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Publication Mail Agreement No. 0041039024
and Return Undeliverable Canadian Addresses to
Alpha Publishing Group Inc.
Suite 2 - 203 4360 Agar Drive, Richmond, BC, V7B 1A3
email: amu.magazine@telus.net

April - May 2013
Volume 11/Issue 6

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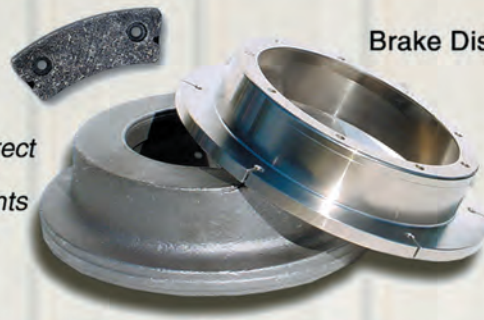
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Welcome to Spring

Well, did you get all those winter projects done that you promised yourself you'd do last autumn? It's been a number of years since I was active in the business, but when I lived in the north, every year the floats would come off and get put in a corner of the yard and we were certain we'd get to those temporary repairs to make them ship-shape for the next summer season. Then they'd get buried in snow and the work wouldn't get done until they surfaced in the spring. Perhaps the panic is on for many of you now.

The busy season is fast arriving for many, whether it's tourist season, forest fire season, or any other number of reasons for the aircraft to be spending more time in the air during the summer months. Also, the days are longer, so in many cases, the flying can continue until a late hour, which means that maintenance must be done in the wee hours of the morning. We really aren't naturally meant to be at our best in the middle of the night, but the very nature of our business (and numerous other businesses) dictates that's when we must do our work.

This is when our human factors awareness is most important. When we're at work when we should be sleeping, and on our minds is the fact that our friends and families are at the lake or are just clearing up after a barbecue, we are not 100 percent focused on our work. After all, we're only human. This is the time, more than any other, to take a minute to think, then have a second look at the work we've just done, or trade jobs for a few minutes with another technician and have a look at each other's work.

Meanwhile, do make sure you get a few days off to enjoy the summer, and when you do, don't take your work with you.

— Ian Cook
Editor



Departments

- 4 **Upcoming Events**
- 4 **Advertisers Index**
- 6 **STCs & New Products**
- 8 **Industry Forum**
- 20 **AME Association and PAMA News**
- 39 **Classified**
- 42 **AMU Chronicles**
By Sam Longo

Features

- Helicopter CK Again** 10
By Mike Broderick
- Passenger Service & Entertainment Systems** 16
By Gordon Walker
- Who CAIRS? and other regulatory topics** 26
By Norm Chalmers
- Raising the Bar** 32
Loss of control and crash: Cessna Citation 550

We're moving!

As of May 1, 2013
our new address will be:



Alpha Publishing Group Inc.
Unit 7, 11771 Horseshoe Way
Richmond BC V7A 4V4

AirMaintenance Update

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phone: (604) 214-9824 • **fax:** (604) 214-9825
toll free: 1-877-214-9826

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Norm Chalmers, Sam Longo, Stuart McAulay,
Brian McNair, Gordon Walker, Sue Yost

Publications Mail Registration No. 0007198278

Published by Alpha Publishing Group Inc.

Publication Mail Agreement Number 0041039024 and Return Undeliverable Canadian Addresses to:
Alpha Publishing Group Inc.
Suite 2-203 4360 Agar Drive
Richmond BC V7B 1A3 Canada

website: www.amumagazine.com

Subscription Rates: 1 Year: \$40 2 Years: \$60
AirMaintenance Update is published 6X annually.
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ISSN 1703-2318

AMU is viewable online: subscribe and download at www.amumagazine.com

Upcoming Events

CANADA

Western Aerospace Expo

May 6 – 8, 2013
 Fort Garry Hotel
 Winnipeg, MB
www.register2attend.ca/WAE/2013/default.asp

2013 Canadian Aviation Expo

June 1 – 2, 2013
 Region of Waterloo International Airport
 Breslau, ON
www.canadianaviationexpo.com/

Canadian Business Aviation Association (CBAA)

Convention 2013

June 25 – 27, 2013
 Vancouver, BC
www.cbaa-aaaa.ca

UNITED STATES

Sun 'n Fun International Fly-In & Expo

April 9 – 14, 2013
 Lakeland Linder Regional Airport, FL
www.sun-n-fun.org

MRO Americas 2013

April 16 – 18, 2013
 Georgia World Congress Center
 Atlanta, GA
events.aviationweek.com

Aviation/Aerospace Workforce Issues Think Tank

May 7, 2013
 Minneapolis, MN
www.aviationworkforcedevelopment.org

Arizona Aircraft Expo and Ownership Conference

May 18, 2013
 Legend Aviation, Ernest A. Love Field
 Prescott, AZ
www.azaircraftexpo.com/

85th Annual AAAE Conference and Exposition

May 19 – 22, 2013
 Reno-Sparks Convention Center
 Reno, NV; <http://events.aaae.org>

EAA AirVenture

July 29 – August 4, 2013
 Wittman Regional Airport
 Oshkosh, WI
www.airventure.org/

2013 NBAA Business Aviation Convention & Exhibition

October 22 – 24, 2013
 Las Vegas Convention Center
 Henderson Executive Airport
 Las Vegas, NV
www.nbaa.org

INTERNATIONAL

Aero Expo UK

May 31 – June 2, 2013
 Sywell Aerodrome
 Sywell, Northampton, UK
www.expo.aero/uk

2013 European Business Aviation Convention & Exhibition (EBACE 2013)

May 21 – 23, 2013
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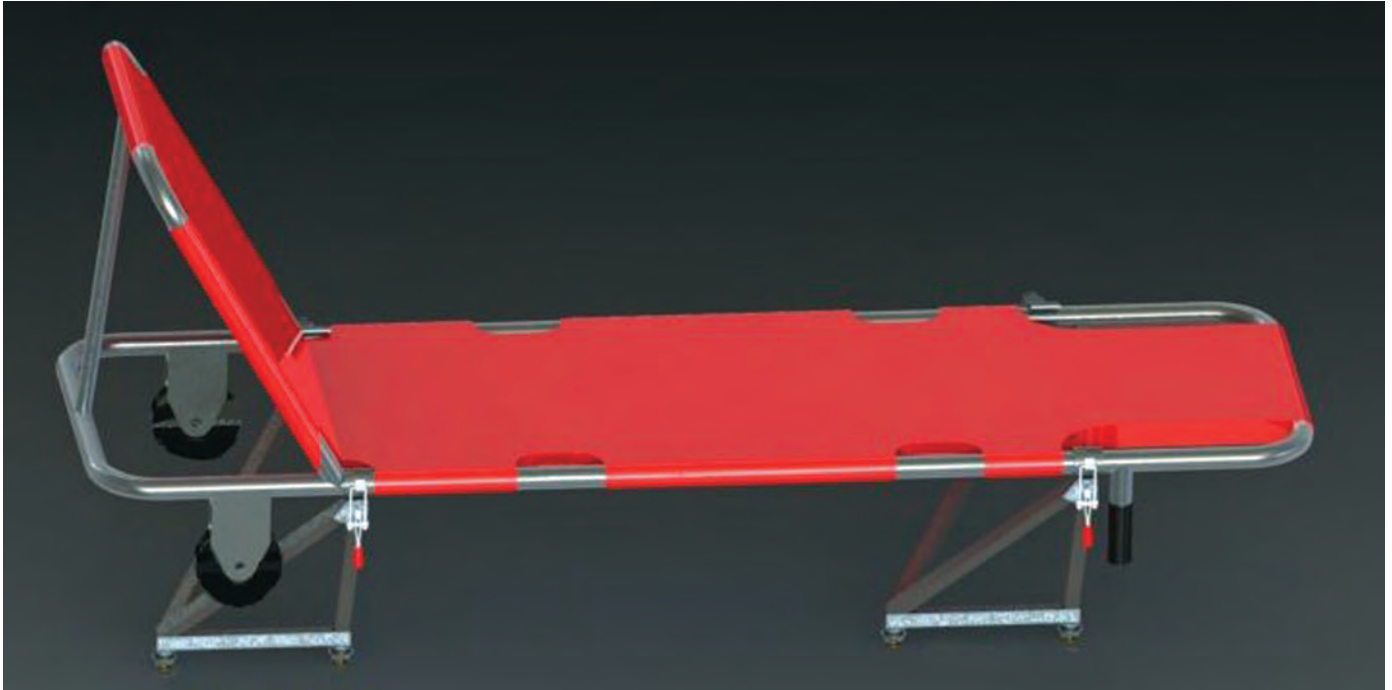
Aero Friedrichshafen

April 24 – 27, 2013
 Friedrichshafen, Germany
<http://www.aero-expo.com>

Advertisers Index

APS Brakes / Aero Incorporated	9	Gregorash Aviation	11	Rapco Inc	2
Aeroneuf Instruments Ltd	27	Hartwig Aircraft Fuel Cell Repair	30	Schweiss Bi-fold Doors	18
ARMEX	17	HEROS	41	Scissordeck.com	29
Barfield	34	Hope Aero	19	Superior Oil Coolers	33
BKD Aerospace	37	MARSS	36	Thunder Bay Aviation Ltd.	5
Canadian Aero Accessories Ltd	7	NAASCO	14	U.S. Air Tool Company	28
Canadian Propeller Ltd	12	Okanagan Aero Engine Ltd	17	U.S. Industrial Tool & Supply Co	34
Casp Aerospace Inc	18	Perimeter Aviation	33	Universal Aero Engines Ltd	36
Concorde Battery	13	ProAero Engines Inc.	29	Vector Aerospace	42
Eagle Fuel Cells Inc	8	Progressive Air	31	Western Propeller Company Ltd	27
FAA Productions	34	Propworks Propeller Systems	30	WestStar Aviation	15

Beech 1900 Stretcher Racks!



**Have you ever been in the situation where someone who is injured needs transport?
If you answered “yes”, then this product is for you!**

These stretcher racks have been developed to allow the carriage of a person unable to sit in a seat in your passenger-configured Beech 1900.

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- allows the carriage of a patient in your passenger-configured aircraft
- safer transport of the patient

The Ferno #9 stretcher (above) is shown for illustration only and is available separately.

For further information, please contact

**Dave Breton: dave@thunderbayaviation.com
or**

Steven Appelt: steve@thunderbayaviation.com

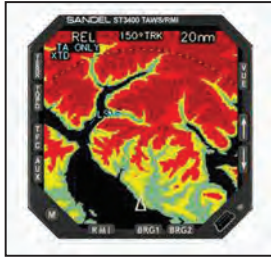


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STCs & new products

Maxcraft announces STC for Beechcraft 1900C and 1900D regional airliners

Maxcraft Avionics Ltd. has received Transport Canada Supplemental Type Certificate (STC) SA12-78 for installation of a Class A Terrain Awareness Warning System (TAWS) into the Hawker Beechcraft 1900C and 1900D aircraft. The STC also meets the new Transport Canada requirements for Enhanced Altitude Accuracy (EAA) as referenced in the Transport Canada Advisory Circular for TAWS AC 600-003. It offers the Sandel ST3400 TAWS Class A display, integrated with existing compatible GPS receivers or can provide a new dedicated WAAS/GPS sensor, if required. For information visit www.maxcraft.ca

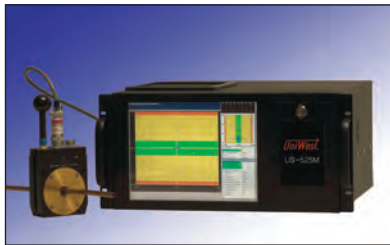


Walter Surface Technologies launches high-performance 1mm Cut-off Wheel

Walter Surface Technologies is pleased to announce ZIP ONE, the highest performance extra thin cut-off wheel on the market. Designed for cutting thin gauge metal, ZIP ONE is a specially-reinforced disc bonded with a unique, proprietary mix of high performance abrasives that deliver extra cool cutting. A new technology enables an optimal grit distribution throughout the disc. ZIP ONE is the first wheel on the market with a true 1 mm (1/32") thickness that can last much more than only a few cuts. For information visit www.walter.com



UniWest's Eddy Current Inspection Instrument provides Signal-to-Noise Ratio



United Western Technologies Corporation (UniWest) has introduced the US-525M, a single- or multi-channel eddy current instrument designed for detecting surface defects in metals. With an exceptional signal-to-noise ratio, the 525M enables detection of smaller flaws that other instruments

may miss. This rugged, rack-mounted eddy current instrument can be integrated into a semi- or fully-automatic inspection system to provide reliable non-destructive testing.

For more information visit www.uniwest.com

Shadin announces AIS Fuel Flow on Bell 412 Helicopter EPI

Shadin Avionics, a global leader in aircraft fuel management solutions, has announced the installation of the Shadin Avionics AIS Fuel Flow system on the Bell 412 Helicopter EPI. The new AIS Fuel Flow "Behind the Glass" system includes the new Shadin AIS Fuel Flow signal converter which allows fuel flow and additional fuel information to be displayed on a glass display rather than on a separate indicator. The installation package also includes Shadin's fuel flow transducer for the upgraded Pratt & Whitney PT6T-9 engines. Learn more about Shadin Avionics Fuel Management Systems at www.shadin.com



Timken announces Bell-Approved Replacement Parts

The Timken Company continues to grow its aerospace aftermarket business, developing additional replacement part offerings, engine overhaul services and facility investments. Timken provides precision-engineered bearings, related components and assemblies for aerospace OEM and aftermarket customers, bringing together 75 years of industry expertise. The company's aerospace aftermarket capabilities include Bell-Approved Replacement Parts for many Bell part numbers. For a list of parts please visit www.timken.com/aerospace



Kitchener Aero announces Caravan C208 Avionics Upgrade

Kitchener Aero Avionics (KAAV), one of Canada's premiere avionics and special missions modifiers, is pleased to announce another Canadian "first" with the completion of a new upgrade package for the Cessna C208 Caravan. The heart of this upgrade is an Aspen EFD-1000C3 PFD and Class B TAWS. The Aspen PFD replaces the problematic and expensive gyros in the King KFC-150/225 Flight Control Systems that were originally installed in the C-208 fleet. For more information visit www.kitcheneraero.com



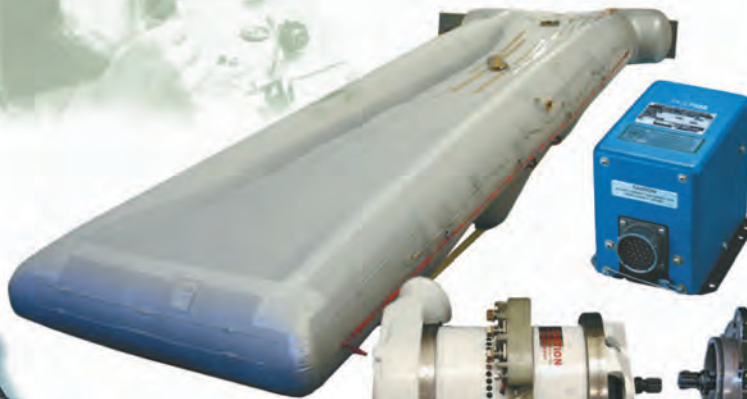
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VECTOR RENEWS AGREEMENT WITH AIR GREENLAND

TORONTO ON, January 29, 2013 — Vector Aerospace Corporation (Vector), a global independent provider of aviation maintenance, repair, and overhaul (MRO) services is pleased to announce the renewal of its current engine services agreement with Air Greenland, based in Nuuk, Greenland.

As per the terms of the two-year extension of this exclusive agreement, Vector provides Air Greenland with fixed and rotary wing aircraft engine repair and overhaul support from its Vector Aerospace Engine Services — Atlantic facility in Summerside, Prince Edward Island, Canada and from its Vector Aerospace Helicopter Services — North America facility in Richmond, British Columbia, Canada. Air Greenland is also supported by Vector's network of service centres in the United States and in Europe.

The agreement with Air Greenland includes various repairs, hot section inspections, modifications, overhaul services, and test support on the P&WC PT6A, PW123 and PT6T series engines.

For more information visit www.vectoraerospace.com.

STRAUBE'S TO OBTAIN REPAIR STATION CERTIFICATION

KINGMAN AZ, February 28, 2013 — Straube's Aircraft Services has announced that the company will soon obtain a 145 Repair Station Certification at the AgustaWestland paint facility located in Philadelphia, PA. The company has been operating the paint shop at AgustaWestland's Philadelphia OEM facility for the past six years, and working towards a 145 Repair Station Certificate since 2011.

While offering aircraft painting from coast to coast, Straube's are also pursuing ISO certification, and are expecting

all paint shop locations to be ISO AS 9100 C certified in the next 18 months, starting with the Utah and Arizona locations, following with Hawaii and Pennsylvania.

Straube's Aircraft Services is a family owned and operated aircraft paint service company. In addition to locations in Kingman, AZ, Kapolei, HI, Ogden, UT, and Philadelphia, PA, Straube's offers mobile painting crews at any location. Since March 2007 the company has been working with AgustaWestland as an in-house paint contractor at their Philadelphia location. All three of Straube's locations offer complete aircraft refinishing, interior refurbishing, interior and exterior wash, and detailing. For additional information visit www.airstraube.com.

WEST STAR COMPLETES FIRST SKYBOX INSTALLATION

EAST ALTON IL, March 14, 2013 — West Star Aviation has announced that

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the company has completed the first-ever installation of Rockwell Collins' Skybox in a Gulfstream G550. The installation was completed at West Star's East Alton (ALN) location and was delivered on time at the beginning of March 2013.

The new Skybox allows users to take full advantage of an onboard Apple iTunes library to share movies, TV shows and music wirelessly and on demand. West Star installed the Skybox AMSU-5100, the larger capacity of the two available units, into the Gulfstream G550.

In addition to its facilities in East Alton, IL; Grand Junction, CO; Columbia, SC; and Dallas, TX, West Star Aviation runs the maintenance operations at Aspen-Pitkin County Airport in Aspen, CO, and at Spirit of St. Louis Airport in Chesterfield, MO. To learn more about the installation, visit www.weststaraviation.com.

SKANDIA INTRODUCES NEW INTERIOR MATERIALS AND TESTING GUIDELINES

DAVIS JUNCTION IL, March 13, 2013 — Skandia, Inc., has announced that it has completed the across-the-board implementation of the FAA's new Policy Statement PS-ANM-25.853-01, also known as Flammability Testing of Interior Materials.

"The new policy statement allows the streamlining of testing for various material types," explained Judy Johnson FAA DAR/DER and Skandia's Flammability Manager. "It's making quite a splash in the industry, mainly because it has taken a lot of ambiguous topics and narrowed them down into a concise document. It's a major improvement."

Ms. Johnson said that ever since the first day the new policy was released, it has become an integral part of every flammability-testing plan Skandia has implemented.

"The FAA's new policy covers all materials used in an aircraft's interior. If you have questions about topics such as qualification testing or circuit boards, you have additional policy guidance to follow," she said. "Even as a leader in flammability testing, we had many advisory circular and policy guidelines to

search through. Now the FAA has not only consolidated the guidelines, they have streamlined the testing procedures. We save time and money all around."

Ms. Johnson explained the FAA's streamlining process like this: "For example, if an aircraft manufacturer was using multiple panels, say it was the same composite panel, but it may have extra plies of skin in some areas or possibly the cell structure may be a little different in other areas, but overall it is the same material. Prior to these new guidelines, the manufacturer would have to produce and test samples of each of these panels. That's very expensive and time consuming. With the new rules, we can just do a flammability test on one of the particular samples and qualify the rest. So instead of the manufacturer having to produce maybe 15 or 18 samples, now they only have to produce perhaps three of them for testing.

"It has and will continue to produce some cost savings, especially for cabin refurbishing projects where there are a lot of unique components. We are going to be able to do the qualifications test-

ing quicker, easier and at less expense. That's going to be extremely beneficial, especially to the aftermarket industry." For information visit www.scandia.org.

POSITIVE DATA ACCUMULATES FOR TAMARACK'S ACTIVE WINGLETS

SANDPOINT ID, February 28, 2013 — Tamarack Aerospace Group continues to show significant performance and efficiency gains on a CitationJet equipped with Active Winglets. In a number of flights starting at gross weight (10,400 lbs.), the Tamarack test CJ has beaten the published times for climbing to 41,000 feet by significant margins.

The most recent flight from Dallas to Jackson Hole (a distance of 1100 nm) used 2400 lbs. of fuel. Starting at gross weight, an unmodified CJ would have burned 2700 lbs. of fuel. The ability to make the flight non-stop saved close to 800 lbs. of fuel under realistic operating conditions that included 50-knot headwinds. For more information visit www.TamarackAero.com. ■

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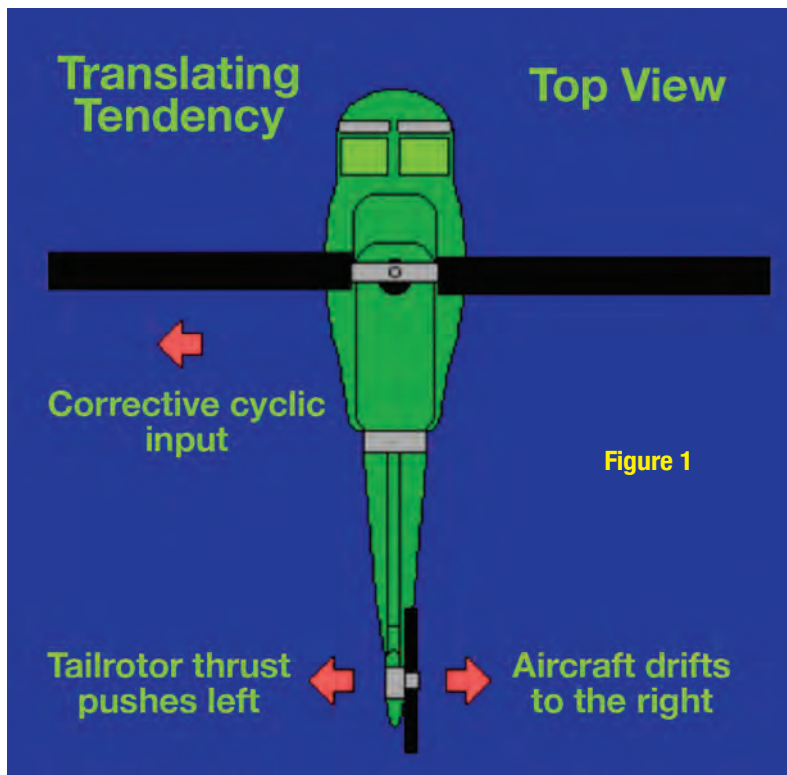


BY MIKE BRODERICK
Helicopter Engine Repair
Overhaul Services

Welcome back to another session of Helicopter CK.

I will assume you are reading this because you enjoyed the previous session on Helicopter CK and have returned to satiate your craving for more helicopter CK, or you just have no one to talk to right now, and figure this might be as good a time as any to learn some more stuff about helicopters. In either case, thanks for spending part of your day with me; I appreciate it. And to reward you for stopping by, today's lesson is full of some really cool helicopter cocktail knowledge (CK) so that when you do have someone to talk to, you can impress the heck out of them.

So, if you attended our last session, among other nuggets of CK, you learned about the difference between the Brayton and Otto cycle, why helicopter pilots sit mostly in the right seat, and of course that sure-fire conversation starter, dissymmetry of lift. Today, in keeping with our tradition of education and entertainment, we shall begin with the term "left skid low."



Helicopter Translating Tendency

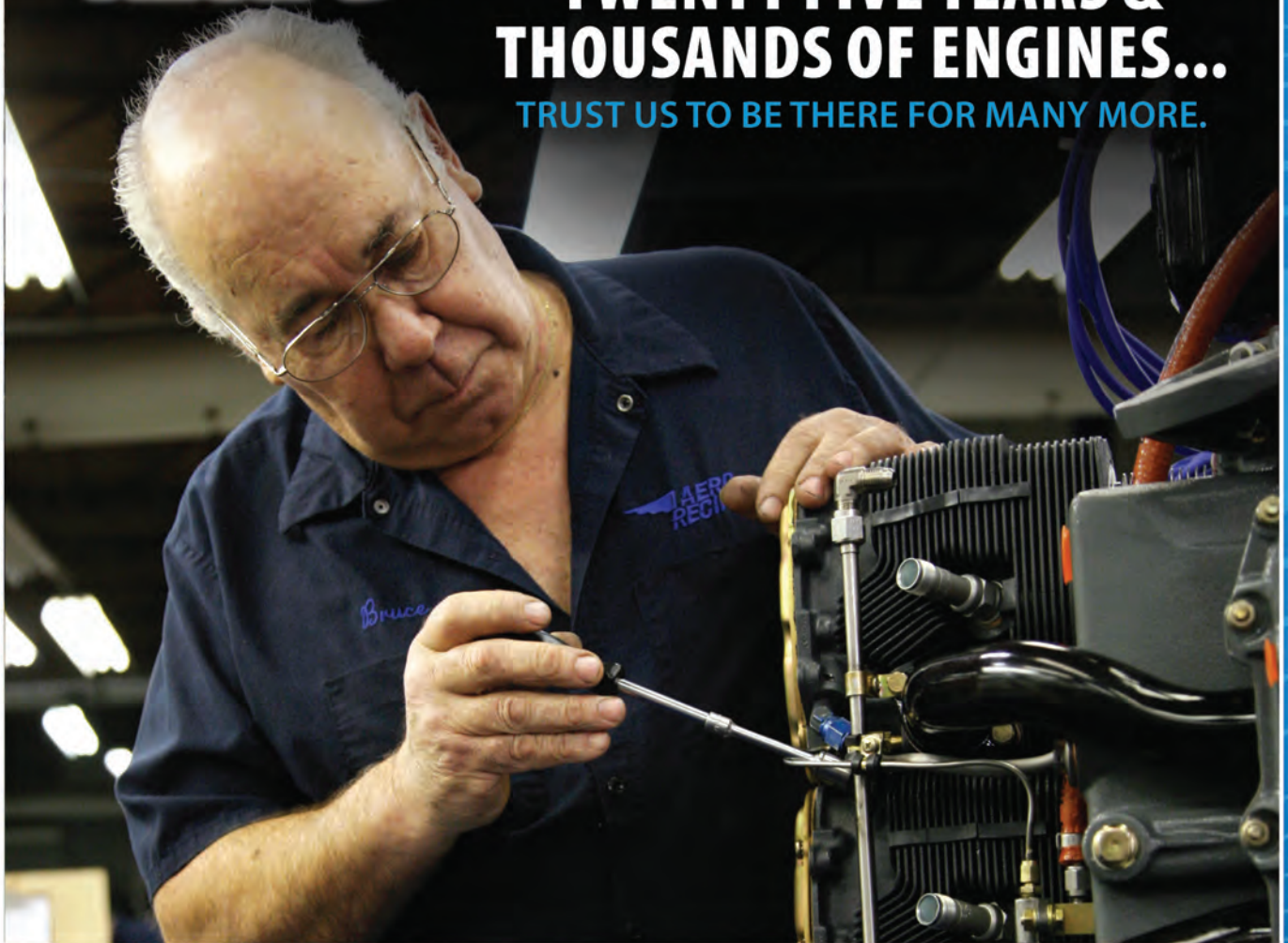
So what does "left skid low" or for the French helicopter pilots "patin droit bas" (right skid low) have to do with a helicopter's translating tendency? Well for sure, you will see it has nothing to do with the helicopter being bilingual. Nope, helicopter translating tendency is a normal occurrence with hovering helicopters.

The textbook definition for this flight behavior is: The tendency or inclination of a single rotor helicopter to drift laterally. And why will the helicopter drift laterally you ask? Because of the thrust produced by the tail rotor, that's why.

Is there really that much tail rotor thrust? You betch'ya there is. Remember that the tail rotor has a 6 to 1 rotational ratio to the main rotor, meaning it is spinning 6 times faster than the main rotor. The tail rotor has to spin this fast because, as you long time students know, the job of the tail rotor is to compensate for the torque of the main rotor, and by doing its job, our thrusting tail rotor tends to push the aircraft sideways at a hover. We compensate for this by adding left cyclic control inputs (on American helicopters, the opposite in the French-manufactured aircraft because their rotor systems turn the opposite way). *(Continued on page 12)*



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This makes the US-manufactured helicopter hang left skid, or wheel, low at a hover. If you ever see an American helicopter hovering, you may notice this left side low condition. If you ask a helicopter pilot how he is doing today, and he answers, “left skid low,” or because it is the opposite for the French pilots, “patin droit bas”, that means right now, all in his or her life is normal (or as normal as it can be for a helicopter pilot). So, the very next helicopter pilot you meet, ask them if they are “left skid low” or “patin droit bas” and they will be impressed; trust me.

Settling With Power

As shown in Figure 2, settling with power is very unsettling if you are in a helicopter that is experiencing this condition. Settling with power is a dangerous condition that any pilot may face which, if he or she is not focused, can cause a serious and uncontrollable situation. Now, just what is “settling with power”? When the helicopter settles into the rotor wash

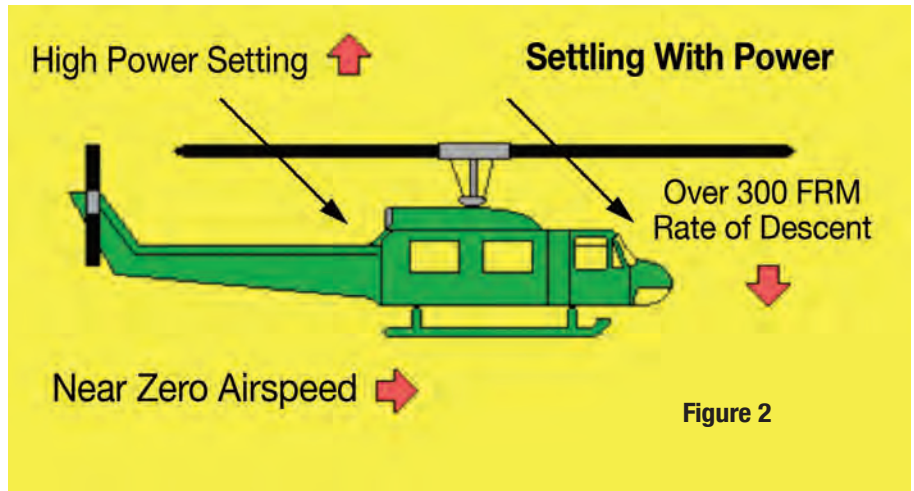


Figure 2

produced by its own main rotor system, that my faithful students, is settling with power.

Settling with power requires three key flight characteristics to take place in combination with one another:

1. a near zero airspeed
2. up to 100% power applied
3. a better than 300-foot-per-minute rate of descent

Once you have completed this triangle of disaster, the aircraft will settle in its own down wash from the rotor system. And in this case, you settle with all the finesse of a homesick rock. The only way to recover from this situation is to obtain forward airspeed and allow the rotor system to fly into “clean air.” After the rotor system is clear of the rotor-wash, it will become efficient again, and the settling with power conditions will cease to exist. This can become a real problem while flying in an out of ground effect hover (above 10 feet from the ground), and/or during landings.

OK, now for you US Navy types, the situation I have just described is known to you as power settling, and you army aviators out there, settling with power is what you call it. Confused? Just wait. To add more to the confusion of terms, the different branches of service have different meanings for the latter two terms. The navy uses the term “settling with power” as a means to explain how high temperatures and high humidity will reduce the available power a helicopter can generate and use. The army uses the term “power settling” to describe the same phenomenon.

Say what? You would think these two branches of the US armed forces would get this cleared up. Now to add to the discussion, lets interject the term, “vortex ring state,” which describes the actual swirling of the air within the rotor system itself that causes settling with power (army) or power settling (navy). But these two branches of the US armed forces can’t even agree on when the vortex ring state begins.



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The army manuals say that vortex ring state can begin to occur when you have 300 feet per minute (FPM) as a rate of descent. The navy says 800 FPM is a more accurate figure. Come on you guys, can't we all just get along?

The bottom line, however, is that no matter which term you use to describe it, settling with power or power settling is a dangerous situation that any rotary wing aircraft can experience. Pilots need to be aware of the situation and avoid it at all cost. OK?

What shall we describe next? How 'bout another fun activity that is unique to helicopters called dynamic rollover?

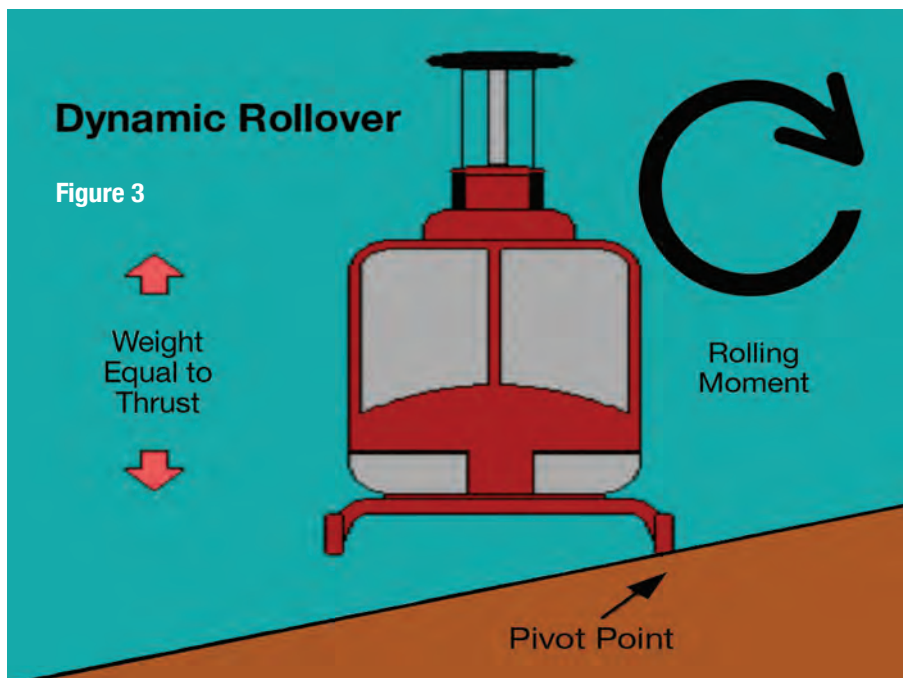
Dynamic Rollover

A different and dangerous maneuver that a helicopter pilot can experience, and should avoid, is called dynamic rollover.

What actually happens is that the helicopter, which by the way, is on the ground, will start to roll over on its side using one skid or wheel as the pivot point or fulcrum. As the helicopter begins to roll, the only thing that will stop the forces in action from flipping the aircraft on its side is a reduction of collective. This action reduces the thrust-to-weight ratio, which allows the aircraft to settle back down in a level attitude. However, if the helicopter is sitting sideward on a sloping terrain, as is depicted in Figure 3, a collective reduction performed too quickly can cause the aircraft to roll over on the other side, and down the hill it will go. So, as you can imagine, care and caution are essential when performing slope operations. But, should the pilot become complacent, a dynamic roll over can occur on the flattest of surfaces just as quickly. And once again, just like settling with power (or for you naval aviators, power settling), three distinctive components are required for this precarious situation to happen:

1. a pivot point,
2. a rolling moment
3. weight equal to thrust at some time during the maneuver

Now, if landing sideways on a slope is dangerous, why not land from the front or back? Well, most helicopters have



skid-type landing gear like a sled. Like that sled, the helicopter skid gear has no brake system, and once again like that sled, it will want to slide down a hill if the toes or heels of the skids are pointed up hill and the power holding the aircraft in

place is taken away. Once power is reduced, the weight of the aircraft will get the sliding started, and it will stop only when it reaches the bottom of the hill. Unlike when you used a sled as a kid, this is not a fun ride.

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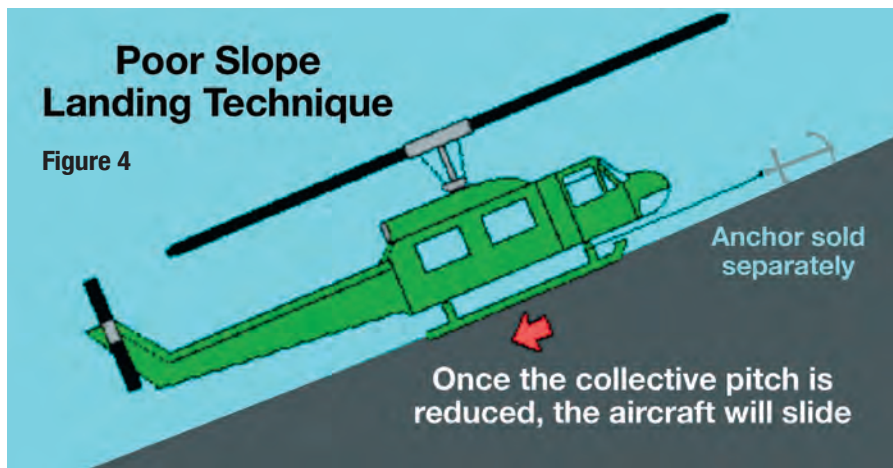
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Other reasons not to approach a slope from the front or back is that the tail boom may strike the hill before the skids do (again depending on the degree of the slope), or the rotor system may smack the hill before the skids reach the ground. For these reasons, helicopter drivers use a standard of eight degrees of incline as a maximum, allowing a sideward approach to the slope that will have the skids touching before the rotor system.

Here's one other word of caution if you are a passenger exiting a helicopter that has landed on a hill. Unless you want a haircut beginning at the neck, exit on the downhill side of the running helicopter, and trust me the helicopter will be running. If you go up the hill you will experience that haircut I just described, as well as ruin a good set of expensive main rotor blades.

Also if you are going to call your local parts supply house for the anchor shown in Figure 4, forget it. A helicopter anchor for securing the helicopter on the hill is constructed from a rare material called unobtainium.



All right my friends, enough for today's session. It's time for you to go out and find somebody to impress with all the CK you have just learned.

And remember, until next time, even the best pilot can't fly 'til you, the technician, says the aircraft is safe to fly.

MIKE BRODERICK is Vice President of Business Development at Helicopter Engine Repair Overhaul Services (HEROS). Over the past 35 years, he has served as a shop technician, engine shop supervi-

sor, Engine Program Director, Director of Maintenance, Director of Operations, and owner of a Rolls-Royce engine overhaul and MD Helicopter component overhaul shop. He is a certified A&P, and holds a Bachelor of Science degree in Aviation Administration.

As well, Mike has been appointed as an FAA representative for the FAA Safety Team (FAAST) and is a member of the HAI Tech Committee. Mike is a regular contributor to Air Maintenance Update. ■

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BY GORDON WALKER, AME 'E',
Professor of Avionics
Centennial College

Besides the standard “fascination with aviation” and a geek-like interest in electronics, what truly lured me into the airline business, was the travel benefits. Sipping Mai Tais and chatting up flight attendants at the Honolulu Interline Club, high atop the Reef Hotel on Waikiki Beach, was a pretty cool perk for a young, single guy. Being single also meant that my parents were able to enjoy the benefits of nearly free interline travel.

Decades later, my dad (now almost 90) STILL brags about flying first class on a British Airways 747, and being served rack of lamb, carved to order at his oversized upper deck seat. Although this is a far cry from the bag of chips and stale sandwich that must be ordered and paid for in advance on many of today’s flights, we must nonetheless never lose sight of the fact that the primary function of an airline is to move people from place to place around the globe, and that we must provide them with a certain level of comfort and accommodation.

As maintainers, we tend to focus on “the machine” that is, the aircraft, rather than the “living space” that is the passenger cabin. Avionics types tend to focus on the cramped little room at the front of the machine, with its instruments, radios and controls. Mechanics tend to focus on engines, flight controls and undercarriages.



(A puzzled RAF engineer once asked me: “Why do you Yanks call it a ‘landing gear’? Don’t you use it for taxi and take off as well?” He has a point, so I’ve called it an undercarriage ever since.)

We tend to think of the passenger service items as “luxury additions” rather than priority items. When introducing my students to passenger service systems, I always present them with the following scenario: “If an airplane arrives at your base with two snags: 1. the autopilot will not stay engaged, and 2. the passenger entertainment system in the first class cabin is inoperative, and you only have time to fix one before the aircraft departs for Sydney Australia, which would you fix?” Invariably, most of them opt for fixing the autopilot snag. It doesn’t occur to them that the passengers will never know that the pilots had to hand-fly the aircraft, but a passenger paying over \$10,000 for a one-way ticket to Australia who can’t even watch an inflight movie will NEVER fly on your airline again! A commuter aircraft doing a 7 a.m. business flight of the “Toronto/Montreal” or “New York/Washington” ilk MUST have serviceable coffee-makers to provide the bleary-eyed business travelers with

their morning java. Failure to do so would, once again, mean a loss of future custom from these passengers.

It is therefore not only a good maintenance practice, but also a good business practice to ensure the integrity and operation of all customer comfort related aspects of the aircraft. In the competitive airline market of today, we must realize the importance of winning and securing customer loyalty. In Canada, we face the allure of cross-border airline shopping where discount flights aboard US carriers are often a short drive away. Failure to address passenger service issues could easily cost an airline the loss of a valuable patron. What then can we, as maintainers, do towards this end?

The first step, I believe, is the realization that the Cabin Logbook, usually filled out by flight attendants, deserves as much of our attention as the Cockpit Logbook filled out by pilots. Notwithstanding NO GO items, snags associated with passenger convenience and comfort should be given the appropriate amount of time and attention they deserve. Replacing burned out reading lights may seem like a trivial and tedious task, and is often deferred until the next A Check, but consider how many bored passengers will become annoyed at being unable to pass the time on a long flight by reading a newspaper, magazine or book. Between the time that the snag occurs and when the next A Check rolls around, failing to complete that two-minute task could result in the loss of several future passengers.

While rack of lamb carved at your seat may be a thing of the distant past, most long-distance flights do offer hot

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meals and hot drinks. Having a technician check the integrity and operation of the galley fixtures could prevent a future inflight failure or departure delay. Coffee-maker hoses should be checked to ensure that there is no pinching, chaffing or kinks. Oven power receptacles can be checked for correct voltages and ground connections as well as signs of overheating and misalignment. Switch and timer functions should be verified to confirm that the appropriate power is delivered at the appropriate time.

Oven, coffee-maker, and hot cup circuit breakers are pulled and reset far more often than most aircraft C/Bs and thus tend to wear out more quickly. A check of the tension required to open these breakers could signal the need for replacement before an actual failure occurs.

It is noteworthy also that galley accidents are the number one cause of flight attendant injuries. The risk can be reduced if we ensure that all appropriate lighting is operational, non-slip surfaces are intact, and all locks and latches are fully functional.

Shifting our focus from the galley to the passenger seat, it's fair to say that passenger entertainment systems have been constantly evolving since the introduction of the "Inflight Movie" in the 1960s. From the early days of inflight movies, employing monstrous film projectors and even more monstrous reels of celluloid film, to the current individual seat video, with choice of live satellite feed TV, internet connections and an array of feature films, nothing passes the time on a long, boring flight like a little audio-video entertainment.

What most passengers don't know, however, is that the same system that allows them to listen to so many different channels of audio on the headset plugged into their arm rest also controls their reading light, call button, oxygen mask, and in some cases, even toilet flush motors in the lavs at the rear of the cabin!

To find out how all these items tie together and how we can better maintain them, be sure to read "Passenger Accommodation: Explained Part 2" in the next issue of AMU.

Q: What procedures should be followed when checking an aircraft's galley oven receptacles?

Answer to last issue's question:

Q: How do recombinant gas, relief valve lead acid batteries prevent the spillage of electrolyte?

A: The electrolyte is absorbed by the glass mats, and the case is sealed

GORDON WALKER entered the avionics industry after graduation from Centennial College in 1980. His career with Nordair, Air Canada, CP Air, PWA, and ultimately Canadian Airlines took him to many remote corners of Canada. Since leaving the flight line to pursue a career as a college professor, Walker has continued to involve himself in the aviation/avionics industry, by serving on several CARAC Committees concerning the training and licensing of AMEs, being nominated to the CAMC Board of Directors, and being elected President of the National Training Association. (NTA). ■

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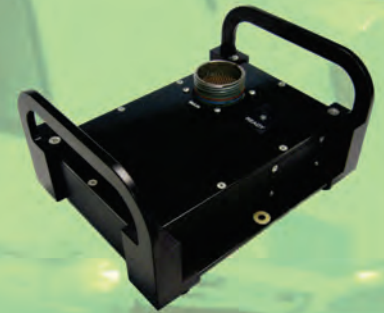
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PAMA SoCal Chapter



November 2012 Meeting Wrap

Thank You Guy Davies. The SoCal Chapter would like to thank Guy Davies and all at Standard Aero LAX for their time and generosity in hosting the November 11, 2012 chapter meeting, dinner, the excellent technical presentation on "Gas Turbine Engines For the Normal Folks" and bountiful scholarship raffle prize donations at the 94th Aero Squadron Restaurant in Van Nuys, CA. To learn more about Standard Aero or to reach Guy directly, go to www.standardaero.com, or email Guy.Davies@standardaero.com.

November 2012 Scholarship Fund

The raffle drawing brought in \$316. Thank you chapter supporters: Aero-Nasch/Jet Brella, Aircraft Window Repairs, Aviall, Business Aerotech, Aero-Weld, Ameriflight, API Worldwide, Clay Lacy Aviation, Consolidated Aircraft, Corporate Air Parts, Corporate Jet Support, Crane Aerospace, Chris Cancelosi, Extraord-N-Air, Gulfstream Long Beach, Helicopter Accessory Svcs, Herber Aircraft, Honeywell Aerospace, HRD Aerosystems, Idea International, Mather Aviation, Million Air Burbank, NetJets, Ninety-Fourth Aero Squadron, Otto Instruments, PreFlite Solutions, Robert Lumus, Rotor FX, Rotorcraft Support, Standard Aero LAX, Triumph Instruments, West Coast Aircraft Maintenance, Western Jet Aviation Zee Medical.

2012 Holiday Social Wrap

Thank you sponsors Jim Hanson, Western Jet/JetEdge International, Shaun Baldaccino, CalJet, and Dan and Linda Ramos. The scholarship fund raffle drawing and donations brought in \$2,148. 100% of the proceeds from raffle ticket sales and donations benefit the SoCal PAMA Scholarship Awards Program.

Job Opening to Post?

Get the word out through SoCal PAMA. Send your postings to SoCalPAMA@gmail.com and include company name, logo, position title, location of position, and contact information. The SoCal chapter offers employment & educational opportunity postings free of charge to the aviation maintenance community worldwide.

Volunteers Welcome

Contact Greg Potter or Gail Erwin to get more involved with SoCal PAMA: greglpotter@verizon.net, gailjerwin@verizon.net

2013 Scholarships

2013 SoCal PAMA A&P and continuing education scholarship applications are now available. Find them at www.SocalPAMA.org. The application deadline is May 1, 2013 and the awards presentation will be at the June 11, 2013 chapter meeting.

SoCal PAMA Website

Advertise your company at SoCalPAMA.org and support SoCal PAMA. It's only \$50 for 12 months. Contact Nikki King or Gail Erwin for posting a new ad, renewal fees, or artwork updates: nikki@extraordnair.com, gailjerwin@verizon.net.

SoCal PAMA Calendar 2013

- April 9: Chapter Meeting
- May 1: Scholarship Applications Deadline
- June 11: Chapter Meeting, Scholarship Awards
- July/August: No Meeting – Summer Recess
- Sept. 10: Chapter Meeting
- Nov. 12: Chapter Meeting
- Dec. 10: Holiday Social

Industry Events 2013

- NBAA Maintenance Management Conference: April 30–May 2; Ft. Worth, TX NBAA.org
- NBAA Regional Forum: July 11; Denver, CO; NBAA.org
- ALEA Convention: July 17–20; Orlando, FL; ALEA.org
- Reno Air Races: Sept. 11–15; Reno, NV Aircraft.org
- AOPA Aviation Summit: Oct. 10–12; Ft. Worth, TX; AOPA.org
- NBAA Annual Convention: Oct. 22–24; Las Vegas, NV; NBAA.org
- AVM Summit/PAMA Natational Symposium: Nov. 21–22; Orlando, FL; AVM-Summit.com

New Design for Mechanic and Repairman Certificates, Notice Number: NOTC4498

On January 1, 2013, the Airmen Certification branch of the FAA will begin issuing Mechanic and Repairman certificates with a new design on the back of the certificate honoring Charles Taylor. Since the introduction of the updated airman certificate in 2003, the mechanic and repairman community have requested that FAA issue a certificate that represents the contributions of Mr. Charles E. Taylor, who served as the Wright brothers' mechanic and was credited with building the engine for the 1903 Wright Flyer. The new design will be printed on all original and replacement airman certificates issued after January 1, 2013, to mechanics, repairmen (experimental aircraft builder), and repairmen (light sport aircraft).

Mechanic and Repairman Certificate holders are not required to replace their current plastic certificate. An airman may, if he or she wishes, obtain the new style Mechanic/Repairman Certificate with Mr. Taylor's likeness by submitting a \$2.00 replacement fee and by visiting the registry's website (http://www.faa.gov/licenses_certificates/airmen_certification/), by mailing a signed replacement request, or by completing an application for an added rating or other change. Instructions are on the registry's website.

PAMA First State



First State Chapter PAMA/Dassault Falcon JetIA Renewal/Maintenance Workshop

The chapter would like to thank all the attendees and sponsors for making the First State Chapter – PAMA Maintenance Symposium so successful on a tough travel weekend. The chapter regrets that many attendees from the north were not able to make our event. There were 360 registered for the event Saturday morning, but despite the snow north of the Newark Delaware location, 275 still attended.

During the symposium, the chapter announced the renaming of its scholarship fund to the John Serwinski Scholarship Fund in honor of John who was a long time chapter member and officer who passed away recently in a car accident. Through the gracious donations at the symposium, we were able to raise \$1,522. Also, our second speaker of the day, Jim Garland of Sharp Detailing, donated 1/3 of all sales of his book sold at the show and \$100.00 on top of that to the fund.

Next Years Symposium

February 8, 2014 at the Deerfield Country Club

The first state chapter would like to thank the following sponsors for their participation:

- Partner: Dassault Falcon Jet – Wilmington
- Event: ICG – International Communications Group

- Breakfast: Flight Safety International – Wilmington
- Morning Coffee: Sikorsky Global Helicopters
- Lunch: PAMA First State Chapter
- Afternoon Coffee: PAMA First State Chapter
- Cocktails: Dallas Airmotive, Inc.
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Please support our sponsors

Chapter meetings are held on the second Tuesday of each month at 7 p.m. at Flight Safety International, New Castle Airport (except June, July, August and December).

Central Ohio PAMA



March 13–14 Aviation Maintenance Symposium

The 22nd Annual Ohio Aviation Maintenance Symposium took the place of our normal monthly meeting and was held at Columbus State's Aviation Maintenance Facility at Bolton Field. Attendance was slightly down from last year, but approximately 415 aviation technicians and students received training. The fact that the students at CSCC were on spring break may explain the change in attendance.

This year's vendor count was up, with 39 vendor displays and 25 speakers. We want to thank all the vendors who provided items for the door and raffle prizes. This year's raffle total from both days was \$700 for the COPAMA scholarship fund.

Many thanks to everyone who stopped by the COPAMA booth and the volunteers who greeted the attendees. We'd like to acknowledge Inspector Mark Harden, our FAASTeam Program Manager, for setting up the speaker agenda for the symposium and the FAA inspectors from the Cincinnati and Columbus FSDOs for being an important part of the event. Inspector Harden also presented Columbus State's Aviation Maintenance Technology with the Gold Award for a 2012

Aviation Maintenance Technicians (AMT) Program. The Gold AMT awards are given by the FAA for colleges that have 50 percent of employees who earn the AMT award. See you next year.

COPAMA Takes Part in 2013 District Science Day

District Science Day, Saturday March 16th, featured warm spring-like weather as we arrived at Columbus State's main campus. This year's judges included Gene Sprang, Earl Redmond and Lowell Dowler to review the aviation-related projects of the hundreds of student projects there for the district competition. The three projects chosen for the COPAMA sponsored award are:

- First Place: Rockets, Andrew Pierce, Dominion MS, 6th Grade
- Second Place: Rubber Band Powered Helicopters, David Rinehart, Canal Winchester MS, 8th Grade
- Third Place: The Effect of the Shape of the Parachute on the Time It Takes to Fall, Jonathan Mager, St. Paul ES, 7th Grade
- Honorable Mention: Which Fabric Works Best for a Parachute? Nebraska White, St. Cecilia ES, 7th Grade

COPAMA gives three monetary awards for \$100, \$75 and \$50 to first, second and third place winners. We're happy to be a part of this competition of Central Ohio students that may be at the start of careers in aviation. We want to thank all the students we interviewed for competing in this year's District Science Day and encourage them to continue their interest in science and aviation.

February Meeting: Oxygen System Maintenance

Our February 12th meeting was held in Lane Aviation's media room, and featured a presentation on Oxygen System Maintenance by Richard Cady of Limited Brands and local FAASTeam member. The weather was unusually warm for February but we still had a medium turnout for dinner and the presentation immediately after.

Rich started his presentation with a base review of oxygen and its natural occurrence as 21% of our atmosphere at sea level. He showed several photos of airliners that had been subjected to oxygen fires that ranged from severe damage and bottle explosions to complete destruction of the airframes with loss of life.

He reminded us that fire needs three things to occur, symbolized by a triangle of oxygen, fuel and heat. He then focused on proper maintenance procedures, with cleanliness of tools and work area being very important. One of his slides showed a construction worker who had tried to fix an oxygen line leak in a torch regulator, and the fire from contaminated hands had caused 3rd-degree burns.

With Rich's background maintaining a Boeing Business Jet, he offered two videos: one from Boeing on aircraft oxygen servicing and the other from Southwest Airlines on the proper packing of O2 masks in a passenger service panel.

We want to thank Rich for his topic and for bringing to light the importance of proper Oxygen System operation for the safety of passengers and crewmembers of high flying aircraft and maintenance technicians here on the ground.

What's on FAA TV?

Did you know that there is a host of aviation videos about safety, trending news items, training, NextGen, and administration policy right at your fingertips at www.faa.gov/tv/? Links on the main page allow you to share the content via your favorite media platform, or you can download the videos as an MP4 for future viewing.

January 8th Meeting Featured Deicing Training

Our January meeting was held in Lane Aviation's Media Room, and featured a presentation on Aircraft Deicing by Mr. Walter Randa, President of Leading Edge Deicing Specialists, a provider of onsite training. The presentation included slides and video segments that discussed ice-related accidents, types of deicing and anti-icing fluids, safety issues and application procedures. Walter was in town to conduct two days of training at the Lane Aviation facility for corporate operators and line service personnel.

These training sessions are normally four- and eight-hour courses that may include actual application of fluids to inflatable aircraft,

preventing possible damage to a real aircraft during a training scenario. We'd like to thank Walter for his willingness to give us an overview of his training program and Limited Brands for bringing him in to conduct their training.

Information about Leading Edge may be found at their website, which includes updates on their future training opportunities and the addition of on-line training coming later this year.

The evening ended with the drawing of a 50/50 raffle won by Dennis Curtin. We want to thank him for donating his portion of the proceeds back to the COPAMA Scholarship Fund.

2013 Summer Tuition Fund Established

When all the State of Ohio colleges and universities changed from quarters to semesters, some AMT students at Columbus State Community College were left without means of funding for their 2013 summer classes. We've received several requests for tuition grants to help them through this financial dilemma.

With all the financial and tax unknowns that loom at this time over Washington DC, we have decided to create a special fund to help them as much as we can. You may make donations by check, payable to "COPAMA" with Summer Tuition Fund entered in the memo line. Send checks to COPAMA, PO Box 340494, Columbus, Ohio, 43234.

We have also set up a PayPal donation button on our website so you may contribute whatever amount you wish to give. This may be used by individuals and corporate sponsors. Corporations who give a donation of \$100 or more will be added to our Corporate Sponsor page with a link to their website.

We'd like to thank Colin Campbell and Jet Charters.com for leading off as our first sponsor of the 2013 tuition fund.

Come join us with your contributions to this worthy cause. The full amount of your donations may be tax deductible. Please consult your tax advisor when filling out your 2013 tax return.

Our Monthly Meetings

Monthly meetings are held on the second Tuesday of the following months: January, February, April, May, October, and November. A pre-meeting gathering is at 5:30, dinner at 6:00, and the presentation is after dinner.

The Ohio Aviation Maintenance Symposium is our March meeting, the Central Ohio Aviation Golf Outing (COAGO) is our September meeting, and the Holiday Dinner is our December meeting. Regular meetings are held in Lane Aviation's Media Room at their Port Columbus facility, 4387 International Gateway, Columbus, Ohio 43219. We wish to thank Lane Aviation and their staff for the use of their facility and their continued support.

COPAMA's Mission

COPAMA is a non-profit membership organization designed to provide a forum for the exchange of ideas, concepts, and techniques through communication, education, representation and support related to the aviation industry.

Atlantic AME Association



News from the Rock

By Mel Crew

Hello fellow AMEs, apprentices, and corporate members. It's newsletter time again and an opportunity to update our readers on happenings at this end of the country. Since our last newsletter, St. John's continues to be one of the busiest airports in the country. It has become a real boomtown, and activity around the airport certainly indicates the same. During the past few weeks I have had the time to visit many operators and get the scoop on activities at the various firms.

Over at Provincial Airlines Ltd. (Provincial Aerospace Ltd.), crews are extremely busy keeping the fleet of Beech King Air 200s, Saab 340s, DeHavilland DH-8s and a Cessna Citation 550 airworthy. The company is a very diversified operation, as they are involved in aerial surveillance, air ambulance and a scheduled airline service. The maintenance department is under the guidance of their new Director of Maintenance, Curtis Goodyear. He replaces Ron Hickman who has left the company. The QA department is headed by Myles Caines, Production Manager. Robert Glasgow keeps tabs on his group of AMEs while Dion Heffern is busy chasing electrons in the avionics section. Besides supporting operations at St. John's, the company also operates a fleet of DeHavilland Twin Otters at Goose Bay in affiliation with Innu Mikun Airways. The Saabs and Dash 8s are used on the scheduled service. A Fairchild Metroliner is also used for freight operations.

Another operator at Hanger #2 is Skylink Express. Base Engineer (Maintenance Supervisor), Dwight Collins, and Jason Lundrigan maintain a Beech 1900D, which is used exclusively for freight and is on charter for the bank runs.

Over at the Canadian Coast Guard base, operations are busy with senior engineer Tim Sheppard and engineer Guy Beazley turning the wrenches on the Bell 212 and a BO-105. The boys are getting help from engineers out of Ottawa and Shearwater when required.

My next contact was at Cougar Helicopters Inc. Their fleet of Sikorsky S-92As is busy supporting the offshore oil industry rigs drilling off the coast of Newfoundland. At last count, six aircraft were operating from the base. The company also has a dedicated SAR service in the new facility at the airport. Two aircraft are assigned to SAR duties on a 24-hour basis. The hangar is equipped with a stores department, avionics shop, and maintenance workshop, as well as accommodations for standby crews. At the Cougar Maintenance and Operations hangar, the aircraft undergo rigorous maintenance checks, and mods are carried out by various personnel. Bob Parly is the director of maintenance; Bruce Lundrigan is production manager, Bob Whittle is maintenance training supervisor and Tristan Grech is avionics supervisor.

A short distance from the airport is a small hangar on Majors Path, the home of Universal Helicopters Newfoundland Limited. The hangar can accommodate two Bell 407s; Universal has one aircraft on the Government of Newfoundland and Labrador contract while the other is operated by Quinlan Brothers Fisheries. Engineer Vivian Matte is busy turning the wrenches while being assisted by engineers

out of the Gander base when required. Engineer Keith Ball was at the base helping out with an engine change on QBF Bell 407. The company continues to be very busy with most of its work coming from the mining sector. It has been a real boom season on the island and Labrador.

Over at Kelowna Flightcraft, Bob Hutchings and his crew are kept busy maintaining their B727 (Purolator) daily, and they also supply maintenance services for other operators such as Cargo Jet, Canadian North, United Airlines, Air Transat, Sun Wing, and any other transient aircraft which require technical services.

On October 10, 2012, the Regional Aviation Safety Council meetings were held at the Delta Hotel and Conference Centre. I had the pleasure of attending the meetings on behalf of the association, and it was a very informative session. The operational sessions were interesting, but the transportation safety board presentation by Gary Branscombe was a real eye-opener. The topic of the presentation was on lithium batteries and their hazards. We all carry these batteries around with us in our cell phones, cordless drills etc. and we do not realize the potential hazards they may cause. When we fly, we do not realize the hazards that surround us. If these batteries are not maintained properly, they are time bombs in the making. The hazards of these batteries have certainly been the discussion of many aviation groups. Many operators in this area have addressed the problem and opened the eyes of people. It seems to be the major concern of dangerous goods training.

Another topic of interest was the presentations on UAVs (unmanned aerial vehicles). It is an ever-growing facet of our industry, and the requirements for operators and maintenance are being addressed by the CARAC working group. Presenters Bob Gladney and Chris Alain of Transport Canada were very knowledgeable on the subject and were able to provide many answers to the queries. It will be interesting to see what qualifications are required to operate and maintain these aircraft. A report by the working group should be presented in the near future.

Capt. Mark Wunnenberg of the Royal Canadian Air Force also gave a very informative presentation on UAVs (UAS) operated by the military. Overall, it was a very educational day and was thoroughly enjoyed by all.

One of my concerns regarding the Regional Aviation Safety Council meetings that are held in St. John's every fall is the lack of participation by aircraft maintenance engineers in the area. The organizers contact all the operators and encourage their participation. They all say they will be attending, but when the time arrives, there are only a handful of AMEs in attendance. This could have been a breakout session for AMEs to discuss areas of concern but there were only five in attendance. We have to stress the importance of the forums, as they are very educational and are not just for pilots and operators. It is a great venue to hear safety concerns as well as present information to other operators. Safety is a major concern for all AMEs and operators, so we should jump at the opportunity to promote it.

This concludes my report at this time, and I look forward to seeing everybody at the ARAMC in Moncton, April 17-19, 2013.



AME Association of Ontario

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The Ontario AME Association supports several charities by sponsoring holes at local golf tournaments. These tournaments are organized by different aviation related groups. The first tournament is the Aviation "FORE" Charity tournament on May 24th. The Ontario AME Association sponsors a hole, and all the proceeds from that event are donated to "For the Love of a Child" based in the Durham region. Contact Cara Tweyman at 905-405-1870 or email cara@precisionaerocomponents.com for more information.

Next up, the northwestern wing of the Ontario AME Association will be holding their annual golf tournament in July in Thunder Bay. All proceeds from this event go to a local Thunder Bay area charity. It's a great day, a great meal, and a great chance to get together with other aviation people. For more information about this event, please contact our association's northern region director, Sheldon Wabich, at 807-474-2012 or email swabich@confederationnc.on.ca

In the fall, our association will be sponsoring a hole at the Barth Syndrome Foundation annual golf tournament. This event will take place in September; for more information please contact the association treasurer Jasper Megelink at 905-677-8747. Please join our fellow aircraft maintainers as they get out for a fun time.

Aircraft Student Awards 2013

Centennial College held its Annual Student Awards Gala on February 20, 2013. This year's affair was a sit-down dinner, with hundreds of awards being presented to deserving students across a wide range of disciplines. As always, the students of the aerospace department were among the many winners.

The association has a strong commitment to support and nurture our future AMEs, and provides \$500 bursaries to outstanding students in each of the Ontario colleges providing aviation maintenance training. Congratulations to this year's recipients, Stuart Vincent (Avionics) and Marc De Buono (Aircraft Maintenance). Congratulations from the board of directors, and good luck to both of you in all your future endeavours.

Save the Date

Our annual AME Workshop is being planned for October 30th to November 1st. Please save the date to your calendar. More details will be available mid-summer.

Skill Training for the Aviation Community

The AME Association of Ontario supports the effort to offer training opportunities to the aviation community. In recent years, the semi-annual Saturday board meetings have included "seminars" on effective communications, running meetings and auditing. This is expected to continue, and the selected subjects are influenced by the needs of the board members. Members-at-large are welcome at these meetings. We are always open to being "hosted" for the monthly meeting venue.

The training events use facilities of our corporate sponsors to minimize costs for the association. We began training by offering a one-day, stand-alone event of Human Factors for Aviation Maintenance with our hosting partner Air Georgian on three consecutive days in 2011 and continuing into 2012. In total, 61 attendees participated in the interactive training, including the AG VP of Maintenance. Also, through our "discount for AME association partners" we obtained new corporate members Venture Aviation, Mid Canada Mod Center, and Field Aviation. When we launched the initial event, we bartered by offering complimentary seats per day to Air Georgian staff in lieu of renting their fully equipped classroom. The board of directors decided that any current paid-up AME Association corporate partner's staff may enjoy the lower enrollment fee to attend the training. For more information, or to participate in a course, please contact our director of training, John Longo at association@ame-ont.com

Status of the Aircraft Maintenance Engineer

There have been several lively discussions on the LinkedIn group sites and various blogs in the past few months. Whether a person maintaining an aircraft should be called a mechanic, an engineer or a technician, if this is a trade or profession. As well, issues surrounding training, licensing, apprenticeship, and government financial assistance for students are all being hashed over on a regular basis. It makes for interesting reading and can be quite enlightening to review the viewpoints of others.

The following is an article from our association's director of training "Uncle John" Longo. Enjoy.

— Sincerely,
Your Board of Directors

Professionalism

A real professional: This is the highest form of praise you could pay to anyone. Do you agree?

Professional: That one word says it all. For purposes of this message, can we agree that it refers to an individual's "status, methods, character or standard of behaviour"?

From the aircraft maintenance engineer/technician/apprentice/team leader point of view, the key word is STANDARDS. Professionals demonstrate their status and standing through the standards they live by in handling their jobs, their teams, and themselves.

The following guidelines are offered to assist individuals to increase and upgrade their level of professionalism:

Professionals insist on high quality performance. They refuse to settle for second best. They realize that it is in their best interest for their names and images to be identified with excellence. This doesn't mean they function as a nitpickers, nor are they perfectionists where

the achievement of perfection would serve no useful purpose and be costly and inconvenient. What they do insist on is the best and most productive job under a particular set of circumstances. They are not content to let errors and questionable performance pass by because it's easy or less troublesome to do so. They crack down on themselves in a practical and reasonable manner, crack down on their team members when called for, and most importantly, do their utmost to instill in each individual genuine pride in their work. Doing the job right the first time and every time is their way of life. If there is any doubt as to the correct procedure to be followed, they encourage the individual to take the time to find out "the facts" and then carry out the job.

Complete, correct, and by the book

There is no room in their operation for the "slough off" approach to any given task. The professional looks and acts the part.

Consider these well-known characteristics of the professional:

- a certain manner, bearing and style
- special pride in themselves as team member and an individual
- special care in dress (not expensive but impeccable)
- honesty and credibility in word, deed, and keeps promises
- has intelligence and sensitivity when interacting with others
- always cool, calm and well spoken
- avoids using profanity and curse words in their speech
- goes all-out in a continuing effort to improve in every way possible

The professional Communicates like a pro. Again, consider these known characteristics of the professional:

- gives respect to each person regardless of status or position
- comes up with good ideas/suggestions and gives credit to others
- speaks persuasively and clearly before a group
- gains acceptance among the team and with customers
- uses media effectively for letter, report writing, and task directions
- spends time on vocabulary enrichment and self improvement
- uses active listening to enhance job performance

To sum up:

One looks and acts like a professional because one feels like a professional. What about you? Can you objectively rate yourself an honest-to-goodness professional? If you are prepared to accept, adopt, develop some or all of the above practices and be serious about it, you will raise the effectiveness of your organization through safety, reliability and profitability. Being professional is the key to enhance our positions and for us to thrive as the world class industry that we are today.

— John Longo AME

About the author

John Longo has AME certification and many years experience in technical operations as a mechanic, technical trainer, manager and facilitator and trainer. He is currently working as an aviation consultant with an international clientele and is volunteering as the director of training for the AME Association of Ontario.



We invite you to contribute news about your AME or PAMA chapter to be included in the newsletters section of AMU. Stay in touch with members and keep them up-to-date on what your association is doing to provide information crucial to working in today's aviation industry.

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“WHO CAIRS” ?

and other regulatory topics



emphasis on the WHO. Of course this is a rhetorical question; we now know that WHO is nobody. My concern has been regarding the administration of the Transport Canada (TC) Program Validation Inspection (PVI) programs. Many Civil Aviation Safety Inspectors are mandating that victim companies implement Root Cause Analysis (RCA), among other new

“requirements”. They want all these when there are no regulations to back them up.

My CAIRS stated:

“ISSUE: TC M&M Inspectors are forcing companies to perform root cause analysis and for each PVI finding and to provide reports to the TC office. This local requirement varies from office to office.”

SUGGESTED SOLUTION: “Inform your inspectors that root cause analysis reports are not mandatory. Inform your inspectors that they must not impose additional requirements.”

Here is part of the response that the minister sent me:

“Staff Instruction SUR 001, Section 10.4, lists five items that an acceptable certificate holder Corrective Action Plan shall contain, one of which is a root cause analysis of each non-conformance. All Transport Canada inspectors shall be reviewing the root cause analysis as part of the company’s corrective action acceptance process. If that is not happening consistently, we will remind inspectors of the requirement for these.”



BY NORM CHALMERS
Pacific Airworthiness Consulting

Transport Canada has several ways

of dealing with people like me. The first is to ignore me, the second is to tell me that they love my complaint and they are adding it to their list that exists somewhere in their ethereal filing system, and the third is to obfuscate. Obfuscatorial responses are the most curious because the minister seems to expect people to believe them when they are so obviously absurd.

In October 2010 I sent a note of concern to the Minister of Transport in the form of a CAIRS. This Civil Aviation Issues Reporting System is now widely known as the “WHO CAIRS?”, with

Is the minister telling me that the staff instruction, written by another of the minister's minions, is the requirement (regulation)? I hope that I am sitting in the public gallery of the courtroom if this ever ends up in court. I don't blame the minion who wrote this response. I just ask that next time TC answers one of my complaints, at least they read it before responding. That may be a chimerical expectation, but I'll keep on trying.

One of my concerns is that TC staff are now being directed to comply with these policy requirements. This use of the wording "acceptable Corrective Action Plan" is now morphing into a whole new set of regulations that I see as being unconstitutional. As certificate holders, you will be seeing more of this in the future. I will be writing more on this, but if any of you out there are interested in reading about your fate, go to any TC WWW site and find "SI SUR-001". Don't read it before bedtime because you'll have nightmares.

Here is another example, but with a different response. In my journeys, I read numerous Maintenance Policy and Control Manuals (MCM & MPM) that contain job descriptions and organizational charts when they are not required and that add no value. The regulations and standards only add to the confusion in this. Related to that, I sent a WHO-CAIRS to the minister in February, 2011 that went as follows:

“ISSUE: An error in Standard 726 causes confusion and delays regarding development and approval of MCMs. 726.08(1) (h) wrongly refers to “subsection 706.03(3)” where it ought to refer to “subsection 706.03(6)”.




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SUGGESTED SOLUTION: Recognize this error AND Notify CASI offices to recognize and allow for this error. AND Amend 726.08(1)(h) to refer to 706.03(6).”

Yes, I see the grammatical error. Here is part of the response from one of TC’s fast-rising autocrats:

“All administrative NPAs have to follow the normal Canadian Aviation Regulation Advisory Council (CARAC) process.

Your concern will be added to the list of editorial errors that need to be corrected when this section of the regulations is revised. I would like to take this opportunity to thank you for sharing your views, as all comments we receive are appreciated.”

I totally believe that, but the minister’s minion totally missed my point regarding MCM approval problems. Unfortunately there is no way to mandate reasonable responses and these senior

mandarins know it. On any issue they can tell you or me to “Go push a rope!”

Now that the minister has SMS implemented as a legacy of recent senior bureaucrats, the new batch of Ottawa bosses are working on their own legacy.

Let’s hear your applause for the introduction of Fatigue Risk Management Systems or FRMS. In a come-from-behind response, the helicopter industry has issued some statements. Much of the aviation industry doesn’t have any representation. I note that one of the key players in the push to FRMS has never worked in the aviation industry. That is a sign of the relativity of the future autocracy in the Tower of Darkness.

These people always fall back on the old response: “we consulted with industry”. As George Bernard Shaw said, “The single biggest problem in communication is the illusion that it has taken place.”

With all this RCA, FRMS and SMS codswallop (not fish oil) lubricating the gears of our aviation industry, what’s next? To quote the British when they were being bombed, “Keep calm and carry on”.

Now for some regulatory topics that are not clearly understood by most industry professionals: “Basis of Certification” and the “Type Certificate Data Sheet”. These two terms are the book-ends of the process of getting an aircraft designed, built and approved. As a maintainer, this information is background stuff, but as such, it is the foundation of maintenance requirements.

As the inventor of a new aircraft, you will meet with the TC Aircraft Certification group and you will get the whole process down on paper. It all starts with the Basis of Certification. This depends on your planned aircraft size, weight, passenger capacity, etc. The categories are listed on the TC web site. Find the Canadian Aviation Regulations (CAR) and the standards. The standards, starting with 522 for gliders and going down to 551 for equipment, are the Bases of Certification. Next in your meeting with the TC Aircraft Certification group, you agree to a “compliance program” that will ensure that your aircraft conforms to the standard.

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On completion of the compliance program, you will have one or more flying aircraft and a stack of records to show compliance that is equal to, or greater than, the weight of the aircraft. That is the Type Design Data.

When all is in conformance with the standard, you receive your long-sought-after and amazing Type Certificate issued to you by TC. Attached to the Type Certificate is the Type Certificate Data Sheet. This data sheet is the legal description of your aircraft as determined during the compliance program. Sometimes that gets confusing because many people refer to this Type Certificate as the "TC" with its "TC Data Sheet". Just what we need: two TCs.

Now with this Type Certificate to your name, you are the Type Certificate holder (TC holder) with all of the accompanying obligations. You must provide technical support to the aircraft

owners, including manuals for maintenance, parts, wiring diagrams, flight manuals and other documents specified in the Data Sheets.

Now all you need to do is become a TC-approved manufacturer so you can build aircraft and issue a Certificate of Airworthiness for each one. That's another story.

Now for a different you: the maintainer. You have an aircraft to maintain. You have the aircraft and piles of manuals. What you may not have is the Data Sheet, which is the legal description of this new aircraft. To find that, once again I direct you to the TC web site: http://wwwapps.tc.gc.ca/saf-sec-sur/2/nico-celn/c_s.aspx?lang=eng. For this example to follow, I pick the Lear Jet 35, but I encourage you to find and examine the Data Sheet applicable to your aircraft. You will find that the headings and order of things is the same or similar.

First of all, note at the top of page 1, the words: "This Data Sheet, which is part of Type Certificate No. A-128, prescribes the conditions and limitations under which the product(s) for which the Type Certificate was granted meet(s) the standards of airworthiness required by the Canadian Aviation Regulations."

For this aircraft, this Data Sheet number A-128 is the law for Canadian registered aircraft. If you are looking at the FAA Data Sheet number – A10CE – that's OK for USA registered aircraft.

On page 1 are listed the Type Certificate Holder, aircraft models, engines permitted, and fuel and additives permitted. Using any other fuels or additives is not allowed.

Next, we see the "Limits" section. If any of these are exceeded, the aircraft becomes unairworthy until maintenance restores it to serviceability. These limits



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are usually specified in the approved aircraft Flight Manual and must be complied with by the flight crews.

Following that are the legal weights, centre of gravity limits and other related limits. This is what the Flight Manual data is based on. This is where the datum is defined by law. Note the reference to the Maintenance Manual for control rigging. Some Data Sheets list those specifications.

Then we find the “Basis of Certification” (see above) but for your Data Sheet, it may be later in the sheets under the title “Data Pertinent to All Models”. Note the effectivity date, which may be different for the different models. In this section are usually specified configuration or modification documents that you don’t have and cannot find. These documents are part of the “type certification” process and only Transport Canada and the Type Certificate owner/applicant have them.

Under “Serial Numbers Eligible” are listed the only ones allowed. Do not buy any other serial numbered aircraft for import unless you are prepared to spend a lot of money.

Under “Required Equipment” we see some stuff that must be on the aircraft, including the Aircraft Flight Manual. This must be on board the aircraft at all times for the aircraft to be legally airworthy. Stunning, eh?



The Type Certificate Data Sheets provide you with the background to understand where many of the requirements are based; they need to be a key document referred to by MDMs when doing imports . . .

Following down, we come to “Approved Publications”. Have a look at your aircraft’s Flight Manual and ensure you have the correct manual. Under “Life Limited Parts” the sheet specifies the Maintenance Manual Chapter 5. That reference makes that Chapter 5 a part of this approval and mandatory by law. In other aircraft, it may refer to a Service Bulletin making that SB mandatory or it may list those Life Limits in the Data Sheets.

Next, we see the models 31A and 60 are included in this approval. What we see for these models are additional sections titled “Canadian Configuration” and “Placards”. Once again, a Data Sheet may list the placards or may refer to another document making that document mandatory.

Following those aircraft-specific sections, we come to a section titled “Data Pertinent to All Models”. For most types, this section is large and needs to be examined in detail.

Following that section are the Notes. Throughout the Data Sheets you may find notations “See NOTE ##”. When you see that notation, go to this area at the back. For the model LJ60XR aircraft, NOTE 5 specifies the approved seating configurations.

This is unusual. The approved interior configurations, including seating arrangements, are usually specified in the

approved flight manual. In small aircraft, the flight manual often gives you enough flexibility to put the seats and baggage in almost any place. Any configuration not covered by this must be approved.

The Type Certificate Data Sheets provide you with the background to understand where many of the requirements are based. Being the legal description of the aircraft, they need to be a key document referred to by MDMs when doing imports.

To go deeper you can examine the Basis of Certification. I touched on this in a previous column when I pointed out that the FAA provides easy access to the specific FARs by date. Transport Canada has not progressed to that point yet and may never get there considering the focus is on developing new barriers to commerce. It's like a ship's captain looking for more cargo while the boat is sinking. The big difference is that Transport Canada can't sink as long as the Treasury Board keeps shovelling money at them while having no knowledge of where the cash is really going.

Now for the Transportation Safety Board. The TSB continues to issue reports without going into what "root cause analysis" was performed. The causes continue to begin "the pilot did this" or "the pilot did not do that." Often the operators do take safety action as noted in the reports but I see no reference to the apparent lack of that safety net prior to the accident. These reports do not show how these actions that the

companies take relate to causes that the Board found. Please note that content of the previous sentence was influenced by SMS.

It seems unfair to blame the pilot without addressing the support systems, such as the operator's management systems and specific regulatory omissions and weaknesses. In most cases the investigators know what's missing, but their reports need to get past the censors.

That's all for now, so until next time, study those Data Sheets and be skeptical. Next time we will examine the authoritarian direction being implemented by Transport Canada twisting and misusing the law to intimidate the aviation industry that they know so little about.

Please be aware that I am not a lawyer or legal expert. My column is not legal advice or legal opinion. If you face a legal issue, you must get specific legal advice

from a lawyer and preferably one with experience in the aviation matters in your own country.

NORM CHALMERS worked with Transport Canada as an Airworthiness Inspector for 25 years. From 1967 to 1983, he worked in aircraft maintenance throughout Western Canada and in the Arctic. His industry experience includes the operational maintenance of normal and commuter category aircraft and smaller transport category aircraft in the corporate sector as well as several years working in major repairs in the helicopter sector. As an airworthiness inspector, he has been responsible for most duties related to the position, including the approval of all aspects of maintenance, manufacturing, training, and responsibilities related to distribution organizations. Norm now operates Pacific Airworthiness Consulting; www.pacificairworthiness.ca. ■



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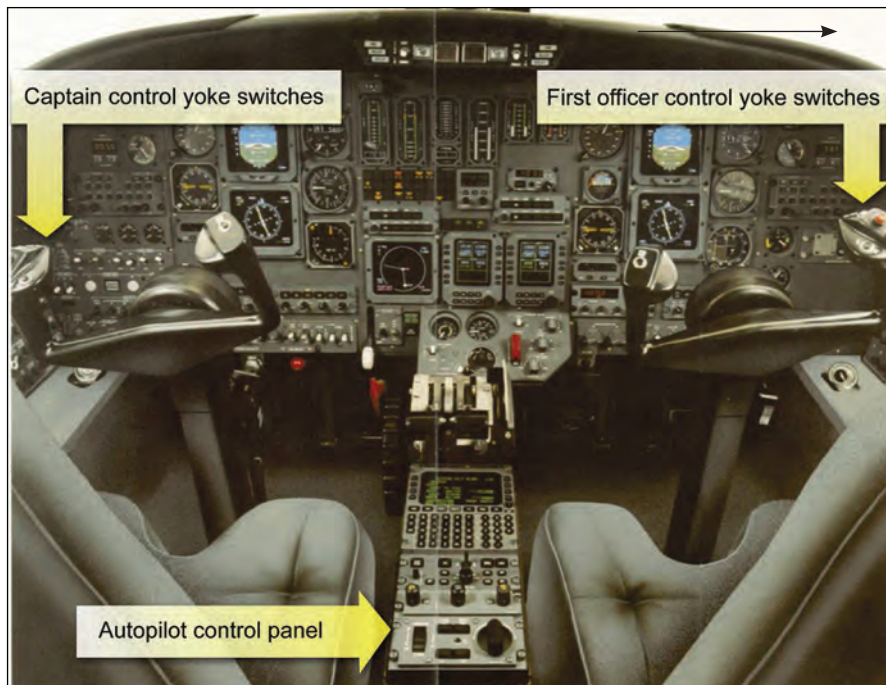
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Loss of Control & Crash

Cessna Citation 550



In June 2007, a Cessna Citation 550 impacted Lake Michigan shortly after take-off. The two pilots and four passengers were killed, and the airplane was destroyed. At the time of the accident flight, marginal visual meteorological conditions prevailed at the surface, and instrument meteorological conditions prevailed aloft.

The pilots taxied to the departure runway. According to the cockpit voice recorder (CVR) transcript, they discussed some tasks that were on preflight checklists but they did not perform a formal challenge-response checklist procedure as they were leaving.

Soon after takeoff, the CVR recorded the captain stating, "Lights off, yaw damper on." The first officer then radioed the controllers to advise them that the pilots were starting the airplane's turn from the runway heading to the assigned heading of 050°. The captain asked, "Why am I fighting the controls here?" The captain again stated, "I'm fighting the controls..." and then he confirmed with the first officer that the landing gear was up and instructed him to retract the flaps.

A few seconds later, the captain made his third mention of an unspecified control problem, stating, "what the [expletive]'s going on? I'm fighting the controls." The first officer then asked, "How's your trim set? Is that the way you want it?" The captain began to describe the control problem

more specifically, stating, "I'm fighting the controls. It wants to turn hard left," and the first officer again asked, "How's your trim down here?" The captain's response, which began, "trim has nothing..." was interrupted when the first officer erroneously responded to an ATC transmission intended for another airplane. After this, the captain stated, "... something is wrong with the trim...the rudder trim..." The captain questioned the altitude clearance, the first officer stated they were cleared to 3,000 feet msl, and the captain stated, "all right, something is wrong with our rudders. And I don't know what." The first officer asked the captain what he wanted to do; then he asked, "How's that; any better?" The CVR recorded the captain stating, "huh, no, we got a trim problem...[sound of grunt]...tell 'em we got to come back and land." Soon the CVR recorded the captain saying, "She's rolling on me. Help me, help me," and the first officer responded, "I am." The captain asked the first officer to pull the autopilot circuit breakers, and the first officer responded, "Where is it?"

The captain then said, "tell 'em we got a control problem," and the first officer advised the controllers that they had "a control problem, we've got to come back in." The first officer used an incorrect airplane identification number on this transmission, and the captain promptly corrected him. The first officer transmitted, "Milwaukee, we got...a runaway trim, we got an emergency."

According to the CVR transcript, the first officer then asked, "what circuit breakers?" The CVR recorded the captain telling the first officer, "answer her..." in response to an ATC query, and "keep turning." The captain then advised the MKE departure controller, "We're declaring an emergency, yes."

The first officer repeated that they were “coming back to Milwaukee,” and the captain added, “landing any runway at... Milwaukee. Guide us in please.”

The captain transmitted to MKE, “I don’t know what’s wrong,” and then he stated to the first officer, “I don’t know what’s wrong...I see the airport.” The captain then stated, “You hold it, I’m gonna try to pull circuit breakers...” He then stated, “...we’re not...holding it.” The first officer stated, “I’m pulling,” The CVR recorded the captain stating, “awww [expletive]...” The CVR recording ended.

The fragmented airplane wreckage was recovered from Lake Michigan during multiple dives. Physical evidence indicated that the airplane impacted the lake at a speed of about 243 knots, in a steep (about 42°) nose-down, left-wing-low attitude. During post-accident interviews, several pilots who had flown with the captain indicated that although he was a capable pilot, the captain lacked in-depth airplane systems knowledge and did not always adhere to company procedures or comply with regulations. Several former company pilots commented that the captain seemed to focus on business issues rather than on flight operations and safety. The NTSB conducted post-accident interviews with several pilots who had flown with the first officer. One of these pilots characterized the first officer as “a nice guy who had no idea how the airplane operated” and added that he would act without thinking. These interviews revealed that the first officer would get overloaded easily and had difficulty flying a stabilized approach without coaching.

Airplane Information

According to post-accident calculations, the airplane’s takeoff weight and the calculated center of gravity for the accident flight were within the required limits.

Flight Control Trim Systems

The accident airplane had separate trim control systems for elevator, aileron, and rudder. Each system included a manual hand-wheel in the cockpit with control cables attached to trim tabs at the related flight control surfaces.

Pitch Trim System Information

The pitch trim system is equipped with an electric servomotor and offers pilots the option of adjusting the elevator trim setting manually or electrically. Either pilot could input electrical pitch trim commands through a toggle switch on his control yoke. After engagement of the autopilot, the autopilot computer could also make pitch trim inputs through a relay to relieve the load on the electric autopilot servomotor. Once engaged, the autopilot would disconnect if either pilot used their electric pitch trim switch.

The Citation 550 airplane flight manual describes an in-depth taxi checklist of the elevator trim system. The CVR recorded no evidence that the pilots performed these system checks during the accident airplane’s ground operations.

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The “Abnormal Procedures” section of the flight manual included the following instructions for a jammed elevator trim condition during a takeoff or go-around maneuver: Reduce power as necessary to maintain 120 knots indicated airspeed or less. Do not change flap position. Do not retract landing gear. Land as soon as practical.

Autopilot System

The accident airplane was equipped with a Honeywell SPZ-500 integrated autopilot system, which used a computer to collect information from various sensors and control inputs and then to position electric-clutched servomotors at each of the primary flight controls. The rudder servomotor and an internally segregated portion of the autopilot computer also functioned as the yaw damper, providing a limited amount of rudder authority to the rudder servomotor to offset minor yaw motions.

The Citation 550 autopilot control panel is located between the pilots’ seats, aft of the seats’ forward edges. The two buttons that are used to either fully or partially engage the autopilot system (the autopilot and yaw damper buttons, respectively) are located on the aft portion of this control panel, are directly adjacent to each other, and are identical except for their left/right orientation and the labeling text beneath them.

Wiring Service Bulletin

As a result of previous reports of failures of the wiring within Cessna Citations control column shafts, Cessna issued a service bulletin in 1992, advising Citation operators to replace the flat ribbon cable installed inside the control column shafts (which were found folded and damaged in the accident airplane control column) with a rounded type of sheathed wire bundle that would fit better and be better protected within the shaft. This service bulletin had not been accomplished on the accident airplane.

Accident Flight Sequence

According to the CVR recording, the captain had recognized a flight control

problem almost immediately after takeoff as he began to turn right from the runway heading. He repeatedly stated that he was “fighting the controls” and confirmed with the first officer that the landing gear had been retracted.

The captain allowed the airplane to accelerate and climb after takeoff consistent with the airplane’s assigned departure heading and altitude while he and the first officer tried to troubleshoot the control anomaly. Comments recorded by the CVR indicated that the pilots did not consult an emergency or abnormal procedure checklist.

Further, CVR evidence indicated that, on at least one occasion, it is likely that the first officer made an unrequested trim input.

Inadvertent Autopilot Engagement Scenario

The NTSB considered the possibility that the autopilot was inadvertently activated instead of, or at the same time as, the yaw damper, initiating the accident sequence. Because the captain would normally have hand-flown the initial portion of a flight, he would not have expected the autopilot to be engaged. Additionally, because he did not request trim adjustments, the captain would not have anticipated having to counter trim-related forces while haphazardly troubleshooting the problem.

According to the NTSB’s performance study, the lateral and directional handling problems that would result from inadvertent autopilot activation and mistrim under these circumstances would result in control forces that were light at first and larger as the airplane accelerated and turned further from the runway heading. The effects of the autopilot turning the airplane toward the runway’s heading and the forces resulting from the mistrimmed condition would have demanded strenuous inputs from both pilots to maintain control.

The performance study results were consistent with many aspects of this interpretation of the accident sequence. For example, the captain first complained of a control problem just moments after the airplane would have begun to turn from the initial autopilot engagement heading in accordance with the departure clearance, when an inadvertently activated autopilot would have been trying to return the airplane to the initial autopilot engagement heading.

The final loss of control began just after the captain transferred the controls to the first officer to look for the autopilot circuit breaker. The performance study showed that the transfer of control occurred when the airplane was heading back towards MKE and passed through and moved away from the autopilot engagement heading, which, according to this scenario, would have resulted in dynamically changing forces on the control wheel as the autopilot reversed the direction of its input in an attempt to return to the runway heading.

Other evidence was inconsistent with this scenario, however. For example, examination of the recovered autopilot servomotor clutches and the unstretched filaments in the cockpit autopilot-engaged light bulb (which was not

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illuminated at impact) suggested that, although the autopilot did have power at impact, it was likely not engaged. Some stretching was observed in the yaw-damper-engaged bulb filaments. If the autopilot had been engaged, similar stretching should have been observed in the autopilot-engaged bulb filaments.

Runaway Pitch Trim Scenario

Because of evidence of short circuits in the first officer's control column wiring

that could have affected the airplane's pitch trim, the NTSB also considered the possibility that a runaway pitch trim resulted in uncommanded nose-down inputs, initiating the accident sequence. This scenario interprets the captain's reactions as consistent with an increasing control force and efforts to decrease that force. These efforts would have been complicated by the first officer's trim inputs. Actuation of the accident airplane's electric pitch trim required completion of circuits providing power to the

motor and to a ground path. Wreckage examination did reveal physical evidence that, sometime before impact, at least two short circuits occurred in a bundle of wires in the first officer's control yoke/column. Investigators also found evidence of heat damage consistent with the short circuits and chafing on some of the wires in this area.

One of the short circuits occurred between the pitch trim power supply wire and the adjacent steel surface of the first officer's control yoke shaft; the recovered wires were chafed around the area where the exposed wire had become welded to the steel of the control shaft. This short circuit exposed the cores of multiple wires, providing a potential source of power to the pitch trim motor. The short circuit would also have caused the pitch trim circuit breaker to trip, which would render the electric pitch trim system unavailable for normal use by the pilots.

Examination of the wreckage also revealed that a contact in one of the two switches in the first officer's pitch-trim control was bent inward, eliminating the



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space between it and the center reed. In normal pitch trim operations, the center reed moves outward and contacts the fixed contact to complete the ground path circuit; this condition might have provided the pitch trim motor with the nose-down latent ground path.

Other evidence is inconsistent with this scenario. For example, previous NTSB investigations involving pitch control problems indicate that pilots are typically immediately aware of the nature of pitch-related problems and struggle to keep the airplane upright. Because the captain would have routinely adjusted the pitch trim with each configuration change and in response to any unwanted trim forces experienced during departure, it is likely that he would have recognized a runaway pitch trim situation shortly after it began.

Further, in this scenario, the pilots would have been struggling to keep the airplane from nosing over during the accident flight, yet there was no specific reference to “pitch” or “pull” by either pilot until about five seconds before impact.

Autopilot Panel Design

FAA airworthiness standards require cockpit controls to be located and identified to prevent confusion and inadvertent operation.

Additionally, human factors engineering principles indicate that, in a well-designed control system, every control must be detectable and discernable from other controls.

The current design configuration of the Citation yaw damper/autopilot control push-button switches appears contrary to this standard. The switches present identical size, texture, mode of operation (on/off pushbutton), and actuation pressure to the pilot.

Further, they are located immediately adjacent to each other, outside of the pilots’ normal range of vision, without an intervening divider or partition.

In periods of high workload or other distractions, a pilot might be inclined to activate the yaw damper by feel and location; under such circumstances, it would be easy to select the wrong switch.

Aileron Trim Sensitivity and Responsiveness

Post accident interviews indicated that many Citation pilots have been surprised by the disproportionate sensitivity and responsiveness of the Citation aileron trim control system. In addition, numerous Citation pilots (including the owner of the accident airplane) reported problems or even declared an emergency as a result of aileron trim issues. The anecdotal evidence indicates that it is easy to set the Citation aileron trim inappropriately, possibly resulting in a hazardous out-of-trim condition. The disproportionate sensitivity and responsiveness of this system would likely have compounded any aileron trim inputs made by the first officer during the accident flight and exacerbated an already challenging troubleshooting effort.

Findings

The accident sequence initiated as a result of a control problem that was related to either an inadvertent autopilot activation or a pitch trim anomaly, the effects of which were compounded by aileron and/or rudder trim inputs; however, it was not possible to determine the exact nature of the initiating event.

Regardless of the initiating event, if the pilots had simply maintained a reduced airspeed while they responded to the situation, the aerodynamic forces on the airplane would not have increased significantly; at reduced airspeeds, the pilots should have been able to maintain control of the airplane long enough

to either successfully troubleshoot and resolve the problem or return safely to the airport. The design and location of the yaw damper and autopilot switches on Cessna Citation series airplanes do not adequately protect against inadvertent activation of a system, which could have disastrous consequences.

A rounded type of sheathed wire bundle would fit better and be better protected within the control column shaft than the currently installed flat ribbon cable; replacement of the flat ribbon cable with a rounded type of sheathed wire bundle could result in fewer short circuits and other electrical events.

If circuit breakers that a pilot might need to quickly access during an abnormal or emergency situation were equipped with identification collars, pilots would be able to locate them more readily and pull them more easily during such a situation.

Limiting the deflection of the Cessna Citation’s manually operated aileron trim tab to the deflection certification limit for powered trim tabs and reducing the Citation’s aileron trim sensitivity (the unexpectedly significant aileron trim deflection that results from a relatively small amount of trim knob input) would help pilots avoid sudden and excessive aileron trim deflections.

If Cessna Citation pilots and operators were informed of the potential hazards related to the sensitivity and responsiveness of the airplane’s aileron trim system, they would be better able to avoid problematic aileron trim inputs until a more permanent solution (an aileron trim system retrofit) is in place. ■



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BY SAM LONGO, AME A&P



The Name Game

Since the dawn of powered flight, repairing and maintaining aircraft has been our job. That fact has remained constant. However, with the influx of new technology, there seems to be a resurrection of that age-old debate regarding what we call ourselves . . .

From my earliest days of building balsa wood models in my parents' basement, my dream was to one day become an aircraft mechanic. As I glued together ribs and stringers to produce tissue papered wings, that vocation seemed a logical progression and a realistic future goal. From those fledgling forays into aircraft technology to present day, I have always felt that the term "aircraft mechanic" was an honourable, positive designation of my chosen profession.

Recently, through the magic of social media such as LinkedIn and PAMA discussion forums, the "proper" moniker for our profession seems to be hotly debated and ripe for a change. The term "aircraft technician" seems to be winning more favour these days, despite the fact that the dictionary provides proof that the term mechanic is a better descriptor of what we do. By definition, a mechanic is "a person skilled in maintaining or operating machinery or motors"; meanwhile a technician is listed merely as "a person skilled in a particular technical field". A good case in point would be the job of an X-ray technician. They photograph your bones with a machine, but have little or no ability to repair that machine. In my opinion, the term mechanic provides a more accurate accounting of our day-to-day, hands-on working reality.

Many comments from our US counterparts also felt that the term Aircraft Maintenance Engineer (AME) sounds more professional than their long standing designation of A&P Mechanic. Speaking as a Canadian who holds both these titles, I feel that the term Aircraft Maintenance Engineer is not ideally suited to our profession and is somewhat misleading when speaking to people outside the aviation community.

Transport Canada issues this federal license in much the same way as the FAA, essentially tracking and verifying the appropriate time and experience and testing, as required. However, the reality is that we, as Canadians, are not engineers in the university-educated perceived sense of the word. We, like our American brothers to the south, are mechanics, as per the aforementioned dictionary reference.

Interestingly, when looking for additional guidance in terminology, the dictionary further muddies the water by giving a secondary description of the word engineer as "a person who repairs and maintains mechanical or electrical devices". Hence, the continued discussion and confusion.

I am truly mystified why the term mechanic continues to generate such a negative vibe, particularly in North America.

In many other countries, it appears to be a very honourable trade. Perhaps it is a sign of the times. In less fortunate economic climates, having the ability to fix something that ceases to function brings a hero-like status, while here in our throw-it-away consumer society, it just makes you appear (heaven forbid) too poor to replace it.

This brand of social-economic prejudice reminds me of a situation that transpired when I was a young man with a newly minted AME Licence. My girlfriend, Sara, and I were hosting her mother for lunch. It was my first meeting with her mom and I was eager to make a good impression. I can actually be quite charming when the need arises, so I pulled out all the stops. She was a prim and proper, university-educated woman of Welsh ancestry. Her first question for me after our friendly introduction was: "and what do you do for a living?" My proud response was that I was an aircraft mechanic with Air Canada. She immediately rolled her eyes, and with uninhibited disgust, replied: "Oh, a mechanic!" I was immediately dismissed as socially unacceptable and unequivocally unsuitable for further relations with her daughter. No amount of friendly banter thereafter could retrieve me from my blighted, blue-collar exile. Fortunately, Sara did not share her mother's opinion and took pity on my poor decrepit soul.

These types of highly educated, technical snobs always fail to see the inherent value in a fellow human being's ability to renew and repair anything. In most cases, I suspect they don't have the talent or dexterity to replace the batteries in their television remote. Consequently, I learned long ago that it is best to leave them to their own devices (pun intended).

The bottom line of this ongoing name game debate is really quite simple. It really does not matter how you are branded or labelled while you diligently perform your daily or nightly duties. Mechanic, technician, and engineer are all worthy words that fit the bill to varying degrees. The most important thing to remember is that once you put the word aircraft or airplane in front of them, the pride and quality of your work must be inherent. Lives depend on it.

Perhaps the final divine confirmation on this discussion can be quoted from the Bakers School of Aeronautics newly released T-shirt which wisely decrees: GOD CREATED AIRCRAFT MECHANICS SO PILOTS CAN HAVE HEROES TOO! Amen to that. For more published writing by Sam Longo, please visit www.samlongo.com ■

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