



Pilatus Owners & Pilots Association

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***“POPA... The Voice of the
Pilatus Community!”***

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THE PILOT IN COMMAND (P.I.C.) IS RESPONSIBLE FOR THE SAFE AND PROPER OPERATION OF HIS OR HER AIRCRAFT. IT IS THE RESPONSIBILITY OF THE P.I.C. TO OPERATE THAT AIRCRAFT IN COMPLIANCE WITH THAT AIRCRAFT'S PILOTS OPERATING HANDBOOK AND OTHER OFFICIAL MANUALS AND DIRECTIVES.

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From The President ...

The Board Addresses Member Concerns About Cost of Operations

Having just spent over \$53,000 on my annual inspection (2004 PC 12/45), the topic “Cost of Operation” was not only timely as an agenda item at our last POPA Board Meeting in Broomfield, Colorado, but it was top of mind for me. Now I must admit my annual included the Garmin STC’d WAAS upgrades for my 530 and 430 units, and the need to replace the AHRS unit that failed when I delivered the plane. Much to my chagrin, the AHRS is not a Honeywell product so wasn’t covered under my \$15,000 a year HAPP insurance which I bought because I have had two EFIS tubes and an EIS failure since new. Doing the math, that’s one major electronic system failure every 1.5 years.

Using my situation as just one example of what Legacy PC-12 owners are facing in the post-warranty maintenance world, we were able to have an open and frank discussion with Thomas Bosshard, PilBAL President and Pete Wolak, VP of Customer Service, who were present at the meeting.

In my situation, which other members have also experienced, there are two major problems: 1) lack of a viable, cost effective avionics/electronics upgrade path that would improve quality, functionality, and maintenance costs; and 2) lack of available data on major component failure rates so that owner/operators can anticipate costs and make informed decisions about whether or not to buy insurance, self-insure, or look for aftermarket solutions.

Other legacy owners cost of maintenance concerns were also vetted. Of special note was a difference of philosophy between some Part 91 operators and Pilatus imposed maintenance requirements. Specifically, Pilatus refuses to differentiate between Chapter 4 and Chapter 5 maintenance items in their field service guidelines. To some owner/operators this is seen as usurping their right to make decisions that are ordinarily permitted by Part 91 operators under the eyes of a certified, qualified mechanic. Pilatus defended their position on the grounds of safety and liability. They also reminded us Pilatus continues to be rated number 1 in service, and that our fleets’ resale value remains at the top in its class.

In the end, the Board agreed to support Pilatus’ position on maintenance, seeing it as a reasonable balance between cost of operation, safety, and used airplane value retention.

However, the Board reaffirmed, in the spirit of our Mission Statement, we are committed to continue working with Pilatus and PilBAL to keep direct operating costs low, maintenance reasonably priced, and safety at the highest level. To that end, the Board called for regular and on-going updates about what Pilatus is doing to address and work on our behalf to reduce those costs.

Also, we have asked for annual updates on “mean time between failure” data, or the like, on all major-cost components— especially avionics, engine components and electronics - so that owners and operators can better plan and manage their operations.

Thanks and Welcome

The Board was sad to have accepted Board Member Lowell Sando’s resignation. Due to various business commitments, Lowell is not able to continue as a POPA Board member. We will miss Lowell’s guardianship as Treasurer, his balanced and thoughtful approach, and his enthusiasm for what we are trying to accomplish on behalf of our members. Thanks Lowell!

On a very positive note, I would like to welcome Everett Clark of Alpha Flying as an Advisor to the Board. Everett brings a wealth of experience as Director of Operations for one of the largest and most successful Fractional Share programs in the world. Flying PC-12s exclusively, Alpha hires over 100 professional pilots and manages a fleet of approximately 30 PC-12s. We look forward to Everett’s guidance and participation as we continue our march to become the most relevant Owner and Operator organization in the industry.

Finally, if any PC-12 owner is interested in becoming a POPA Board member, please contact Laura Mason.



Your POPA Board...

Joe Howley, Lowell Sando, Bob MacLean, Brian Cleary and Pete Welles



FAA's Focus on Runway Safety Brings Changes

By Christine Knauer

4

By 2025, just 15 years from now, the Federal Aviation Administration (FAA) expects that the country's nearly 600 towered airports will see 84 million aircraft operations. With aircraft and equipment, vehicles and pedestrians, airport structures and obstacles all on the airport surface, millions of operations means millions of opportunities for a runway incursion.

Over the last several years, the FAA has focused heavily on incursion prevention by improving runway and airport signage and markings, adding new lighting, installing airport surface detection technology, and redesigning runways and taxiways.

FAST FACTS:

- 74% of runway incursions involve GA operators
- 70% of all runway incursions are caused by pilot deviations
- 80% of pilot deviations are from GA

Listen for the new ATC phrases

The latest changes bring new air traffic control instructions. In June, the FAA eliminated the familiar "taxi to" expression. Now instructions to cross an active or inactive runway will be issued one at a time. In general, you must have crossed the previous runway before receiving permission to cross the next runway.

Similarly, beginning September 30, you'll no longer hear the words "taxi into position and hold." It's now "line up and wait." The National Transportation Safety Board (NTSB) suggested the change, which the FAA adopted, to match international standard terminology, and minimize the risk of runway incursions.

During the transition, the FAA cautions that the phrase "traffic holding in position" will continue to be used to advise other aircraft that traffic has been authorized to "line up and wait" on an active runway.

To highlight the importance of towing the new ATC line, the FAA launched a nationwide campaign this summer with the slogan "If You Cross the Line, You've Crossed the Line." The program is designed to increase awareness among pilots and vehicle operators about the dangers of entering a protected runway without clearance.

Know the hot spots before you go

From Manhattan to Montgomery, St. Louis to San Francisco, there are dangerous runway hot spots where the risk of collision is highest. Before you fly into or out of an airport, the FAA suggests that you check the Hot Spot Charts for issues such as easy-to-miss taxiway turns, a single runway that crosses every other runway on the airfield, and confusing runway and taxiway configurations. Visit the FAA's website for Hot Spot information on more than 90 airports, from large to small.

Be sure to brush up on those hot spots as well as runway safety before taking your next flight test. The FAA's Flight Standards Service "believes that including specific runway safety questions on the pilot exam will increase runway safety awareness for pilots." The organization recommends that questions target the airports that pilots are likely to fly into depending on their region and flying schedules.

"By allowing Designated Pilot Examiners to determine which questions to use during test administration, pilots will become more familiar with the specific airports' runways they will likely use," said the organization in the FAA's National Runway Safety Plan, 2009-2011.



By the end of 2010, the FAA will have airport surface detection equipment (ASDE-X) installed at 35 airports. The system is designed to help reduce incursions between aircraft and vehicles.

(Continued on Page 5)

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ASDE-X is here

The FAA has accelerated deployment of its latest runway safety tool — airport surface detection equipment (ASDE-X). The agency now projects that all systems will be installed at 35 major U.S. airports by the end of 2010, a year earlier than originally anticipated.

According to the FAA, ASDE-X enables air traffic controllers to detect potential runway conflicts by providing detailed coverage of movement on runways and taxiways. The system collects data from several sources, including surface movement radar located on the air traffic control tower or a remote tower, multilateration sensors, automatic dependent surveillance-broadcast (ADS-B) sensors, the terminal automation system, and aircraft transponders.

By combining the data, ASDE-X is able to determine the position and identification of aircraft and transponder-equipped vehicles on the airport's surface, as well as aircraft flying within a five-mile radius.

Controllers in the tower see the information on a color display with aircraft and vehicle positions overlaid on a map of the airport's runways, taxiways and approach corridors. The controllers monitor the activity looking for potential incursion opportunities. ASDE-X is especially helpful at night, during inclement weather and other times of low visibility.

An enhanced version of the system, ASDE-X Safety Logic (AXSL), provides even greater situational awareness for controllers by predicting if the current or projected aircraft and vehicle movements are on track to cause a collision.

General aviation to benefit most

The result of all these changes? Safer airport operations and fewer incursions, especially for general aviation (GA) aircraft operators. Between 2001 and 2004, general aviation pilots were involved in 74 percent of runway incursions even though the segment accounted for just 57 percent of the operations. Given the statistics, general aviation has the most to gain from the FAA's efforts.

Christine Knauer, a freelance aviation writer, has more than 13 years experience writing for and about aircraft and avionics manufacturers, flight service centers, aviation technology and industry-related issues. A contributing editor for Avionics News, her articles also have appeared in Twin & Turbine Magazine, AutoPilot Magazine, American Bonanza Society Magazine, International Federation of Airline Pilots Association New Technology Journal and other industry publications.



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Hot Summer, Hot Performance

By John Morris

It's been one of the hottest summers that I can recall. As a result it also has allowed first hand observation of the PT6A-67B (P) as it relates, in this case, to takeoff performance. Whether operating in high or low altitude airfields with high time (>3200 hrs) engines or low time (<400 hrs) engines, the high heat does have an effect on engine performance. What is the effect?

The effect is engine temperature, which can have an effect on our decision making as to takeoff/initial climb procedures. Pilots have been properly trained for PC-12 operations, but need a refresher as to hot operations and engine performance.

Limitations prescribe how to operate the engine (powerplant) for takeoff**. The takeoff limits, for this article, are [Max]: SHP / 1200, Torque / 44.34 PSI, ITT 800°C (850°C-PC12/47E) ** time limited to 5 minutes.

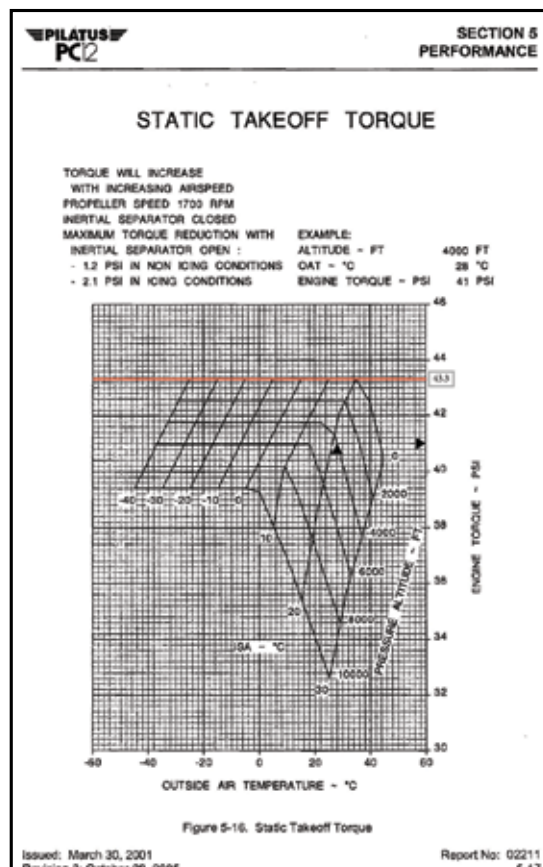
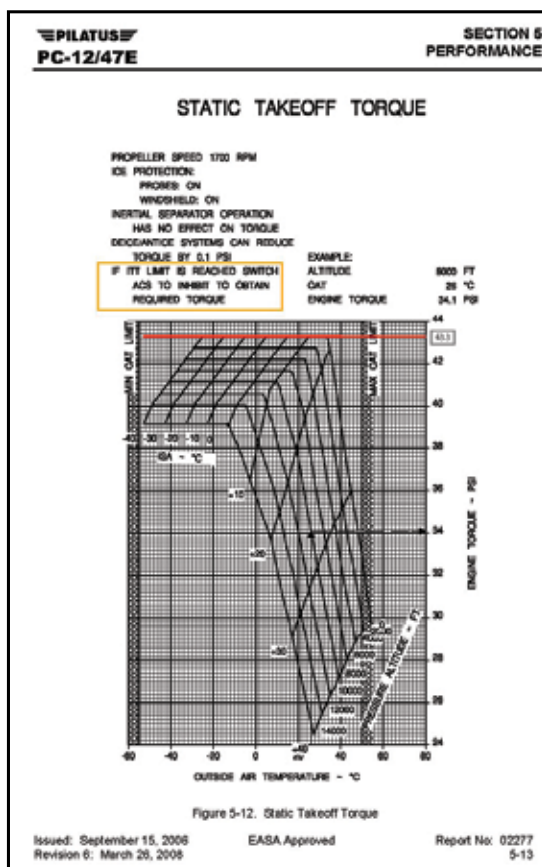
From the POH, Normal Procedures 4.9 TAKEOFF, line 2 and 3 (line 1 and 2 PC12/47E), the pilot is directed via the first stated line - ECS (or ACS) ... OFF (INHIBIT) with the following "(If the torque as per Static Takeoff Torque chart in Section 5 is below flat rating)". The second stated line directs that the - Power Control Lever ...SET with the following "(Under certain hot and/or high altitude the engine power is below the torque limiter setting and manual power setting is required according to Static Takeoff Torque chart in Section 5)". Following this line, all PC12 variants, is

a Caution: THE TORQUE LIMITER ASSISTS THE PILOT IN SETTING THE ENGINE POWER. THE PILOT IS RESPONSIBLE TO RESPECT ALL ENGINE OPERATING LIMITS. Then a Note: Increasing airspeed might cause torque and ITT to increase.

Looks like we need to see if we are below the flat rating and the torque limiter setting using the Static Takeoff Torque chart from Section 5 (see fig 1 and 2). But before we check out the chart a quick review of flat rating and the torque limiter.

Flat rating is when a high ESHP (Estimated Shaft Horsepower) turbo-propeller engine is restricted to a lower ESHP rating. Why restrict? Letting the "beast" go to its maximum at takeoff would probably do structural damage unless the airframe/engine mounts were built to sustain over the duration of the airframe/engine mount lifetime limits. Hence the 5 minute time limit at takeoff power, even at this SHP rating. Instead of full ESHP, reduce the ESHP, which allows for less structural strength/mass, which will allow for more useful load, and use the available additional compressible air, or thermodynamics, at higher/hotter altitudes while maintaining the limits set by the manufacturer. The PC12/NG (PT6A-67P) has a 15% increase in thermodynamics due to the higher operating temperatures associated with a higher true ESHP than the PT6A-67B. This additional "energy" is used primarily for longer-sustained climb and higher cruise speed but is also reflected for takeoff with the higher ITT limit.

(Continued on Page 7)



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Which brings us to the engine limiting. Pratt&Whitney uses a torque limiter to control the output limit of the engine. Torque limiting is accomplished by P3 bleed air being removed from the Fuel Control Unit when the PSI limit has been reached via the Reduction Gear Box sensing. Torque limitation for all PC-12s is 44.34 psi, which is based on Sea Level, ISA Standard Day conditions. In the early days of the PC-12 the torque limiter was sometimes being set to values near 50 psi! All of course done statically, on the ground, by maintenance. Happily, that changed to a factory standard torque setting of 43.0 psi, based on Sea Level, ISA Standard. This factory standard allows, in principle, for the operator to apply full power, at any altitude, and never exceed the torque limit for that altitude (i.e. the EIS blinking at an inappropriate time, rotation-distraction). However, due to operator requests, maintenance, etc, the factory settings may not exist anymore. In any case it is the pilot's responsibility to respect engine-operating limits.

Now, if you look at the Static Takeoff Torque chart, all of the horizontal flat lines represent the "flat rating" of the PT6A-67B/P for the respective altitudes/temperatures. Torque (limiter) settings are derived from the right side of the chart for the same altitudes and temperatures. So, if the torque limiters are set to 43.0 psi for takeoff [SL, ISA standard day] are we below "flat rating"? Should we then turn OFF (INHIBIT) the ECS (ACS)? Why are we turning Off/Inhibiting the ECS/ACS? Answers shortly.

What about the TAKEOFF line dealing with Power Control Lever ...Set "(Under certain hot and/or high airfield altitude the engine power is below the torque limiter setting and manual power setting is required according to Static Takeoff Torque chart in Section 5)"? Are we setting a lower power or a higher power? Can we set a higher power? Not at *that* moment if we use full power, unless our torque limiter has been adjusted. Why would we set a lower power? What are we protecting from?

Unless we do a full power, standing still static run-up, before every flight and with the Static Takeoff Torque chart in-hand, will we truly know if the engine is below flat rating, and that we may need to adjust the torque manually? Not likely. Instead we use knowledge and understanding of what we are really looking to protect against.

So what are the answers? Basically, all answers relate to Engine TEMPERATURE. Look back at limitations. The SHP of 1200 is controlled via Torque Limit. The Torque Limit is ultimately controlled by the pilot but normally by the torque limiter. ITT is where it is the responsibility of the pilot to not exceed the takeoff limit (not max continuous or max continuous climb/cruise). Most of the features in the PC12 are automatic, but ITT is a function of atmospheric conditions and equipment being operated by and for the engine, including engine age.

Takeoff and initial climb are VERY important. Distractions of any kind need to be avoided, such as a blinking EIS or CAS message from an over temping engine. Or would you reduce power at takeoff to avoid a high temp?

Why turn OFF (INHIBIT) the ECS (ACS)? If we turn OFF (Inhibit) the ECS (ACS) the ITT will drop approximately 20°-25C at takeoff. Normally the P2.5 Bleed air taken from the engine is used for cabin temperature/pressurization. This in turn is removing pre-burning performance air from the engine, which causes the ITT to rise correspondingly.

The piece of equipment operated for the engine, as it relates to ITT would be the Inertial Separator. With the separator open for takeoff the ITT will increase approximately 20° to 25°C. Why? We are letting air bypass the engine inlet causing the compressor to work harder, which means more fuel (not much, but enough to increase ITT).

We are required by limitations to do a Preflight Function Test for takeoff (AKA Inertial Separator). That does not mean we have to keep the separator open for takeoff. Pilatus recommends use of the Inertial Separator-OPEN, as it pertains for takeoff, if operating on unprepared surfaces. Of course it is a good idea to have the separator open for FOD protection but unless the runway is contaminated the engine will perform (ITT) better with it closed. Will you benefit by closing the separator *and* turning OFF (INHIBIT) the ECS (ACS)? No. Tried all combinations. PFM (Pure Factory Magic)!

What about Manual Power Setting? Obviously if we reduce power that reduces fuel flow which reduces the burn output/ITT (temperature).

Engine limitations: 5 minutes at takeoff torque/temp. If you have a choice between ECS (ACS) or power reduction (shouldn't matter where), which should/would you do?

Check your engine numbers, quickly, prior to takeoff with the ECS (ACS) operating *and* the inertial separator -Closed. Better yet would be a co-pilot noting the numbers for you, specifically torque and ITT (you should have the OAT before engine start). Check the numbers against the Static Takeoff Torque chart-later. Do you have to turn OFF (INHIBIT) the ECS (ACS)? Be aware of using the Inertial Separator for takeoff, if not required. Don't do reduced power takeoffs-period.

"A Safe Pilot is Always Learning"

John Morris

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John Morris – Simcom Training Centers-Orlando for 14 years with 1999 being the first year teaching the PC-12. Program Coordinator for the PC-12 from 2000 until resigning in 2007 to start ACFT Services. ACFT Services provides training ONLY for all PC-12s, no other aircraft.

ADS-B

By Mike LaConto

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Automatic Dependent Surveillance–Broadcast (ADS-B) is part of the FAA's Next Generation, Communication Navigation Surveillance–Air Traffic Management System (CNS-ATM). We have seen the initial roll out of a portion of CNS-ATM with the Navigation piece utilizing GPS technologies. ADS-B will provide the Surveillance portion and the Communications will be rolled out at some point in the future. The initial testing of these technologies began with the Capstone project in Alaska, which was a very successful program. These new technologies will support a more efficient and less costly National Airspace System.

ADS-B will replace ATC's current radar system for tracking aircraft. The FAA lists the benefits of ADS-B as:

- *Provides air to air surveillance capability*
- *Reduces the cost of the infrastructure required to operate the National Airspace System*
- *Provides surveillance to remote or inhospitable areas that do not currently have coverage with conventional radar*
- *Allows for reduced separation and greater predictability in departure and arrival times*
- *Real-time traffic and other vital aeronautical information in the cockpit*
- *Supports common separation standards, both horizontal and vertical, for all classes of airspace*

The operation of ADS-B requires the aircraft to be equipped with an ADS-B system. Currently there are two components of signal flow for ADS-B "IN" and "OUT". The ADS-B "OUT" will transmit position and aircraft information "OUT" to other aircraft, and as well to ground stations that will relay the information to Air Traffic Control Centers in near real time. ADS-B OUT benefits the FAA in reducing the overall cost of maintaining the National Airspace System and as an efficiency enabling tool for Air Traffic Control.

ADS-B IN on the other hand, can provide important flight safety information to the flight crew. ADS-B IN is comprised of Traffic Information Service-Broadcast (TIS-B) and Flight Information Service-Broadcast (FIS-B).

TIS-B is traffic information sent from the ground station to the ADS-B receiver and then displayed. This system only works when in range of the transmitting ground station. ADS-B traffic would be available outside this service area(ADS-B out from other aircraft).

FIS-B is the ground to air transmission of weather data and aeronautical information either textually or graphically. These products would include Nexrad, TFR's, Metars, TAF's, Notams, and others. FIS-B reception is also limited by distance to the ground station to the aircraft. ADS-B IN requires that you have a compatible display to show this information. All the ADS-B IN data is considered advisory in nature.

Currently the FAA has a mandate for ADS-B equipage for most aircraft of January 1st, 2020. This mandate requires ADS-B OUT but ADS-B IN is optional and not required. The final rule was issued earlier this year and the ground infrastructure is still being completed for the ADS-B network. At this point I would recommend waiting to comply with the mandate and also give serious consideration to installing ADS-B IN. In the next year or so, many of the manufactures will have their systems ready for sale and the FAA will be much further along in completing the ADS-B infrastructure.

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Mike LaConto, Avionics Manager has been working at Epps Aviation since 1998. He is currently on the Aircraft Electronics Association Board of Directors.



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-Phil Rosenbaum



POPA President 2002-'07
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The Collaborative Convective Forecast Product (CCFP)

By Scott C. Dennstaedt

12

Convective weather is undoubtedly the single most disruptive force affecting the National Airspace System (NAS). Consequently, these disruptions can quickly engender major delays in the system. So the best the FAA and NWS can do is to pinpoint where those disruptions will likely be located in near future and then develop a master plan for coping with the inevitable loss of this precious airspace. Developing such a plan requires a collaborative effort among the NWS, FAA and commercial air carriers. The Collaborative Convective Forecast Product or CCFP is the primary convective weather forecast product used as input to develop this strategic plan.

The CCFP is certainly not new; it became operational in 2000. It is made available on the Aviation Digital Data Service (ADDS) website so you may have been tempted to use it on an occasional basis. If you use this forecast regularly or have been tempted to use it in the past, read on ... the CCFP isn't the product you think it is.

The CCFP is a seasonal product that begins on March 1 and runs through October 30. During this time it provides a single convective forecast for strategic planning of en route aircraft operations within the NAS. Consequently, it is not intended to be used for traffic flow control in the airport terminal environment, nor for tactical traffic flow decisions. Most importantly, the CCFP is primarily for use by commercial air traffic operations and has not been designed to also support general aviation pilots for reasons that will be discussed later.

As the name suggests, this is a collaborative forecast effort. Collaboration occurs among meteorologists for the Aviation Weather Center (AWC), commercial air carriers, Center Weather Service Units (CWSUs), Air Traffic Control Command Center (ATCSCC) and Environment Canada. Their ultimate goal is to produce a short-range forecast that primarily aids in air traffic flow management decisions to reduce delays, rerouting and cancellations due to convective weather for the conterminous U.S. and its coastal waters as well as southern-most portions of Ontario and Quebec, Canada.

Once the CCFP is finalized, it is used by the FAA to develop a Strategic Plan of Operations (SPO). The SPO is developed during the collaborative TELCONS hosted by the FAA's strategic planning team and conducted immediately after the issuance of the final CCFP graphics.

The CCFP Cycle

CCFP is issued on a *two* hour production cycle beginning at 0700 UTC with the last cycle at 0100 UTC (0800 UTC and 0200 UTC during standard time). Prior to each forecast cycle, the AWC forecaster working the CCFP desk issues preliminary charts that include forecasts of convective coverage valid 2-, 4-, and 6-hours after the issuance time. For example, the 1700 UTC preliminary forecasts are due before 1615 UTC and include forecasts valid at 1900 UTC (2-hour), 2100 UTC (4-hour) and 2300 UTC (6-hour).

Once the preliminary maps are available at 15 minutes past the hour, the AWC forecaster opens a 30 minute collaboration

(chat) session. Authorized participants log in to the session and view the preliminary charts. Participants can suggest changes to these forecasts. The AWC forecaster moderates the session and considers their comments. At 45 minutes past the hour, the chat session is automatically closed. At this point, the forecaster has 15 minutes to modify the forecast incorporating the participants' input as needed and is responsible for transmitting the final CCFP graphics before the top of the hour.

CCFP Criteria

Deep, moist convection for the purposes of the CCFP forecast uses criteria that are quite different than the criteria used for issuing convective SIGMETs. To be included in the CCFP, the area of convection must meet the following *minimum forecast* criteria:

- A coverage of at least 25 percent with echoes of at least 40 dBZ composite reflectivity; **and**
- A coverage of at least 25 percent with echo tops of FL250, or greater; **and**
- A forecaster confidence of at least 25 percent.

Note that all three of these threshold criteria combined are required for any area of convection of 3,000 square miles or greater to be included in a CCFP forecast. Besides areas, lines of convection can also be identified in the forecast. Lines can stand alone or be included within an area. Note that these lines or areas are instantaneous forecasts. That is, they describe the convective coverage at a particular point in time (e.g., 2300 UTC), not over a period of time.

General aviation pilots must be careful when using the CCFP for preflight weather analysis. Most are unaware that the CCFP is not a *thunderstorm* forecast. It is created to provide forecast guidance to air traffic managers and may not always take into consideration areas or lines of convection that may or may not meet convective SIGMET criteria. Unlike the criteria used for convective SIGMETs, the CCFP threshold criteria do not consider lightning, precipitation or severity (i.e., tornadoes, large hail or damaging winds).

Another unique aspect of the CCFP that continues to confuse some pilots is the echo tops forecast; the echo tops provided in the CCFP are not a forecast for *maximum* tops as they are in a convective SIGMET. The best way to understand this aspect is to use an example.

Assume that an area of convection meeting the CCFP criteria has been identified as a polygon on the final graphics. Using the table below, the forecaster believes that with this area of convection there will be isolated coverage of echo tops that exceed 40,000 feet. On the opposite extreme, broken coverage is expected with echo tops anticipated to be between 25,000 feet and 29,000 feet. Even though there are widely scattered

| Coverage | Isolated | Widely scattered | Scattered | Broken |
|-----------------|--------------|------------------|-----------------|-----------------|
| Percentage | < 10 percent | 10 – 24 percent | 25 – 39 percent | 40 – 74 percent |
| Tops (feet MSL) | 40,000 + | 35,000 – 39,000 | 30,000 – 34,000 | 25,000 – 29,000 |

(Continued on Page 13)

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or isolated echo tops expected to occur above 35,000 feet, the CCFP graphic will show scattered (sparse) coverage at 34,000 feet since most of the echo tops will be located at or below 34,000 feet.

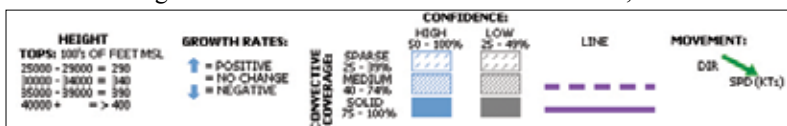
CCFP Graphics



Shown here is a 6-hour CCFP forecast issued during the 1700 UTC cycle and valid at 2300 UTC.

The “final” CCFP graphical representation issued by the AWC forecaster can be viewed online at <http://aviationweather.gov/products/ccfp/>. Each of the three forecasts for 2-, 4- and 6-hours will largely consist of one or more hatched or filled polygons describing areas of convection that are expected to meet the CCFP criteria. The color of the polygons describes the forecaster’s confidence whereas the hatching or fill denotes the expected convective coverage. Areas of higher convective coverage or lines of convection can be included within other polygons of lower convective coverage. Each polygon will also include a categorical echo tops forecast.

Coverage is identified within each area of convection, in one of



This legend depicts the symbology used in the CCFP graphics to include categories for convective coverage, forecaster confidence and echo tops.

three possible categories:

- Sparse 25 - 39 percent (sparse fill)
- Medium 40 - 74 percent (medium fill)
- Solid 75 - 100 percent (solid fill)

The forecaster’s confidence is a subjective estimate that conditions defined by the minimum CCFP criteria will occur in the forecast polygon at the specified time and place. It is identified in one of two possible categories:

- Low confidence—25-49 percent (border & fill gray)
- High confidence—50-100 percent (border & fill slate blue)

Echo tops within each area of convection are forecast in one of four possible categories:

- 25,000 – 29,000 feet MSL
- 30,000 – 34,000 feet MSL
- 35,000 – 39,000 feet MSL
- At or above 40,000 feet MSL

Extended Convective Forecast Product (ECFP)

The CCFP is only valid out to 6 hours. However, to provide traffic planners and collaborators with a quick-look forecast of the greatest probability of thunderstorms (not just convection) beyond this period, the AWC issues an Extended Convective Forecast Product (ECFP) valid for the following day.

The ECFP planning tool is a graphical representation of the forecast probability of thunderstorms for the afternoon of the following day. The product will identify graphically where in the U.S. thunderstorms are the most likely based solely only on the calibrated thunderstorm probability forecast from the Short Range Ensemble Forecast (SREF) model. While this graphical product will use CCFP-style graphics it is automatically generated and does not use the same CCFP criteria since this is a thunderstorm forecast. This is to facilitate ease of interpretation and use by those already familiar with the operational CCFP and is intended to support the long range planning for CCFP-type of constraints in the NAS.



The Extended Convective Forecast Product (ECFP) uses similar CCFP-style shading. Contours are drawn at 40, 60, and 80-percent and represent the probability of thunderstorms. Hashed areas represent 40-59 percent probability, solid lined areas represent 60-79 percent probability, and solid blue filled areas represent greater than 80 percent probability.

As of this writing the ECFP is considered “experimental” and should not be used operationally. The ECFP is updated by 1800 UTC each day and is valid between 1800 UTC and 0000 UTC the following day. This product can be viewed online at <http://aviationweather.gov/testbed/ccfpoutlook/>. A Day 3 (the day after tomorrow) product is also being considered.

In the end, the CCFP can provide some useful forecast guidance concerning convective weather along your proposed route of flight assuming that you are aware that it is not a forecast for thunderstorms. Be sure to always integrate this forecast with other official guidance provided by the NWS before making any preflight decisions.

Scott C. Dennstaedt is a CFI and former NWS research meteorologist. To learn more about aviation weather, please visit his website at <http://avwxworkshops.com>.

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PC-12 De-Icing Best Practices

By Alpha Flying

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With the cold-weather season starting soon, it is an opportune time to review PC-12 deicing procedures. This article, as well as a free on-line seminar on winter operations available from Alpha Flying, will provide a refresher on operating the PC-12 in icing conditions. This article will only cover deicing procedures but you may join the on-line seminar, during which airfield and aircraft contamination, in-flight icing, and deicing equipment will be discussed (info by emailing training@alphaflying.com). Flying in icing conditions is manageable and can be done safely.

Pilots should make themselves aware of the relevant documents before operating their aircraft in icing conditions, including the PC-12 POH (particularly section 10), the relevant FARs, and AC 135-17 (Advisory Circular: "Pilot Guide. Small Aircraft Ground Deicing"). Another resource is NASA's on-line course "A Pilot's Guide to Ground Icing" available at <http://aircrafticing.grc.nasa.gov/courses.html>.

Deicing Procedures

Deicing your PC-12 is no big deal, and must be part of your routine if you are flying in cold temperatures on a regular basis. Anytime the temperature is below 10° C and there is visible moisture, you should consider deicing. also, when icing conditions were encountered during descent, approach, or taxi during the previous flight, deicing will most likely be necessary.

The Pilatus POH reminds us that the aircraft must be clean before flight. This means it must be completely free of any contaminants on any part of the aircraft.

There are 3 basic ways to remove ice, snow, and frost from your aircraft:

1. Deicing by manual methods: this method is only useful for removing large accumulations of dry snow and the bulk of large wet snow deposits. Use of deice fluid after this may still be necessary and extreme care should be taken so as to not damage aircraft surfaces.
2. Use of a hangar: because of the cost of deice fluid, you may want to consider alternatives, such as putting the aircraft in a hangar. The cost of the hangar might be far less than deicing. In fact, Alpha Flying has experienced deicing bills in the \$6000 range, far more expensive than a night in a typical hangar. Also, warming up your aircraft has other advantages other than removing and preventing contaminants – it improves starting and cabin comfort.
3. The third method is deicing with fluids. Type I fluid is the only deicing fluid approved for the PC-12. Type I fluid is referred to as a "Newtonian" fluid, meaning that it has no resistance to stress

which might cause it to flow. Any stress applied to the fluid (such as wind, propeller blast, heavy precipitation, etc) will cause the fluid to move immediately. Other deicing/anti-icing fluids are known as "non-Newtonian," meaning that the properties of the fluid provide a greater resistance to flow when a force is applied. These fluids are therefore considered anti-icing fluids as well because they will continue to provide protection against freezing contaminants. The rotation speed of the PC-12 does not provide a strong enough force to shed those types of fluids and therefore they are not approved for use on the PC-12.

There are several requirements for the fluid. The temperature must be between 140° and 160° F as temperatures above 180° F can damage the painted surface of your aircraft. Also, the freezing point of the fluid has to be more than 10° C below ambient temperature, otherwise it may not be effective. And finally, the mixture of the fluid must contain at least 50% glycol (the other 50% is water).

Other types of fluids (type III, IV) might seem like they are suitable for use on the PC-12, but the manual specifically states that only Type I may be used. Getting deiced with an alternate fluid and then attempting to hold the aircraft on the runway until the fluid shears off is not a good technique. Regardless of the fluids offered to you (until the manual lists alternate fluids for use), you may not use them.

The procedure for applying deice fluid is outlined on page 10-5 of the POH. In general, the aircraft should be deiced front to back and from the top down. Under no circumstances should deice fluid be applied to static ports, pitot head, AOA transmitters, cockpit windows, air intakes, and the engine. Alpha Flying has a deicing quick reference card which we keep, laminated, in the aircraft and can hand to line service personnel with information on how to deice (see figure 1).

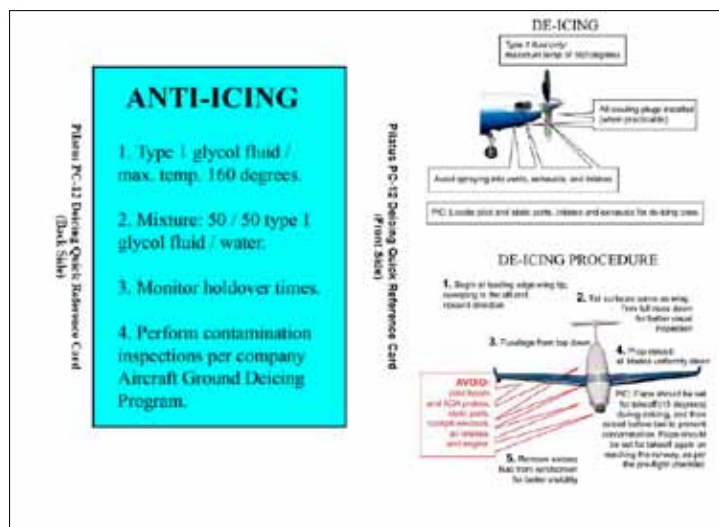


Figure 1

(Continued on Page 17)

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With the writing of this article, the PC-12 manual is being revised to allow deicing while the engine is running (with certain procedures). Alpha Flying has never deiced with the engine running because of the lack of procedures, but will find this useful at airports such as Toronto Pearson (CYYZ), where it is the only way to get deiced.

Another option for deicing is doing it yourself. Alpha Flying has portable pressurized spray bottles containing appropriate deice fluid for light deicing. This has been especially helpful at airports, such as Morrisville-Stowe (KMVL) where deicing is not available but almost always needed.

Post Deicing Check

According to the PC-12 POH, following deice fluid application, a Post Deicing Check will be made. The manual lists the areas that must be checked. In addition, the pilot

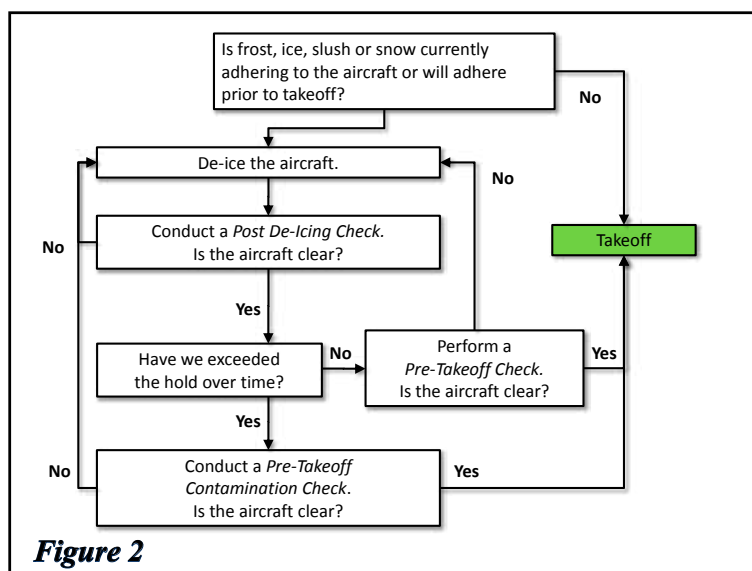


Figure 2

should check for full and free movement of the flight controls to ensure there is no remaining contamination. Additionally, the flight crew should check brake effectiveness as the brakes may be initially affected if they have been sprayed with deicing fluid.

Holdover Times

A holdover time is the estimated time that the application of deicing fluid will provide protection from the adherence of frost, snow, ice, or other precipitation on the surface of the aircraft. The holdover time begins at the start of fluid application and ends when the fluid loses its effectiveness. In other words, start your timer when the first drop hits the surface of your aircraft on the final application.

The holdover time chart serves as a guideline only. If, at the expiration of the holdover time, you can ascertain that the aircraft is free and clear of any and all contamination, you can consider commencing your takeoff. If not, you should deice your aircraft again. Since the holdover times for type I fluid

tend to be very short, especially in freezing drizzle, freezing rain, and even moderate amounts of snow, you may want to consider delaying your takeoff until conditions improve. The holdover time in moderate snow at -3° C, for example, is 6-11 minutes, and in freezing drizzle, 9-13 minutes. Is that enough time for you to finish the deicing procedure, start the engine, taxi to the runway, and takeoff?

At Alpha Flying, we perform a pre-takeoff check within the holdover time. In other words, we do not just taxi to the runway, check to ensure we are within the holdover time, and takeoff. From the cockpit, or the cabin when necessary, the PIC checks for buildup on the wings, nose, and windshield. Since deicing fluid has the potential to interfere with visibility through certain windows, and other visibility impairments (such as low light) can intensify this interference, a visual inspection from the cockpit or cabin may not be possible and an exterior inspection would then be required.

Pre-Takeoff Contamination Check

The PC-12 POH states that “A pre-takeoff contamination walk round check should be made 5 minutes prior to beginning takeoff to make sure the wings and control surfaces are free of frost, snow and ice.” According to the letter of the manual, this would mean ensuring that your takeoff is less than 5 minutes after deicing and doing a walk around inspection.

To avoid having to shutdown at the end of the runway to do a walk around inspection, all efforts should be taken to complete the pre-takeoff contamination check after de-ice application and before taxiing to takeoff. Takeoff should then be made within 5 minutes.

At Alpha Flying, we require this pre-takeoff contamination check if: the holdover time has expired; the aircraft has not been deiced and the weather is conducive to the formation of wing contamination; or, the holdover table does not cover the actual weather conditions.

The safest course of action is to perform both the post-deicing check and the pre-takeoff walk round check, according to the manual. If at all uncertain as to the cleanliness of your aircraft, delay takeoff and inspect the aircraft from the outside, getting deiced again if necessary.

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PT6 Engine Overhaul: Demystified

The following article appeared in the 2010 Summer Issue of Skytech's *Owner Pilot Advantage Magazine*.

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To the uninitiated, the turbine engine overhaul experience can seem like a daunting task. Even seasoned owner-operators take pause when faced with an impending overhaul. The myriad of tasks, choices and considerations can quickly overwhelm. What really happens at overhaul time- what are my resources- and how much will it cost are the major questions that arise. It helps to understand the overhaul process by breaking it into a sequence of major phases, establishing communication with knowledgeable resources and planning ahead for schedule and budget. If you plan ahead and ask the right questions you can confidently navigate the overhaul process adhering to budget with the least amount of down-time.

What really happens at overhaul time?

The six weeks typical for most overhauls appears mysterious without a basic understanding of the process. They're just tearing it apart and putting it back together...right? Well, yes - but they are also inspecting each of its various components with non-destructive tests, hand inspections and precision instrument tolerances. There are hundreds of parts composed of a myriad of materials to review, repair and rebuild. The major phases include analysis of competing proposals, scheduling, engine removal, engine teardown, inspection and cost estimate review, reassembly, test and finally re-installation of the overhauled engine onto the airframe.

As with your aircraft itself, every engine is different. Factors for its successful overhaul include your specific serial number, campaign status, environment and hours/cycles. Any of these items can affect both budget and downtime. A little planning and a brief understanding of the process and timeline help to allay any concerns about what is happening with your engine.

What are my resources?

Said another way: How do I make sure that someone is looking out for me and my engine? Of course, you need to make certain to understand the details of your contract in terms of prices, campaigns and replacement parts, but there are some knowledgeable resources who will be involved with you throughout the process that can help significantly.

Typically people rely on their regular maintenance provider to manage the overhaul process. The two people who will be most involved with your engine once it ships will be your service manager, or appointed expert at your maintenance facility, and the administrator at the overhaul facility.

Your primary point of contact will likely be the service manager at your repair facility. Where an individual owner typically will need to overhaul their engines once every 8 to ten years, the service manager at your local facility oversees many overhauls every year.

They can provide detailed information and history specific to your aircraft and engine to the overhaul facility, helping to take as much guess work out of the estimate as possible. They will guide you through each phase of the overhaul, and be your advocate to help make decisions once your engine is on site with the overhauler. They can even travel with you, or on your behalf, to the overhaul site to see your engine while it is in process or review any scrap or components with you.

Most overhaul shops welcome customers for a factory tour and scrap review. There is no substitute for being able to see the physical characteristics of your engine components with the experts on site. It is also impressive to see the specific machinery, talents and test cells for the engines.

| | |
|---|--|
| One – Six Weeks Before | •Schedule with Shop •Request detailed quotes •Plan for other maintenance/downtime |
| One Week Before | •Confirm schedule •Make travel arrangements to/from facility |
| Day of Arrival at Maintenance Facility | •Remove engine •Ship to overhaul facility |
| Day of Arrival at Overhaul Facility | •Un-crate engine •Send to pre-inspection •Communicate, check log books |
| First Week of Overhaul | •Complete tear down •Final cost estimate •Receive tear down report •Send accessories to appropriate tests |
| Second Week of Overhaul | •Parts to detailed inspection/ndt |
| Third / Fourth Week of Overhaul | •Parts back from repair |
| Fifth / Sixth Week of Overhaul | •Reassembly •Test •Ship to maintenance shop for installation |

The primary point of contact at the overhaul facility is the administrator. Sometimes this person is called a product support representative or customer service manager. They are there to help guide your engine through the process at the facility and make certain they are keeping to the terms offered to you in its proposal.

How much will it cost?

This answer depends on the particular variables of your engine. After you have provided your serial number, campaign status and basic maintenance information, a more detailed quote can be provided. Usually overhauls are quoted as "time and material" or "flat rate", but all quotes will contain similar key elements.

Key price elements for any overhaul are as follows:

- **Labor:** This covers everything from taking it out of the crate all the way to final inspection. Usually quoted as a flat rate.
- **Parts:** these are the specific parts (new or used) to be replaced in your engine

(Continued on Page 19)

(Continued from Page 18)

- **Consumables:** fluids, small gaskets and other small parts required to reassemble your engine. Sometimes quoted as a flat rate.
- **Exchange parts:** parts that have long repair turn-around times and are replaced with like parts, but not the originals
- **Other items that may be included or should be considered:**
 - Freight costs for getting the engine to/from facility
 - Travel cost for seeing the engine in production
 - Major campaigns that may be optional, but recommended
 - Separate line item for testing
 - Separate line item for accessories or outside vendors
 - Rental Engines
- **Airframe related expenses:** These are usually billed through your regular maintenance provider, so you will need to make certain you have an understanding of any airframe related maintenance that is required at the time of the overhaul.

You will find that quotes from different vendors can appear vastly different, but frequently say the same thing. It is important to consider all the factors when reviewing your quote – an upfront quote that doesn't include a critical (but not legally required) campaign may appear less expensive than a more inclusive quote. So – read the fine print.

What is a flat rate anyway? Some overhaulers will offer a flat rate, usually at a premium, for taking on some of the risk for scrapped parts. They typically include all labor, consumables and known parts for your particular dash model and serial number range. Even though flat-rated, most exclude major components, so again - read the fine print. For example, oftentimes replacement CT blades are excluded from the flat rate.

Do I have any choices here? Yes – it is your engine. You will have choices to make regarding new or used parts, exchange parts or optional service bulletins. Working closely with your trusted service manager to ensure the proper choices are made can have a profound effect on the final cost and effectiveness of your project. Important points to consider when making budget choices are, warranty, performance, compatibility and the next hot section inspection.

Successful Overhaul

When the six weeks are up, you will have a safe, well-performing up-to-date engine; adding value and life to your aircraft. Take time to read the details, know the shop and full advantages of all the resources that are available to you and you will have a smooth experience with your PT6 overhaul.



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Checklists – Part 1

By Bo Corby

'A checklist is not for those afraid of forgetting ... but for those who are afraid of the consequences of forgetting ... which should include all pilots'

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A few months ago on a contract flight, I noticed the airplane had no less than 4 different checklists in the side pockets of the cockpit. Each checklist was for the same aircraft...but different in many ways; type styles, type size, order of items, different items, different lengths, laminated, not laminated. All of these checklists were designed to accomplish the same thing...get the aircraft into the air safely.

Continued interest in the subject of checklists and how they are developed lead to additional research, including several forums on the Internet, where pilots discussed the issue of checklist selection and use. Surprisingly, some professed to develop and use 'their own' checklist in place of that provided by the manufacturer. Is this an acceptable practice. Is it advisable to develop and use your own checklist? Can we perform the checklist safely if we have memorized the items on the checklist? To answer these questions we need to investigate the potential consequences of checklist design and use.

A review of NTSB accident data between 1983 and 1993 revealed approximately 279 aircraft accidents occurred where the checklist was not used or followed during CFR Part 91, 121 and 135 operations. In addition, a small number of accidents involved checklists that were inadequate for the aircraft or failed to include critical steps required for safe operation of the aircraft. These 279 accidents were responsible for approximately 215 fatalities and over 260 injuries. The NTSB went on to conclude that the causal or contributing errors in the above accidents were identified as follows:

- *Crew or pilot failed to use the checklist*
- *Crew or pilot overlooked item(s) on the checklist*
- *Crew or pilot failed to verify settings visually*
- *Checklist flow was interrupted by outside sources*
- *Operators or manufacturer's checklist contained errors or was incomplete*

Other factors determined from NASA ASRS reports concerning checklists error or misuse suggested that at the time of occurrence:

- *The pilot was nearing the end of a long day or flight*
- *The pilot was rushing to make a scheduled departure*
- *The pilot(s) had not completed all of the before takeoff checklist items and did not decline an ATC takeoff clearance because they were late or traffic was backed up behind them and they did not want to cause a delay in departures from the airport*
- *When rushed, the pilot conducted the checklist from memory but inadvertently omitted steps*

The complexity of today's aircraft requires a systematic approach to aircraft operation. Although the PC-12 may be touted by sales organizations as "easy to fly as a Cessna 172", it is certainly more complex in systems and capability, requiring much more attention to how it is operated. Complicating the equation is the PC-12's incredible versatility with the potential

of lulling pilots into thinking it can do anything asked of it. The PC-12, like any other aircraft has its limitations. The checklist becomes the interface between the pilot and aircraft in assuring the two are in concert for each phase of flight. How the checklist is accomplished depends on a basic philosophy of use by the initiator.

Checklist vs. Do List

There is a distinction between a 'Do List' and 'Checklist' although the common term for both is Checklist.

Reading the challenge and response of a checklist item, observing or positioning the item and then reading the published item response before proceeding constitutes a 'do list'. This is common in single pilot operations, particularly in light general aviation aircraft. The PC-12 is sometimes flown with two pilots, and the checklist can be accomplished more efficiently when the non-flying pilot reads the challenge and response while the flying pilot will observe or position the item, repeating the response only. Military operations and the general aviation community often use the 'do list' philosophy.

Airlines, some air taxi and corporations use a different procedure; the cockpit is preset for the phase of flight by using 'flow patterns' from memory, with the checklist conducted as an 'after the action' check that each item is in proper position for the appropriate phase of flight. The non-flying pilot would read the challenge and the flying pilot would observe the item for assurance of its condition and repeat the proper response. Any of these methodologies are acceptable as long as the checklist is completed for each phase in its entirety. Let's look at some human factors that inhibit proper use of the checklist.

Fatigue/Stress

Fatigue and stress are related in that the presence of one can often cause the other. The result of both factors is a reduction in coordination and alertness. The normal human reaction or compensation for fatigue and/or stress is to mentally "load shed" or reduce the workload required by ranking tasks to be accomplished according to their perceived importance, shedding or deleting those of lower priority. The individual may also refuse to accept new tasks or may devote less time to each of the present tasks. All of this can directly impact the successful completion of checklist tasking.

Personal stress, such as anger, depression, anxiety, an argument, death in the family, divorce, separation, or financial problems can also decrease one's alertness in the cockpit, reducing judgment and potentially leading to taking risks. Performance will degrade and the pilot may notice themselves "getting behind the aircraft", a good sign that an added push of discipline in accomplishing tasks in a systematic and timely manner is required, assisted by the completion of all checklists.

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Interruption/Distracton

Pre-departure through the after takeoff phases have been proven by data to be the most vulnerable to interruptions or distractions. Initiation of a flight always has the potential to be rushed ... by factors such as weather, passengers, ATC, maintenance issues, fueling problems, etc. In addition, events during the pre-departure phase of operation do not always occur in a logical sequence, requiring a greater sense of situational awareness in order to keep required tasks, such as checklist performance consistent and sequential.

Arrivals and approach phases normally have more time to deal with the routine processes. Nonetheless, distractions and or interruptions can occur and checklist discipline will assist in minimizing the impact of these situations.

Anytime a checklist flow has been interrupted, the pilot should be able to invoke a “hold” on the checklist process. The checklist should be placed in a location visible to the pilot, other than its normal resting place, indicating there are items to complete prior to the next phase of flight. Never stow the checklist in its resting place until all checklist items have been complete. Interruptions/distractions can be deadly.

Pressure to Depart or Complete a Trip

Studies have shown that pressure to quicken the pace of an operation increases the possibility of error. There is a direct relationship between response-time and error-rate. For example, if the control and/or instrument panels are scanned rapidly due to time pressure, the accuracy of that scan may suffer and the probability of error will increase.

Checklist design can minimize these errors with procedures that prepare the aircraft prior to customer/owner arrival ... the hot cockpit approach as used in the military. At other times, personal discipline is necessary to forcefully slow down the operation to allow proper completion of all required procedures and checklists.

Cues for Initiating Checklists

No honest pilot can say they haven’t forgotten to accomplish a checklist or checklist item at some point in his or her flying career. After all, we are human. One tool to help prevent forgetting is to establish a set of routine behavior patterns; doing things the same way every time. We call this behavioral conditioning but there must be a cue or trigger to initiate the behavior. The cue can be any number of things that will jog the pilot’s memory to accomplish a checklist task.

Pilots should develop their own internal or external cues as to when a checklist should be initiated. For example; the Before Start Checklist can be cued by fastening of a seatbelt and shoulder harness or completing a before start flow pattern. The taxi clearance could cue initiation of the taxi checklist. Pilots can choose their own cues for various operations.

Of equal importance and directly related to “cueing” is the timing of tasks performed in the cockpit. Researchers refer to this period as a “window of opportunity” indicating the time period when this task can take place. For example; the window of opportunity for completing the Descent checklist may be defined as the period from leaving the cruise altitude to 10,000’, allowing for variations based on radar vectors, restrictions, altitude limitations, etc. Although the task can be completed at any time in the window of opportunity, research again shows the earlier a task is completed, the less chance for error. The later in the window a task is completed, the higher risk of error, mainly because of the compression of time.

Cueing can also be effective in organizing the descent/approach phase of flight ... by using mnemonic devices. One example is the W.A.R.D check:

- ***Weather (checked for approach requirements)***
- ***Approach (briefing and radios/instruments set or dialed in)***
- ***Radios (tuned and identified)***
- ***Descent (and Approach Checklist completed)***

A list such as this can also be useful in the training environment, as multiple approaches are normally conducted. Performing the W.A.R.D check helps in situational awareness. For example, if you are on downwind abeam the runway and have just asked for the weather, chances are the approach is going to be rushed because there is so much to do before being turned to final. Immediate realization of the situation and the need for a delay strategy becomes apparent. Requesting a delay vector, a hold at the marker or being ready to declare a missed approach in the event all of the required checklist items are not complete prior to the Final Approach Fix makes for good situational control.

In summary, we have explored the use of normal checklists and some situations that will interfere with use of the normal checklists routines. Tools to guard against errors of omission and commission have been explored to assist in awareness of traps in the environment.

Good checklist discipline is a must for safe aircraft operations. It also assists in deflecting liability if the checklist was used properly in the event of an accident or incident.

Now for the True Story

Let’s take a look at history ... for those who disregard history are doomed to repeat it!

History of the Checklist

The acknowledged history of the aircraft checklist begins in 1934, when Boeing, Douglas and Martin were in hot competition for supplying the Army Air Corps with a new bomber aircraft. Boeing’s entry was the B-299 and it was flying literally circles around the Douglas and Martin entries... That is, up until the final flight demonstration when the aircraft crashed on take off because the flight control locks were left

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in the locked position by the flight crew. The final report on the accident concluded pilot error was the probable cause of the crash. The press to label the B-299 as 'too much plane for one man to fly'. Where it certainly wasn't too much aircraft for one man to fly ... it certainly was 'too much airplane for one man to remember'.

Following the accident, Boeing pilots and engineers came up with the solution; a detailed checklist to assure no essential items were missed during flight operations. The resulting checklist concept contained four phases of flight: Takeoff, Flight, Landing and After Landing segments. The checklist process evolved with more and more aircraft developers gravitating to the checklist process for assuring the highest levels of safety. The B-299 went on to become the famous B-17 and over 12,000 units were sold to the Army Air Corps.



Captain Bo Corby is a retired airline check airman, former FAA Designated Pilot and Flight Engineer Examiner, President of Core Training Industries, Inc. in Seattle, Washington and operates N916AD. He may be reached at borhino@aol.com, 206 769-3398 and www.airmentors.com.

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The Updated FR/IPC

By Ron Cox

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Similar to going to the dentist once a year, an aviation event comes up every two years to show flight proficiency or on an as needed basis to make us legal to fly instrument. These events are the Flight Review (FR) and the Instrument Proficiency Check (IPC). FAR 61.56 determined the ground and flight requirements for the FR and the time requirement within which it can be conducted. The requirement for the IPC is outlined in FAR 61.57(d) and invokes the “6-6” rule or that all instrument pilots, in order to act as pilot in command in instrument conditions need to have completed six instrument approaches within the last six months. Though this seems like an innocuous statement hundreds of pages have been written as to the “how and when” this statement needs to be applied to the flying community.

High performance aircraft like the PC-12 require both initial and annual refresher training, the FR and IPC are normally administered as part of either of these two events. If the training is conducted in a FAA approved training device for the PC-12 that the FAA has designated to meet the requirements for the FR and the IPC, then each of these two events can be conducted in that device. In-aircraft training can also provide both of these requirements during the initial or refresher training program, as long as they meet the specifications outlined under FAR 61.56 and 61.57(d). Many of you have never really had to think about your currency from the FR level, and unless you were inactive as an instrument pilot or you only flew under brilliant sunny skies for a solid six months, the need for an IPC has never arisen in your normal training cycle.

The FAA has made a concerted effort to upgrade the FR and IPC, but have strayed from their original intent. In August, 2006, the FAA published a document called, “Conducting an Effective Flight Review”. The intent of this document was to provide guidelines for CFIs conducting a FR. Meaning having pilots show ground and flight proficiency in relation to their ratings. The years following has shown a decrease by the flight instructors and pilots in meeting the intent of the FR as administered in the field environment. The FR had digressed to nothing more than a couple of times around the old “pea patch” and a steep turn followed by a stall. A quick sign-off of the log book, a few dollars to the local CFI and the pilot was good for another two years. I am not saying that every CFI and pilot adhered to these practices. But, enough did to show a disconcerting trend that the FR was not meeting its originally intent.

With the publication “Conducting an Effective Flight Review” document, the FAA has tried to put some teeth into the FR program. They published three guides to use as the basis for the FR. They are the Regulatory Review Guide (Chart 1); and Ground Review and Suggested Flight Activities (Chart 2).

The Regulatory Review Guide shows the Regulations governing the pilot in regards to his experience, responsibilities, and cautions.

The next category that the FR entertains focuses on aircraft in regards to: (1) Airworthiness (2) Maintenance, and (3) Inspections. All of the sub items in this area are cross referenced to the appropriate FAR.

| Regulatory Review Guide | |
|---|--|
| Conducting an Effective Flight Review Appendix 3 | |
| Pilot | Experience: Recent flight experience (61.57) Responsibility: Authority (91.3) ATC Instructions (91.123) Preflight action (91.103) Safety belts (91.107) Flight crew at station (91.105) Cautions: Careless or reckless operation (91.13) Dropping objects (91.15) Alcohol or drugs (91.17) Supplemental oxygen (91.211) Fitness for flight (AIM Chapter 8, Section 1) |
| Aircraft | Airworthiness: Basic (91.7) Flight manual, markings, placards (91.9) Certifications required (91.203) Instrument & equipment requirements (91.205) -ELT (91.207) -Position lights (91.209) -Transponder requirements (91.215) -Inoperative instruments and equipment (91.213) Maintenance: Responsibility (91.403) Maintenance required (91.405) Maintenance records (91.417) Operation after maintenance (91.407) Inspections: Annual, Airworthiness Directives, 100-Hour (91.409) Altitude & Pilot Static System (91.411) VOR check (91.171) Transponder (91.413) ELT (91.207) |
| Environment | Airports Markings (AIM Chapter 2, Section 3) Operations (AIM 4-3, 91.125, 91.125) Traffic Patterns (91.125) Airspace Altitude Settings (91.121; AIM 7-2) Minimum Safe Altitudes (91.119, 91.177) Cruising Altitudes (91.159, 91.179, AIM 3-1-5) Speed Limits (91.117) Right of Way (91.113) Formation (91.111) Types of Airspace (AIM 3) -Controlled Airspace (AIM 3-2; 91.135, 91.131, 91.130, 91.129) -Class G Airspace (AIM 3-3) -Special Use (AIM 3-4; 91.133, 91.137, 91.141, 91.143, 91.145) Emergency Air Traffic Rules (91.139; AIM 5-6) Air Traffic Control & Procedures Services (4-1) Radio Communications (4-2 & Pilot/Controller Glossary) Clearances (4-4) Procedures (AIM 5) Weather Meteorology (AIM 7-1) Wake Turbulence (AIM 7-3) |
| External pressures | Personal Minimums Checklist Risk Management (3-P model) PTS Special Emphasis Items |

Chart 1

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v.1.1 Aug06

The guidelines more than provide the basis of a good FR and complies easily with FAR 61.56 in meeting the 1 hour of ground and flight outlines by the regulation. This includes a review of Part 91 of the FAR's and the general operating procedures to conduct a safe flying environment.

After tackling the FR in 2006, the FAA turned its attention to the IPC. In 2004 and subsequent versions of the Instrument Rating Practical Test Standards (PTS) stipulates the flight portion of the IPC must include aeronautical tasks specific to instrument flying. This offers additional (optional) guidance, with special emphasis on conducting a thorough ground review and on administering IPCs in aircraft with advanced avionics. The goal is to help the CFI-I determine that a pilot seeking an IPC endorsement has both the knowledge and skills

(Continued on Page 27)

| Conducting an Effective Flight Review | | Conducting an Effective Flight Review | |
|---------------------------------------|---|--|--|
| Ground Review | P | Experience: Recent flight experience (91.57) Responsibility: Authority (91.3) ATC Instructions (91.123) Preflight action (91.103) Safety belts (91.107) Flight crew at station (91.105) Cautions: Careless or reckless operation (91.13) Dropping objects (91.15) Alcohol or drugs (91.17) Supplemental oxygen (91.211) Fitness for flight (AIM Chapter 8, Section 1) | Note: Structure the flight portion as an out-and-back VFR XC, with one leg focused on XC procedures (including diversion and lost procedures and the other leg focused on airwork ("physical airplane" skills). Suggested activities include: AREA OF OPERATION (from Private Pilot PTS) I. PREFLIGHT PREPARATION A. Weather Information B. Cross-Country Flight Planning F. Performance and Limitations G. Operation of Systems II. PREFLIGHT PROCEDURES A. Preflight Inspections B. Cockpit Management F. Before Takeoff Check III. AIRPORT OPERATIONS A. Radio Communications C. Airport, Runway, Taxiway Signs, Markings, & Lighting IV. TAKEOFFS, LANDINGS, AND GO-AROUNDS A. Normal and Crosswind Takeoff/Climb B. Normal and Crosswind Approach/Landing C. Soft-Field Takeoff and Climb D. Soft-Field Approach and Landing E. Short-Field Takeoff F. Short-Field Approach L. Go-Around/Rejected Landing V. PERFORMANCE MANEUVER A. Steep Turns VII. NAVIGATION A. Pilotage and Dead Reckoning B. Navigation Systems & Radar Services C. Diversion D. Lost Procedures VIII. SLOW FLIGHT AND STALLS A. Maneuvering During Slow Flight B. Power-Off Stalls C. Power-On Stalls D. Spin Awareness IX. BASIC INSTRUMENT MANEUVERS A. Straight and Level Flight D. Turns to Headings E. Recovery from Unusual Flight Attitudes F. Radio Communications/Nav Systems X. EMERGENCY OPERATIONS A. Emergency Approach and Landing B. Systems and Equipment Malfunctions XI. POSTFLIGHT PROCEDURES A. After Landing, Parking, Securing |
| | A | Airworthiness: Basic (91.7) Flight manual, markings, placards (91.9) Certifications required (91.203) Instrument & equipment requirements (91.205) -ELT (91.207) -Position lights (91.209) -Transponder requirements (91.215) -Inoperative instruments and equipment (91.213) Maintenance: Responsibility (91.403) Maintenance required (91.405) Maintenance records (91.417) Operation after maintenance (91.407) Inspections: Annual, Airworthiness Directives, 100-Hour (91.409) Altitude & Pitot Static System (91.411) VOR check (91.171) Transponder (91.413) ELT (91.207) | |
| | V | Airports: Markings (AIM Chapter 2, Section 3) Operations (AIM 4-3; 91.126, 91.125) Traffic Patterns (91.126) Airspace: Altitude Settings (91.121; AIM 7-2) Minimum Safe Altitudes (91.119, 91.177) Cruising Altitudes (91.159, 91.179; AIM 3-4-5) Speed Limits (91.117) Right of Way (91.113) Formation (91.111) Types of Airspace (AIM 3) -Controlled Airspace (AIM 3-2; 91.135, 91.131, 91.130, 91.129) -Class G Airspace (AIM 3-3) -Special Use (AIM 3-4; 91.133, 91.137, 91.141, 91.143, 91.145) Emergency Air Traffic Rules (91.139; AIM 5-6) Air Traffic Control & Procedures: Services (4-1) Radio Communications (4-2 & Pilot/Controller Glossary) Clearances (4-4) Procedures (AIM 5) Weather: Meteorology (AIM 7-1) Wake Turbulence (AIM 7-3) | |
| | E | Personal Minimums Checklist Risk Management (3-P model) PTS Special Emphasis Items | |

Chart 2

(Continued from Page 26)

for safe operation in all aspects of instrument flying. The March 2010 Instrument Proficiency Check Guidance along with the PTS serves as the basis CFI-I's should conduct their IPCs.

Though no minimum number of hours is required for the IPC, a good rule of thumb is to allow 90 minutes for the ground work and two hours for the flight evaluation. A tool that can be used to incorporate FAR 91.103 into the training scenario is to incorporate an abbreviated line-orientated flight, modeled after a routine flight the pilot takes on a regular basis. Current weather, aircraft load, runway conditions, weight and balance and aircraft performance all need to be factored into the scenario. Items such as Kinds of Operations Equipment List (Section 2 POH) need to be evaluated in regards to the type of flight being conducted. If an alternate is needed due to weather, review the 1-2-3 Rule and GPS alternates if GPS is the sole source of navigation for an approach. Plan traffic delays to include holding procedures. And last but not least, fuel requirements for the trip to include approaches *and* alternates. Risk Management considerations could include **P A V E**:

Pilot: general health, physical/mental/emotional state; proficiency, and currency.

Aircraft: airworthiness, equipment, and performance capability.

enVironment: weather hazards, terrain, airports/runways to be used.

External pressures: meetings, people waiting at destination, etc.

The instructor should ask the pilot what strategy he uses to combat each of these risks *before* the flight. Review flight accidents that were caused by long days, CFIT, new aircraft or equipment, and different approaches i.e., circling approaches at night. In addition, review:

- Airport taxi requirement to include unfamiliar airports, known hotspots that can cause runway incursions and how best to avoid them, new ground clearances require full taxi clearances and stops at all intersecting runways (no more "Taxi to" clearances).

- Instrument departure procedures to include Obstacle Departure Procedures (ODP) and Standard Instrument Departure procedures (SIDs), when are they used and where can they be found in the preflight material.

- Airways to include such items as RNAV(Q) routes and terminal low level T-routes; how to file direct using RNAV based equipment and when to use preferred routing is an important part of the flight planning process.

- En route Navigation to include FMS and AP/FD (Autopilot/Flight Director) operations if aircraft is so equipped.

- What is RAIM and how can the pilot confirm its availability for the flight?

- How does course and distance information on a GPS navigational display differ from data presented on navigation charts and conventional instrumentation?

(Continued on Page 28)

- How to obtain en route weather above FL 180. Weather datalinks and update reports using XM sources.

- What is your XM weather display telling the pilot, and how is it being downloaded and the sky conditions determined.

- Is the data corresponding to what other weather sources in the aircraft are indicating, or what you see outside the aircraft?

Your IPC should also include a review of abnormal and emergency scenarios, to include loss of two-way radio communications. Radio failure's should include filed routes, expected routing, MEA for a specific routing, and expected approach clearances. The loss of avionics/equipment, especially glass cockpit such as PFD/MFD tubes, should be considered relative to their impact on the flight. Lastly, closely consider revisions or emergency capabilities and their effects on autopilot and screen data.

Pilots should be aware of how to fly instrument approaches via pilot nav, vectors, and Intermediate Fixes (IF). The use of STAR in Class B environment is a must for high performance aircraft like the PC-12.

Instrument approaches should include LPV, LNAV/VNAV, LNAV+V, and LNAV for WAAS equipped aircraft. Visual Descent Points (VDPs) should be studied and discussed how they fit into non-precision type approaches. Missed Approach (MAP) should be reviewed to include the beginning point to execute the MAP on precision and non-precision type approaches. What is the preferred manner for a beginning a

MAP before the MAP on the approach. Use of decision making skills in determining to execute a second approach or proceed to your alternate should be discussed as part of the ADM procedures for a flight.

The Flight portion of the IPC looks at three distinct areas:

- a) aircraft control skills
- b) aircraft system knowledge, and
- c) aeronautical decision-making (ADM) skills.

The line oriented training scenarios are the ideal way to test the ADM skills of the pilot to include CFIT, diversions, and aircraft weather capabilities addressed in the flight planning portion of the skills test. Though many instructors spend a great deal of time on aircraft control skills, it is still the overall evaluation of the pilots' ability to make the right decision from lift-off to touchdown rather than a "one time around the pea patch" effort. However, you could fly in solid IFR for 500 miles, with hundreds of miles in weather and numerous aircraft decisions made along the way, but the passengers will measure the success of the flight by how well the pilot touches the wheels to the concrete. Education of the flying public is sometimes necessary in order to understand the complex airspace we fly during each and every flight.

The task blocks of the PTS guide stipulate which tasks are required for the IPC and which are optional. At the very least, we need to be able to control the aircraft with all instruments functioning, conduct unusual attitude recoveries, fly partial panel if a major instrument fails during our flight, and conduct precision and non-precision approaches both with the AP/FD and hand flying to include approaches with raw data.

The next time you and your instructor are preparing for your annual refresher training, consider pulling out the basic documents for the FR and the IPC. Discuss how these items are going to be an integral part of your training.

Fly safe.

Ron Cox

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From The Insurance Side

By Lance Toland

We are seeing lots of interesting things going on in the used PC-12 market. As a result, there are many insurance issues to consider if you are selling your PC-12.

A client recently inquired about selling his PC-12, and delivering the aircraft after a pre-purchase inspection. Depending on how the sale transaction is handled and any conditional sales agreement you might enter into is structured, it could set the seller up for an array of unanticipated consequences. One example would have you as a seller delivering the aircraft to the new owner after the sale. This is all well and good, but stop and think for a moment. Once your sales transaction is completed and you have been funded, your insurance contract ceases to exist based on no insurable interest in the aircraft. Therefore, any insurance or conditions you may be accustomed to operating under do not apply to your operating the new owner's aircraft.

Nothing, and I mean nothing, extends to the new owner from your insurance contract, except in some cases were products liability for the sale of a used aircraft was endorsed. Most owner flown PC-12 contracts do not have this coverage. In this case, it would be advisable to become an additional insured and an approved named pilot under the new owner's policy.

Further, you need an unconditional waiver of subrogation in your favor to offset any insurance companies' claim against you as a negligent part in the loss event you are involved in. A certificate of insurance from the insuring company (never accept an agency certificate; it's useless!), should be obtained which outlines these conditions. Have your aviation insurance broker review the cert before you fly away for that last flight.

Also, be careful not to enter into a conditional sales agreement where you agree to deliver the aircraft for any compensation. I suggest you run any sales contract by your aviation attorney before you agree to any part.

On the buying side, these same basic principles apply. Never rely on insurance in place from the seller, pre- or post-sale. Your only option on insurance is to have your insurable interest protected and set up properly to meet your operational objective.

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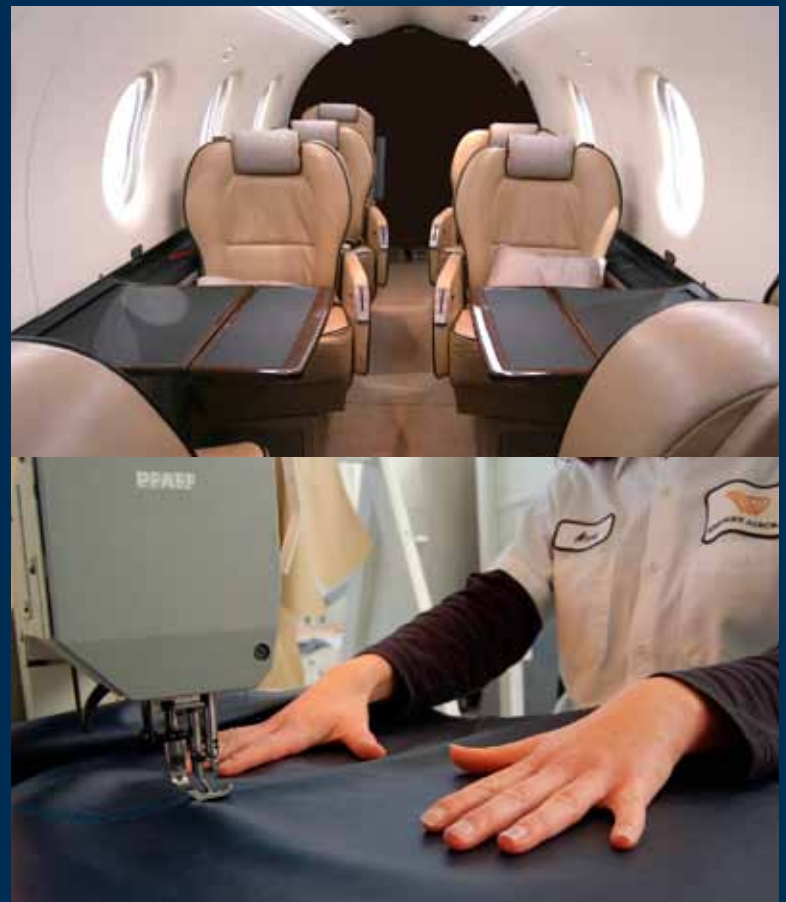
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Nothing But Questions...

By Jeff Rhodes

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What is your aviation insurance plan? Most aircraft owners spend eleven months of the year thinking about insurance only when they need a certificate for the airport or the bank, or need to have the airplane flown by someone other than the regular pilot(s). The twelfth month is spent hoping that the premium will go down – or at least not go up very much. When they get the renewal quote, they mope around for a few days, beg their agent for some relief – and then pay (or finance) the bill, go to training and move on with their lives. This is not really a good plan, but is it how you buy insurance?

Ask yourself the following questions with your aircraft operation in mind. Hopefully, it will stimulate some thinking about the way you have approached the purchase of aviation insurance.

How did I select my broker? Do I know his/her strategy for marketing my annual renewal? What insurance markets does he/she represent?

Does my broker know my story? Have I provided him with all the information that he needs to build a package for me? Does he know my business? Does he know my flying background? My aircraft ownership goals and plans? Have I tasked him with assembling an insurance package designed around my plans, or do I just demand the lowest price every year – strategy be damned?

Do I know the difference between my broker, and my insurer? Do I know the roles of each when my coverage is being underwritten and bound? Do I know the roles of each when I have a claim? Do I know how my broker is being paid, and how much? What value am I receiving for that fee?

Have I presented a formal, written pilot training plan TO the underwriters, or do I just accept whatever they tell me I must do? Do I even have a formal, written training plan? How about formal safety and operations procedures? Have the underwriters seen those?

Does my policy have adequate coverage to allow rental of a substitute aircraft, if mine is in the repair shop for an extended period of time? Have I ever reviewed those limits? Did I even know they were there?

When did I last review the insured value of my aircraft? Is it insured for what I owe? Is it insured for what it's really worth, or what it was worth three years ago?

Am I protected if my employees sue me? Is my hired pilot protected? Should he be? Is my company protected while I am flying a personal (or holding company owned) airplane on company business?

How should I handle leaseback or dry lease arrangements? Who should carry the coverage? If it's not me, then how do I insure that I am protected? What effect does a dry lease arrangement have on the willingness of insurers to cover me? Is my broker correctly presenting the arrangement to the insurance market, or is he unnecessarily causing alarm that could affect my premium?

How does my insurer administer claims? What do they do to protect the value of my asset during and after repairs? How much will I have to spend out of pocket before I can expect reimbursement from the insurance company?

What is my plan for maintaining insurability as I age past 60 or 70 years old? Do the underwriters know this plan? Are they agreeable to it? What if I change aircraft types? Will I be able to get proper coverage from my present insurer?

If my current insurer refused or was unable to renew my coverage next year, what is my broker's back up plan?

What happens if my FBO damages my airplane? Should I file a claim? Should I sue the FBO? Should I take their offer to repair my aircraft?

Do the aviation contracts I have signed jeopardize my insurance coverage? Has the insurer reviewed each aviation contract? Do I solicit my broker's input during the negotiations for hangar leases, rental parts, management services, etc. or do I simply send him a copy of the contract once the deal is done?

Whether your aviation policy renews this month, next month, or eleven months from now, spend some time thinking about these questions. Make a purposeful plan for your aviation operations and risk management. Interview your insurance representative and make sure the consultant you employ does more for you than send you a quote and a few certificates each year. Make sure that you are attractive to the insurance marketplace and are buying the coverage that fits your unique situation.



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SPRING 2010 Q & A!

Question #1

What are the limited for the Primus Apex electronic charts?

Answer #2

Charts do not allow blind taxi procedures. The pilot is responsible for taxi by external visual reference and airborne by primary navigation instruments. Electronic charts do not replace paper charts.

Question #2

What are the limits for operating the Primus Apex Weather Radar on the ground?

Answer #2

With weather radar on, when on the ground, point the A/C away from large metal objects, like hangars or other aircraft for a minimum distance of 100 feet, and tilt antenna full up. Do not operate radar while re-fueling or if re-fueling is conducted within 100 feet. Do not operate radar when personnel are within 33 feet of the 270 degree forward sector of the A/C.

Question #3

What anti-icing additives are approved for the PC-12, and when are we required to use them?

Answer #3

Anti-icing additive must be used when temps are below 0 C. The additive should conform to MIL-DTL 27686 or MIL-DTL 85470. They should also comply with P&W SB #114004. The concentration should be within .06% and .15% by volume.

Question #4

What is the procedure for a Batt Hot warning with the lead acid battery?

Answer #4

Go ahead...hate me! There is no Batt Hot warning for the lead acid battery.

FALL 2010

Question #1

Where do we need to go in the P.O.H. to find landing distance increase factors for landing with flaps at 0, 15 and 30 degrees?

Question #2

For the NG Owners: Were does the E.S.I.S. get it's attitude and airspeed information?

Question #3

With Pass Oxy switch in the auto position, when do we deliver O2 to the passenger masks? (Answers are different for the Legacy and the NG aircraft).

Question #4

Under what conditions is the stick pusher inhibited?



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PC-12 TOOLING
FACTORY TRAINED TECHNICIANS



39

INITIAL AND RECURRENT PROGRAMS

INITIAL

RECURRENT

Approx. 24 Hours

ATM
Ground School

Approx. 16 Hours

Up to 10 Hours

ATM
Flight School

Up to 5 Hours



**INSURANCE
APPROVAL**



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Free On-Line Winter Operations Course for POPA members!

You are cordially invited to attend a live and fully interactive on-line course taught by the largest fleet operator of PC-12s in the world.

Just in time for the winter flying season, we will share information on PC-12 specific deicing procedures, airfield and aircraft contamination, in-flight icing, and deicing equipment. Course information will be drawn from Alpha Flying's 15 years of experience flying the PC-12 in the northeast and Canada!



AlphaFlying



Opportunities to Participate:

Tuesday, October 19, 2010 @ 6:00 pm ET or

Wednesday, October 27, 2010 @ 1:00 pm ET

This course will last approximately 1 hour with time for discussion and questions. It is free for all POPA members.

To register, please e-mail:

training@alphaflying.com

For more information on our insurance-approved recurrent PC-12 training program, please contact Alpha Flying Training at: 603-501-7612 or training@alphaflying.com

Epps Aviation is taking reservations for those individuals who will be flying into PDK during the NBAA Convention October 19-21. POPA Members can schedule maintenance for their PC-12 at Epps Aviation during those dates and attend the show at the Georgia World Congress Center or the static display at PDK. Visit www.eppsaviation.com or call to make your reservations for space and/or repairs...or even if you need assistance with accommodations and ground transportation. Hope to see you in Hot'lanta!

EPPS  **PDK**
Aviation

ABOVE & BEYOND
NBAA STATIC AT PDK
OCTOBER 19-21, 2010
.....

770.458.9851
eppsaviation.com



Shell Aviation

SAVE THE DATE!

Thursday, June 9th
thru
Saturday, June 11th, 2011

15th Annual POPA



Convention

The Westin
Westminster, CO

*Aircraft will fly into Rocky
Mountain Regional Airport
(PILBAL's Home Field).*

*Commerical flights will fly into
Denver, Int'l.*

*We are already working hard
to make our 15th Annual
Convention the
"Best of the Best!"*

*POPA and Pilatus are putting
their heads together to make
this an event to remember.*

Don't miss it!

This flight bag is already packed.



AV8OR ACE™, the
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The traditional flight bag has been grounded. Bendix/King by Honeywell delivers yet another highly affordable, portable system for the cockpit that raises the bar on the competition. The new AV8OR ACE is the latest in paperless, full Electronic Flight Bag solutions. Its compact, lightweight design includes airborne navigation, all FAA charts, airport diagrams, weather, traffic, automotive and multimedia capabilities. With its geo-referenced charts and large, easy-to-use touchscreen, you can clearly read your charts as you stay on course. **So put down your old flight bag and visit us online to locate your authorized dealer.**

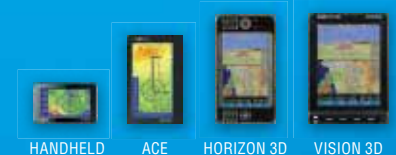


TOPOGRAPHIC
MAPS



FAA APPROACH
PLATES

THE AV8OR FAMILY



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HORIZON 3D

VISION 3D

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PILOTUS

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AvWxWorkshops.com is your best online source for aviation weather education!

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News, Announcements, Notes...

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Honeywell

Honeywell EFS 40 and EFS 50 Display System WAAS Update

"Honeywell is moving ahead with a software update to the EFS 40 and EFS 50 display system to meet FAA guidelines for WAAS Vertical Deviation Annunciation and to eliminate a nuisance lateral mode disconnect during a WAAS approach with vertical guidance. The remaining task, which we plan to complete before the end of October is an update to the STC, subject to aircraft availability. The STC update will include the new software and through a collaborative effort with Pilatus, the STC will enable autopilot coupled operation to published minimums for WAAS LPV approaches".

PILATUS 2010 CALENDAR!

| | |
|----------|-------------------------|
| 10/19-21 | NBAA - Atlanta, GA |
| 10/23-27 | IACP - Orlando, FL |
| 10/27-30 | MMOPA - Amelia Isle, FL |
| 11/11-13 | AOPA - Long Beach, CA |

POPA is looking for Magazine Cover Photos!

***If you have a photo of your PC-12
that you would like to be on the
cover of our quarterly magazine,
please send your pictures to the
POPA Home office at
popapc12@aol.com***

Magazine Submission Deadlines

| | |
|----------------------------------|----------------------|
| <i>Spring (January-March)</i> | <i>March 15th</i> |
| <i>Summer (April-June)</i> | <i>June 1st</i> |
| <i>Fall (July-September)</i> | <i>September 1st</i> |
| <i>Winter (October-December)</i> | <i>December 1st</i> |



...that you can log in and see new posts since your last visit easily. Log in, and click on "View New Posts" on the top left-hand corner! That's it! Simple! You'll find all the new posts hi-lited with just one click!

Vist your Members Forum in the POPA website today!

www.pilatusowners.com

MEMBERSHIP DUES ARE DUE!

***If you have not paid your dues
as of yet, please do so!
We'd hate to lose you.***

***Please feel free to call the POPA
Home Office if you have any
questions or would like to renew
your membership over the phone.***

WELCOME NEW MEMBERS

| | |
|--------|-------------------|
| #288 | Denis Breslin |
| N554VR | El Cajon, CA |
| | |
| #543 | Joe Budd |
| N543PB | Winston-Salem, NC |
| | |
| #659 | Kenneth Jensen |
| OY-MID | Randers, Denmark |
| | |
| #757 | Jimmy Garrison |
| N770PW | Boerne, TX |
| | |
| #1145 | David Inglis |
| N145NX | Monument, CO |
| | |
| #1195 | Clay Healey |
| N990H | Oklahoma City, OK |
| | |
| #1202 | Frank Dupuis |
| N202PE | Osprey, FL |

Mr. Rick Potter of Ornge Air
Thunder Bay, Ontario Canada
Ornge operates six (6) PC-12s as Medical Transport

MEMBER's FORUM..

Sampling of various topics being discussed:

- Garmin G-600
- Universal Retrofits
- Trend Monitoring
- Moving Map
- FBOs (Good and Bad!)
- Recurrent Partners Needed

Join in the discussions. Share your information with your fellow members. Log in today!

***Remember...** You can receive emails when a post is made. Visit the website and select "subscribe forum" (located on the bottom left-hand side of the page). An email will be sent to you at the address we have on file directly from the website when someone posts to your selected forum. You can do the same for a particular **topic within a forum** you are interested in.*

It's easy...and takes just a few seconds!



Showalter Announces the Simcom Advantage Program

June 9th, 2010

Orlando Executive Airport (KORL) – Showalter Flying Service has announced a new program designed to help save Simcom customers money. Showalter, located minutes from the Simcom Orlando Headquarters, has dedicated 3 covered hangars- that can store everything up to and including a Lear 35- for Simcom training customer's exclusive use. There is also one dedicated spot in a bulk hangar to house the larger aircraft Simcom offers training for.

All Simcom customers flying into Showalter Flying Service already enjoy 50 cents off fuel per gallon, hugely discounted rental car rates thru Enterprise Rent-A-Car®, and free overnight tie-down parking. Most will now enjoy **FREE** overnight hangar (for the entire training stay) that also will allow them to perform preflight operations in a protected environment. These hangar spaces are available on a first come - first served basis. Contact Showalter at 407-894-7331 and mention the *Simcom Advantage Plan*.

Showalter Flying Service

For 65 years, Showalter Flying Service has been making our customers feel right at home regardless of whether Orlando is your domicile or just your current destination. We are proud to be Florida's oldest and largest family-owned and operated FBO, now entering our fourth generation. To find out more, please visit www.Showalter.com.



Press Releases...

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Pilatus delivers the 1000th PC-12

Pilatus Aircraft Ltd announced today that it has completed the delivery of the 1000th PC-12 at a special ceremony at its wholly owned subsidiary Pilatus Business Aircraft, Ltd. in Broomfield, Colorado.

Oscar J. Schwenk, Chairman and CEO of Pilatus Aircraft Ltd, marking the significance of the occasion, said “The traditional Pilatus qualities of high performance, rugged durability, versatility, and superior operating economics have been the foundation of every PC-12 we build. Today’s PC-12 NG, represented by the 1000th example here, is generations ahead of the first one Pilatus delivered back in 1994. But it still holds to these same principles that have made the PC-12 program such a great success.”

The milestone aircraft was handed over to its new owner, Mr. David Fountain from Halifax, Nova Scotia, who is now a three-time PC-12 owner. A private investor by trade, he plans to fly his new PC-12 himself as he has done with his two previous PC-12s. He purchased all three aircraft from V. Kelner Pilatus Center, the exclusive Pilatus Sales and Service Center for Canada located in Thunder Bay, Ontario.

Having a record year in 2009 with 100 PC-12 NG deliveries, Pilatus celebrated the delivery of the 900th PC-12 just last year. Since its introduction in 1994, the PC-12 has steadily grown in sales and success to become one of the top selling turbine-powered business aircraft in the world.

The versatile PC-12 performs many roles worldwide, including executive transport, commuter, air ambulance, police and border surveillance, cargo, incident response, military liaison, and regional airliner. The PC-12 fleet has amassed more than 2.6 million flight hours of operating experience, including thousands of hours in some of the harshest environments.

“There is no other aircraft in the world like the PC-12” said Mr. Fountain. “The size, speed, range, and the Swiss quality of the aircraft are exceptional, and it is a joy to fly.”



GENERAL AVIATION'S DISASTER RESPONSE ORGANIZATION

It's no secret (at least within the aviation community) that a corporate aircraft is the best means of leveraging executive time since the invention of the telephone. Studies and experience both have proven it, time and again. Likewise, in an emergency, an air ambulance can get patients to treatment literally within minutes.

In a situation like Haiti, on the other hand, where what little medical and support infrastructures that existed prior to the 12 January 2010 earthquake were for all intents and purposes vaporized within the first 45 seconds of the disaster, corporate aviation took on a less-than-familiar but no less critical role: General Aviation aircraft inserted medical teams, relief workers and relatively small but utterly critical supplies to numerous regions where they were operational within hours.

AERObridge (formerly known as C.A.R.E, or Corporate Aviation Responding in Emergencies, an NBAA-endorsed NGO) mobilized over 125 general aviation aircraft to include 25 Pilatus PC-12s, which played a pivotal role in the overall response to the Haitian disaster. Operating into and out of ten airports in Haiti and the Dominican Republic, AEROBridge volunteers and their aircraft provided immediate, on-demand transport for thousands of medical volunteers and tons of desperately needed medical supplies. The capabilities of the PC-12s proved to be particularly significant when needs called for transport to some of the smaller airfields located throughout the country.

Jacmel, on the southern coast, is a perfect example. A 3000 foot paved runway that normally saw two to four operations a day became a hub for relief flights that included aircraft ranging from PC-12s to Canadian Air Force C17s. Staging out of Santiago, DR and Fort Lauderdale Executive, hundreds of flights brought in food, medicine and personnel. Leogane, with its fairly well paved National Highway was another area that despite its proximity to Port au Prince was cut off from the world. By operating over 150 flights, Tradewinds Aviation working with C.A.R.E. sustained Leogane with food, medicine, medical and relief workers as well as fuel for the hospital generators for over a month.

For future responses, AEROBridge is building on the lessons learned over the past decade.

As AERObridge President Marianne Stevenson explained, "AEROBridge works on a simple model of supply and demand. If there is a catastrophic disaster that meets the criteria level for AERObridge to activate, we contact the aviation member groups to announce our activation for the collection of donated aircraft. They put a notice on the home page of their websites and link the incoming volunteers to our software program."



Since it is impossible to know in advance the type and location of future disasters, AEROBridge has created 4 pre-identified staging areas within the Continental US with immediate activation capabilities, which would be activated to assess critical short- and mid-term needs and to facilitate a rapid and appropriate response to meet those needs.

After the initial assessment and determination of the airports available within the disaster zone to provide relief, AEROBridge would select the appropriate aircraft types and put initial ground support teams as first responders into the area. These first teams would provide intelligence for prioritization, airport coordination for GA assets, and create a supply chain to get the supplies to the most in need. After the initial ground teams were in place and providing intelligence, AEROBridge would begin immediate rapid transport of the applicable teams that were on call at the pre-identified staging areas.

The coordination of the GA assets is a specialized function that AEROBridge is uniquely qualified to manage. AEROBridge and the GA community can, do, and will facilitate the deployment of a unique and incredibly capable tool whose use requires the experience and participation of the GA industry to maximize its impact. AERObridge understands the depth and sincerity of the aircraft owners and operators desire to assist and will use the valuable resources judiciously while working in an extremely fluid environment that requires outside the box thinking to accomplish the missions. These qualities enable AERObridge and the GA community at large to coordinate an aviation response that is crucial to the timely assistance of victims and which can compliment military and large aid organization's response efforts.

For more information on AEROBridge, contact:

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President AERObridge
951-491-9827
mstevenson@aerobridge.org
www.aerobridge.org

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Non-Profit Status

The Pilatus Owners & Pilots Association has been granted exemption from income tax under Section 501(c)(7) of the United States Internal Revenue Code. The Internal Revenue Service (IRS) has classified POPA as a "social club" and has assigned Employer Identification Number EIN #31-1582506 to our Association. Annual dues are not deductible as a charitable contribution, but members will likely be able to deduct annual dues as a business expense. Consult your tax advisor for details.

POPA

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Suite #120-Box #114

Tucson, AZ 85750

www.pilatusowners.com