, including instructions to attach the wing spars and struts to the fuselage. The instructions specify that the bolts holding the brackets are to be tightened until snug.

The owner’s manual also indicates that the brackets and their associated bolts and nuts are to be inspected for tightness, cracks, play, and safeties at the 50-hour inspection. These are visual inspections only. The manual does not specify any recommended torque values to be used, the inspection

methods to be used, or the type of inspections to be performed to identify possible cracking.

At the time of the occurrence, the aircraft had accumulated approximately 1450 hours. The aircraft’s journey log showed that the occurrence pilot was completing inspections at 25-hour intervals, rather than the 50-hour intervals recommended by the manufacturer, and that one of these 25-hour inspections had been completed on 06 May 2018. The manufacturer does not require or have a specific checklist for a 25-hour inspection, and it could not be determined if these inspections were conducted using the 50-hour inspection checklist, or if the brackets were inspected as required.

The Quad City Challenger Owner’s Manual states that the brackets are to be replaced completely at 500 hours time-in-service. The aircraft journey log indicated that all brackets had been replaced at the high-time airframe inspection conducted in June 2014, and the aircraft had flown approximately 403 hours since that time.

Technical examination

As part of the investigation, both right wing lift struts (front and rear), both right wing spars (front and rear), and the respective brackets were sent to the TSB Engineering Laboratory in Ottawa, Ontario, for examination.

The examination of the failed right front lift strut bracket identified the following:

- A clean and straight fracture line went through the centre

**Increase your starter generator reliability
with NAASCO's Mercury Mod™ upgrades**

Advanced cooling for greater reliability!

Mercury Mod
Phase II

Approved for:
Agusta • Bell • Bombardier • Eurocopter
MD • Schweizer • Sikorsky

HAC

MEMBER NBAA

NAASCO

NAASCO NORTHEAST CORP.
FAA repair station # FD1R135K • EASA.145.4687
www.naasco.com

Scan QR

for more information

To learn more about our cost-saving repair and overhaul programs, contact NAASCO today!

of the bolt hole on the bracket. There were no signs of plastic deformation shown on the bracket.

- Arced beach marks indicate that the edge of the bolt hole being the origins of the fatigue. The number of beach marks also indicated that the fatigue had begun some time before the occurrence, although the exact timeframe could not be determined.
- The fracture surface of the fatigue crack was examined under the scanning electron microscope, and a significant number of secondary cracks were found parallel to and underneath the inboard surface of the base of the bracket. These cracks resembled material delamination.

The examination concluded that the bracket that attached the right forward strut to the heavy load saddle on the fuselage had failed under nominal loading condition due to the presence of a large fatigue crack. The fatigue crack, which accounted for at least 60% of the cross-section of the base of the bracket, had been present in the bracket for some time before this occurrence. The secondary delamination cracks that were found in the bracket are considered abnormal for aluminum alloy. The failure of this bracket allowed the lift strut to detach from the fuselage and the right front spar to twist and rotate upward under aerodynamic load. The right front spar tore away at the bracket attachment point to the main centre beam and caused the wing to fail.

Meanwhile, because the right-wing lift forces were no longer being transferred to the fuselage, the lift forces generated by the left wing caused the aircraft to roll to the right. As the right wing continued to fold back, the rear spar and rear lift strut failed, and the wing separated from the aircraft. This right wing separation resulted in an unrecoverable loss of control and collision with terrain.

It was determined that the fatigue crack on the right front lift strut bracket went undetected during the routine inspection cycle undertaken by the pilot and failed before the 500-hour stipulated life span. Although a bolt longer than specified had been used to attach the bracket to the lift strut, there was no evidence to indicate that the bolt had been overtightened or over-torqued. It could not be determined whether the hard landing the day before the accident contributed to the bracket failure.

Examination of brackets installed on other aircraft

To determine if this issue was isolated to the occurrence aircraft, the TSB examined lift strut brackets from 6 other Quad City Challenger II aircraft. Of these, 4 were based in the Ottawa area and 2 were based in the Toronto area. Twenty-one strut brackets from these aircraft, each of similar construction to the occurrence bracket, were examined visually. Some were also examined under an optical microscope or scanning electron microscope.

Of the 21 brackets, 8 were found to have cracks. The cracks varied in size and origin; however, their actual lengths and depths were not determined. Some cracks resulted from fatigue, whereas others were caused by material delamination.

The time-in-service of these brackets ranged from ap-

proximately 4 hours to 829 hours, and the brackets had been manufactured between 1996 and 2018. At the time of this examination, none of the aircraft from which these brackets were taken were owned or operated by the original owner; they had all been through multiple changes of ownership. The investigation did not examine the individual aircraft assemblies, operating histories, or maintenance documents, nor did it examine in detail the manufacturing process of the brackets.

Previous Canadian occurrences and related activities

A search of TC and TSB databases for occurrences from 1993 to 2018 found 245 reported incidents and accidents involving the Challenger II aircraft. None of these occurrences specified wing separation or failure of the bracket as a contributing or causal factor.

Safety message

The lift strut brackets used on the Quad City Challenger II have been in service for 35 years and are installed on more than 4400 aircraft worldwide, of which 608 are in Canada. In this accident, a fatigue crack on the right front lift strut bracket went undetected during the routine inspection cycle undertaken by the pilot, and the bracket failed in flight before the 500-hour stipulated life span. The failure led to the right wing separating from the aircraft, resulting in an unrecoverable loss of control and collision with terrain.

THE BEST PLACE IN THE WORLD TO TAKE A LEAK

FUEL CELLS

QUOTES ON:
Cherokee Tanks
Fuel Cells & Metal Tanks
Repair, overhauled & new
Technical Information or
Free Fuel Grade Decals

MONARCH PREMIUM CAPS
Premium Stainless Steel
Umbrella Caps
for your
Cessna 177 through 210

www.hartwig-fuelcell.com info@hartwigfuelcell.com

HARTWIG
AIRCRAFT FUEL CELL REPAIR
Keeping aircraft in the air since 1952

US: 1-800-843-8033
CDN: 1-800-665-0236

INTL: 1-204-668-3234
FAX: 1-204-339-3351

Examination of additional brackets obtained from other aircraft, with various amounts of time-in-service, found that fatigue and delamination cracks are not isolated to the occurrence bracket.

As this occurrence demonstrates, it is possible for fatigue and delamination crack failures to occur on these brackets within recommended time-in-service limits and to remain undetected during basic manufacturer-recommended inspection practices. Cracks that develop on an airframe component need to be identified before the component fails completely. This is especially true when the component's failure can result in an irrecoverable loss of control in flight.

Safety actions taken or underway

On 15 November 2018, the TSB issued a safety advisory to inform TC, the manufacturer, and other stakeholders about the issue and encourage them to take the necessary steps to reduce the likelihood of the bracket failure identified in this occurrence happening again.

Quad City is conducting a stress analysis on the addition of a fixture under the head of the bolt that secures the lower strut attachment brackets to the fuselage longerons. The purpose of this fixture is to reduce flexing and spread loads around the bolt hole where fatigue cracks appear to start.

TC, Quad City, the Canadian distributor of the Challenger II, and other agencies are working together to determine the causes of the failure and to publish safety alerts with

amended maintenance directives and inspection processes. The purpose of the safety alerts will be to:

- provide details on the possibility of cyclic loading of the lower strut attachment brackets;
- require the removal and inspection of the brackets before further flight;
- require that installation, configuration, inspection, assembly and replacement criteria and processes be amended;
- require that maintenance checklists and the high-time airframe inspection document be amended;
- require that bracket inspection and replacement intervals be amended;
- provide information on the bracket service life for aircraft used as trainers and those operating in rough terrain;
- warn against using the strut-to-fuselage junction as a step or installing fuel tanks or baggage pods on the main struts or jury struts; and
- recommend that the heavy load saddle kit be installed.

On 01 March 2019, TC published Civil Aviation Safety Alert 2019-02 to address the issue. Quad City intends to issue a safety alert to Challenger owners that will explain the updated maintenance instructions.

(These were excerpts from Transportation Safety Board of Canada's investigation into this occurrence. The Board authorized the release of this report on 24 March 2019. It was officially released on 9 April 2019.) ■

Maintenance and Ramp Safety Society

A Non-Profit Society Dedicated To
Reducing Aviation Human Error

The tools that we offer to help achieve a zero accident rate consist of:

- ▶ **Posters**—High impact, non stop reminders how to reduce human error
- ▶ **Videos**—High quality productions that show how to reduce human error.
- ▶ **Membership**—Access to human factor specialists help reduce human error

- ▶ **Training**—Courses designed by experts to help you reduce human error
- ▶ **'GroundEffects'**—Specialized articles to help you reduce human error

These Tools Save Lives and Money!
Are you going to deny yourself and your company the most important wish of all—SAFETY?




ORDER YOUR POSTERS TODAY!

REMEMBER!
Safety and Profit
Work Together



121 - 19140 28th Ave, Surrey, B.C. Canada V3S 6M3

tel: 604.531.9108 fax: 604.531.9109 email: marss@marss.org

Visit our website to view the full selection or to order your posters today! web: www.marss.org

Aviation Services

ENGINE APPROVED KITS
NEW DPU 7-7070 VIDEO RECORDING

MACHIDA

- HD VIDEOSCOPIES
- BORESCOPES
- BLENDING SCOPES
- CUSTOM SCOPES

WWW.MACHIDASCOPE.COM

Find us on Facebook | LinkedIn | Twitter | YouTube

PHONE: 1-800-431-5420 - 1-845-365-0600 EMAIL: INFO@MACHIDASCOPE.COM

FLYRITE

ACCESSORY OVERHAULS
 AMO 90-97 EDMONTON, AB

OVERHAULS BY THE BOOK! **STARTER-GENERATOR**

Overhauls
 Modifications
 Service
 Rentals

SAFRAN POWER (GOODRICH)
 SKURKA/APC ▶ THALES (AUXILEC)

1-888-439-6020
 flyrite@incentre.net
 Ph. (780) 439-6020
 Fax (780) 439-6106

Heli Technology Inc

SPECIALIZING IN BELL HELICOPTERS
 204, 205, 206, 212 & 407

- Dynamic Component Overhaul
- Genuine Bell Parts Sales
- Exchange & Rental Program
- Field Maintenance
- In-House Reworks & Machining

OVER 30 YEARS EXPERIENCE

Phone: (250) 566-4401
 Fax: (250) 566-4333

PO Box 18, 3010 Selwyn Road
 Valemount BC V0E 2Z0

SAVEONJETFUEL

- Enviro Tanks
- Bulk Jet Fuel
- Avgas

Toll Free: 1-866-353-3030
www.saveonjetfuel.com
 SERVING THE HELICOPTER INDUSTRY

Aviation Services

Canadian Aero Accessories Ltd.



**Component Sales
Overhaul & Repair**



Authorized repair Station For

GOODRICH

**Ice protection systems
PowerSystems**

170 George Craig Blvd. N.E.,
Calgary, AB, Canada T2E 7H2

ph: 403.250.9077

sales@cdnaero.com
www.canadianaero.com

Aircraft
CANADA



**SINGLE PISTON • TWIN PISTON • SINGLE TURBINE • TWIN TURBINE
JETS • HELICOPTERS • APPRAISALS**

*Certified Aircraft Appraisals
Member of National Aircraft Appraisers Association*

LORNE GRAY AGENCIES LTD.

TEL: 403-547-1024 FAX: 403-547-0037 EMAIL: INFO@AIRCRAFTCANADA.COM

www.aircraftcanada.com

**Contact AMU Magazine
to advertise**



phone: (604) 214-9824
toll free: 1-877-214-9824
amumag2015@gmail.com

**Do you have any story ideas
for AMU?**

By contributing articles to AMU, you are able to promote your skills and expertise; and you provide valuable information to the aviation and aerospace community.



Email ideas for articles to AMU's editor, Ian Cook, at:
amu.editor@gmail.com

When flying is what you do, we're here.

Sealand Aviation, located at Campbell River on Canada's West Coast, provides experienced and efficient aircraft maintenance and service.

- Transport Canada approved for repairs, maintenance, structures, welding and manufacturing.
- A&P and IA on staff for US inspections and US annuals.
- EASA Part 145 Approved



• 2300 Airside Drive, Campbell River Airport
• 2880 Spit Road, Campbell River Floatplane Base

www.sealandaviation.com • 1.800.331.4244

Aviation Services



CARs AMO 76-90
ALL NDT METHODS

X-ray • Ultrasonics • Bond Testing
Eddy Current • MPI • LPI

EXPERIENCED STAFF OF CERTIFIED TECHNICIANS

#8, 2280 Pegasus Way N.E. Calgary, AB T2E 8M5
p: (403) 274-8214 • f: (403) 274-8457 • w: www.applusrtd.com



**Pitot-Static
Test Adaptors**
For all Types of Aircraft
Nav-Aids Ltd
1-877-332-3055 www.navaidsltd.net

AirMaintenance Update
has a new address



Alpha Publishing Group Inc.

Unit 7, 11771 Horseshoe Way
Richmond BC V7A 4V4 Canada

Leading
Edge
Technology



Beaver & Otter
Safety & Performance
Modifications

- Beaver – STOL Kits
- Wing Angle Kits
- 5370 Upgross Kits
- Otter – STOL Kits
- 400-lb. Upgross Kits
- Float Stretch Kits
- “Yukon” Cargo Door



Walter Turbine Otter Conversions
*“the most cost effective
Turbine Otter Conversion
on the market”*



TC approved (AMO# 80-07)
for Maintenance,
Repairs, Structures,
Welding & Manufacturing

www.stolairus.com / stolairus@telus.net
6095 Airport Way, Kelowna, BC V1V 1S1
(North end of Kelowna Int'l Airport)
Phone: (250) 491-7511
Fax: (250) 491-7522

Chasing the Bill O'Brien

Maintenance teams from around the world will square off to see who's best.

A record 90 aviation maintenance teams from around the world are expected to compete against each other in the Aerospace Maintenance Competition Presented by Snap-on. The event will be held at the MRO Americas 2020 Convention, April 28-30, in Dallas, Texas.

The event provides certified AMTs from major airlines, MROs and OEMs, as well as military personnel and students in FAA Part 147 schools, the chance to test their skills against their peers. The AMC truly has an international flavour as this year's field includes commercial teams from Alitalia, Qatar, Flybe, Qantas, JetStar, American, United, JetBlue, Spirit, WestJet and several other commercial, MRO, military and school teams.

Participants will compete in 28 events, including airframe damage inspection, cable rigging, fibre optics, engine fan blade removal, and many others that are new this year that challenge their knowledge, skill and team work.

The team earning the overall best score takes home the grand prize in aviation maintenance – the William F. "Bill" O'Brien Award for Excellence in Aircraft Maintenance. Presented by Snap-on, the award is a traveling trophy that debuted at the 2013 competition. The winning team receives the honour of displaying the five-foot tall trophy in their facility for a year.

In addition to the trophy, Snap-on is awarding more than \$75,000 in tools and equipment as prizes to the top finishers in the competition. Last year, the five-member team from United Airlines Team Cleveland showed everyone why they were the team to beat, keeping the O'Brien Award trophy on display at the company's facility at Cleveland Hopkins International Airport for a third straight year.

Aviation maintenance supporters can get involved with the AMC through college financial donations. The Aerospace Maintenance Council, which hosts the AMC, is accepting donations from industry organizations to increase funding of its Phoebe

Omlie Award. Named after the first female to receive an FAA aircraft mechanic's licence in 1927, the Phoebe Omlie Award is available to both men and women who are enrolled in an FAA Part 147 school, and who are participating in the AMC.

(For more information, visit www.snaponaviation.com)



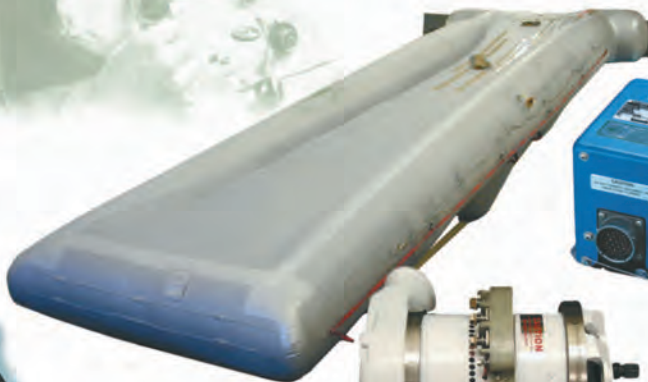
Canadian Aero Accessories Ltd.

Component Sales

Overhaul & Repair



Trusted
Experience
Since 1964



CALL US FOR THIS & MORE !

- Fire Bottles • Oxygen Bottles • Escape Slides • Life Rafts
- Starter Generators • AC Generators • Generator Control Units
- Boost Pumps • Fuel Pumps • Blowers • Valves • Brakes
- Hydraulics 5606 and Skydrol • Electronics/GCUs
- Actuators - Hydraulic and Electrical

Authorized repair Station For

GOODRICH

Ice protection systems

170 George Craig Blvd. N.E., Calgary, AB, Canada T2E 7H2

ph: 403.250.9077 • fax: 403.250.6841

sales@cdnaero.com

www.canadianaero.com



PRATT & WHITNEY

R985



TRAINING SESSION

ENGINE THEORY & MAINTENANCE HOSTED BY AERO RECIP

featuring our R985 running cutaway engine

APRIL 2, 2020 • WESTMARK HOTEL
WHITEHORSE, YT • 8:00AM-4:30PM

LIMITED CAPACITY

Cost: \$350

Continental breakfast, lunch and coffee breaks provided.

Contact tgregorash@aerorecip.com or 1.800.561.5544 to reserve your space.

AeroRecip.com 1.800.561.5544 | [INFO@AERORECIP.COM](mailto:info@aerorecip.com)

