



Pilatus Owners & Pilots Association

Winter 2007

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Disclaimer

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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.

**Cover Photo by Venzin & Buhler*

Letter from The POPA Board...



The POPA Board met November 29th and 30th at the Club at Hammock Beach in Palm Coast, Florida. The meeting location enabled the Board to get a first hand feel for the resort chosen for our 2008 Annual Convention. We are very excited by this location, and are hard at work putting the agenda together to make this the best and most relevant Convention yet. We encourage all POPA members to put the arrival date of May 29th, 2008 and the convention dates of May 30th and May 31st on their calendars right now. It is such a spectacular location with the ocean and championship golf courses a chip shot away from your room you won't want to miss this one! You may even consider extending your stay backwards to Memorial Day, or over the convention weekend to take advantage of all that Hammock Beach Resort and the Convention have to offer. More details to come.

Looking ahead, we are already planning to visit potential sites to host our 2009 Convention. We hope to announce that location when we are all together at Hammock Beach.

In attendance were Ty Carter, President; Bob MacLean, Vice President; Board members Doug Bradley, Pete Welles, Lowell Sando; POPA Executive Director Laura Mason; Advisory Board Members Mike Fitzgerald, SkyTech, Inc. and Mike Haenggi, PilBAL Vice President of Marketing.

Strategic Direction

For quite some time, the Board has been working on creating a Mission Statement that would embrace not only our purpose but our diverse constituency – Owners, Operators, Professional Pilots and Passengers. At this Board Meeting, with Lowell Sando leading the charge, we created and passed the following as the POPA Mission Statement

POPA MISSION STATEMENT

POPA helps PC-12 owners and operators achieve the safest, most reliable, cost effective and comfortable turboprop operations in the industry.

We believe through POPA's unique collaboration with Pilatus, PilBAL, Simcom, and the major Pilatus OEMs, we have contributed to influencing the design and improvements of new generation PC-12s. This has helped our members achieve a safety record second to none, which in turn continues to help lower insurance rates (your POPA President meets frequently with insurance carriers ensuring they understand and appreciate the PC-12 story). POPA helps capture and disseminate the enthusiasm and variety of uses to which PC-12 owners and operators deploy their airplanes which, along with our safety record, consistently supports the highest resale value in the industry. And through creative programs like our collaboration with the Corporate Aircraft Association (CAA), POPA helps our members participate in substantial fuel and other discount programs.

As we go to press, we are continuing to work with Pilatus and Honeywell to create a minimal cost solution to the KDR 510 transition when Honeywell converts from ground-based to satellite weather reporting on board. We continue to work with Simcom and outside vendors to upgrade our members' education and training alternatives.

Aside from upgrading our support and services to our owner-operator members on an ongoing basis, with our new Mission Statement, we are targeting PC-12 professional pilots who carry passengers. Getting them more involved in POPA will surely improve the flying ability and safety of non-professional owner operators; but in addition, we believe there is an opportunity for those "old pros" to learn about improving the way they manage the PC-12 on behalf of their owners. In addition, they are becoming more and more important in the passenger comfort part of the equation, which in turn affects the overall reputation of the PC-12 as a cost efficient airplane of choice.

So, with our new Mission Statement in hand, POPA will continue to focus on helping our members **SAVE MONEY, SAVE LIVES, and ENHANCE THE FLYING EXPERIENCE** of all those fortunate enough to fly in a PC-12.

General Business

2008 Convention Update – Ty Carter, POPA President, is working hard as Convention Host to finalize the agenda and to bring in an exciting Key-Note speaker to the event.

Having heard from our members that they want to continue to stay abreast of Pilatus and Vendor news and to have more educational content at the convention, we are working hard to increase vendor attendance and to create educational breakout sessions on topics of interest to our increasingly sophisticated PC-12 owners and operators. In the meantime, Laura Mason, our Executive Director, was busy working behind the scenes to make things right with the Hammock Beach Resort management and the Flagler County Airport FBO to assure our members the best Convention experience we possibly can.

POPA Website – While we have spent both time and money improving our website, we are still disappointed with the small number of visits and the small number of interactive sessions by you, our members. We would like to know why. Please contact Laura with your input. All member responses welcome! Also, due to lack of business, we agreed to close the Webstore, and will no longer offer POPA items for sale on line.

Contact with Members – Again responding to your input, we agreed at this meeting to reach out more often through our Website and direct mailings to alert our members about important Pilatus and POPA information. Our hope is to become more timely, interactive and relevant to both current and future members as our size and diversity continue to grow.

(Continued on Page 4)



Letter from The POPA Board...(Continued from Page 3)

Education and Training – We polled our membership about their interest in advanced PC-12 Education and Training. We reported those outcomes in our Winter 2006 POPA magazine. What was loud and clear was: Simcom needs to improve! And, we need more on-going education and training opportunities at our Conventions and throughout the year.

Board Members Dick Wikert and Bob MacLean met last December with Simcom and expressed our dissatisfaction with the state of the Simulators and software, the lack of scenario-based training, and the unfamiliarity with the PC-12 by some of their instructors. Shortly thereafter, POPA President Ty Carter made a personal visit to Simcom reinforcing our concerns and asking them to address the issues immediately. We are proud to say that Simcom listened and has responded very positively. Our feedback from our members returning from primary and re-current training has substantially improved. This stands out as a great example of the Board listening, getting involved and advocating for what you want and are entitled to. It also underscores the great working relationship we have with Simcom and PilBAL, all the interested parties.

Partnering with one of our members, Rick Boswell who volunteered to be Education Committee Chairman, Bob MacLean has been working on a 3-pronged advanced education and training mission:

1. *Improve the educational content at our annual convention. We are working hard at this. Come this year and judge for yourself.*
2. *Find advanced training organizations, compile a list, and make them known and available to our members. We will have those available to our members in the New Year.*
3. *Create a PC-12 Pilot Proficiency Program. The first tangible offering of this program is in its final stages of development. Our goal is to have it available to POPA Members in the Fall of 2008 as a compliment to the 3rd annual Regional Operators Conference (ROC) in Broomfield, CO. We will have much more to say about the Pilatus Pilot Proficiency Program (PPPP) at the Annual Convention this year.*

Call For New Board Members

With two of our Board Members at the end of their terms, we have two openings. These positions are non-paying as POPA is a non-profit organization.

Why consider applying?

- Spend time meeting with others who are passionate about owning and flying the PC-12
- Learning – being in front of Pilatus developments
- Work on projects with other positive, committed (and bright) POPA members
- Influence the future of POPA
- Meet at great destinations across the U.S.

Expectations:

- Attend all Board meetings – usually 3 per year, plus one at the Annual Convention
- Be on four conference calls per year between meetings
- Be accountable for working on assignments or initiatives
- Be an ambassador for POPA

Qualifications:

- POPA member
- A background of making things happen
- Embraces our Mission Statement

Nice To Haves:

- Technology/Web Site background
- 135 Operations Experience
- Owner non-pilot; Back-Seater
- Fleet Owner
- Association/Board Experience

If you are interested, Please give Laura Mason, POPA Executive Director a call as soon as possible. We are interested in filling these key positions at the upcoming POPA Annual Conference.

Once again, thank you for your time and continued interest in POPA. We hope to see you all at the upcoming Convention in Hammock Beach, Florida!



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Windsock:	NW
Elevation:	6 ft.
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2008 POPA Convention - Florida...Here We Come!

The 12th Annual POPA Convention will be held at Ginn's Hammock Beach Resort and Spa (www.hammockbeach.com) in Palm Coast, Florida, located on two miles of the Atlantic shoreline. Aircraft will fly into Hammock Beach's private FBO located at Flagler County Airport (KXFL). Jet A and parking will be plentiful. Attendees will be met and shown to a waiting shuttle for the brief ride to the resort.

The Convention will open with a Welcome Reception on arrival day (Thursday, the 29th of May), followed by two days of educational sessions and seminars. Vendors will also be available for all your after market PC-12 items. The POPA Board is working on an agenda guaranteed to interest newcomers, as well as keeping regulars coming back! As usual, Pilatus, Honeywell, Pratt & Whitney, Simcom Training Centers and the Pilatus family of Service Center and Dealers will be on hand. We will close on Saturday evening with our Live Auction and Farewell Dinner.

The accommodations at Hammock Beach are unlike no other; you'll see why once you enter your beautifully appointed suite. Hammock Beach offers a variety of entertainment, plus excellent golf opportunities. POPA will be attempting their 1st Annual Golf Tournament. This is your chance to experience world-class golf with service only Ginn Hammock Beach Resort can deliver.

With a Water Park on property, you can float down the lazy river or ride the twisting water slide; enjoy the adult and family pools, a huge spa, a zero entry beach pool, beach volleyball, a poolside bar, and more. Adjacent to the water park is the indoor pool complex with two spas and workout lap lanes. And, the ultimate pool - the Atlantic Ocean - just outside your door.

Golf at Hammock Beach is outstanding. The Ocean Course has six holes right on the edge of the Atlantic Ocean. The Conservatory Course has the highest slope rating in Florida! With six tee boxes per hole, The Conservatory promises an exciting challenge for all levels of play.

The Spa at Ginn Hammock Beach Resort draws from the bountiful resources of its unspoiled beaches, offering the very best to enhance your spa experience. For those of you tennis players, located at Yacht Harbor Village, the Tennis Center is the perfect place to play.

Fine dining is perfected at the Seaside Grille, using the freshest local seafood and finest cuts of meat. The Atlantic Grille offers a beautiful oceanfront setting for all day casual dining. Special preparations for sushi are made from fresh local fish at Hammock's own Sushi Bar. Loggerheads Bar has live music every weekend. The Cigar Bar is the perfect place to relax with a premium cigar, flat panel televisions, a fully stocked humidor, and a bar that boasts some of the finest single malts, ports, and cognacs around, all in a carbon filtered air environment.

For attendees and guests with free time on their hands, Hammock Beach is near historic St. Augustine, Daytona Speedway and the Kennedy Space Center. Orlando's theme parks are less than a 90-minute drive.

Convention Packets should be in the mail and on the POPA website in January, 2008. Should you have any questions, don't hesitate to call and speak with Laura. She'll be happy to assist you!



Mark your calendars...Don't miss this one!

May 29th, 30th and 31st

***Ginn's Hammock Beach Resort and Spa
Palm Coast, Florida***

POPA Convention Attendees!

Flagler County Airport (KXFL) is pleased to be the host Airport for the 2008 POPA Convention being held at the nearby Hammock Beach Resort in Palm Coast, Florida. The Airport has two 5,000' runways, and special parking arrangements have been made to accommodate the group. The FBO was WSI Weather; Internet access and free Wi-Fi available to for your use. Convention attendees that pre-register with the FBO before May 26th, 2008 will receive their first night of parking free, and a discounted rate on fuel purchases over 200 gallons. To pre-register, please call 386-437-0401 or e-mail jdeily@flaglercounty.org with your name and aircraft tail number.



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Single pilot CRM by JT Bjorge

The weather is at minimums, a little gusty and the pilot hand-flies this one! Because that is what a REAL pilot does, or is it...?

CRM is a term well known in aviation. We've all heard it, and most have a sense of what it implies. Something about working together, using all available resources and so on. But, you fly single-pilot, so this does not apply to you, does it?

A modern multi-crew airline can fly and land itself. The pilots are full time professionals, and they typically fly in and out of the same familiar airports. Still, every approach is briefed in detail, including the missed approach, and the autopilot is typically left to do the flying. In a multi-crew cockpit, the duties are divided by the flying pilot, and the other guy doing everything else. In practical terms it means the flying pilot monitors the autoflight system and programs crossing altitudes, switches autoflight modes etc. If a pilot insists on doing some hand flying, parts of the flying pilot duties are moved to the non-flying pilot. In an emergency, whether in the simulator or in the airplane, we quickly try to stabilize the airplane to accept the autopilot. Then, we can use our resources to evaluate the situation.

As a PC-12 simulator instructor, I see a different pattern. The typical reaction is to disengage the autopilot in an emergency. That can be a tall order! Now we have to fly an impaired airplane into a non-familiar airport, hand-flying, while sorting out a problem - alone! Gee, it seems like those airline guys have it easy!

Our formidable task is somewhat self-induced. In general aviation circles the autopilot is somewhat looked down upon. It seems to be a gentleman's agreement that good piloting is hand flying. The worse the weather, the better the pilot! I even had several general aviation pilots tell me that they turn off the autopilot when the weather is low; "to get some real training!" This is much like a high wire act. The achievement is the same whether you walked a wire two feet off the ground, or across the grand canyon - the difference is in the wager! So, go ahead, hand fly approaches to published minimums, in VMC conditions. Remember you are the Captain, in charge of flying, safety and the entire ship. When the weather is down to the wire, be your own co-pilot. Let the autopilot do the basic and easy stuff, while you supervise and make Captain decisions!

(Continued on Page 9)

YOU TAKE PRIDE IN YOUR PC-12. SO DO WE.

Carl Coffelt (above, right) is Western Aircraft's dedicated, in-house PC-12 Tech Rep, and also assists our network of 8 satellite service centers. For the convenience of our customer base, our expansive support network has centers located in: AK, CA, ID, ND, NV, OR, UT, and WA.

The 2006 POPA "Queen of the Fleet" featured the IS&S Cockpit/IP" Display, installed by Western Aircraft.

(Photo at bottom right shows the future Jepp Chart capability on the system.)



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(Continued from Page 8)

Even a go-around can be easily executed with G/A button and autopilot. Practice in good weather, and be the supervising Captain in bad weather. Naturally, severe weather, ILS and other equipment failures/deviations that could easily be missed while concentrating on hand flying, may be noticed and save the ship while “supervising” the autopilot. That is good management of the resources available to the crew, *MRC* - or the more familiar; CRM.

A scenario might be as follows: PC-12 pilot experiences an in-flight emergency. He determines the flyability of the airplane, and engages the autopilot. He performs the emergency checklist as appropriate. He declares an emergency, and gives the ATC controller criteria such as flight radius, weather requirements etc. Naturally, getting the ILS freq, course, min's, ATC and other frequencies from the ATC is also good CRM - you're busy, making Captain decisions. I always use the autopilot for engine out glides, I am too busy doing simple math to hand fly! The battery *will* last the remaining flight time!

Take the airplane “in the hand” on those nice sunny days, but when the ante stacks up, it is good CRM to use all resources available.

It is a good autopilot...

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JT Bjorge

PC-12 instructor and Ferry Pilot

FAA ATP, CFMEII, JAA ATPL



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Same Trip...Always Different, Always Fun

Place—Paine Field, Everett WA; 9PM

Wind—150 Degrees at 12 knots

Sky Conditions—2000' broken 4200' overcast, occasional rain

10

Sit in the dark cockpit, use a flashlight to sort out the engine start sequence, good engine start, a faint odor of burning kerosene, work the post start checks, listen to ATIS, load the flight plan in the GPS, call clearance delivery for the IFR flight plan home, call ground for taxi clearance, cleared to 16 right alpha 4 intersection, sort out the confusion of taxiways in an ocean of blue lights, tower releases us for departure.

Off runway 16 Right, tell Paine tower good night, Seattle Departure clears us to a heading, 210 degrees and 3000 feet, the lights of Seattle move slowly left while we roll right on course, out Jude's side window Everett is under us, brightly aflame in mono chromatic yellow, energy efficient, high pressure sodium lighting, the blackness of Puget Sound ahead. Under the broken layer of clouds at 2000 feet, here and there, a few random renegade clouds back lit by the pale yellow city lights, we can see other aircraft maneuvering for landing down at Boeing Field; they look like fish with illuminated eyes swimming under a murky layer of yellowish ooze in the deep ocean.

At 3000 we're slipping along in between the broken clouds and the city lights are winking off and on, Departure clears us to 5000, we slide up into the solid layer of gray illuminated by our recognition lights and strobes. Turn off the strobes; stop the optical nuisance of reflected flash from the clouds.

Seattle Center clears us to 9000, then 13000. At 11000 an intense light illuminates the clouds above, at 13000 we level, break out into a clear, black and white night sky with a 7/8ths moon brilliantly lighting the ocean of clouds under

us, the constellation of Orion hanging in its usual place in the windshield. Sliding along at 260 knots over the rolling layer of clouds the sensation of speed is terrific. Larger cities illuminate the cloud ocean from underneath forming pools of diffuse light. At "sandr" intersection we're well clear of the inbound traffic to Seattle, the auto pilot rolls us left to Scappoose. The air is absolutely smooth; the only sensation, the shadowed motion of the clouds under us and the instruments message telling us of our steadily shrinking distance from home. We fly south, the cloud layer slowly sinks, stars are brilliant, Seattle Center clears us to descend to 10,000 feet.

At 11000 we slip into the cloud layer, which, as it happens, isn't solid now but a thin ephemeral wisp of a thing which quickly slides over us, the moon illuminating it like a gossamer film above. The solid layer is still under us but no longer smooth. Clouds are all around us in castle like formations, we're sailing along, sliding down through these canyons of vapor with the moon providing light enough to give the scene a magical story book appearance in shades of gray.

Seattle Center hands us off to Portland Approach, bids us, "Have a nice night", Portland Approach clears us to 3000. At 5000 we slide out the bottom of the clouds, directly ahead, our destination, Scappoose. I cancel the IFR, say thank you and good night to Portland Approach.

Scappoose AWOS tells me the wind is from 330 degrees at 5 knots; we set up for a right down wind landing on runway 33. Feel for the ground, rotate to a smooth landing. The landing gods are kind tonight.

Landing on 33 there isn't any hurry to slow down as our turn is at the far end of the runway so our arrival is quiet, without the commotion of reverse thrust. Condition lever to ground idle, stow the flaps, clear the runway; reset the trims, taxi to our tie down. Go through the shutdown procedure; enjoy the unique pleasure of sitting in the dark listening to the airplane noises slowly whine down...Do the paperwork.

We've made this trip hundreds of times, it's always different, always fun.

*Mike Dennis
Scappoose, OR*



1980 Airport Road,
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During inclement weather the first question you should always ask is, do I really need to make this trip? Assuming you've already answered that question then there is still more to do. Before you head to the aircraft, there is more preflight planning that remains to be accomplished.

In the winter, inclement weather brings challenges that many of us don't see very often. Here are some questions you should be asking when the sky turns gray and the temperature has dropped.

Hopefully, you have done your homework and now you find yourself at the airport looking out at the snow and ice. Here are some questions you should be asking about the environment and about your aircraft.

- What is the condition of the runway and taxiways?
- Are there braking action reports?
- Are there crosswinds?
- What is my stopping distance in the event of an aborted takeoff?
- What are my wing and engine anti-ice procedures before and after takeoff and can I find the deice switches without looking up?
- What is my landing distance should I have a problem after takeoff and have to return?
- Do I need and have a takeoff alternate if this airport is unsuitable?

•Have the taxiways been plowed?

•If there is slush on the taxiways should I delay extending the flaps until approaching the runway, and if so how will I postpone the checklist so I don't miss setting them prior to takeoff?

By now the aircraft should have been cleaned of all frost, snow and ice. Renting hangar space is far more economical than arriving at the airport and having to have the aircraft deiced. If frozen precipitation is still falling then you've hopefully applied a coating of anti-ice fluid. Remember, deice and anti-ice fluids are slippery. Use caution when doing a walk-around and when boarding your passengers.

Once the door is closed, it's time to start the engine. Snow and ice are contaminants and create a FOD hazard for you and for those behind your aircraft. Blowing snow from your prop creates additional hazards not limited to reduced visibility. Actual conditions will determine whether you need to taxi slower than normal. This not the time to rush and it is not the place to make up for a delay.

You are almost ready to fly. Remember to correct your takeoff figures for the runway condition. If you accidentally use dry runway numbers stopping will be a problem. Finally, complete your checklist items, review your departure procedure and your icing plans and its time to fly.

A contaminated runway may call for a standing start. Make sure you are pointed directly down the runway. Snow and slush will slow your acceleration increasing your takeoff roll. They also create a slippery surface that makes your aircraft more susceptible to crosswinds. There is no worse feeling than having full control input and sliding ever so gracefully off the side of the runway into a snow bank.

Thankfully, most of us do not fly in these conditions often. They are stressful and fatiguing and require intense planning and preparation. With the proper attitude, training and respect for inclement weather, they don't *necessarily* ground your operation. Remember, though, there are days when the best thing to do is stay on the ground.

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WAAS Up...

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How often has a curious chap come up to you and asked, "Can I stick my head in the cockpit and look around?" Most of us proud pilots are happy to show off our pride and joy. Now a day, the reaction often is, "look at all that glass and computers. This isn't what cockpits looked like when I learned to fly." Well, advancements in GPS technologies have reached the point that even the youngest of pilots among us will soon be saying, "This WAAS GPS isn't like the GPS I used to use."

WAAS (Wide Area Augmentation System) is a SBAS (Satellite Based Augmentation System) for the GPS built by the United States. The augmentation comes from extra satellites placed in geosynchronous orbits broadcasting integrity and correction data for GPS satellites and transmitting ranging signals. Within its coverage area, the SBAS greatly improves the accuracy, integrity and availability of the GPS. Aircraft equipped with WAAS receivers will be able to take advantage of the higher accuracy and integrity in many ways. One of the most significant advantages will be a new set of GPS based approach procedures specifically designed for WAAS.

The first WAAS satellite was launched in 1996. WAAS has been operational in North America since 2003. Europe's version of SBAS is called EGNOS and is expected to be operational in 2008. Japan also has a version of SBAS called MSAS. MSAS satellites are in orbit and undergoing testing. India is also planning an SBAS system called GAGAN. All these SBAS providers follow the same signal standard. That means receivers, like the WAAS receiver embedded in the Universal Avionics wFMS family of FMS's, will be compatible with all of the SBAS systems worldwide.

Extra accuracy, better integrity, it sounds great, but what does it all mean? When flying airplanes around using a GPS signal, satellite integrity is important. Current GPS receivers are required to accomplish autonomous integrity monitoring known as RAIM. WAAS signals include system integrity monitoring alleviating the need for preflight or in flight RAIM predictions to fly GPS based procedures. WAAS also provides receivers with corrections to compensate for ionospheric delay and satellite ephemeris and clock errors. WAAS receivers also can take advantage of the new geosynchronous satellites as ranging sources when computing position. This is a distinct advantage if any of the current GPS satellites have problems as they age. Certification guidance for WAAS receivers (TSO-C145 or TSO-C146) also allows receivers to take advantage of the U.S. military's commitment to keep selective availability turned off. Selective availability was a feature built into the GPS satellite system that degrades the signal for military purposes.

All of these system improvements, features, and advancements help WAAS receivers produce a highly accurate position with a high degree of integrity as well as increased signal availability. Sure, but what can I do with all this extra performance? As already mentioned, you can forgo preflight and in flight RAIM predictions. With a standard GPS, you can file to a destination only served by a GPS approach, but you are required to file an alternate served by a ground based instrument procedure. With a WAAS receiver, you can plan to fly a GPS approach at your destination as well as your alternate. This potentially opens up many previously unqualified airports as alternates.

And speaking of GPS approaches, one of the largest benefits the WAAS receiver will bring to the cockpit is a new set of RNAV (GPS) approach types. The new approaches are LPV (Localizer Performance with Vertical guidance) and LP (Localizer Performance without vertical guidance). Both of these approach types take advantage of the better accuracy and integrity of WAAS receivers. LPV and existing LNAV/VNAV approaches will utilize the WAAS computed aircraft altitude for more accurate vertical guidance. LPV approaches are designed and built to provide performance comparable to a Category 1 ILS approach with minima as low as 200 & 1/2. As of the beginning of 2007, there were 675 LPV, 1057 LNAV/VNAV and 2942 LNAV approaches published in the United States. Hundreds are being published each year.

The Author - Dave Zeitouni is the FMS Systems Engineering Manager for Universal Avionics Systems Corporation. He is also a senior pilot with the Air Force Reserves with approximately 4000 C-17 hours. He holds a BS from the US Air Force Academy and a MS from the University of Washington both in Aeronautical Engineering.



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The bottom section of the advertisement features four Polaroid-style photographs. The first photo on the left shows the exterior of the Kansas City Aviation Center at night, with its lights on. The second photo shows a cityscape with an airplane flying over it. The third photo shows a person in a white shirt working on the interior of an aircraft. The fourth photo shows the cockpit of a Diamond aircraft, with its various instruments and controls.

Trip to Cabo San Lucas

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I recently had the pleasure to visit the Cabo San Lucas region of southern Baja California, Mexico. This was my first foray into Mexico, my having always avoided the experience based on horror stories I had heard about the graft, treatment, and exposures to risk in operating in Mexico. I have operated throughout the Caribbean without concern or problems, but Mexico had me “gun-shy”. Nonetheless, after winning three nights’ usage of an exclusive villa overlooking the Sea of Cortez, I decided to take the chance, “bite the bullet” and plan the visit with the use of our PC-12. To spread any risk or exposure, I decided to invite two other couple to accompany my wife and me (but never shared the reasoning with them!).

I will not bore you with the details of our trip. What I will do is share my process and brief you on the major change in support and service to private aviators visiting this area. If I put you to sleep, my apologies.

Thinking it Through

When I began the planning process, I decided to follow my normal planning template, and attempt to complete each phase as if I was flying a normal domestic trip. For, me this involves working backwards. I start where I will end up, and work forward to my departure from my home base airport (KAUS – Austin TX). In our case, we would end up at Villas Del Mar, at Palmilla Point in San Jose Del Cabo, BCS (Baja California Sud). The nearest airport is MMSD–Los Cabo International, in San Jose Del Cabo. Normally, a quick glance on the internet provides huge volumes of information about domestic destination airports (FBOs, fuel prices, approaches, airport diagrams, etc., etc.). Not true once you leave the USA! As a card carrying member of the UVAir fuel purchasing program, I was aware of the services available from Universal Weather and Aviation (a flight planning and overseas handling service company) to facilitate international travel. I decided to give them a call.

How Do You Handle It?

The “Green Team” handler at Universal was very receptive to my phone call. He offered that they (the Green Team) typically arranged four or more trips per week to Cabo. They not only had the routine down pat, but they had fueling available in MMSD under the UVAir program – and fuel would cost about \$3.50 per gallon. Not bad! I asked for them to send me a price quote for their services, and I felt that I was in good, experienced hands that would provide the necessary guidance to get me to MMSD and my destination villa.

Sadly enough, a few days later I received their service quote. It included pricing for flight plans; weather briefings; NOTAMs; ground handling; paper shuffling; parking and ramp fees; various forms and customs fees; but no fuel costs; and they wanted me to pay slightly over \$2,700 for these services. I thought this was a bit pricey, so I decided to try to explore performing the services myself.

How Else Might You handle It?

First thing I did was pick-up the phone and call the FBO at MMSD. The call was answered and I was speaking with an individual who was fluent in English, and very emphatic in his encouragement that I should come and visit. When I started asking for more details (“What permits do I need to acquire? How much does that cost? What services can/does the FBO provide to assist me in the process? What are landing/parking/ramp fees?”) all of a sudden his English language skills began to degrade. However, he was able to communicate that for “a small tip here and there” everything would get accomplished satisfactorily. Mark up one small victory for Vicente Fox!!!

My next direction was really a fork in the road. I decided to pursue two paths to figure out the conundrum of how to best get to Mexico; The Baja Bush Pilots organization, and my good buddy Bob MacLean (POPA Board member; PC-12 flyer; and most importantly a home-owner on the Sea of Cortez!). Both provided me information that was helpful in understanding the process of legally getting into Mexico, and who and how to do so. Additionally, from the Baja Bush Pilots website, I was able to find out that change was occurring at the Cabo San Lucas airport. What?! What changes?! Good or bad? When? Then I noticed something else; they were talking about the Cabo San Lucas Airport, not the San Jose Del Cabo Airport. Sure enough, there is a smaller airport in Cabo San Lucas – MMSL.

Note: A bit of geography. The southern end of the Baja California peninsula is about 20 miles wide, and faces south. The western “corner” of the tip of the peninsula is Cabo San Lucas (Cape of St. Luke) and the eastern “corner” is San Jose Del Cabo (St. Joseph of the Cape). Between them, the southern coast of the peninsula is almost wall-to-wall hotels, resorts, and development.

Back To The Story...

How I Finally Handled It

Having found out there was another option I started sleuthing around for information. I found varying accounts of what was going on, what might be going on, when it might happen; so I decided that again, first hand information would be best. A little further snooping lead me to contact information for the Airport Operations Manager; Tania Sosa. I was enthused to find not only her phone number, but also her mobile phone number, and her email address – advanced civilization awaited me! As it turns out, recently someone of enormous and outstanding insight had decided to make some changes in aviation in the Cabo vicinity. It is a very fluid situation, but as of 13 October 2007, here’s what I can tell you. The Cabo San Lucas airport (MMSL) is 7000’ X 100’ of paved runway, with a control tower. It is a Daytime, VFR use only facility (and probably will not change due to a large mountain at the northeast end of the runway). It is a Mexican Airport of Entry AOE for customs

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and immigration purposes. It is about 2 miles northeast of the town of Cabo San Lucas, and about 18 miles (driving) from San Jose Del Cabo. They have Jet-A (but NO PRIST) at \$3.80 per gallon; if you bring cans of PRIST they are familiar with how to inject PRIST while fueling (they hope to have pre-mixed fuel in the future).

Now the most important information:

Tania Sosa

Tel: 011-52-(624)-108 1100 (from the USA)

Cell: 011-52-(624)-122 4227 (from the USA)

Email: tsosa@acsl.com.mx

Most of my communication with Ms. Sosa was via email. She is fluent in English, responsive, and will not dodge questions or issues. She made the trip painless.

Having decided where we were going, it was time to work on the “legal” part. Again, with the assistance of Ms. Sosa (and confirmed via MacLean, Baja Bush Pilots, AOPA, and just about everyone else), I discovered what I would need to be legal. To enter Mexico, one must make their first landing at an Airport of Entry (AOE). This designates they have customs and immigration staff present and the legal authority to accept you into the country. There is a set of documentation the authorities will want need to see to allow you to pass their criteria for entry. These include the aircraft registration, the airworthiness certificate, your pilot license, your medical certificate, your radio operators’ permit, your aircraft radio station license, and proof of insurance coverage in Mexico provided by a licensed Mexican underwriter. Additionally, if the aircraft is not personally owned by you, a letter of authorization from the owner (leasing company; corporation; flying club; whatever) allowing you to be using it and bringing it to Mexico is advised.

In any typical situation, you would have these documents in your possession upon landing at the AOE, and you would present them to the proper authorities. I had been told to expect somewhat of a run around, as the various authorities that need to see your entry documentation are housed in different locations on the airport and you must run back and forth with your paperwork until you have satisfied their local sequential requirements to view everything, usually in triplicate (do you remember carbon paper?), properly stamped and/or initialed by the previous official.

Strange aside: Mexico insists you have an approved Mexican flight plan for flights in Mexico. In order to get to an AOE, you must have flown in Mexican airspace. So, to cover the requirements, once you land at your AOE the local authorities will issue you an approved flight plan for your arrival flight (even though it has ended) just for record keeping. Go figure. However, this is one of those pieces of paper to be filled out, approved, and stamped prior to getting another required piece of paper that needs to be filled out and stamped.....

Fortunately, the Cabo San Lucas airport manager (remember Ms. Sosa?) has taken a slightly different approach. Having received all of the necessary information from me in advance (I scanned and sent, in .pdf format, copies of all of the required documents and flight plan), she had printed it out, submitted it to the proper local authorities, who blessed it and had it ready and waiting upon my arrival. Ten minutes after we shut down the motor (while the passengers lounged in an air-conditioned private lounge for GA travelers) the plane was unloaded, the passengers and pilot were through the entry process, and we were loading up our limo (Suburban with driver) ready to head for our villa.

How We Got Back

A few days later we were leaving (against our basic desires, but reality is reality). Again facing the expectation set by the bulk of those ahead of me, I anticipated an hour or so of paper shuffling and arm waving. And again to my pleasant surprise, Ms. Sosa had a different approach. Upon our arrival at the airport she had a baggage cart and handler ready to take our bags from curbside to our plane (which was fueled and waiting). I handed her my flight plan (you CANNOT pre-file from the USA as most everyone had told me you should do when you depart the US), to which she responded by telling me she had already filed one for me, but would momentarily amend it to match mine. She went to her computer, made the change, and suggested I wait about five minutes for it to get to the tower’s computer. WOW! Another ten minutes of dealing with paperwork that she had prepared in advance for us (I had told her on our arrival when to expect us to be departing), and we were loading up, starting up, and heading out. We were cleared for our return “as filed” and departed MMSL. We did get two enroute re-routes to our clearance; they ended up matching the exact flight plan Ms. Sosa had pre-filed for us, and reduced our trip by about 30nm. She is good!

Returning to the US from Mexico is the same as returning from any southern point of origination. Customs and Border Patrol (CBP) wants at least 1-hour notice of your intent to land at an AOE. I was in a special situation in that I had been granted a Customs Overflight Exemption permit. This permit allows you to overfly the requisite stop at the AOE nearest to the US border on your route of flight, and rather allows me to fly all the way to my destination (KAUS) and clear customs and immigration at that location. The permit is issued by CBP and usually takes 60 days to issue; it is good for 1 year and for multiple uses, but involves lots of restrictions. In my case, it saves me about 2 hours of waiting in Del Rio TX while CBP (not based at the airport) finds their way to the airport.

I had pre-notified CBP at KAUS of my intent to return on Monday (I actually notified them before I left the US!), and just for good measure I called them prior to departing MMSL to give them a more exact update on my arrival time at KAUS.

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Trip to Cabo... (Continued From Page 17)

Upon arrival at KAUS we taxied to my FBO where the CBP officer was awaiting us. Less than five minutes later he had completed our arrival processing, and we were home.

Conclusion: My fears were unjustified, at least for going into and out of MMSL.

Think cautiously about professional handlers. I contacted Thierry Pouille, the owner of Air Journey (www.airjourney.com) who provides many advisory services for international traveling by private aircraft. Thierry provided me with essentially all of the information I had discovered on my own, including a strong recommendation to use MMSL versus MMSD, and information on how to contact Ms. Sosa. Next time I head off into the unknown I will think strongly about using his services if I cannot find good answers on my own.

For the effort required, having a Customs Overflight Exemption permit is a blessing when you have the range to utilize it (i.e. in a PC-12). The airway distance from KAUS to MMSL was 850nm and it took 3:30 each way. A stop at Del Rio TX or at Laredo TX on the way back to clear customs might only add a few miles to our distance, but would have added at least 2 hours to our trip time.

Costs; there is need for an entry permit for the aircraft that cost 567 pesos. There is an immigration handling fee of 47 pesos per person. Landing fee for a PC-12 was 167 pesos. Boarding fee for a PC-12 was 88 pesos. Parking fees of 5.14 pesos per hour came to 1584 pesos for our trip. The airport usage fee was 1188 pesos (combine this with the Boarding Fee and think "ramp fees"). Lastly, there is a tourist tax of \$25 per person. So, for our party of 6, we paid 3310 pesos, plus \$150 dollars. That works out to less than \$500 in airport and immigration fees. Add to that 756 liters of Jet-A at 9.45 pesos per liter (200 gals at about \$3.50 each) plus the taxes, and the total for air transportation plus handling was about \$1200 in Mexico. Add another \$750 for the fuel purchased on the US side of the border, and we spent under \$2,000 for 6 people to travel in luxury to and from Cabo, including all immigration costs. I think that comes out pretty cheap on a per head basis. Of course you start out by owning a PC-12!!!

Anyone having any questions feel free to call me!

Phil Rosenbaum
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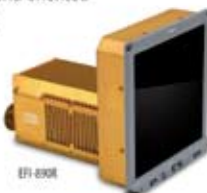


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An Interview with Ben C. Bernstein, Icing Forecaster Extraordinaire

by Scott C. Dennstaedt

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Convective SIGMETs are not stalking us at the moment and our memories of dodging thunderstorms are now turning into visions of AIRMETs for icing as the cold air from Canada plunges south. We're now looking directly into the countenance of winter.

Not to worry, the hottest new icing product on the web, called **CIP Severity**, became operational on December 6, 2006. As a former NWS meteorologist, FAA-certificated instrument flight instructor and *IFR* magazine contributing editor, I provided a look at this newest NWS product in the December 2006 issue of *IFR* magazine (see http://chesavtraining.com/Articles/Dennstaedt_CIP_Severity.pdf). An analysis of icing *intensity* has been long overdue. While AIRMETs and SIGMETs still provide the official icing forecasts, the Current Icing Product or more simply CIP (pronounced "sip") provides a better spatial and temporal resolution than the traditional advisories produced by the Aviation Weather Center (AWC) in Kansas City. It is refreshing to see an icing intensity product that attempts to highlight the regions of airspace that instrument pilots should be sure to avoid.

Recently I had the pleasure to visit with meteorologist and icing expert, Ben Bernstein. Now retired from the National Center for Atmospheric Research in Boulder, CO, Ben was one of several meteorologists who was responsible for the research and development of CIP. "Icing is a complex problem. There are so many factors that play a role in what makes or breaks an icing situation," says Ben. He further emphasized, "I am not totally fond of rules of thumb with respect to icing. There are some that are descent, but there are so many exceptions to every rule of thumb that they can be dangerous." Like many icing forecasters, Ben prefaces many of his statements with "it depends."



Stratocumulus clouds may only be a few thousand feet thick and will have a quilt-like appearance from the top. From below, the darker the bases of these clouds, the more condensate are in the clouds. These clouds can contain a significant amount of supercooled liquid water, especially near the tops. When the temperature is between -2°C and -15°C , it's best not to hang around in the tops for any longer than required.

He further explains that icing comes down to a competition. Once you get into subfreezing temperatures and there are clouds present, there's a competition between the production of ice crystals and the production of supercooled liquid water. He offers this simple model. "If there is sufficient lift and a cloud is formed, there are two possible outcomes; it will either become a cloud containing mostly supercooled liquid water or will contain mostly ice crystals. The latter is a glaciated cloud and does not represent a structural icing threat."

Depending on the specific scenario, both ice crystals and liquid water can coexist in the same cloud. As the cloud continues to develop there's a competition between the existing ice crystals trying to deplete the liquid water present in the cloud. In other words, the ice crystals may grow at the expense of supercooled liquid water droplets. This occurs because water vapor will preferentially deposit on the ice crystals and not on the liquid drops. In this rather unstable situation, the liquid drops begin to evaporate to grow larger ice crystals. Lower liquid water content in the cloud means a lower risk of icing in that cloud. However, "The devil is in the details," Ben acknowledges.

Most of the time precipitation falling from a cloud also tends to deplete the liquid water content in it. Snow is one of the best examples. Snow falling from a cloud or into a cloud tends to deplete liquid water in that cloud or in clouds below it. Therefore, if snow is observed at the surface, it tends to diminish the icing potential in the clouds producing the snow, but does not eliminate the possibility according to Ben. I asked him, "If it's snowing at the surface, is it safe to launch into the clouds?" Ben emphatically says, "No, that's not a good choice."

Ice pellets (sleet) and snow grains falling at the surface tend to be a good indicator of icing aloft. Both ice pellets and snow grains are produced by liquid water "riming" on the snowflake or ice pellet. Ben says, "If there's riming, there's liquid water in the cloud." "Rain, on the other hand, is a mixed bag," says Ben. "On some days, rain at the surface means there's nasty stuff around and other days, rain might be depleting the liquid water content in the cloud."

What about a plain overcast sky with no precipitation whatsoever? Ben indicates, "Now you've eliminated the depletion mechanism, but you may have also eliminated production because those clouds are not getting enough kick to get much going. Even the most harmless looking stratus layer may be loaded with water or it may be rather weak and very thin with not much going on...in other words, it depends."

So the \$64,000 question I posed to our expert is, "Are there any weather products a pilot can use to make this determination between a harmful cloud loaded with ice and

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a harmless cloud with little or no icing potential?" Ben answers, "That's what we try to do in CIP. We first try to identify that a cloud exists and then we try to get a handle on what's happening in that cloud. What are the mechanisms that relate to -- 'it depends.' What temperature is it occurring at? How deep is the cloud? What's the cloud top temperature? Is there precipitation falling and what type is it? How intense is it? How strong is the lift in the cloud?" All of these things add up to how likely it is for supercooled liquid water to be in the cloud and how much is likely to be there. "That's what CIP tries to do," Ben continues. "CIP tries to digest all of these things to give you an answer that is somewhat credible, ergo, there's a 30 percent chance of icing as opposed to a zero percent chance."

Even though CIP provides some help, pilots need to understand that icing prediction is a complex problem. Even rather benign-looking situations can turn out to be

problematic. Ben watches pilot reports every day during the fall, winter and spring and is drawn to severe pilot report to monitor CIP to determine what needs to be improved.

I asked him about an icing accident earlier this year near Birmingham, Alabama where a Cirrus SR22 pilot who held an ATP certificate had to activate the Cirrus Airframe Parachute System (CAPS) after he lost control of his airplane while trying to get on top of cloud layer. Ben commented, "Even though they were on the edge of the icing AIRMET, this was a classic case of an encounter with stratocumulus clouds."

For this particular accident, a strong cold front with thunderstorms moved through the Birmingham region about 18Z ushering in much colder air. At 18Z, the freezing level was about 9,000 feet. Just before his departure around 21Z, the freezing level had dropped to 4,000 feet and there was an AIRMET for icing from 3,000 to 8,000 feet. The accident

occurred inside the AIRMET, but right on the edge of the AIRMET boundary.

According to Ben, post-cold frontal icing can occur when there is a low level destabilization of the atmosphere that can kick up the water content in the swaths of stratocumulus clouds behind the front. While only a few thousand feet thick, stratocumulus clouds have characteristics of both stratus clouds and cumuliform clouds. They have a large horizontal extent like stratus, but are vertically developed like cumulus clouds. They are usually found behind a strong cold front and can have copious amounts of liquid water, especially right near the cloud tops.

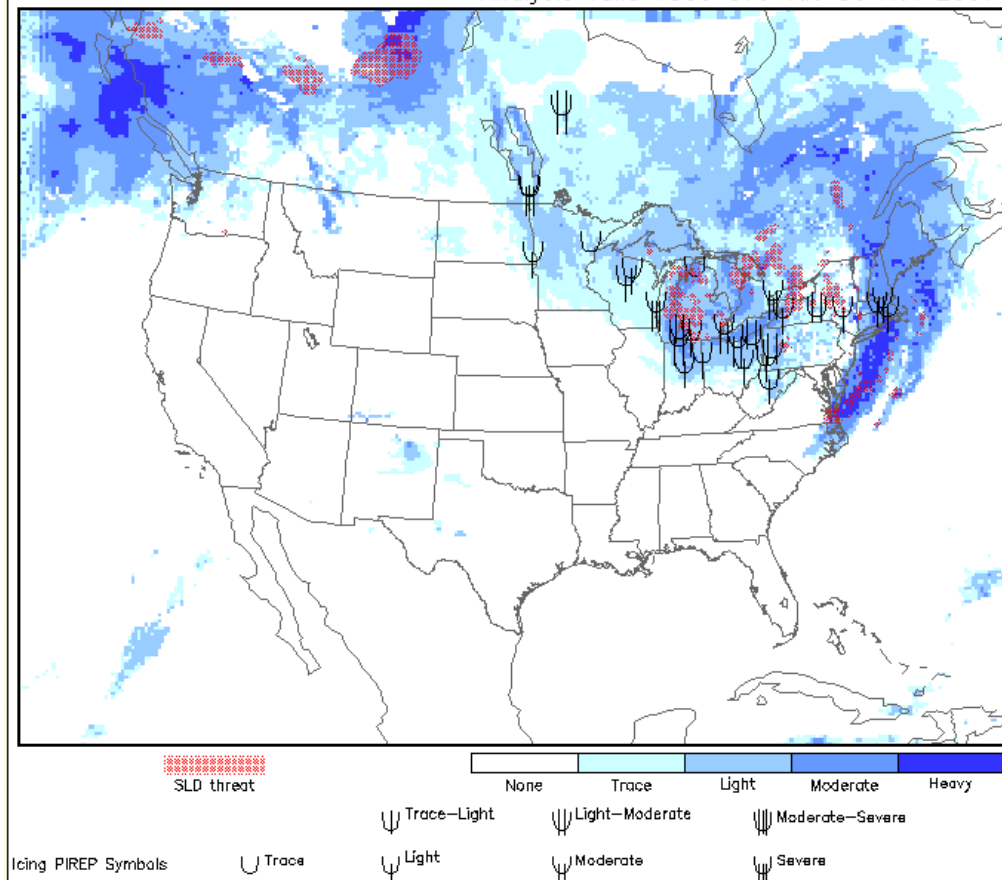
This is all assuming that the temperature is just right. The temperature in the icing layer near Birmingham was about -4 degrees Celsius which is a perfect for icing, especially clear ice. Ben then pointed out, "The instability helps to generate condensation or liquid water if the cloud has some depth."

(Continued on Page 22)

By FAA policy CIP is a Supplementary Weather Product for enhanced situational awareness only and must be used with one or more primary products (safety decision) such as an AIRMET or SIGMET (see AIM 7-1-3).

Maximum icing severity (1000 ft. MSL to FL300)

Analysis valid 1800 UTC Tue 06 Nov 2007



The Current Icing Product's maximum icing severity plus SLD is the default image when visiting the ADDS icing web page. While you are free to select specific altitudes, the maximum icing severity product is a composite image that shows the highest or maximum value (intensity) in the column of air above the surface up to and including FL300. It's essentially a worst case scenario with respect to icing. This is perfect for identifying the maximum icing intensity you might encounter on a climb or descent. The product stops at FL300 since clouds above this altitude are normally glaciated. Any icing above this level will usually be associated with convective activity.

Sometimes it all comes down to how well the pilot prepares before the departure. We don't know exactly how this pilot prepared prior to launching into known icing conditions, however, the NTSB did state that the probable cause in part was "the pilot's inadequate preflight planning and failure to obtain a current weather briefing." Experienced or not, knowing how to do a complete self briefing is paramount. My article, "Pump Up Your Web Wx" that appeared in the January 2007 issue of *IFR*, provides some great self briefing tips for even the most seasoned instrument pilot (see http://chesavtraining.com/Articles/Dennstaedt_Internet_Wx_Brief.pdf).

Determining that icing exists in a cloud is quite complex; determining the **amount** of icing in the cloud is either incredibly difficult or fundamentally impossible in some cases. Nevertheless, the sole purpose of the new CIP Severity product is to provide pilots with a way to assess the location and altitude of supercooled liquid water that represents a serious icing threat. CIP Severity also offers a masked variant that combines the CIP probability field with the intensity so pilots can quickly assess those regions that have the highest probability of moderate or greater icing. This product masks out those lower probability events to only show areas that have a high likelihood of containing supercooled liquid water. Additionally, the icing intensity levels of trace, light, moderate and heavy are preserved. The term "severe" is not used since it is reserved for how the aircraft reacts to the meteorological conditions, not the meteorological conditions themselves.

Icing severity is primarily a function of three elements. Factors of severe icing include the liquid water content in the cloud, temperature in the cloud and the drop size. While temperature is fairly easy to predict, the other two factors are not. Ben says, "Small errors in timing, vertical velocity in the cloud, stability and moisture initiation could mean the difference between a benign or dangerous event." There are classical freezing rain events that remain easy to identify, but are less common than most other large supercooled water drop scenarios. According to Ben, these other non-classical freezing rain events are about 9 times more common and have a more complex structure, and therefore, are more difficult to identify.

All of the CIP products, including the severity products, can be found on the Aviation Digital Data Service (ADDS) web site at <http://adds.aviationweather.gov/icing/> or on their experimental site at <http://weather.aero/icing/>.

What about the Forecast Icing Product? Will there be a severity product available soon? Ben says, "It is one thing to try to determine icing severity based on observations like we do in CIP. It is a totally different problem trying to **forecast** the potential for severe icing based purely on model data." Ben mentioned that there is a plan in place to have a FIP Severity product operational by 2009 with an experimental product that's currently available on the experimental ADDS web site.

Scott Dennstaedt Bio

As a former NWS meteorologist and FAA-certificated instrument flight instructor, Scott offers a unique set of qualifications to his instrument students. While he still occasionally teaches his in-person two-day aviation weather workshops, Scott now occupies most of his free time teaching instrument pilots over the Web using live online sessions via WebEx. Some of these sessions are offered free of charge on a first come, first served basis and others require a small fee. He also offers one-on-one online weather training tailored to the pilot's specific needs or mission. Scott is now building a complete aviation weather curriculum that will easily outpace the FAA standards including his latest CD called "Ice Is NOT Nice." Ice Is NOT Nice was a collaborative effort between Scott Dennstaedt and Ben Bernstein.

In addition to his online training, Scott provides a subscription-based aviation weather forum called The Weather Report. The Weather Report is a categorical group of forums dedicated to aviation weather training that features the Internet Weather Brief Roadmap, a step-by-step guide for pilots who want to get the most out of their Internet preflight briefing. For more details see <http://chesavtraining.com>. Scott can be reached via e-mail at scott@chesavtraining.com.

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FAA MOVES CLOSER TO MANDATING ADS-B FOR ALL AIRCRAFT

24

In October, the Federal Aviation Administration (FAA) announced that it is considering mandating that all aircraft operating in controlled airspace be equipped with Automatic Dependent Surveillance Broadcast (ADS-B) by January 1, 2020. The GPS-based system allows both pilots and controllers to see real-time displays of air traffic. Less expensive and more accurate than its radar predecessor, ADS-B has the potential to increase airspace capacity because aircraft will be able to fly closer together.

Although the benefits of the next-generation aircraft positioning system seem promising, industry leaders asked for more time to consider the issues. In November, the Federal Aviation Administration (FAA) obliged extending the comment period to March 3, 2008.

“While the transition from today’s radar to ADS-B will take more than 13 years, it is important for the FAA to get it right,” said Phil Boyer, president of Aircraft Owners and Pilots Association. “At the current cost of \$8,000 to \$10,000 per aircraft for ADS-B equipment, it is a lot of money to spend for the same access and services we now have with a transponder.”

The FAA estimates that it will cost general aviation operators \$4,328 to \$17,283 to equip their aircraft with ADS-B avionics. Turboprop owners are expected to pay \$12,906 to \$463,706 and turbojet operators will likely spend \$3,862 to \$135,736. Several systems are already available on the market.

“A 10-year compliance window gives the aviation community ample time to manage costs and minimize the impact of ADS-B installation on their normal operations,” said the agency in its Notice of Proposed Rulemaking (NPRM).

Despite a few reservations from industry insiders such as cost and complexity of the avionics, access by outsiders to sensitive flight and aircraft data, vulnerability to GPS signal jamming and lack of coverage over the ocean, the FAA plans to keep moving forward. Before a recent congressional committee, Vincent Capezzuto, Director of Surveillance and Broadcast Services Program Office, said, “We anticipate a Final Rule will be issued in late 2009.”

He mentioned other FAA milestones such as focusing on testing and voluntary compliance through 2008, rolling out initial operating capability by October 2009, and mandating aircraft owners to equip their aircraft between 2010 and 2020.

Preparing for the Next Generation

ADS-B is one part of the FAA’s Next Generation Air Transportation System (NextGen), a plan to modernize the National Airspace System (NAS) through 2025. With

NextGen, the FAA is hoping to mitigate the impact of air traffic growth by increasing airspace capacity and efficiency while simultaneously improving safety and expanding user access.

The FAA also expects ADS-B to reduce aviation’s environmental impact. According to the NPRM, “The FAA estimates that between 2017 and 2035 ADS-B technology would allow more efficient handling of potential en route conflicts, which will result in a total of 410 million gallons of fuel savings in the national airspace system over that time period. This decrease in fuel use would result in about four million metric tons less carbon dioxide emissions.”

To accomplish its goals, NextGen focuses on utilizing a variety of existing and emerging technologies, including ADS-B, which sport hefty price tags. The Fiscal Year 2008 budget request includes \$85 million for ADS-B. Over the next five years, the budget request totals \$564 million for ADS-B.

How does ADS-B work?

An ADS-B transponder utilizes GPS signals to determine an aircraft’s precise position in the sky. The signal information is combined with data from the aircraft’s flight monitoring system and broadcasted to air traffic control and other aircraft. The information includes the aircraft type, flight number, speed and whether it is turning, climbing or descending. The code containing all of the data is automatically broadcasted once a second.

How does an ADS-B mandate affect you?

In short, the proposed rule requires aircraft operating in Class A, B, and C airspace as well as Class E airspace areas at or above 10,000 feet over the United States to be equipped with ADS-B avionics. It also requires that aircraft be equipped when operating within 30 nautical miles from the surface to 10,000 feet at the nation’s busiest airports.

Although January 1, 2020 seems far away, the FAA is committed to an ambitious schedule and may choose to spur the transition well before the deadline by limiting access to airspace at busy airports for those not outfitted with ADS-B.

CALLOUT

As the ADS-B network is being implemented, about 50 percent of the current radar system will be maintained as a backup for the satellite system.

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Descending From FL280, Over The Gulf of Mexico...

26

Descending from FL280, over the Gulf of Mexico, on a typical late summer day, meaning a good chance for thunderstorms!

Inbound to Houston, Texas from central Florida I am remaining approximately 60 NM off shore instead of one of the standard arrival procedures to avoid some unnecessary bumps and build-ups over the Houston area since I had sufficient fuel to deviate to New Mexico or back to Florida. Using the Nexrad and Radar on my Multi-Function Display, along with ATC guidance, I am avoiding the worst of the storms but I am IMC with occasional ice accumulation requiring use of Propeller De Ice and Inertial Separator in the open position.

Suddenly (it's never slowly, is it!) the CAWS amber GEN 1 OFF annunciator illuminates followed by the CAWS amber N ESTNL BUS annunciator. Since I am using the autopilot and things are not TOO bad outside, FLY THE AIRPLANE FIRST, I can attend to these annunciations. Following emergency procedures I reset GEN 1. However, GEN 1 does not reset and now the CAWS amber BATTERY* annunciator illuminates! Huh? Things are starting to get a little busy inside the airplane while I am still dodging build-ups and descending into the Houston area IMC.

Ok, first things first, notify ATC that I need to find some clearer air (should not be in Icing Conditions with GEN 1 off) and that I am having some "issues" that I need to correct when able, still have lots of fuel. I head south; get out of the clouds, level, at FL220. I now review the emergency procedures for GEN 1 OFF – if Gen 1 does not reset. The continuing procedure reads: "GEN 2 load - reduce until Battery current is positive (not discharging)". I look up and see the Battery ammeter* showing an average discharge of 105 amps (it is cycling higher and lower) and it's blinking! What else can I reduce? I thought, from training that the Non-Essential Bus Auto Load shed would take care of the additional load. And what happened to GEN 2? What about the CAWS amber BATTERY* annunciator? Picked a bad week to quit drinking...(coffee).

Before I continue with this saga, let me translate the emergency procedure regarding GEN 1 OFF and the reduction of battery current until positive charge. With GEN 1 OFF and the Non-Essential Bus Auto-Load shed indicating, GEN 2 should be able to carry most of the remaining electrical load. However, even with GEN 2 indicating 28 Volts and at or below it's maximum rating of 115 Amps, it may happen that the Battery will come on line, indicated at the BAT Volt/Ammeter, by a discharge (a minus sign) of the Battery and a lower (Battery) voltage than GEN 2 or what should have been the Battery's approximate voltage before engine start. The Battery is assisting an actually diminishing line voltage from GEN 2 due to a higher amperage load than is actually being indicated.

That was a translation? Let's think of the electrical system as a train. The train has three engines-the Main Engine (Gen 1) pulling the largest load, the Support Engine in the middle (Battery) capable of pushing or pulling limited loads to assist and the Rear Engine (Gen 2) pushing a percentage of the total load to help the Main Engine. The RPM of the engines is voltage; the cargo load is the amperage and the speed of the train (system voltage) is relative to the RPM of the largest Engine(s). Since the Support Engine (Battery) is a lower RPM (voltage) than the Main/Rear Engines it will coast (charge) once one or both of the other two engines are at their normal RPM's. A problem can occur if the Main Engine shuts down while pulling a heavy load. The Rear Engine will increase its power to maintain the train speed while the train crew disconnects excess cargo load (Non-Essential Bus Auto-Load shedding). The Engine RPM [indicated and measured at each engine] of the Rear Engine is maintaining, not over heating (over-voltage), but the speed of the train is decreasing-wheels slipping? When the speed decreases to the Support Engine's RPM, then the Support Engine joins the Rear Engine to pull the load.

Back to the fun! Clear of clouds I turn off the Propeller De Ice hoping to drop a lot of amperage. The Battery discharge only reduces by approximately 30 amps so it is still blinking and discharging at approximately 65-70 amps! And now I notice that the Battery Voltage is indicating 20.5 Volts and I think it is dropping!!! What's going on with Gen 2? I see the GEN 2 Volt/Ammeter on the EIS showing 28.3 Volts and 110 Amps. Shouldn't Gen 2 be able to produce more amps? What else can I turn off? And oh by the way, I am flying south over the Gulf of Mexico, away from land in order to remain clear of clouds/build-ups, ATC wants to help and I would LOVE to land-NOW!

Again, its daytime, fuel is not a problem and the engine is fine but the electrical items are interesting to say the least. And let's remember that this is not winter type weather, which would require more heat related items for safety of flight, which means more amperage.

With the help of ATC and my on-board equipment it is decided to head for Corpus-Christi, which is better weather and not that much farther than Houston (which I really don't care about at this point anyway). It is still about 35 minutes to landing and I need to reduce the electrical load further before I lose my Battery/GEN 2. What else can I turn off? What is causing this mess?

Why did I say I could lose my Battery/Gen 2? Answer: How long will the Battery remain useful if discharging at 60 amps or greater? The best answer available is 20 minutes-at 60 amps. And from my (hopefully useful) analogy of the electrical system it is apparent that Gen 2 is *not* carrying the remaining load correctly, it (Gen 2) will overload if the Battery goes off line.

(Continued on Page 27)

(Continued from Page 26)

And, I am still about 30-35 minutes from landing! What else can I safely turn off to avoid the above conclusion?

Here's the good news. Obviously I successfully concluded the flight. Here's the BETTER news. This did not really happen. Yes, I have been in the exact area with the exact weather described and I have experienced the electrical malady being discussed, but not at the same time (thankfully only during training).

The electrical system design and redundancy of the PC12 are excellent and I have only heard of one or two complete Gen 1 failures. However, it does not mean that everything always works correctly as designed. The Non-Essential Bus holds the control over the majority of the high amperage loads that can affect the operation of Gen 2, after a Gen 1 failure. These include the Landing Gear motor (Max 100 amps), the AOA Plate Heat (Max 30 amps), the Recirculation fans (Max 30 amps)-Electric Air Conditioning (Max 125 amps) and Cabin Heater/Under floor Heater (Max 75 amps each-Note: Only the A/C or the Heaters operate, not both).

What is not included that draws some energy (Max 29 amps) is the Windshield Heat (the Co Pilot's Windshield heat is on the Non-Essential Bus for the MSN 100-400, except 321 aircraft). Note: A Service Bulletin was issued over three years ago relating to a ground strap location for Gen 2 that affected Gen 2 performance. This bulletin,

strongly recommended but not mandatory, was for all PC12's until MSN 600. If your aircraft has not already received this update, I strongly urge you to comply at the earliest date.

If you suspect a higher than normal amperage load due to a scenario similar to the one just described, select OFF the items that would have been disconnected by the Non-Essential Bus Auto-Load shed. Example: Cabin Air Conditioning/Recirculation System, Cabin Heat, Co Pilot Windshield Heat, ALL External lights.

A Safe Pilot is one who is always learning....

John Morris

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**During this article I am referring to the CAWS amber annunciation "BATTERY" which is associated with MSN 321,401 and after aircraft. This annunciation is to indicate either the Battery is in an over volt condition or that the discharge rate is greater than 60 amps (with the associated volt/amp problem blinking at the overhead Battery Volt/Ammeter). MSN 101-400, except MSN 321, the Battery indications mentioned above will be shown on the EIS-BAT Indicator and EIS annunciators only.*

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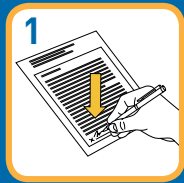
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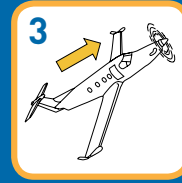
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SOP's: Checklists, Briefing Scripts, and Callouts for the PC-12

Fredric R. (Rick) Boswell, PhD
N875RJ / SN 646

Introduction:

Shortly after I purchased a PC-12 two years ago, I came across some data compiled by Robert E. Breiling Associates comparing accident rates in various segments of aviation. I was struck by the fact that certain segments of corporate aviation exhibit an accident rate significantly lower than scheduled airlines, and lower than general aviation overall by a factor of about one fiftieth (1/50). Such a huge difference in accident rates raises questions of why this is the case, and what other GA segments can do to approach these rates. Of course, there are many factors, including establishment of a safety culture, two person crews, rigorous and frequent recurrent training, and development and use of formal standard operating procedures (SOP's). Included in SOP's are flight operations manuals, checklists, departure and arrival briefings, and callouts. Since I elect to fly my PC-12 single pilot much of the time, I have chosen to focus on training and SOP's as a means to assure a risk profile closer to corporate aviation, rather than to GA overall. This article focuses on checklists, briefings, and callouts; flight operations manuals will be the topic of a future article.

I should emphasize that what is presented here is a work in progress, and is tailored to my personal preferences. As I have examined the literature in these areas and talked with corporate and airline pilots, it has become clear that there are many different approaches employed by various organizations, with no one of these standing out as being "best." As a result, I have adopted good ideas wherever I have found them. Also, because I am new to flying pressurized turbine aircraft, fly multiple aircraft types, and fly the PC-12 only about 150 hours per year, I have chosen to structure my SOP's to be more detailed than some might feel is necessary given their own flying experience. What follows are examples of the current state of development of the checklists, briefings, and callouts that I use. I hope that those who take the time to review these in detail may be able to suggest improvements, and that those not currently using formal SOP's may be motivated to develop their own.

Checklists:

Discussions of checklists often make reference to "flows" and "do" lists. At this stage of my experience with the PC-12, I have chosen a format which can be used as either a do list or a checklist (in order to be useful for both single pilot and 2-crew operations), and have attempted to optimize flows as a secondary consideration. In developing a Normal Operations Checklist for the PC-12, I have established a number of goals:

1. The resulting checklist should reflect the actual equipment configuration of my aircraft. Because PC-12's are typically equipped to owner preferences, the

checklists published by Pilatus, SimCom, and others rarely apply as written.

2. The checklist should reflect the way I actually operate the airplane, but should not conflict with safety related recommendations from Pilatus.
3. The checklist should be compact enough to be easy to use in the cockpit, but sufficiently detailed to meet my personal needs. I established a limit of the front and back of one 8.5" x 11" sheet as the maximum practical size, so that no page turning is necessary other than flipping the page over once.

See Figure 1 (*pages 32 and 33*) for an example of a Normal Operations Checklist for the PC-12/45 Series 10. This incorporates the best of Pilatus, SimCom, and Alpha Flying (a PC-12 fractional operator) checklists, together with my personal preferences and formatting ideas. These two pages are printed on glossy photo paper in a high resolution inkjet printer, and laminated back-to-back in a 10 mil thick clear plastic laminating pouch. This results in a highly readable, semi rigid card that stows easily in the side pocket.

Not shown due to space limitations is a Preflight Checklist. This incorporates a Cockpit Inspection section that is done prior to the first flight of the day, and establishes a known cockpit configuration prior to moving to the Normal Operations Checklist. This is helpful if the aircraft is operated by multiple pilots, or for restoring "normalcy" after maintenance.

I have chosen to use the Pilatus provided Quick Reference Handbook (QRH) as my emergency checklist. I find this well done and relatively easy to use given the complexity of the PC-12 systems.

Briefing Scripts:

See Figures 2 and 3 (*page 31*) for an example of Arrival and Departure briefing scripts. I use these both when flying single pilot and when flying with a second pilot. The underscore on the briefing side of these cards indicates where a pilot response (verbal if 2-crew, silent if single pilot) is required. The reverse side of this card contains takeoff and landing data (TOLD) as appropriate. These are 3" x 5" in size and are also laminated in plastic. The cards are stored in a pocket Velcro'd to the side of the center console, and are clipped under the approach chart clips on the yoke when needed.

Callouts:

See Figure 4 (*page 34*) for a list of appropriate callouts. This list is for reference and training purposes only, and the list itself is not used in flight. These callouts are memory items for both 2-crew and single pilot operation.

Conclusion:

As stated previously, these examples are a work in progress and I continue to incorporate new ideas and refinements as experience and need dictate.

(Continued on page 31)

(Continued from page 30)

I am happy to provide more information to those who may be interested. Contact me via email at rboswell@vesbridge.com.

During the initial development of the checklists, I asked a friend who is a retired NWA 747 Instructor/Captain and a highly experienced GA pilot to review my work and make recommendations. He was quite helpful, but he said, “I can fly a 747 from Minneapolis to Tokyo with a shorter checklist.” I replied, “But Captain, I don’t have 30,000 hours, and you don’t fly single pilot.”

Bibliography:

FAA AC 120-71 Standard Operating Procedures for Flight Deck Crewmembers

Flight Safety Foundation: Standard Operating Procedures Template rev 1.1

“Cockpit Checklists: Concepts, Design, and Use,” Deganni, A., and Weiner, E.; Human Factors, 35(2), pp. 345-59
“The Problem of Checklist Errors,” Patrick Veillette, PhD; Business & Commercial Aviation, August, 2007

FAA-H-8261-1A Instrument Procedures Handbook

“The Limits of Expertise: Rethinking Pilot Error and the Causes of Airline Accidents”; R. Key Desmukes, Benjamin A. Berman, Louis D. Loukopoulos; Ashgate Publishing, 2007

NOTE: The author makes no representations as to the appropriateness of these checklists, briefing scripts, and callouts for any pilot other than himself and any aircraft other than PC-12 sn 646. Do not use these materials without first assuring the appropriateness for your circumstances.

Fredric R. (Rick) Boswell has been flying since 1966 and holds a Commercial Pilot certificate with the following ratings: ASMEI, Instrument-Airplane, Douglas DC-3 Type Rating; Private Pilot privileges: glider, helicopter.

FIGURE 2

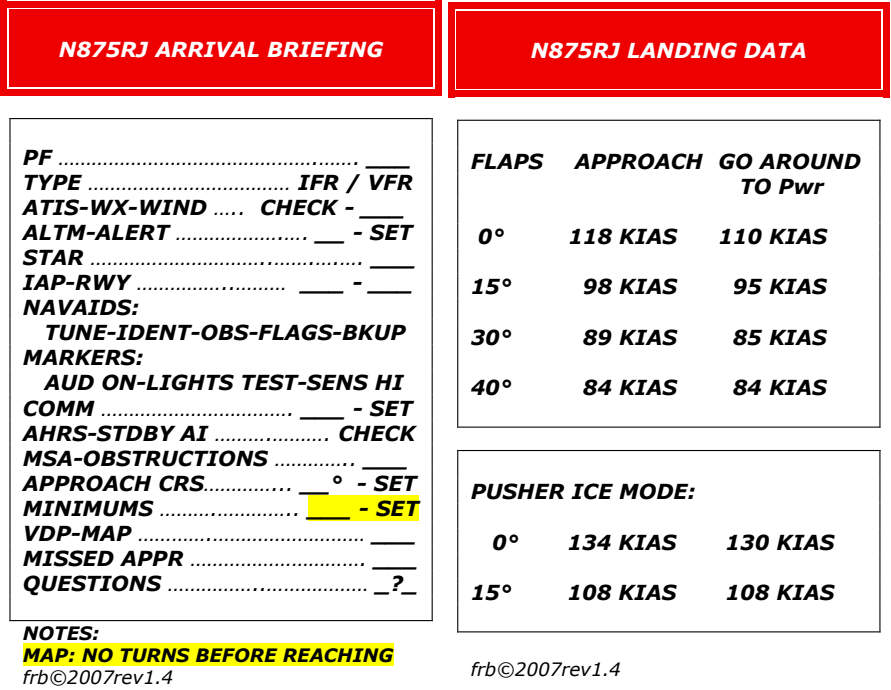
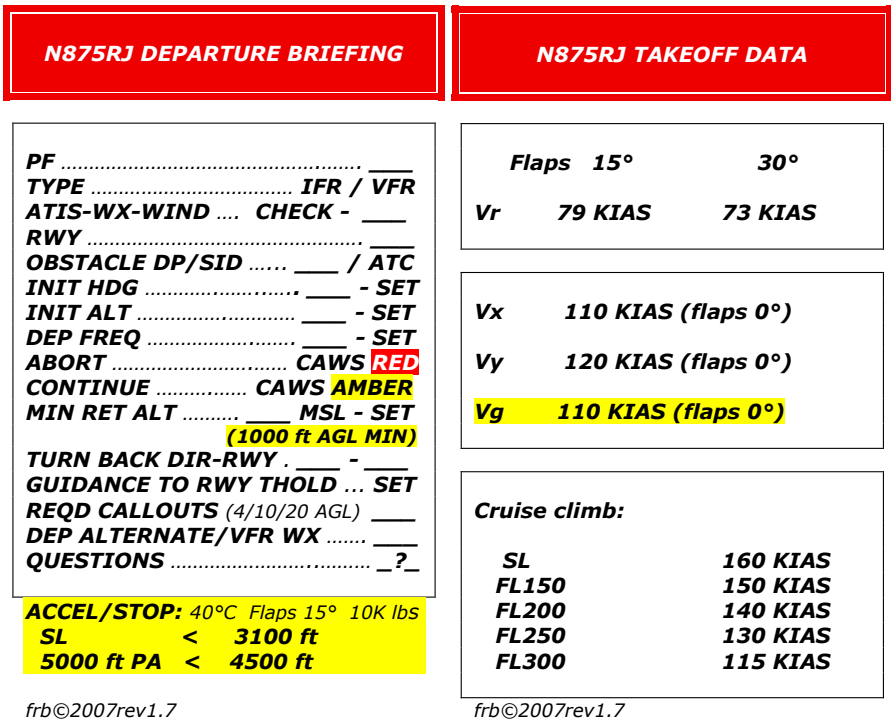


FIGURE 3



SOP's: Checklists, Briefing Scripts, and Callouts for the PC-12

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N875RJ NORMAL OPERATIONS CHECKLIST

PILATUS PC-12/45 S/N 646

<frb©2007rev2.4p1>

BEFORE START

Parking brake SET
Fuel caps ORIENTED - LATCHED
Chocks REMOVED
Control lock REMOVED - STOWED
Crew oxygen - masks ON - TESTED
DV window SECURED
Circuit breakers **lt - ovhd - rt** CHECKED
Flight controls CORRECT - FREE
EPS TEST (5 sec) - ARMED - ON
Cabin pressure - rate SET - SET
BATT 1 switch ON >24 VOLTS MIN
Inertial separator OPEN
Landing gear DOWN - 3 GREEN
Fuel quantity - bal ... RESET - ___ LBS - ___ BARS
EIS* TESTED
Fire warning*(CAWS: **ENG FIRE - FIRE DETECT**) TESTED
Lamps* TESTED
Master caution - warning RESET - RESET
EPS ARM light OFF
L-R fuel pump . ON-AUDIBLE- **L/R FUEL PUMP** -AUTO

BATTERY START

<EXTERNAL POWER START>

<External power unit CONNECTED - ON>
Voltmeter > 24 VOLTS MIN
ECS - cooling • heating OFF - OFF
Beacon ON
CAWS APPROPRIATE
Prop area CLEAR
MOR-PCL-Cond Lvr STOWED-IDLE-CUTOFF
Starter ENGAGED (2 SEC)
Oil pressure CHECKED
NG >13%
ITT <150°C
Condition lever GROUND IDLE - GUARD
ITT APPROPRIATE**
NG STABLE @ ~64%

IF COMBUSTION IS NOT INITIATED
WITHIN 10 SEC:

Condition lever CUTOFF•FEATHER
Starter RESET
WAIT 30 SEC THEN SEE DRY MOTORING RUN

Engine instruments CHECKED
GEN 1 **then** GEN 2 ON - VOLTS - AMPS
<External power switch OFF>
<External power unit DISCONNECTED>
AV 1 - AV 2 switches ON - ON
Cooling • heating ON - RECIRC
ECS AUTO - TEMP SET
VCCS - aux heat AS REQUIRED / OFF
Inverters SWITCHED
Prop heat - boots* TESTED - TESTED
Windshield heat* 4 TESTED
Probes* TESTED
Flaps SET 15° - INDICATING 15°
Standby bus switch OFF
Cabin inverter ON
Panel - reading lights AS REQD

BEFORE TAXI

Autopilot (SELF TEST - OVERRIDE - DISC) TESTED
Pusher (CAWS: **PUSHER ICE MODE - PUSHER**) TESTED
Overhead panel lights TESTED
AHRS 1 - AHRS 2 SELECTED - NO FLAGS
EFIS - RA TESTED
Pax oxygen ON - **PAS OX** - AUTO
CAWS APPROPRIATE
ATIS - clearance COPY
Flight instruments SET
EGPWS TESTED
Comm-nav-EFIS-MFD-xponders-stdby GPS SET
Seat belt-no smoking signs ON - ON
Fuel totalizer RESET - ___ LBS - ___ BARS***
Circuit breakers **lt - ovhd - rt** CHECKED
Time out RECORDED
External lights SET

TAXI

Brakes CHECKED
Flight instruments CHECKED

BEFORE TAKEOFF

Takeoff power setting 42.1 PSI / CALCULATED
Battery amps **BELOW 15**
Prop heat - boots OFF - OFF
Windshield heats - probes ON - ON - ON
CAWS - EIS BOTH APPROPRIATE
Cabin pressure - rate SET - SET
Trims 4 TESTED - SET GREEN
ECS AUTO / OFF
AP/FD (GA - HDG - ALT - VS) SET - ARMED
Pax briefing COMPLETED
Crew (departure) briefing COMPLETED

ECS TAKEOFF REFERENCE

Pres Alt	OAT	Pres Alt	OAT
Sea level	>+36°C	6,000 ft	>+10°C
1,000 ft	>+32°C	7,000 ft	>+ 3°C
2,000 ft	>+28°C	8,000 ft	>- 4°C
3,000 ft	>+24°C	9,000 ft	>-12°C
4,000 ft	>+20°C	10,000 ft	>-20°C
5,000 ft	>+15°C		

TAKEOFF

Flaps SET ___° - INDICATING ___°
Trims SET GREEN
Lights ALL ON
Yaw damper OFF
CAWS APPROPRIATE
Condition lever - brake . FLIGHT IDLE - FEET LOW

* designates tested first flight of day or at pilot's discretion

** MAXIMUM 1000°C limited 5 sec; 800-870°C limited 20 sec

*** MIN fuel for TO: 1000lbs; MIN fuel at alternate: 700lbs

SOP's: Checklists, Briefing Scripts, and Callouts for the PC-12

N875RJ NORMAL OPERATIONS CHECKLIST

PILATUS PC-12/45 S/N 646

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CLIMB

Landing gear **RETRACTED – NO LIGHTS**
Yaw damper **ON**
Landing - taxi lights **OFF - OFF**
Inertial separator **AS REQD**
Climb power **SET**
Engine instruments **CHECKED**
ECS **AUTO**
Cabin pressurization **CHECKED**
Oxygen **CHECKED**
Flaps ... **(above 100KIAS) Set 0° - INDICATING 0°**

FL 180 or Transition Level

Altimeters **SET 29.92 - INDICATING** ____
Cabin pressure **SET**
VCCS **OFF**
RECOG lights **OFF**

CRUISE

Cabin pressurization **CHECKED - SET**
Seatbelt – no smoking sign **OFF - OFF**
Cruise power **SET**
Engine instruments **CHECKED**
Fuel status **CHECKED**
Glide dist, time, airspeed **VERIFIED**

GLIDE DISTANCE, TIME & AIRSPEED

Altitude	Distance	Time	Weight	KIAS
FL290	78 nm	36 min	9920 lb	114
FL250	66 nm	31 min	9500 lb	112
FL180	49 nm	23 min	9000 lb	110
FL150	40 nm	19 min	8500 lb	107
FL100	26 nm	13 min	8000 lb	104
FL050	13 nm	6 min	7500 lb	101
			7000 lb	97

DESCENT

Cabin pressure - rate **SET - SET**

FL180 or Transition Level

Altimeters **SET** ____ - **INDICATING** ____
RECOG lights **ON**

APPROACH

Altimeters **SET** ____ - **INDICATING** ____
Seatbelt – no smoking signs **ON - ON**
Passenger briefing **COMPLETE**
Crew (arrival) briefing **COMPLETE**
Flaps **(below 163KIAS) SET 15° - INDICATING 15°**

BEFORE LANDING

Landing gear **(below 177KIAS) DOWN - 3 GREEN**
Yaw damper **OFF**
Landing - taxi lights **ON – ON**
Inertial separator **OPEN**
Flaps **(below 163KIAS) SET 15° - INDICATING 15°**
Cabin pressure **ZEROED**
Brake pedals **FEET LOW**

500 ABOVE / AIRPORT BOUNDARY

Landing gear **DOWN - 3 GREEN – NO RED**
Yaw damper **OFF**
Brake pedals **FEET LOW**

AFTER LANDING

Condition lever **GROUND IDLE**
Flaps **15° / UP**
Trims **RESET**
ECS – VCCS – aux heat AS REQD
Ice protection **5 OFF**
External lights **SET**
Radar **STDBY / OFF**

SHUTDOWN & SECURING

Parking brake **SET**
ECS – VCCS - cool • heat **OFF – RECIRC - OFF**
AV 2 – AV 1 switches **OFF - OFF**
GEN 2 **then** GEN 1 switches **OFF - OFF**
Condition lever **CUTOFF • FEATHER**
ITT **DECREASING**
External lights **OFF**
Internal lights **OFF**
CAWS **APPROPRIATE**
Inertial separator **CLOSED**
EPS OFF
Cabin inverter – stdby GPS **OFF - OFF**
Fuel remaining - Hobbs **RECORDED**
Battery **OFF**
Oxygen **OFF**
Control lock **INSTALLED**
Shades - chocks - plugs - covers **INSTALLED**
Parking brake **RELEASED**

KEY AIRSPEEDS

PC-12/45	APPROACH	CRUISE CLIMB
Vr 15° 79 KIAS	0° 118 KIAS	SL 160 KIAS
30° 73 KIAS	15° 98 KIAS	FL150 150 KIAS
Vg 114 KIAS	30° 89 KIAS	FL200 140 KIAS
Vo 158 KIAS	40° 84 KIAS	FL250 130 KIAS
Vx 110 KIAS		FL300 115 KIAS
Vy 120 KIAS		
	Pusher Ice Mode	Vfe 15°163 KIAS
	0° 134 KIAS	30°130 KIAS
	15° 108 KIAS	Vlo 177 KIAS
		Vle 236 KIAS

SOP's: Checklists, Briefing Scripts, and Callouts for the PC-12

FIGURE 4

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N875RJ NORMAL OPERATIONS CALLOUTS PILATUS PC-12/45 S/N 646

<frb©2007rev1.3p2>

DEPARTURE		
Callouts:	When:	Actions:
"Airspeed alive"	First positive motion of airspeed indicator	Crosscheck airspeed indicators
"Positive rate"	VSI shows positive ROC established	Gear up, YD on, taxi & landing lights off, inertial separator as required
"100 KTS"	ASI reads 100KTS and trending up	Flaps up
"400 AGL, no turn back until 1000 AGL"	Climbing through 400 ft AGL	Confirm: flaps up, gear up & no lights, YD on, taxi & landing lights off, inertial separator as required
"1000 AGL, above minimum turnback altitude, no manual override"	Climbing through 1000 ft AGL	AP on, climb power set, climb checklist
"2000 AGL, above minimum turnback altitude, try manual override"	Climbing through 2000 ft AGL	Confirm navigation per clearance
"Top of climb"	Leveling at cruise altitude	Cruise checklist

ARRIVAL		
Callouts:	When:	Actions:
"Top of descent"	Beginning initial descent from cruise	Descent – Approach checklists, approach briefing
"1000 above initial"	1000 ft above IAF altitude	None
"Localizer alive" / "Glideslope alive"	First positive motion of localizer / glideslope needle	None
"Final approach fix, gear down, timer is running, altitude is ____ ft, altimeters, instruments crosschecked"	At FAF	Select gear down, start timer, crosscheck instruments
"1000 to minimums" / "500 to minimums" / "100 to minimums"	At appropriate altitudes on approach	None
"Decision height" / "Runway in sight, transitioning to visual" or "Missed approach"	On reaching DH on precision approach	As appropriate for landing or missed approach
"MDA, ____ feet, missed approach point in ____ miles"	On reaching MDA on non precision approach	Level off at MDA, set power; Prior to reaching MAP & runway in sight: "Runway in sight, transitioning to visual" On reaching MAP, runway not in sight: "Missed approach"

ARRIVAL		
Callouts:	When:	Actions:
"500 AGL" and/or "Airport boundary"	After EGPWS "500" callout or at airport boundary	Confirm gear lights 3 green, no red, YD off

OTHER		
Callouts:	When:	Actions:
"Autopilot is flying"	On engaging autopilot	Confirm AP control and modes
"Pilot is flying"	On disengaging autopilot	Confirm AP disengaged
"Transition level"	Climbing or descending through transition level	Appropriate transition level checklist
"10,000 feet"	Climbing or descending through 10,000 feet MSL	Confirm appropriate speed



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Occasionally I fly to a non public airport to visit friends who live on private airports, am I covered?

In most cases I would say yes you are covered. Check your policy exclusions to make sure. Every PC-12 operator should note while filling out an application for insurance there is a question about unimproved airfields. If you routinely fly to an unimproved strip or private airport, answer yes and explain. The underwriters may want to know more about these operations and may apply a higher deductible. It is always best to divulge all activities you intend to conduct in your aircraft. Your aviation insurance specialist can guide you through the process.

My insurance cost has gone down over 40% in the last two years, how much of a reduction can I expect on my renewal?

You might look back a several similar rate question response I have made in the last 36 months, all predicting present market conditions. Pre and post 911 we saw quantum leaps in aviation insurance rates. Obviously losses as well as lost financial capacity kept rates marching upward through out the late 90's and into 2000, 911 and beyond. Another key factor in my personal opinion were scandalous unfair unethical business practices conducted by many alphabet houses namely AON, Marsh, and Willis all large agencies who have since settled with the NY Attorney Generals office on charges of price fixing and receiving contingency commissions to block and selectively place business with favored companies. These practices alone assured these firms of easy placements and large profits while bleeding policyholders. See my website www.lancetoland.com for news on these inappropriate business practices that were investigated, fined and settled out of court with millions of your premium dollars!!!

With a number of new players entering the aviation insurance arena existing underwriters will struggle to maintain market share. This additional capacity and competitiveness in the market has driven rates down which is good for all PC-12 operators, but cannot continue. Other factor such as a declining dollar against other foreign currencies allows foreign aviation reinsurers to absorb losses. As new markets begin to experience losses on books of business that were built on poor underwriting we will begin to see a definite shift to rate stabilization and more stringent underwriting. These soft rates should continue for the next 12 to 24 months, then we will see a gradual firmness build on insurance cost on both hull and liability. Hopefully rates will not rise as quickly as the have declined.

During an inspection several bullet holes were discovered in my PC-12 airframe, is this covered by my physical damage insurance?

Do not laugh; this has happened more than once. From a coverage standpoint there are definite issues here. If you are traveling in some not so friendly parts of the globe you might make sure you carry worldwide territorial limits to include war risk physical damage coverage. Bullet holes would most likely be treated as a war risk peril by your underwriter and adjusted accordingly. War Risk coverage is defined by over 21 perils to include civil commotion, riot, and insurrection. These same perils would apply to damage discovered while operating domestically and would probably be covered as a civil commotion, vandalism or malicious mischief claim, each embedded in a war risk endorsement. Think strongly about not purchasing war risk coverage as these small holes could cost you big time...



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Jet-A and Its Additives

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Jet-A is hardly given a second thought other than its cost at the time of purchase. Though it makes up about 70% of our aircraft operating cost, we only think about it as a flight item. But how it is acquired, processed, and distributed for our use, is to quote the History Channel, "A Modern Marvel".

Searching the Internet for Jet-A brings a whole list of authors writing about the PC-12's approved fuel, but two are very interesting. If you enjoy the technical side of any subject, visit Chevron's website on aviation fuels. A lengthy article written in late 2004, takes the reader down the How, Why, What, and When road and answers just about every question about the history of both avgas and turbines fuel since inception. Another good article is in the June 2006 issue of Business & Commercial Aviation titled Fuel System Basics.

Fuel refineries normally have to worry about four items in compounding raw petroleum oil into something we can burn in our engines. They are combustion quality, low temperature fluidity, volumetric, and gravimetric. Again, if you are technically inclined read Chevron's article on the production of aviation fuels to get the technical use of each of the above listed jet fuel properties. What I am interested as a fuel source user is the quality and uniformity of the jet fuel delivered into my fuel tanks.

What we as pilots are concerned with is that our fuel is stable, ignites well, and stores for extended periods with little or no ill effects. Water in jet fuel can appear in three different forms: dissolved in fuel, separate liquid free water, and fuel-water emulsion. Some dissolved water is present in all jet fuel and is not a problem as long as the aircraft is operated within its temperature limitations. Free water and water emulsion are potentially hazardous and must be avoided.

The amount of water jet fuel can dissolve is proportional to the compounds present in the fuel. A typical water-saturated kerosene-type fuel contains between 40 and 80 ppm dissolved water at 21 degrees Celsius. If the temperature of the fuel increases, it can dissolve more water. An interesting point on the Fuel-Oil Heater - on most PT-6 engines the temperature by-pass closes when the temperature rises above 21 C. Decreasing fuel temperatures increase the amount of free water in the fuel. Large aircraft normally solve this by putting in fuel tank heaters. Most light turbine aircraft use fuel system icing inhibitor (FSII) as an additive to prevent water from freezing. This additive is available commercially as Prist produced by Prist Aerospace out of Conroe, Texas. With the exception of Philjet produced by Conoco-Phillips, no FSII inhibitors are added to Jet-A fuel.

Jet-A is used mostly in the United States. The freezing point for Jet-A is a minus -40C whereas Jet-A1 international jet fuel freezes at minus -47C. The reason for the use of Jet-A in the US versus the international market is part financial and environmental. Refineries can produce a few percent more gallons of Jet-A than Jet-A1 because the higher freezing

point uses more distillates in Jet-A1. Aircraft flying longer international flights tend to see lower temperatures than US domestic aircraft. Jet-A used in the US is driven by price and availability. Fuel additives such as Prist are needed to provide additional icing protection in the aircraft's fuel system.

Prist complies with MIL-DTL-85470B specification that uses Diethylene Glycol Monomethyl Ether (DEGMME). Prist is mixed both in batch and individual cans of Hi-Flo/Lo-Flo Prist. Hi-Flo is compatible with tankers delivering fuel at 40 to 50 gallons per minute nozzle rate versus Lo-Flo at 15 to 30 gallons per minute nozzle rate used in helicopter refueling. Prior to 1994 ethylene glycol monomethyl ether (EGMME) was used both as an ice inhibitor and microbe retarded. With the changing of the EPA laws in the US, it became cost prohibitive to use this compound in a certified status, thus the change to DEGMME. Though DEGMME still provides some microbiostat properties, it does not meet the full requirements of a microbiocide. Other products such as Biobor JF are used in aircraft tanks to kill micro formations in the fuel tanks.

Aircraft that will be idle for long periods of time and based in warm tropical environments, need to have some form of microbiocide added. Typically piston powered aircraft are not effected by fungi in their tanks because of the toxicity of tetraethyl lead in its fuel. Some turbine pilots have used small quantities of Avgas in their turbine aircraft tanks to prohibit the growth of microbes. This practice is not approved by most aircraft manufactures and consultation with their respective engineering department is advised before this procedure is ever tried in a manufactured aircraft.

If a microbiocide is going to be used in a turbine powered aircraft exact compliance with its formula is highly recommended. Biobor JF recommends that its biocide be used with the following formula. For sterilization effect in a tank, 270 ppm should be used; to maintain fungus free fuel, 135 ppm should be used. A more practical and precise formula for Biobor would look like this: Initial Treatment 100 Gallons of fuel x 7.08 x .004 = 2.83 ounces of Biobor and follow-on treatment would be 100 Gallons of fuel x 7.08 x .002 = 1.41 ounces of Biobor.

The bottom line...Our fuel source has to be water and emulsion free in order to give us the burn qualities we are looking for when the outside air temp is pushing a minus -45 Celsius. Fuel the consistency of a slurpee does not keep the PT6 fires going for long. Prolong storage of your aircraft in a warm tropical setting is a prelude to a fungi attack in your tanks.

Flying your airplane often, and using a recommended microbiocide will keep your tanks clean and mission ready.

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A Journey Around the World
Gateway to One Man's Dream: Chapter Two
By Thierry Pouille

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In the last issue, I shared with you the initial preparation for our First Around The World Journey. A lot has happened over the past three months. First and foremost, we now have 10 airplanes confirmed to join us. We had a successful first meeting of all of the participants in Palm Beach to review many aspects of the Journey. Let me share with you what has happened, where we stand and the next step for the Journey.

First of all, on the participants list I am happy to report we have one PC-12 confirmed to join us along with TBMs, Commanders, Cessna Conquests and a Cessna Mustang.

Taj Mahal, Agra, India



Overflight and Landing Permissions

As expected, additional changes had to be orchestrated to make more sense to the Journey. The most important was the decision to have Japan removed from the itinerary. After checking out the stories being told, we found out that they happened not to be tales but reality. Learning of the \$7,000 landing fee in Fukuoka and the \$15,000 landing, handling and overflight fee in Sapporo caused us to reexamine our program. We decided that visiting the Empire of the Rising Sun was not worth that price. The removal of the destination provided us an opportunity for an additional stay in Vietnam and an additional stop in Russia at the port city of Vladivostok.

The second major change to the itinerary took place in the Middle East. In view of the situation with Iran and Pakistan, the overflight of Iranian territory and the stop in Karachi have been replaced with an additional stop in Muscat, Oman and a flight into the town Ahmadabad in India.

I am sure that additional changes will take place in the forthcoming months prior to the departure or even during the Journey due to political, health or natural causes. We are flying the Journey for fun and discovery. We will still qualify for an Around the World Journey since home to home our total distance flown will be in excess of 23,000 nautical miles.

Fuel Cost

We have now received confirmation of the availability of jet fuel at every stop (this is not the case with Avgas which is not available in Russia and parts of China). I am sorry to report that the average cost of fuel as of today, December 1, 2007, is \$3.18 and the most expensive place in the world is - guess where? - the US...

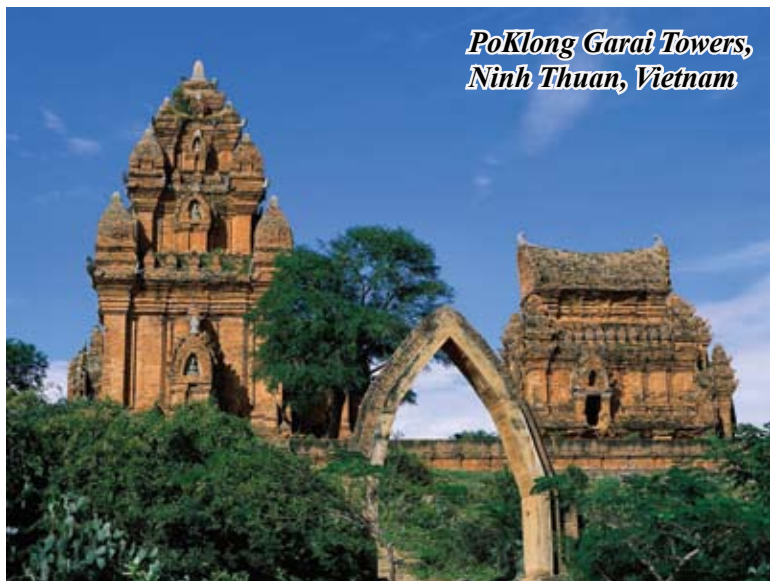
The Electronic Flight Bag (EFB)

The decision that the primary source of approach plates for members will be the electronic flight bag and the Jeppesen Jeppview program. On the hardware side, the computer modification of the Fujitsu made by ADR is very strongly supported but after having access to the new Tablet PC from Dell and the potential announcement of the Apple Macintosh Tablet PC, our final choice will be made at a later date.



Buddhist Temple, Hong Kong

*PoKlong Garai Towers,
Ninh Thuan, Vietnam*



Survival Equipment and Uniform

A uniform is required for all of the airplane's occupants in the Middle East countries. The selection of shirts, hat, epaulet, trousers, ties and shoes has been made and very soon we'll share with you exciting photos.

For the survival equipment, the selection has been made for survival suits from Stearns, survival packs from Aviation Survival Technologies (www.astoverwater.com) and rafts from Winslow.

Visas, Inoculations and Passports

We have been able to secure authorization from the State Department for each of the participants to receive a second passport - brand new and valid for two years. That passport will be used to secure the 10 visas required for the Journey. Amazingly enough there is no particular inoculation required for the Journey only the regular recommended ones such as a tetanus booster, hepatitis A booster and polio booster. Of course the role of Air Journey is to keep an eye of the evolution of the requirements and make sure to update the participants on a regular basis.

Training

A syllabus has been designed by Flight Safety for training on the approaches of the most challenging airports along the way as well as a presentation of the international phraseology.

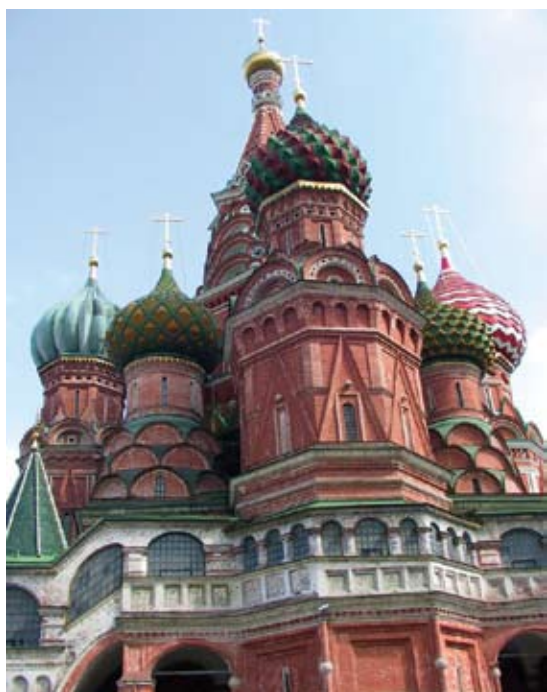
Century Club

A mention and a complimentary membership have been made to the participants to the Century Club. Membership to the Century Club is limited to those travelers that have visited more than 100 countries of the world. The idea has attracted the interest of the world traveler everywhere and they now have members throughout the world and, of course, in the US. If you want more details, you can log in on their website at www.travelerscenturyclub.org.

Is there still space available on the Journey? If you have a IPC-12, we'll make it happen.

Within the next three months a blog will be created for reporting along the Journey.

Feel free to call us or share with us your experiences and ideas. We can be reached at 561-841-1551 or by email at Thierry@AirJourney.com.



FALL 2007 QUESTIONS and ANSWERS!

Question #1

You have no left main gear light after selecting gear down. What are five things you can do to determine that the gear is down and locked?

Answer #1

Check the lamp test first (maybe bulbs are out) Try one of two gear warning test...Airspeed below 130 Kts. and power below about 10 P.S.I. (no warning horn... gear is down and locked) Select a flap setting beyond 15 degrees (no warning horn...gear is down and locked. Turn off Recognition lights, landing and taxi lights on... ask the tower if they can see your lights...if they do that gear is down and locked. Check for the absence of the red light. If the light is off, then the gears are in the same position as the selector handle.

Question #2

The autopilot is engaged but you have not selected any functions on the autopilot control panel. What attitude will the aircraft assume?

Answer #1

Without having made any Autopilot/flight director functions, pressing the AP button the aircraft will assume the position of the aircraft at the time you press the button. The Yaw Damper will also come on.

Question #3

Is it permitted to allow the autopilot to fly the missed approach from D.H. or M.D.A.?

Answer #3

The A/C limitations prohibit capture of an altitude below 1000', using altitude hold below 1000', unless we are captured to the glide slope on an ILS approach with a GS angle of no more than 6 degrees. Pressing the GA button does not disconnect the Autopilot, so we should disconnect the autopilot and hand fly to 1000'.

Question #4

Is it possible to release just the shoulder straps of the crew seat belts?

Answer #4

Yes there is. On the release knob just between the two shoulder straps there is a small metal tap. If you press this tab it will release just the shoulder straps.

WINTER 2007 QUESTIONS!

Question #1

Following the POH procedure for manual gear extension, what is the least number of pumps on the manual extension lever that can be expected to achieve a safe landing gear indication (down and locked)?

Question #2

#2 For the series "10" operators! With ALL switches off, with the exception of the battery or batteries, there is one light that will not illuminate with the lamp test. Which one is it?

Question #3

Another for the series "10" folks. In the very unlikely event of a battery bus failure, is there anyway to provide power to the overhead panel? (It is primary powered by the battery bus).

Question #4

How many patches are allowed on the surface de-ice boot?

CORRECTION!!

Please note below the corrections in response to the SUMMER 2007 Issue. The questions and their correct answers are below. Please contact Ted Otto direct should you need further clarification. Thank you.

Question #1

The amber FUEL PRESS light on the CAWS panel comes on at what pressure? Where is this measured, and what should happen automatically?

Correct(ed) Answer #1

The amber FUEL PRESS light comes on at 2PSI. In addition to that, the fuel pumps will automatically come one until the fuel pressure reaches 10PSI for 10 seconds.

Question #4

What items are powered by the battery direct bus?

Correct(ed) Answer #4

Cargo Door, 50% Cockpit Light, Clock and for the Series 10, the Overhead Panel is also powered off the hot battery bus.



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Buzz Celebrates 25 Years at ASI

George “Buzz” Rabatin celebrated his 25th Anniversary with Aviation Sales, Inc., (ASI) earlier this year.

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If we could travel back in time to an early morning in May 1962, we would find Buzz on his 16th birthday at a grass strip that would later become Jabara Airpark, outside Wichita, KS. The winds were gusting to 42 mph and Buzz had to be at school by 8:30. He was determined to solo but could only do so if the local aircraft dealer, Ken-Mar Aviation, would let him fly the brand new Cherokee that had just arrived. Thankfully, for Buzz, his Dad worked at Ken-Mar and he was able to take his first step towards a long and illustrious career in aviation without too much pleading.

It wasn't always easy for Buzz, though. Although he had the opportunity to fly a great deal growing up, he had little money to spend on lessons. Buzz washed airplanes and did odd jobs around the airport to earn money for college and flight lessons. After a year at the University of Colorado, Buzz went to work for his Dad, who by then had started Pan-Ark Aviation, an FBO, in Pueblo. In Pueblo, Buzz was finally able to earn his Private Pilot's License. In turn, over the next 10 years, Buzz earned his Airframe License; married his wife, Marge; ran an FBO in Alamosa, CO; became a CFI; earned his Commercial Pilot License, Multi Engine Rating, Powerplant License and Inspection Authorization (IA). In the late 1970s, Buzz purchased Pan-Ark Aviation and grew the business to 13 employees before selling it to Flower Aviation.

In 1982, Dave Domenico asked Buzz to join Atlas (the forerunner of Aviation Sales) as the Director of Operations and General Manager of their FBO at Stapleton Airport. In 1985, Buzz was named the Regional Aircraft Sales Manager for the Southern Region. Over the following years, Aviation Sales moved their sales offices to Centennial Airport and concentrated their efforts on selling new and used aircraft. Buzz enjoyed the success of the years that followed until the industry entered a nose dive in 1990. “It took some additional hard work for us to stay afloat,” comments Buzz. Luckily, ASI was already looking for other products to represent.

In March 1994, Dave and Lou Domenico and Buzz flew to Stans, Switzerland to meet with representatives of Pilatus. Although Dave, Lou and Buzz were impressed with the specifications of the aircraft that Pilatus was planning to certify, they wanted to learn more about the company and its philosophy on aircraft support after delivery. After a week

spent meeting with a variety of personnel in just about every department at Pilatus and flying P02, they knew that Pilatus understood the importance of product support. ASI eagerly signed on as the first Pilatus Sales & Service Center in the US.

With five airplanes to sell, Buzz spent many weeks in California, Texas, Arizona, New Mexico, and Nevada demonstrating the airplane and answering questions. Interest in the airplane took off immediately in ASI's territory. “Pilatus was pleased that there was a market in the U.S. for their new \$2.3 million dollar turboprop that could be owner-flown,” remarks Buzz.

As word spread of the “Swiss-turboprop-that-could,” the group of owners grew quickly to include a wonderful variety of individuals involved in a variety of businesses. Buzz fondly recalls selling Cary Marmis his first aircraft (S/N 111) and then attending

the first POPA meeting about two years later at Cary's home in Tucson, AZ, in 1997. “It was quite remarkable to see more than a dozen PC-12s on the tarmac at the gathering,” recalls Buzz.

In 2005, ASI named Buzz Vice President of Sales in appreciation for his hard work and success. ASI has delivered more than 150 new and used versions of the turboprop since 1994, contributing to a number of program milestones. Buzz was there to deliver the 400th PC-12 in July 2003, the 500th PC-12 in December 2004, the 600th PC-12 in April 2006, and ASI's 100th new PC-12 in June 2007. He also returned to Stans in 2004 to celebrate the 10th Anniversary of the aircraft's certification.

Buzz says he is ready for the next chapter of his life. That time will be spent selling even more airplanes and with his family traveling, boating and enjoying the Rocky Mountains.

Congratulations Buzz on an exciting and successful 25 years!



Press Releases

FOR IMMEDIATE RELEASE

SEPTEMBER 25, 2007

KANSAS CITY AVIATION CENTER ANNOUNCES PLACEMENT OF FIRST ORDER OF UNIVERSAL AVIONICS' WAAS-FMS SYSTEMS FOR IMMEDIATE INSTALLATION

OLATHE, KS (September 25, 2007) — Kansas City Aviation Center (KCAC) has expanded its relationship with Universal Avionics by placing a significant launch order for Universal's certified WAAS "W" FMS series for immediate installation into general aviation aircraft. The Universal WAAS-FMS system is the first system of its kind that can be installed in Part 23 & 25 aircraft. KCAC is currently taking deposits and scheduling the installation.

The WAAS-FMS allows pilots to shoot approaches down to 200ft, which is the most accurate approach available. "The Universal WAAS System is going to revolutionize both private and commercial aviation," stated William Benton, KCAC Program Certification Manager. "This WAAS system will allow pilots an added safety factor that is currently lacking on aircraft providing an extra level of comfort due to its accuracy."

"KCAC has forged a strong relationship with Universal that has allowed a level of communication and coordination that is unparalleled in the aviation industry," said Angelo Fiataruolo, General Manager of KCAC. "The teamwork that we have developed allows us to work closely with our customers as well as interact with Universal to provide the most sophisticated avionics packages on the market."

KCAC continues to be a leader in the aviation industry for the installation of the Universal Avionics' three- and two-screen Synthetic Vision System (SVS), which leads the industry in accuracy and reliability for the detection of terrain. Installations of SVS have been underway at KCAC for over a year. As with WAAS, KCAC was the first Avionics facility to step up to support the installation of the Universal SVS system. In 2006, Universal selected KCAC as their "Dealer of the Year."

FOR IMMEDIATE RELEASE

DECEMBER 4, 2007

WESTERN RECEIVES SECOND SHARP AWARD

Boise, Idaho -Western Aircraft, Inc. – For the second year in a row, Western Aircraft's facility in Boise has been recognized by the Occupational Safety and Health Administration (OSHA) and was awarded the Safety and Health Achievement Recognition Program (SHARP) for its stellar safety and training program. Through the SHARP program, OSHA recognizes smaller employers who operate exemplary safety and health management systems. It is one of the highest awards OSHA can give to a small company. Only eight companies in Idaho have earned this merit. This award allows Western Aircraft to forego the regularly scheduled inspections that OSHA performs.

In addition to its exemplary safety and health management system, Western Aircraft has an injury and illness case rate that is well below the industry average. Terry Hess, the Director of Safety and Training, meets with OSHA consultants on a monthly basis to ensure that Western Aircraft complies with pertinent standards, and searches for ways to improve existing programs.

SHARP is designed to provide incentives and support to employers who implement and continuously improve effective safety and health management systems at their work sites. Hess sees this as an important element that also provides something more to Western Aircraft's customers; "Western Aircraft believes that putting a top priority on safety for our employees also leads to customer benefits because customers see we are highly trained and treat their aircraft with the utmost care and professionalism."





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PC-12 NEXT GENERATION



The PC-12 features state-of-the-art Honeywell Primus Apex avionics. Four large displays, including two PFDs and two MFDs, provide an unprecedented amount of viewing area and integrate flight information, engine monitoring, aircraft configuration, pressurization, and environmental controls. Flight and weather data, charts, aircraft system information, and trip planning functions are all within easy reach, while a new cockpit environment designed by BMW Group Designworks USA sets a new standard for ergonomics and aesthetics.

Photo By Venzin & Buhler

News, Announcements, Notes...

Welcome New Members

S/N #201 N456V	Jeffrey Walborn Idaho Falls, ID
S/N #448 N712BC	Clarence Beverly Teterboro, NJ
S/N #614 N614LD	John Martin Southport, NC
S/N #735 N735MD	Walter Bryant Keller, TX
S/N #807 N807D	Wayne Ducote New Orleans, LA
S/N #810 N185TM	Thomas Haffa Munich, Germany
S/N #819 N434JA	Tom Carver Charlottesville, VA
S/N #822 N822BM	Bryan Merrill Ocala, FL
S/N #824 N824SM	Sandy McBride Ocala, FL
S/N #826 N828VV	Steve Zeff Ken Alldrin Modesto, CA
S/N #828 N144MF	Mike Fox Ketchum, ID
S/N #834 N695QE	Glenn Evans John Quinn Lathrop, CA
S/N #836 N996KF	Brian Hahn New Richmond, WI



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Newsletter Submissions

Members are invited to submit articles for publication in the POPA newsletter. We reserve the right to edit, correct or delete information to fit the newsletter format.

<u>Issue</u>	<u>Period</u>	<u>Deadline</u>
Spring	Jan-Mar	Mar. 1
Summer	Apr-Jun	Jun. 1
Fall	Jul-Sept	Sept. 1
Winter	Oct-Dec	Dec. 1

AUTHORS NEEDED!

Looking for regular, quarterly contributors to the POPA Newsletter. In return, you will receive free membership in POPA. If interested, please contact Laura at the POPA Home Office.



Photo By Venzin & Buhler

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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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