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VOLUME 20 NUMBER 2

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Aircraft Count

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OWNERS

Aircraft Count

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1550	BARON 58
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1	CESSNA T206
2714	CIRRUS SR22
240	PIPER MALIBU
387	PIPER MALIBU MIRAGE

37,744 TOTAL AIRCRAFT

TWIN&TURBINE

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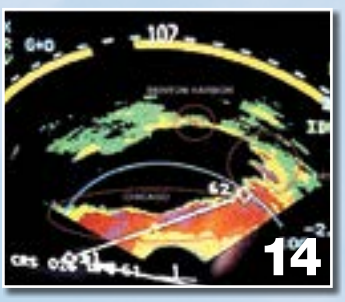
FEATURES



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Incomplete Information

The morning sky was clear, I was enjoying a 50-knot tailwind, and I would soon be landing to pick up the passenger for the return trip. We would be back home for lunch. On such days, it was great to enjoy the freedom and flexibility of general aviation transportation.

The only annoyance was strong westerly surface winds; in accordance with the forecast, the ASOS report was 260 degrees at 19, gusting to 27. Oh well, I knew the airport had a runway 27 that would serve to ameliorate those conditions. I passed the descent-profile target at 20 miles and called the VFR-only tower. "Report downwind for 31," I was told.

I fortunately restrained myself from requesting 27; I can handle it, says I, it's not quite directly across 31, and the tower probably has a reason for assigning us the diagonal. After all, the Citation that passed me on a visual base made it in. I hustled into the downwind to keep spacing for a Twin Cessna reporting 12 miles out.

The battle was joined, and with artful concentration I planted the upwind gear and rolled out through the intersection, where the reason for the tower's instructions became all too clear. Barricades and flashers blocked not just runway 27 but the taxiway as well. Who knew a major construction rebuild was in process?

"Who knew" should have been me. When I got the pickup call, I had a frenzied 45 minutes to plan the trip and get off. I self-briefed the weather, filed and fled, assured that conditions over the route were severe-clear. NOTAMs and fuel didn't overly concern me; in any event, good alternate fields were 30 miles away, and I knew the area like the proverbial back of my hand.

In this age of on-line flight planning, having the luxury of briefers to assist in the required preflight preparation is almost past history. It's up to us to discipline ourselves to dig through the digital pages, until we're fully covered against surprises like my sloppy planning handed me. It's not just the pop-up TFRs and runway closures that can endanger our flight. Fuel can be unavailable and parking can be saturated; I've experienced both in the past month. Smart operators will call the destination FBO after completing the initial filing, just to double-check facilities.

You and I know our responsibilities. But everyone gets in a hurry at times, assuming too much. Just because we're accustomed to having the welcome lights on to greet our arrival doesn't mean we can get careless. NOTAM acquisition isn't always easy, but the information is out there, and we have a duty to check all pertinent data. If the wind had been a little stronger, my passenger would not have been pleased to have had to shuttle to the alternate.

Make sure you have ALL the information before you launch.

LeRoy Cook

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Grumman Turboprop Twin

by **LeRoy Cook**

Dr. Joe Masessa, like the majority of us, had boyhood dreams of being a pilot, and an astronaut as well, since he grew up in the 1970s during the Lunar landings. He hung around a lot of airshows, soaking up their ambience, and after he went into the medical field and established his dermatology surgery practice he acted on his yearnings, gaining his private license in 1969. He rented various airplanes, attained advanced ratings, and eventually gravitated into aircraft ownership by acquiring a Piper Cheyenne II turboprop, which served his business travel needs for 12 years.

Mohawk

A Citation Pilot's Weekend Warbird

"My practice expanded into multiple locations, starting in New Jersey and growing to include clinics in Myrtle Beach, South Carolina and West Palm Beach, Florida," said Masessa. "I was putting 500 hours per year on the Cheyenne, commuting among these sites. Clearly, I needed a faster plane. With a fuel stop, the Florida trip required six hours."

In August of 2013, he purchased a Citation 501SP with the Eagle II extended-wing mod and Williams fanjet engines, a perfect solution to his problem. With an easy 1,500 miles of range, he can do his trips in half the time; he flew the Citation 750 hours during the first two years it was in service.

Masessa was well-prepared for the move into jets. He had already acquired a CE500 rating at SimCom in Orlando in 2007, because he knew the Cheyenne wouldn't always be enough airplane. After 50 hours of mentoring, he was ready for the single-pilot jet. Most of his flying is done at FL390 to FL430; maximum speed comes at FL340.

Preserving History

Our present story, however, concerns Masessa's weekend airshow activities with his Grumman OV-1D Mohawk, a twin-turboprop warbird. Some time back, he was at an airshow at Teterboro, New Jersey and chanced upon a Grumman Mohawk. "What is THAT?" is a typical response to the airplane's aggressive look, massive turbine

engines and bulging cockpit. Masessa was quite taken with the plane, and began looking for one of his own. It wasn't an easy search; most Mohawks were retired to the boneyard years ago.

His prospecting finally hit paydirt in Ogden, Utah, where an OV-1D had been parked outside for perhaps five years. He was too busy to go out west, but eventually the price and his desire met and he became a derelict Mohawk's owner. Now to get it flying. He got in touch with Doug Jeans at the Cavanaugh Flight Museum in Addison, Texas, and Jeans and a mechanic made the airplane ferryable so it could be taken to Lantana, Florida for refurbishing.

His OV-1D turned out to be the lowest-time Mohawk flying, with only about 2,500 hours in the very complete logs. It was overhauled and converted from OV-1C to –1D status in 1982 and had only flown 100 hours afterward. It was equipped with dual controls and used primarily for training. Masessa acquired his type-rating for the airplane in 2008 and, after flying it to shows for static exhibition, he decided to obtain aerobatic certification so its capabilities could be appreciated by the crowd.

"It burns about 150 gph of Jet-A, flying at 19,000 to 22,000 feet. With 600 gallons of fuel, we're good for around 600 nautical miles, landing every 2.5 hours on long trips to take a break. It's a very rugged, dependable airplane, although I once broke a hydraulic hose and lost that system on a long flight. There are no power-boosted

controls, and the gear extends even without hydraulic pressure, so the airplane just keeps going." He flies at a light takeoff weight of around 15,000 pounds, much less than the 18,000 pounds used in service. There is an autofeather system in case of an engine loss, but it's still hard to fly on one, he reports.

Masessa gives a lot of credit to the retired Army mentors who've helped him learn to fly the OV-1D, especially his checkout pilot Denny Hegland, and to Ed Finnegan, for his expertise at flying the Mohawk on its annual pilgrimage to Oshkosh for AirVenture. Keeping the aircraft in the air is a labor of love involving a lot of individuals.

Masessa's primary mission is honor the veterans who flew the Mohawk, and those who served in all our country's conflicts. His public-relations person, Julie Neal of Aviation Marketing Consultants in Tennessee, researched the Missing In Action records from Southeast Asia and found there were 1,636 names still unaccounted for; the Mohawk was stenciled with each of the MIAs and, as their remains are brought home for honored burial, a ceremony is held and an American flag is added beside their inscription.

We spoke with many who flew the OV-1 and in doing so gained considerable respect for what it achieved in service. Dr. Masessa is to be congratulated for dedicating his work to remembering what the aircraft and its crews did. To learn more, and support the effort, visit *www.OV1MohawkAssociation.org* and *www.MohawkAirshows.com*. T&T

OV-1D To Headline DeFuniak Springs, FL Airshow

The sixth annual Marvel of Flight show will be held April 21-23 at DeFuniak Springs Municipal airport (54J) in northwest Florida, featuring a "Tribute To Vietnam Era Aviation" theme. Among the many attractions planned will be Dr. Joe Masessa's OV-1D Mohawk "Flying POW/MIA Monument" and two legacy Vietnam helicopters, a UH-1 Huey and an AH-1 HueyCobra. The Vietnam Veterans Association's 80% scale "traveling wall" replica of the Vietnam Memorial in Washington will be erected at the show on April 21st.

The helicopters will available for supporting rides, and will be performing a "Rescue At Dawn" scenario from the Vietnam conflict. In addition to the OV-1D demonstration, other activities planned are display aircraft judging, vintage vehicles and pilot safety seminars. For additional information, visit www.marvelofflight.com

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Mohawk Memories

by LeRoy Cook

In the mid-1950s, the U.S. Army contracted with Grumman Aircraft to develop a light turboprop observation and support airplane, one capable of operating out of rough forward airstrips yet fast and agile enough to evade the enemy's countermeasures. The outcome was called the OV-1A Mohawk, in keeping with the Army's use of native names for its aircraft. The Mohawk's first flight was on April 14, 1959, entering service in early 1961; production ended in December of 1970, after about 375 were built. It continued in service as late as 1992. Originally the AO-1, for its planned dual attack and observation role, it became the OV-1 after the Air Force took over what it considered to be its missions of fixed-wing ground attack support and transport.

The Mohawk served in Southeast Asia, Europe, Korea and the Middle East, living with the troops and bringing back vital intelligence for battlefield commanders. In talking with veterans who flew the Mohawks, we gained a lot of respect for the little turbine twin. Citation jet owner Joe Masessa, a Florida-based dermatologist, flies a restored OV-1D in airshows and kindly shared his experiences.

The Mohawk was initially designed with a T-tail empennage, using 960 or 1,005-hp Lycoming T-53-L-3 free-turbine powerplants. Early redesign brought a change to a three-rudder tail in the 1959 YO-1A service-test version. The aircraft's 42-foot wingspan, leading-edge slats (in A models) and large flaps enabled a 59-knot stalling speed. The crew was housed in a side-by-side cockpit, normally with a technical operator sitting beside the pilot to run the onboard equipment.

Originally, the A-model had panoramic film cameras, plus capability for carrying underwing armament consisting of rocket and machine gun pods, or even 5-inch Zuni rockets, at considerable annoyance to the Air Force; in 1965, the Pentagon directed that the U.S. Army would not operate armed fixed-wing aircraft.

The unarmed OV-1B had SLAR (side-looking airborne radar) in a long pod under the right side of the fuselage, and the wingspan was lengthened to 48 feet, without slats or dive brakes. The OV-1C had infrared sensing and two cameras, a 70mm-format fixed nose camera and a 180-degree panning camera located aft. The final version, the OV-1D, was convertible from SLAR to camera configurations. SLAR missions were commonly flown at 7,000 feet AGL, while the infrared cameras were utilized at 1,500 feet or so. In its final form, the OV-1's engines were upgraded to 1,450-hp T-53-701 versions. Initially, maximum weight was 15,031 pounds, increasing to 18,109 pounds in the OV-1D. Fuel was carried in a 297-gallon centerline tank in the fuselage; added tanks of 150 gallon capacity could be mounted under the wings.

Veteran's Recollections

According to retired Major George Davis, who flew a tour in Vietnam in 1972, then spent three years at Ft. Hood, Texas before assignment to Korea to command a Mohawk company near the DMZ, the OV-1 was great airplane, once it had achieved 120 knots after takeoff, where single-engine flight was survivable. The ejection seats were not quite capable of ground-level/zero-speed extraction. Normal cruise was 240 knots, and Vne in

a dive was a blistering 385 knots; in the models equipped with dive brakes, the Mohawk could stabilize at Vne and evade hostile action by heading for the deck.

Davis' runway in Vietnam was 3,500 feet long. However, Wayne Klotz, a technical operator based at Phu Heip AAF on the coast at Tuy Hoa, said his unit often operated out of a 2,000 x 80-foot strip, where takeoffs were quite marginal. For proficiency, Klotz's pilots would perform five continuous barrel rolls and attempt to recover at the entry altitude. Such maneuvering was only done if the Mohawk was dry of photo-developing chemicals; radar and IR pictures were recorded on a filmstrip and the film was automatically developed in-flight on the recon missions, ready for study as soon as the plane landed.

Max Corrineau flew Mohawks in the 1980s, initially in Germany during the cold-war era, involving 99% SLAR missions. He then flew the aircraft in Desert Storm, the 1991 Gulf War that drove Saddim Hussein's forces from Kuwait back to Baghdad along the "highway of death." Afterward, he flew out of Camp Humphreys in Korea, monitoring movements along the DMZ. In Corrineau's experience, the Army's Mohawk units coordinated very well with Joint Air Operations, integrating their intelligence with the AWACS aircraft overhead. LTC Corrineau retired in 2009 after 24 years of service.

Captain Brenda Curkendall and her husband both flew OV-1Ds in the 1970's at Fort Hood, Texas, where they were attached to the Army's military intelligence units. Her aircraft was equipped with dive brakes, and the escape and evasion technique they were taught was to go on the deck at 200 knots, because the sound of the aircraft was behind it, evading small-arms fire. In her experience, the SLAR information was downloaded to the ground via datalink, as real-time actionable intelligence. The –D model was reconfigurable, so the ground crew could swap out components in short order. For night photography, a massive photoflash pod could be attached to light up the area, far superior to the flares used in Vietnam. For IP checks, some of the Mohawks had dual controls, but Curkendall enjoyed the single-pilot aspects of flying the little "Grumman Iron Works" airplane. Later in her career, she flew U-21 intelligence-gathering King Airs in Korea.

All of the vets we spoke with loved the OV-1, stressing its ability to deliver information gleaned up to 100 kilometers away from its flight path. It could change speed, altitude and attitude simultaneously to get out of harm's way, capability that Dr. Masessa employs to great advantage in his low-level airshow demonstrations. T&T

Airborne Radar for Navigation?

By Archie Trammel

Strange that airborne radar is so seldom used nowadays for its original purpose. Bob Buck, author of the perennially-popular book "Weather Flying" and one of the greatest aviators of all time, once told me how in olden days he used airborne radar to navigate from Rome down across the Adriatic Sea to Athens. Due to political activities in that part of the world back then, VORs were often out of service and NDBs were frequently not where their identifier indicated they should be.

Another time, after I'd conducted a radar training course for British West Indies Airlines down in Trinidad, my seatmate on the flight back to Miami was a deadheading Senior Captain. He congratulated me for having spent so much time in my course discussing use of airborne radar for navigation. He confided he still island-hopped with radar on his flights from Trinidad up to the States and back. He explained that, in the early days of his aviation career, ground-based nav facilities in South America were scarce and often inop, due to one revolution or another. He was forced to radar navigate just about everywhere he flew. It was a habit he still preferred in flying a Lockheed L1011.

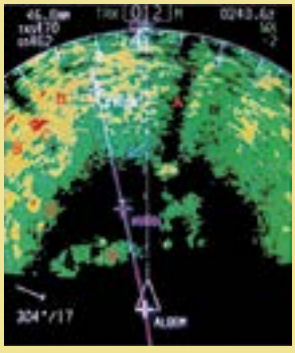
Just why the use of airborne radar for navigation fell out of favor is something of a mystery and has resulted in GA, in particular, being in a very vulnerable situation. Interestingly, the original purpose of airborne radar was for navigation, not weather.

Airborne radar was created 75 years ago by the British. In those days, weather on radar was a hindrance to finding one's way from Britain over to the Ruhr Valley in Germany for the purpose of dropping high explosives on it. But, following the war, radar navigating was never picked up in the civilian sector. We came out of the war with LORAN A, which eventually morphed over to LORAN C, then Doppler and Omega and finally GPS. Who needed radar mapping?

We Need A Backup

We in GA have settled on a dual GPS/VOR system, which is most unprofessional. Safety is always in triplets; two working, a third to keep those two honest. Most airlines provide the third, the backup, with some form of electronics. GA, for the most part, has no backup, in spite of the fact that GPS is extremely vulnerable to hacking.

Terrain mapping is a simple answer to the pressing need for a third system. Fortunately, George Lucchi of RCA at Van Nuys and George Church of Bendix at Teterboro, assisted by Skip Stevens, recognized that airborne radar can and should be used for ground mapping as well as weather avoidance. They saw to it that, from the beginning, "weather radars" had a MAP mode. In some cases, systems are optimized for enhanced ground mapping capability when MAP is selected. How? By providing a means for selecting a very short pulse.



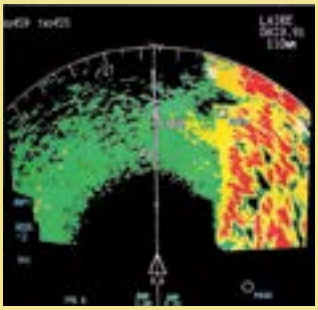
Reading a radar map becomes simple with practice.

A. Classic radar shadow. The echo that casts it has emerged from the terrain paint to positively Identify it as a tall object (you're looking down on it at a rather steep angle, remember.) Since the shadow extends to the far edge of the display, the storm is talle

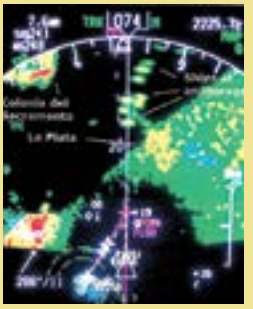
B. Three towns or perhaps weak areas of rain, as evidenced by the lack of a shadow behind them.

C. This echo is casting a shadow to the edge of the display, so it's taller than you. Also it's shape indicates it could be something other than a common thunderstorm. Best to widely circumnavigate downwind, which is to the east

D. Since these echoes are inside the 30 nm range and you are above FL290 they may be the tops of growing storms with that nasty bubble of CAT just above them. Wise to circumnavigate.



Flying west-northwest along the coast of Alaska. Evidently there's a strong west wind at the surface. Strong returns like this from water normally comes from the face of waves. Those black areas in the terrain to the right are valleys behind mountain peaks. As seen in WX mode, Collins WXR 700.



La Plata River mouth, Argentina. Collins WXR 700, MAP mode. This with a 1970's designed radar. The WXR 700 is one of the least capable ground mapping radars you may encounter. However, as you see here, it's adequate.

Radar detects things by broadcasting pulses of microwave energy and listening for the "echo" from them. Engineers speak of those pulses in terms of "pulse widths" because of how they are displayed on his or her test equipment. Pilots, however, must think of pulse dimension in feet, because feet is how things are seen on a radar display. A pulse of one microsecond is 984 feet in length. The significance is that, because the pulse must travel out and back to measure distance, objects become "range smeared" on your radar by the pulse to half again its actual length. That is, an object that's actually 984 feet front to back will be displayed on your radar as being 1,476 feet front to back when detected by a one-microsecond pulse.

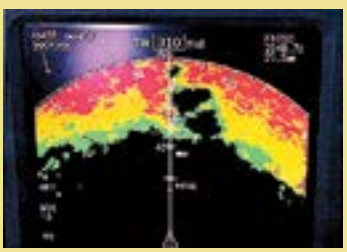
Now consider, to achieve good range performance and weather penetration capability, radar engineers commonly string pulses together in groups. For instance, a string of four pulses is common. The result is a combined pulse length of 3,936 feet. Adding the smear, it becomes 5,904 feet. As a result, objects detected by that radar, say a thin flag pole, appear almost a mile in depth on your radar. Not good for mapping. A small river 3/4 miles wide will be smeared over totally. A single building will smear out to appear like a huge apartment complex.

To overcome that, on some radars, when MAP is selected on a short displayed range, the engineer causes the "pulse length" to drop back to only one microsecond or less. Detail is considerably enhanced. That's why the all-time-great radar, in my thinking, is the Honeywell Primus 700/701. With it, in MAP mode, you can call up a pulse of only 0.1 microsecond – resulting in a range smear of only 150 feet! You can almost count fence posts with it.

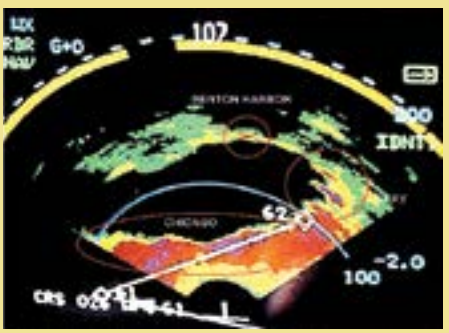
With certain other radars, in order to get them to work at all, particularly at long range, the design engineer had to increase the pulse group to 6, 10, in one case 28! Think of what that does to range smearing. With a 28-microsecond string, the echoes from our thin little flag pole now becomes 41,000 feet front to back! A single house on that radar smears out to a huge blob, making it impossible to distinguish weather echoes from terrain objects when a long display range is selected.

For best ground mapping, the shorter the pulse the better. Before buying a new radar you should find out about the "pulse widths" it broadcasts. (Recently engineers have switched to "pulse compression" techniques, which improve terrain detail greatly; Garmin's GWX 70 has it.)

Florida Coast from over the Glades. Any problem Navigating from here to Fort Lauderdale Executive, Key West, Bimini? Taken with a 1970's era, low end, Bendix, WX mode. Many of the ancient radars are better for navigation then newer ones.



New Orleans from the southeast. Collins WXR 700. WX mode.



Lake Michigan from the northwest on an early (1980) Collins TWX 850. WX mode. Chicago, Glenview, Waukegan along the near shore. Gary's steel mills on the right tip. Benton Harbor on the far shore.

Tweaking For Mapping

With an understanding of all that, the wonderful thing about using airborne radar to confirm the navigation situation is that it's so simple and easy (assuming a pulse string of reasonable length). You select a displayed range of 80 to 120 nm when flying below FL290 and TILT to ground paint on the outer half of the display; above FL290, use a displayed range of about 150 nm and adjust TILT to ground paint from 80 nm outward.

Then. just lean back and watch the world roll by. Most of the time, you'll find mapping in the WX mode works OK. For real precision, go to MAP, a displayed range of 50 or so nm, and tweak TILT and the CAL control (misnamed "GAIN" on most radars) up and down carefully. With many radars you'll be amazed with the detail you can pull up.

It's best to simultaneously tweak TILT and CAL. Unfortunately, with an MFD, through which most radars are controlled today, that's next to impossible because the CAL control is time-shared with something else.

The neat thing about radar mapping is darkness or cloud doesn't matter. And there's the added benefit of being warned about weather that must be avoided. It's simple; don't try to fly into a radar shadow. A radar shadow will be a prominent black area just behind a red echo. If radar energy, traveling at the speed of light, isn't going through that area, the extreme rain there will certainly stop you. Also, when topping weather, don't allow any echo to intrude inside the 30-nm range, to avoid the CAT bubble of turbulence that builds just above some storms. Finally, note that when mapping with radar you get an instant notification of a radar failure. If the ground suddenly disappears or begins to jiggle, dance, change colors or anything weird like that, it's off to the avionics shop you must take it.

So, ground mapping with your radar is a win, win, win situation. Once you've become skilled at radar navigation, you'll wonder why you waited so long to get started. It's eternal CAVU. It's so simple, so soothing, so professional. T&T

Archie Trammell's credentials are 34 years as an instructor and lecturer on airborne weather radar and convective storms avoidance. His clients have included most major airlines, all five military services and numerous government agencies, including the FAA, NASA and NTSB.
His research has been exhaustive and has included more than 4,000 hours of inflight thunderstorm research, both in his own aircraft and from the jump seat for airline clients. He's a pilot and CFII, with much twin and turbine experience. His monthly web site, www.radar4 pilots.com, has been up monthly since May 2005.

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From the Flight Deck

Wintertime Blues

by **Kevin R. Dingman**

There was no drug test, strip search or detention. This story was not penned from the City jail or an interrogation room. And I was grateful that they didn't install a parking boot on my jet, or an ankle bracelet on my leg, right then and there. But, when an angry, bulletproof vest-wearing Chicago Police Officer boards your airliner after a flight, enters the cockpit with his pistol drawn, and with a quivering lip insists that you "not leave the area" until he says so, your day is not going well. Especially if the officer's name isn't Joe Friday. The story you are about to read is true (except for the drawn pistol part). Only the names have been changed to protect the innocent. My name is Dingman and I work here. I'm a pilot. (Cue the Dragnet theme song).

Weather Event

This is the city. Chicago, Illinois. Third largest in the country; the airport is part of it. O'Hare International airport, and these are the facts. It was a Monday. Monday, December 28th . It was windy, dark and snowing in Chicago–snowing ice pellets. My partner John and I were working bunko, I mean a flight from Dallas to Chicago, a flight in the weather, a long flight. After an hour delay on the gate, and another hour off-the-gate due to an EDCT, the flight from DFW to ORD would consume another five hours. Seven hours in the jet that would make the passengers wish they'd stayed home. EDCT is an acronym for Expect Departure Clearance Time; pilots call it a wheels-up time. Administered by ATC to manage arrival rates, it's the last piece of data pilots read-back in an IFR clearance. Sometimes issued for the security of a politician, a runway closure due to an accident, or snow removal, EDCT's are more commonly used during a weather event at the destination airport. And, yes ma'am, the windy city was having a weather event, a big one.

Our entire four-day trip had been peppered with EDCT's. Peppered like the choppy, Joe Friday dialog in this story. Eventually, the winter event would pepper most airports east of the Mississippi. Pepper them with high winds and low visibility. Two alternates were listed on our flight plan and we left passengers stranded in DFW to accommodate the fuel load. Our planned enroute fuel burn, plus reserve and alternate fuel, would require us to arrive in Chicago at our maximum landing weight of 130,000 pounds. The trip went smoothly during cruise and, except for some vectors and speed reductions, the descend-via arrival into O'Hare was normal. We couldn't use just any runway, however. At 130,000 pounds, with reports of poor braking, we would need one at least 8,700 feet long.

Even though one of the fixes on the 10R ILS is KVENN, we couldn't fly that approach because the runway is too short. Our landing assessment calculation indicated that, by using full flaps and maximum manual brakes (as opposed to auto-brakes), the available runway length on either 10C or 10L would be sufficient. More than sufficient with a headwind and by using maximum autobrakes. We asked Chicago Center to pass along our requirement to approach control. As it turned out, 10L was the only runway open on the field. The runway condition was reported as braking action poor with ice pellets, snow, slush and water. Six to nine inches of these contaminants also covered all ramps and taxiways. At 1,500 AGL, the winds aloft showed a 50 knot direct headwind. At the threshold it had dropped to 25 knots. The landing was uneventful with smooth deceleration – even using maximum autobrakes which is normally an attention-getting event. The touchdown was smooth, according to passenger comments as they deplaned. Deplaned after Officer "Stay-In-The-Area" finished with me, that is. But just the facts please. Let's not get ahead of ourselves.

Room to Pass

Most taxiway painted lines were not visible. During the taxi from the 28R holding pad to the gate alleyway, I noted a significant amount of ground contamination with ruts, slippery surfaces, the need for slightly above-average power to taxi, accompanied by reduced steering effectiveness. The conditions warranted an extremely slow taxi speed. I was assigned the North line of the alley, and told to use caution for an exiting S-80 on the South line. Only small lengths of taxiway and ramp painted lines were occasionally visible. The other S-80 and I communicated to each other on ramp-control frequency and

we both assessed the maneuvering room to pass as being adequate. I used the main landing gear tire tracks of the aircraft that had pushed back from our gate as a guide to align with the run-in line. Approximately four aircraft lengths from the gate, I stopped and set the parking brake because the automatic DGS (Docking Guidance System) displayed WAIT, and a ground marshal at the gate was displaying the stop signal with lighted wands.

The delay was due to an aircraft on both the left and right of our gate having a deice vehicle near the tail of each aircraft. After a several minutes, the DGS became active, showing the come-ahead display, and a wing monitor with lighted wands was stationed at both the left and right wing tips; both were presenting the signal for clear. There was a marshal at the front of the aircraft as well with his wands deactivated, monitoring the wing marshals and our approach. As we moved forward, John and I repeatedly told each other that our respective wing monitors were still displaying the clear/continue signal. As we slowly moved forward and began to lose sight of the wing monitors, John opened his side window and looked aft to his monitor and confirmed the clear signal. As I lost sight of my monitor I transitioned to the partially visible run-in line and the DGS which was displaying the normal indications to continue forward. I could see pieces of the run-in line, and both it and the DGS showed me as centered. A couple of seconds later the aircraft nose slid to the left and we came to an abrupt stop. I set the parking brake.

A Buried Chock

After my taxi experience from the 28R pad, I first thought that I had slid into a rut or developed a nosewheel steering issue. I signaled a ground crew member below the left of the nose to come here, slid open my window and yelled that my NWS had malfunctioned. He and the nose marshal moved out of sight near the nose and left wing. One of them reappeared and moved to the front and began to give me the signal to come forward. I released the brakes, added power and the aircraft did not move. I set the parking brake and signaled to them that I could not move. The nose marshal then moved out of sight on the left side of the fuselage. This time I thought that perhaps they noticed a chock buried under the snow that I had run into. I have heard that if you forget to remove a chock or a tail tiedown, you can't move – but I've only heard. He reappeared and moved to the front of the nose; again signaling me to move ahead. I released the brake and added power; the aircraft did not move. I set the parking brake.

Hit a Truck

In the ensuing minutes, passengers reported that one of the wings had hit a truck. I slid open my window, stuck my head out and looked aft – it was true. The left wing, approximately three feet in from the tip, had impacted a deicing truck. After inspections by multiple entities, a tug and ground communication cord were attached to the aircraft and the tug pushed us back fifty feet or so, the deicing truck was moved, and we were towed forward to the gate. I can no longer claim to have never bent any metal on an airplane. Yes ma'am. I bent some metal; I bent it all right.

And that's the way it was on the last leg, of the last day, of the four-day trip day that began on Christmas Day, 2015: talking with mechanics, the FAA, the union attorney, company safety officer, my chief pilot and the angry, stay-in-the-area guy. We will be "invited" to a hearing hosted by the ERT (Event Review Team) at company headquarters in the coming weeks. Hopefully, the lack of an ankle bracelet will accentuate my innocence. I suspect they won't ask us to bring a dish to pass though. The mechanics say that it can be fixed and that it will return to service. I hope so. And I've been told that the officials involved are satisfied that we were not negligent and that's a good thing. But I hurt one of my beloved MD-80's and we don't have many left in the fleet to hurt. It breaks my heart and that's a fact. T&T

Kevin Dingman has been flying for over 40 years. He's an ATP typed in the B737 and DC9 with 21,000 hours. A retired Air Force Major, he flew the F-16 then performed as a USAF Civil Air Patrol Liaison Officer. He flies volunteer missions for the Christian organization Wings of Mercy, is employed by a major airline, and owns and operates a Beechcraft Duke. Contact Kevin at Dinger10d@gmail.com

Twin Proficiency:

Conflicting Priorities

by **Thomas P. Turner**

The multiengine instructor radioed Air Traffic Control that an engine was on fire. The nighttime training flight was about four miles from Okmulgee Airport, near Tulsa, Oklahoma. The instructor requested a straight-in approach to Runway 1L at Tulsa, Oklahoma's Riverside Airport, where the Beechcraft twin was based.

The controller asked the pilot to repeat the nature of his problem and the instructor restated that one of the airplane's engines was on fire. The controller then asked the standard ATC questions in an emergency–how many people on board and how much fuel–and added another query of little import to controllers but potentially distracting to the pilot: "which engine is on fire?" The instructor quickly replied, "Two people, two hours of fuel, and the right engine."

Riverside Tower controllers later said they saw the airplane coming in "fast" and that they saw smoke coming from its right engine. One controller "reported seeing flames coming from the right engine," according to the NTSB report. Shortly afterward, the instructor reported he did "not have a green light" for landing gear down-and-locked indications. The flight instructor then stated he was "going to go around and land on Runway 19R," the reciprocal of the runway he had first asked to use. Controllers witnessed the airplane initiate a climb, then begin to "roll over to the right and pitch nose down" The airplane impacted the ground and exploded on impact.

Numerous witnesses at various locations on the airport reported the airplane approached downwind to Runway 1L and was "very fast on the approach." Several witnesses said they heard an application of engine power before the airplane nosed up into a climb and control was lost. Most described the loss of control as the airplane rolling right "until it was inverted," then nosing vertically into the ground. Tower controllers and some of the other witnesses stated "the landing gear appeared to be extended" prior to the attempted go-around/circle-to-land maneuver.

The NTSB determined the Probable Cause to be the instructor pilot's failure to maintain the airplane's minimum controllable airspeed during a single-engine go-around, which resulted in his loss of control of the airplane. Contributory factors were the engine fire, the pilot's failure to follow the emergency checklist and feather the propeller, and the partial failure of the landing gear indicating system, which resulted in the instructor's diverted attention.

Extreme stress … can blind us to another status our brain dismisses as unimportant; it can cause us to focus on items of much less import, perhaps because we feel we can deal with those lesser items when we cannot control the more-demanding event.

Prepared for stress

Being inside an airplane that's burning in flight is one of the deepest-seated fears of most pilots. Certainly, coming in with a student at night with an active engine fire, the instructor commanding the flight had to have been under some of the worst stress of his life. Extreme stress tends to tap all our mental reserves. It makes us rely in large part on preprogrammed responses to the stressful conditions. It can blind us to another status our brain dismisses as unimportant; it can cause us to focus on items of much less import, perhaps because

we feel we can deal with those lesser items when we cannot control the more-demanding event.

The nature of the scenario may have prevented electrical power from reaching the Beechcraft's landing gear indicators (more on that in a moment). But, for whatever reason, the instructor felt it wiser to go around and presumably address the landing gear issue than to get the possibly still-burning airplane on the ground as quickly as possible.

More from the NTSB

The throttle, mixture, and propeller controls on each engine were found in the mid power range, mid mixture range, and high RPM setting respectively. The fuel selectors for the left and right engines were found in the on and off position, respectively. This confirms that the pilots began the Engine Fire in Flight procedure, which calls for shutting off the fuel to the burning right engine. They did not, however, complete the entire procedure and feather the offending engine's propeller. That the fire continued suggests it may have entered the fuel system itself and was burning in or near the wing, and/or that the engine oil system was burning, the contents of the oil tank and the airplane's oil-charged unfeathering accumulators. Still, performance and control would have been greatly diminished with a windmilling propeller.

The landing gear indication lights were examined under a microscope by the NTSB. All of the indication lights displayed filament stretch with the exception of the transit light and the right main landing gear indication light. The right main landing gear's indication light filament was found separated. This at least suggests that the right main gear light was not illuminated and (had time existed for a check) the light would not have lamp-tested. Possibly the multiengine instructor, who had a little less than 1,000 total hours (although much of that was as a multiengine instructor), had been strictly schooled about the career impact of making a gear-up landing in a customer's airplane and, in the very real heat of the situation, his attention focused on avoiding that potential, seemingly at all costs.

Conflicting priorities

Faced with this dire inflight emergency (the fire, not the landing gear anomaly), the instructor had the opportunity to demonstrate and use good cockpit management skills. This would have included using the student to help. We don't know, for certain, who was flying the airplane, and if the MEI was working the radios as a Pilot Not Flying (PNF) and Pilot Monitoring (PM) to reduce workload for the student who would have been Pilot Flying (PF). We'll never know if the two worked together, or if the instructor took command and control and the student was just along for the ride. Cooperation and communication between the two aboard this Beechcraft might have resulted in better

assessment of the indications and airplane status, and prioritization of responses when the need to get down–the engine fire–was combined with the perceived need to go back up–the gear anomaly. Again, we'll never know.

An inflight emergency of this severity can be met by processing through a series of checklist procedures. In this case, the order would have been:

- Engine fire in flight
- Engine shutdown/securing
- Single-engine approach and landing
- Ground evacuation

Extraneous indications, like the gear unsafe indication, must be recognized but then ignored when the great need is to get the aircraft on the ground. Even a "routine" engine shutdown (i.e., engine failure not involving fire, and a feathered propeller), generally means resisting any attempt at a single-engine go-around from less than traffic pattern altitude in most piston twins.

But, you'll only be able to triage inflight emergencies; do what you need to do and ignore the rest, if you are extremely familiar with the checklists and have made some general-conduct decisions ahead of time, before you are under extreme stress. So, pull out your Pilot's Operating Handbook and become very familiar with the Emergency checklists. Sit in the cockpit and run through them until your muscle memory matches your intellectual mastery of the procedures–you can safely do everything except move the landing gear handle up while you're parked on the ramp or in the hangar, then use the Shutdown checklist to ensure everything is set correctly when you're done.

Afterward, visualize some scenarios and make some decisions–such as, if an engine is on fire you'll shut it completely down, and if you're close to the ground on one engine you're committed to land, even if you have an unsafe gear indication. Bounce ideas off of other pilots of the same airplane type, if you have the chance…the internet chat lines are great for this sort of brainstorming. Only if you've developed a high level of command of your aircraft ahead of time, making well-thought-out decisions when there is no adverse stress on you at all, will you be prepared to act on these decisions in the event you have conflicting priorities during the worst flight of your life. T&T

Thomas P. Turner is an ATP CFII/MEI, holds a Masters Degree in Aviation Safety, and was the 2010 National FAA Safety Team Representative of the Year. Subscribe to Tom's free FLYING LESSONS Weekly e-newsletter at www.mastery-flight-training.com.

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A Winter Storm

When Flying In The Winter, Cold Temperatures are Frequently the Least of Our Problems

From late November through April, fierce winter storms often assault the continental United States and southern Canada. The effects can be devastating in their cumulative effect because some of these storms are not particularly fast movers, while others, such as a Nor'easter, can develop very rapidly and catch pilots unawares. Either way, they can be very dangerous to aviators.

Winter storms typically follow templates depending on where they originate. Knowing what kind of beastie you're dealing with can help you cope with many of them, provided you have the necessary equipment on board and a workable plan for diversion. Watching the weather maps and knowing where to look for storm genesis a few days ahead of actual departure will usually allow you to anticipate what kinds of winter operations problems you'll likely have.

West Coast Winter Storms

Winter Gulf of Alaska storms typically exhibit winds in excess of 50 mph and occasionally will rival the strength of hurricanes with winds as high as 100 mph. When these storms hit the west coast, they interact with the high mountain ranges that run down the coast from the Pacific Northwest to California. The mountains cause the storms to disgorge enormous quantities of rain and snow and the amounts are measured in yards annually, particularly at the higher elevations. For instance, snowfall on Mount Baker in Washington measured 1,140 inches in the winter of 1998-99.

Fortunately, spotting upcoming West Coast storms isn't particularly difficult.

Let's say you have a trip to the Great Northwest in two days. Generally, if you see the semi-permanent Aleutian Low wound up tight in the Gulf of Alaska on the current synopsis chart (if it has a very low central pressure, in other words), you should look at the prog chart for +24 hours and see if the weather guessers show a progeny of the big boy developing just to its east/east-southeast (or if they expect the Aleutian Low itself to temporarily move to the east).

If there's a deep low on the move, things are going to get interesting from British Columbia south in +48 hours and you should plan accordingly. Look at where the low is predicted to come ashore and expect a large area to be affected, stretching from the low down the coast about 500 miles. Rain, ice, snow and low IFR conditions aren't the only problems with these guys. Turbulence is likely to be moderate to severe.

Even if you aren't headed to the Northwest, check out the situation with the Aleutian Low anyway, since, as we shall see, it's involved in the creation of a fair amount of the storms that plague the rest of the country.

Mid-Continent Winter Storms

Mid-continent storms are generally known by names that relate to their location of origin: the Alberta Clipper, The Colorado Low or the Panhandle Hook. Let's take a look at the four most common types; where they typically track and their hazards to aviation.

Alberta Clippers

Not usually related to the Aleutian Low, Albert Clippers originate in the Canadian province of Alberta (surprise). The storm then typically tracks along the upper tier of prairie states until hanging a left and moving back into Canada around Quebec or the Maritimes. Alternatively, it often

Primer

by John Loughmiller

remains in Canada the whole time. But, when the polar jet is making a deep intrusion into the U.S. midsection, the clipper can pay a visit to southern parts of the upper Midwest, including Illinois, Indiana and Ohio, before heading northeast towards New England.

Alberta Clippers have very little moisture to work with, so 2 to 4 inches of snow on the northern side of their path is the norm. Strong and bitterly-cold north winds are their hallmark and pilots operating from east-west runways would do well to practice their crosswind techniques late in the autumn to be ready for these visitors from the Canadian prairies. Of all the winter storms, these are generally the most benign but turbulence can be intense and white-out conditions can create havoc on an approach (along with a 45+ degree crab angle, particularly if you're flying an airplane with low mass like a light twin).

Colorado Lows and Panhandle Hooks

As an Aleutian Low (or its offspring) hits the Rocky Mountains, it generally loses its moisture as the circulation is forced up and over the high terrain. Once on the eastern side of the mountain range, what happens next depends on where the remnant of the low ends up.

Depleted Pacific storms often reform around Colorado or a bit farther south. When the polar front's jet stream loops south, it captures the Colorado Low (or its cousin, the Texas "Panhandle Hook" Low) and heads off towards the northeast. These low pressure areas will deepen as they follow the polar front's jet stream, picking up moisture from the Gulf of Mexico maritime air mass and drawing it north into the Low's circulation. As the low deepens, it will frequently cause a central plains event called a "Blue Norther" which drives very strong winds, biting cold and significant snowfall into the southern plains states, complicating life for pilots in Oklahoma, Texas and even eastern New Mexico.

If a winter storm's genesis is in this area, from west Texas up into eastern Colorado, watch out! Next to Nor'easter, these storms are the most likely ones to cause problems over a large area of the United States and southern Canada. (See the "A Winter Storms Journey" below.)

Ohio Valley Storms

Ohio River Valley storms typically begin life in Arkansas and move through Southern Illinois, Indiana, Ohio, Pennsylvania and into New England. Almost as nasty as the Colorado and Panhandle Hook storms, the saving grace (if there is such a thing with a winter storm) is this type of storm will usually be forecast well in advance and, except for path variations +/- a few hundred miles, the forecast tracks are normally quite accurate. Ice is going to be a problem along and to the south of the track for a few hundred miles. Don't be fooled into thinking you won't need a FIKI (Flight into Known Icing) approved airplane just because you're staying a couple of hundred miles to the south of the storm track – good advice for all winter storms, actually.

East Coast Storms

The path of these storms depends on where they originate and the synoptic set up (large scale weather features). They can move along the western margin of the Appalachians, along the coastal plain, or anywhere within a few hundred miles off shore. The worst place for an aviator to be – especially at low altitude - is to the west of the storm's center when it's just offshore.

Normally, the storm's genesis is somewhere in an arc from the Gulf of Mexico to near Cape Hatteras. When it is still down in Dixie, thunderstorms typically break out but, once it is offshore and north of Cape Hatteras, snow is likely to fall to the left of the storm's track, with rain more likely to the right.

If a Colorado Low or Panhandle Hook storm runs into a Nor'easter moving north up the coast, the two lows will merge and the storm will "bomb out", meaning it will become a very powerful storm, very rapidly. The result is the closing of airports all along the eastern seaboard and flying conditions that are impossible for light aircraft (and many heavy ones as well).

An example of a merger of two powerful storms was documented in the movie "A Perfect Storm" which accurately depicted Hurricane Grace merging with an enormous Nor'easter, resulting in the loss of the fishing vessel Andrea Gail as well as a National Guard helicopter. But you don't need a hurricane to merge with a nor'easter to have virtually un-flyable weather; a potent winter storm will work just as well.

Winter storms come in several flavors but the one thing all have in common is the bad taste they leave in the mouth of a pilot who attempts to fly through them.

A Winter Storm's Journey

The progenitor for most severe winter storms is a remnant from a piece of energy thrown off by our old friend the Aleutian Low. After it plagues the Northwest, it crosses the Rocky Mountains and, a mere shadow of its former self, it frequently meanders into Texas, where it regenerates.

A "Panhandle Hook" winter storm, so named because of its birthplace in the panhandle areas of Oklahoma and Texas, begins life as a relatively-shallow low pressure area. However, the strong temperature contrast, between the Gulf of Mexico maritime air mass and the frigid continental polar air mass lurking in Canada and the Dakotas, quickly results in the low deepening.

On the first day, the storm begins engorging itself with large amounts of moisture from the Gulf of Mexico. The relatively warm air from the Gulf is carried northward and overruns cold air near the ground. Often, a layer of below-freezing air, normally somewhere between 1,000 to 5,000 feet thick (depending on how far north the warm front has progressed) will give rise to freezing rain as liquid precipitation from the warmer air above falls into the colder air below. This situation creates an excellent opportunity for extreme airframe icing. By the time the storm has wound up tight, the freezing rain can overwhelm even the equipment of FIKI equipped airplanes. Aircraft without anti-ice or de-ice devices are in great danger from an encounter with an energetic winter storm.

Oklahoma, Arkansas and Western Tennessee, located on the south side of the low, become victims of an ice storm with an inch of ice frequently coating the power lines and trees in a few hours. An approach through this kind of freezing rain had better not take very long - even if you can heat the wings and tail feathers with prodigious amounts of bleed air.

In Kansas, Missouri, and Illinois, the precipitation stays all snow and 5 to 8 inches fall within 8 hours. As the storm clears the area, a strong northwest wind blows the foot-deep snow into drifts and the skies rapidly clear behind the departing visitor.

By the second day, the low is fully developed and is making a beeline up the Ohio River valley. A very deep low pressure area now, it begins to draw moisture from the Atlantic Ocean, a full 600 miles away, as well as the Gulf of Mexico. If the Great Lakes haven't completely frozen over they contribute to the moisture supply as well, resulting in the low deepening even more, plus creating extremely dangerous icing conditions in cloud and close to the low. An airplane can become an ice cube in the lower parts of the atmosphere from ground level through FL250 regardless of boots and prop deice. Even heated-wing jets can get into trouble while descending to land when close to the deep low associated with these storms.

What happens next depends of the path of the storm. If it heads east from southern Ohio, it will likely "bomb out" (greatly intensify) when it hits the Atlantic Ocean. It will then turn northward and become a nor'easter. Life will

become miserable for hapless east coast aviators. If it continues on a northeast track from Ohio, however, it will ruin the day for pilots in Pennsylvania, New England and southeast Canada, but not be as disruptive as a full blown nor'easter. So, just for argument's sake, we'll assume it becomes a nor'easter.

In a nor'easter, operations all along the east coast are plagued by ATC delays that add hours to our Time-En Route calculations and force wholesale diversions to alternates. If the storm tracks offshore, heavy snow and high winds are the result for the coastal areas. An inland track inundates the Appalachian chain with very deep snow but it becomes mostly a rain and wind event for the coastal areas, albeit with turbulence and ice warnings.

Nor'easter or not, if the Great Lakes icemaker is in full swing, a pilot – maybe several – will have to declare an emergency due to an ice-covered airplane flying somewhere over Pennsylvania, West Virginia or the New England states.

Behind the departing storm, the morning deejays announce the temperature toll: Minneapolis, -21, Chicago, -9, Louisville, +3, Atlanta, +14. Winter has the people in its grip and the grip seems to be extremely tight.

Overhead, the stars shine with a clarity never seen in the summertime. The winds howl and then begin to diminish. A full moon lights up a snow covered landscape and people throw another log on the fire and count the days until spring. The storm has passed. Now, if we could only say the same for winter. T&T

John Loughmiller is a freelance writer, commercial pilot and CFIIMEI-A. He retired from the business world a few years back and is now living the dream as a contract pilot flying various piston and turboprop twins.

EN ROUTE

Whisper Prop Propeller System from BLR Aerospace

Whisper Prop®, the ultra-quiet, low-vibration King Air propeller system from BLR Aerospace, is gaining market share and growing in popularity. Ten Whisper Prop systems have been sold for King Air 90, 200 and 350 aircraft, according to BLR Vice President of Sales and Marketing Dave Marone. "The jury is in," Marone said prior to the 2015 NBAA convention. "Whisper Prop is incredibly smooth and quiet providing a step change in cabin comfort."

The King Air 350 Whisper Prop is a first of its kind five-bladed, carbon fiber propeller with natural composite core for superior noise and vibration dampening. This propeller is certified and ready for immediate delivery.

George Moussa, President of Ambella Home, added Whisper Props to his King Air 90GTi and has no regrets. "I love them," he said. "The props are beautiful. They make the airplane look like a bad boy, so ramp appeal is very high. They are also definitely quieter, with a clear reduction in noise and vibration." Moussa added that he now considers the Whisper Props to be "essential" on any trip of 90 minutes or more.

Likewise, the owner of BB-1006 in Lyon, France, said he installed Whisper Props on his King Air 200 specifically to reduce noise and vibration and increase overall passenger comfort, and he has not been disappointed. "These propellers have made remarkable contributions on both issues beyond what we could have hoped for."

Marone says the data is just as compelling as the owner experiences. Company King Air 90GTi flight test data show that Whisper Prop provides between 30 and 50% reduction in noise measured in dba, depending on audible frequency, when compared to the standard King Air 90GTi propeller. Performance gains are also impressive. King Air 350 operators who install Whisper Prop, for example, can expect a 6% percent reduction in takeoff time from brake release to VR speed.

The Whisper Prop was designed to integrate into BLR's Winglet Systems, providing King Air 90 and 200 customers the opportunity to fly to an improved and certified flight manual supplement. Winglets and Whisper Prop combine to optimize runway performance, climb performance, and range while delivering significant reductions in noise and vibration. The systems may also be installed independently.

Unlike conventional propellers, Whisper Prop features a carbon fiber blade with natural composite core. This design philosophy allows for infinite fatigue life, superior noise and vibration dampening, and highly repairable blades all contributing to empirical reductions in life cycle cost.

The BLR Winglet System increases wing aspect ratio to reduce induced drag. By increasing wing efficiency, Winglets provide superior speed, climb, fuel efficiency and handling qualities.

For further information, visit *www.blraerospace.com* T&T

Book Review:

Floatplane Odyssey, by William T. Coleman, recounts the 1990 flight of veteran seaplane pilot Tom Casey's Around The World Flight in a floatplane. Desiring to recreate the U.S. Navy's 1924 circumnavigation, but only by landing on water, Casey flew alone, seeking sponsorships and support from every angle. He and his wheel-less Cessna 206 completed the odyssey bent and battered, but unbowed.

Author Bill Coleman was involved with the flight as a public relations consultant whose client was Phillips 66 Aviation Fuels, the primary sponsor of the trip. That things didn't exactly go as planned ("we can do this in 60 days") is the mother of all understatements, as Coleman relates in his extensively-recorded tale. But, Casey persevered, against all odds, and eventually splashed down at his Seattle starting point after six months and nearly 30,000 miles of flying.

The epic saga is hard to put down, as the protagonist gets into and out of one scrape after another. A back operation in Saudi Arabia, a mid-ocean crash landing in the Aleutians, bureaucratic snafus–nothing stops Casey's quest for a World Record trip. Meanwhile, the behind-the-scenes headaches for his sponsors just keep mounting up. Be warned: the book is liberally sprinkled with adult language, probably reduced considerably from the contemporaneous utterances being described.

The book is a soft-cover edtion, 408 pages, ISBN 978-1-4951-6086-8. Priced at $25, it is available at *www.floatplaneodyssey.com* T&T

EN ROUTE

Pilatus Enhances PC-12 NG for 2016

For 2016, Pilatus' best-selling single turboprop PC-12 NG offers greater speed, better takeoff and climb performance, more cabin comfort, greater range, and a quieter cabin, with no increase in fuel burn or operating cost.

The 2016 PC-12 NG cruises at a new maximum speed of 285 knots, thanks to a number of enhancements to reduce drag. The under-wing flap actuator fairings for example were redesigned for smoother airflow and the cabin entry door handle was changed to a flush-fitting design. Gaps and joints around the flaps were sealed, and several antennas were repositioned.

New five blade propeller

The most noticeable change to the 2016 PC-12 NG is the standard five blade graphite-composite propeller. Designed specifically for the PC-12 NG by Hartzell, this new propeller reduces cabin noise levels, improves takeoff and climb performance, reduces life cycle maintenance costs, and is easily repairable in the field. The propeller blades feature a nickel cobalt leading edge and are fabricated using aerospace-grade carbon fiber monocoque structural design. The thin blade shape is also optimized for low drag. The new propeller is certified for unlimited life.

By the third overhaul cycle, the composite prop returns a significant value relative to the metal prop.

The 2016 PC-12 NG features a takeoff distance over 50 feet of only 2,600 feet. At maximum gross takeoff weight, it can climb to a cruise altitude of 28,000 feet ten percent quicker, and maximum range has been extended to 1,840 nm with four passengers and VFR fuel reserves.

New interior and exterior packages

Enhancing the exterior styling of the 2016 PC-12 NG are six new exterior paint schemes designed by BMW Designworks. For 2016, there are now six unique BMW-designed executive interiors for customers to choose from, and Pilatus continues to offer full customization services for those who desire something even more unique.

Updated avionics software

Build 10 of the avionics software enhances the flying experience with new features, such as temperature compensation for Baro VNAV approaches, a route flight log to show airways SIDs and STARS in the flight plan, a Vertical Direct-To task menu option, pilot-entered waypoints on the iNav map, an option for orbital search patterns, and a multitude of additional

EN ROUTE

refinements requested by PC-12 NG pilots. In addition, flight plan loading directly into the Flight Management System is made even easier with Pilatus' pioneering wireless gateway.

Markus Bucher, Chief Executive Officer of Pilatus, was at the National Business Aviation Association's annual Convention and stated:

"The PC-12 NG is now and will continue to be a core aircraft in our general aviation portfolio. It dutifully serves as a uniquely capable aircraft which combines a large passenger cabin with turboprop reliability, single engine efficiency, short and unimproved runway capability and the utility of a standard cargo door. No other aircraft is quite like it, and with a worldwide fleet of over 1,300 aircraft, which has collected over five million flight hours, it has earned one of the safest operational records in all of business aviation."

The new 2016 PC-12 NG has a base price of $4,055,000. A typically-equipped executive version retails for approximately $4,850,000.

Visit *www.pilatus-aircraft.com* for further information T&T

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by **David Miller**

Just Along for the Ride

With 6,000-plus hours in his logbook, David Miller has been flying for business and pleasure for more than 40 years. Having owned and flown a variety of aircraft types, from turboprops to midsize jets, Miller, along with his wife Patty, now own and fly a Citation CJ1+. You can contact David at davidmiller1@sbcglobal.net.

The term "Pilot in Command" or PIC is pretty special to most of us. It connotes someone who knows what they are doing, ready in an instant to make crucial lifesaving decisions. It describes everything we do in the cockpit. But what about those times when we have no earthly idea what is going on? When we are just "along for the ride?"

In my flying career, there have been several.

One of note was my very first takeoff from the left seat in a Falcon 50, N50TX . The 50 is quite an amazing airplane. Three engines, an APU, and a potty with a door. This one even had dual autopilots. I was about to start my type rating in the simulator after owning a Falcon 10, so I thought I was pretty hot stuff.

I advanced all three power levers and prepared to rotate as the training captain called out the numbers. Then a strange thing happened. The airplane took off by itself. It just rotated like a large blimp taking to the air, seemingly with no input from me. With all that power and light weight, the mighty Falcon just decided it wanted to fly. And, no, the trim was not misplaced. I just wasn't ready. I was just along for the ride.

Several times in clear air, I have been a bystander when enveloped in severe turbulence. Once in a Comanche in the 70's, while getting just a tad too close to an overhang of a thunderstorm. Another, in a Duke, descending at 14,000 feet over the Allegheny mountains on a clear, perfectly calm night, when WHAM! the airplane became uncontrollable. Again, I was along for the ride, for what seemed like an eternity as we traversed the mountain wave. I certainly was not pilot in command.

But my favorite story was from years earlier. I was a freshly-minted multi-rated private pilot. A banker friend asked if I wanted to ride in a Lear Jet. A LEAR JET! It flew a daily round trip from Dallas to Chicago transporting cancelled checks. I could ride in the back and watch how real pilots flew. It took less than two seconds for me to accept.

This Lear was a model 25. A gas guzzling rocket ship. I was in awe. I think we levelled at 450 just minutes after takeoff. The owner PIC, who I later learned was known to occasionally "flirt" with rules and has long since passed away, asked me if I wanted to occupy the left seat.

"Are you kidding? Absolutely", I said.

There I was. At FL 450 in a Lear 25. Certainly the highlight of my brief career. I looked over at the co-pilot who appeared to be right out of high school.

"Have you ever been in a Lear Jet?" he asked. "Heck no, this is my first time," I replied. "What about you?"

My memory is slightly fuzzy about his exact response. But he either said, "My first time too," or "just once."

In spite of my total lack of experience, my immediate thought was, "Who in the hell is "pilot in command?" It certainly wasn't me. Was it the autopilot? Was it the high school kid next to me? Does he know enough to save my butt?

I sat for a few minutes contemplating these questions. Soon, the real PIC returned to the cockpit and made a normal landing.

I have thought about that flight a lot over the years.

Fly safe.

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