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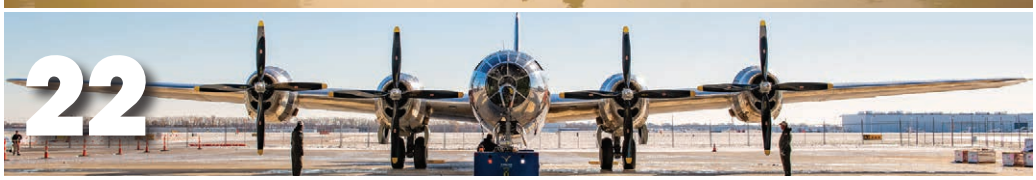







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by **Rebecca Groom Jacobs**

# Great Getaways

Springtime is my favorite time of the year. Nature comes back to life, the birds are singing, and – if you listen carefully – you'll hear the sound of Lycomings, Continentals and Pratts awakening from their cozy hangars to spool up for the year's adventures.

As we begin to thaw, it's time to start thinking about exactly where those upcoming adventures should take place – your potential 2019 flying destinations. To assist with your planning, we are bringing back a fun *T&T* series called "Great Getaways." Within each spring and summer issue, we will feature one pilot-friendly destination for your consideration.

To add to our growing list, our team would like to hear from you – is there an airport you believe deserves recognition? Maybe it offers a unique backcountry strip, a scenic approach, a beautiful hotel, a historical town – or all of the above. We would love to hear about some of your favorite and most memorable destinations in your aircraft.

For me, two airports came to my mind immediately: Gaston's White River Resort (3M0) in Arkansas and Beaumont Hotel Airport (07S) in Kansas. It's probably been 15 years since my father flew my family into Gaston's, but I vividly remember the expansive grass runway and river-front view from the restaurant. Though we only dropped in for a meal, it was a memorable stop (and it's kicking off the "Great Getaways" series on page 12).

On the other hand, Beaumont Hotel Airport is one I have flown into many times, both with my father and on my own. Beaumont, Kansas is a small town about 45 miles east of Wichita and offers visitors a small hotel, RV park, café and 2,400-foot grass runway. It is a charming spot to socialize and grab a hot meal – and the only airport I've visited where you taxi by way of a local street. Though certainly more conducive to small Cessnas and taildraggers, it merits a mention.

I could go on listing other unique places and experiences general aviation has allowed me, but I'll turn it over to you. I know there are some hidden gems all around the country. To share your suggestions, please email me at *rebecca@twinandturbine.com*.

Happy Spring. T&T

The family Bonanza on a visit to Gaston's White River Resort.

# Airmail

## In Response to Kevin Ware's "A Medical Look at Hypoxia" (December)

I want to compliment you on the article you published on hypoxia. It is by far the best article that I have read on the subject, and I am much wiser on the topic as a result of your efforts. You make a great point that just because the aircraft may be doing its job correctly from a pressurization systems perspective, that doesn't necessarily mean it translates into your body doing its job. I had never heard of hypocapnia nor of the Bohr effect, and for many years I flew a Mirage and Meridian where max PSI differential put the cabin altitude generally between 8,000-9,000 feet depending on altitude.

I also regularly fly a Cirrus SR-22TN and occasionally take it up into the low teens. Whether flying PIC in a pressurized cabin or in a scenario where a cannula is required, the issues you identified are very relevant. Your identification of other physical issues that can amplify the effects of hypoxia was also enlightening. I now have a much better understanding of additional contributing physical factors that can cascade with hypoxia. Going forward, I will be much more vigilant about oxygen levels in my blood while operating as PIC or SIC. Safe flying!

Ashton Poole

---

Your article in the December issue of *T &T* is excellent. I agree that hypoxia in a cabin that is still pressurized normally, is a more likely and frequent occurrence than loss of pressurization.

It occurs to me that whenever a military interception allows a close view of the incapacitated pilot in a slumped-over posture, the lack of frosted windows should indicate that the cabin environment is still normal i.e. no pressurization failure. Perhaps the military crews' comments could be used to separate the hypoxia accidents into two categories: normal pressurization and loss of pressurization.

Keep up the good work. Since I retired from practicing optometry, I've been working as a corporate pilot and as an instructor for advanced ratings. So, I feel we have a bit in common.

Perry G. Wilson, O.D.

---

Kevin Ware's excellent article "A Medical Look at Hypoxia" was certainly instructive, and hopefully may save some lives. I have flown a pressurized Aerostar for over 30 years but have never used its supplemental oxygen system. After reading Dr. Ware's article, I plan to start using supplemental oxygen any time my cabin pressure goes above 10,000 feet, and to make use of my finger pulse oximeter on every flight.

For pilots concerned with inconvenience or cost of using supplemental oxygen, I suggest a system like that produced by the Mountain High Oxygen Company in Redmond, Oregon. Mt. High (*www.MHoxygen.com*) makes a "Pulse-Demand" system that supplies a 'puff' of oxygen to a cannula or mask only during the "inhalation" phase of the user's breathing cycle. During the "exhalation" phase (which is longer), the oxygen cylinder is not delivering any oxygen. This results in a significant savings of the oxygen supply. Having flown gliders on long cross-country flights for many years, I can attest to the efficiency of this system.

Mt. High systems can be made to operate from a powered aircraft's supplemental oxygen ports. But it is not inconvenient to use a light-weight oxygen cylinder inside the (warm) cabin of a pressurized aircraft, and recharge it as needed with industrial oxygen which costs only about 10 percent that of "aviators" oxygen. The only difference, as Dr. Ware's article teaches, is that industrial oxygen is not certified to be absolutely "dry." But if the cylinder is in a warm cabin, the moisture content is no factor because no ice will form and block the oxygen flow. Oxygen is oxygen.

P. Neumann

---

Another one of your great articles related to the flying I do. Don't try to scare us old guys! Even though a P-Navajo can hold an 8,000-foot cabin in the mid-20 flight levels, I'm buying an oximeter to check my status. Thanks.

Allan Gillespie

by **Dianne White**

# How Sharp is Your Airmanship Sword?


What piloting skill is the most perishable? When I've had a lapse in flying as I did recently following my hip surgery, I tend to focus on my instrument procedure skills. More specifically, I prioritize my ability to execute an instrument approach with zero errors and within commercial standards as a key benchmark of my skills as a pilot. Sure, I'm game for practicing steep turns, landings or stalls, but I tend to prefer to shoot approaches, ensuring I get the button pushes correct, and the needles centered.

Certainly, it's important to master this critical phase of flight in which the aircraft is moving perilously closer to the hard, unforgiving ground. Interestingly though, it is not the skill that's most likely to slip away the quickest when we step away from the cockpit.

Studies have demonstrated that pilot skills erode the fastest in perhaps the most predictable places: landings, crosswind landings, crosswind takeoffs, steep turns, and minimum controllable airspeed, to name a few. In other words, the hands-on, basic airmanship skills tend to go first.

When I lived in Wichita, it's a common sight to see KC-135s flying the circuit at McConnell Air Force Base, shooting landing after landing. I asked a KC-135 pilot once why they practice landings so much. His answer: It is the most perishable skill. Thus, they have to work at it all the time, especially crosswind landings. The KC-135 has only an 8-degree roll limit on touchdown (the -135R with its bigger engines is even less), making crosswind landings a particular challenge. Too much roll and the pilot will be dragging a nacelle on the runway.

Tony Kern wrote in his landmark paper *"Foundations of Professional Airmanship and Flight Discipline:"*

*"Flying an airplane is not like riding a bike. If you haven't flown recently in the model you are in, you may not remember precisely how. It is probably more like juggling knives, where if you're not proficient, you are likely to end up hurting yourself."*

In the same publication, Tony cited research that showed pilots lose their cognitive piloting skills as fast or faster than the physical ones: "In fact, since flying is a psychomotor process, it is by definition a blending of mind and body to achieve results. Pilots and other aviators must rely heavily on cue recognition and pre-learned mental response patterns, which are decidedly cognitive processes. If we fail to recognize a cue, for example a traffic pattern reference for flap lowering, then it can be the first in a long series of falling dominoes that will mess up our ability to maintain positive control of our flight parameters."

As Tony tells it, skill and proficiency are two edges of the airmanship sword. How do you keep it sharp? Train, and then fly like you train. If you can help it, avoid long chunks of time between flights. If it can't be helped, be prepared to increase your personal minimums, seek expert coaching and commit to sustained practice. Don't put yourself and your passengers at risk because you've allowed the airmanship sword to grow dull. The stakes are simply too high.

While there is no shortage of research and credible science to prove that practice really does make perfect, it's equally important to develop a strategy for you to debrief your own performance after the aircraft is tucked away in the hangar. For it to be effective, it's something you've got to do every time you fly.

Chris Lutat of Convergent Performance, a human factors and safety consultancy, offers this excellent list of questions to pose to yourself after every flight:

1. What could I/we have done today that would have made this a mistake-free flight?
2. Are any of the errors or mistakes made on this flight "repeat discrepancies" from a previous flight?
3. Which of these strategies can I apply to eliminate the same errors or mistakes on future flights:
   a. More practice of the maneuver or procedure?
   b. Feedback or coaching from another expert, instructor or check airman?

c. More study of technical, procedural or regulatory resources?

d. More or better planning or briefing?

4. What maneuvers, procedures, and decisions did I/we make today that led to error-free (or near error-free) outcomes? Why?

A friend of mine who flies a Piper M500 is religious about his post-flight debrief. He keeps a detailed notebook where he notes his mistakes, errors or lapses in judgement. He counters each with a constructive plan on how he intends to correct it. His debrief occurs immediately after his flight in the quiet space of his hangar office. Following his lead, I started carrying a small leather notebook in my flight bag in which I attempt (probably a bit less religiously) to capture my flubs. It is a humbling and revealing assignment in which you must leave your ego at the door.

In Daniel Goleman's "Focus: The Hidden Driver of Excellence," there is this excellent quote: *Those at the top never stop learning: if at any point they start coasting and stop such smart practice, too much of their game becomes bottom-up and their skills plateau."*

How sharp is your airmanship sword? Are you satisfied in remaining at the performance level are you now? Let's strive for better. Our lives and that of our passengers depend on it. T&T

**Dianne White** *can be contacted at* **editor@diannewhite.com**


PHOTO BY DIANNE WHITE

# The Takeoff Briefing

by **Thomas P. Turner**

Think for a moment about everything you need to know or watch out for as you take off. Begin to list everything, and you'll soon find the list is very long. How many different things do you need to consider before taking off? How can you make certain you don't miss anything?

Everyone uses (or should use) checklists to ensure they have not forgotten anything prior to takeoff. Pilot's Operating Handbook (POH) or Airplane Flight Manual (AFM) checklists cover the hardware considerations, that is, making certain everything is configured properly before beginning the takeoff roll. Professional flight crews also use a pre-takeoff briefing to cover the "software" considerations: the pilot decision-making process that accompanies takeoff. What are the unique hazards affecting takeoff? What performance expectations apply to this departure? How will you know if you're not getting the performance you need? What are the routes and altitudes to get you from the airport into the en route structure? Under the specific current circumstances, what will you do in the event of an emergency?

I've tried for years to come up with a quick, concise pre-takeoff briefing. I queried friends in the airline, corporate and military to see what they used, in the hopes I could apply it to my flying. All of the pre-takeoff briefing checklists I found were highly complex, not the sort of thing I thought we could adapt for single-pilot training and encourage pilots to enthusiastically incorporate into their everyday flying. So how could I develop an easy, single-pilot friendly pre-takeoff briefing checklist?

## Ask an Instructor

Or in this case, a room full of instructors. I could have come up with a checklist on my own, but I'd vastly prefer to have something that benefits from the input of many experienced instructor pilots. So, I put a breakout-group exercise, developing a pre-takeoff briefing checklist, on the agenda of the American Bonanza Society's ABS Beechcraft Instructor Crosstalk last August. I challenged the instructors in breakout groups to create a pre-takeoff briefing checklist that is usable and concise—consisting of no more than seven checklist steps. Their faces told me they thought this would be a challenge indeed.

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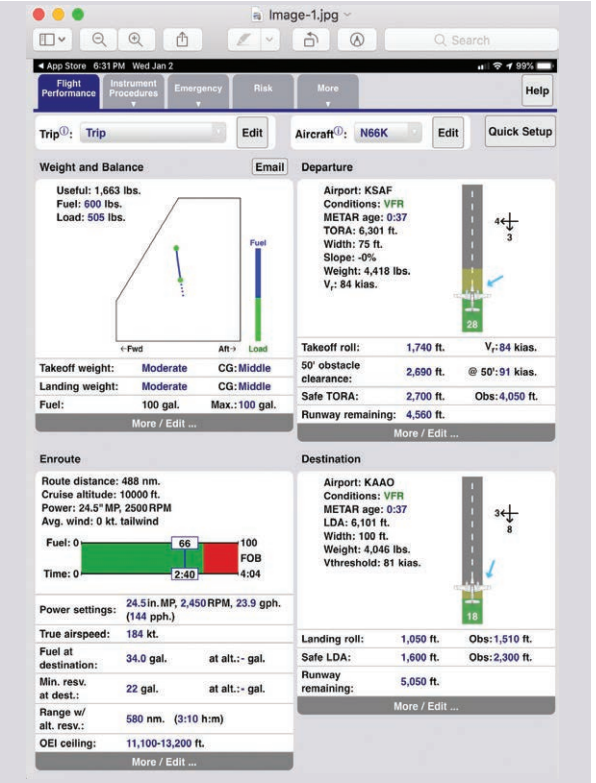


▶ Takeoff performance data for a Beechcraft B55 Baron, KSAF to Wichita/Jabara Airport (source: Bonanza Performance iPad app, free in the App Store).

The result was a great discussion and a whiteboard full of suggestions for pre-takeoff decision verification. As a group, we looked at the common elements and narrowed it down not to seven, but four basic steps to a pre-takeoff briefing checklist we labeled the T-E-N-E (you might call it "teeny") checklist.

- **Threats.** What are the hazards you face for this specific takeoff? How will you manage these threats?
- **Expectations.** What are your performance expectations? What techniques will you use to attain that performance? How will you judge whether you are achieving your expectations?
- **Normal departure procedures.** What is the route and climb procedure you'll use to get from the runway to the en route structure? What is your initial clearance? Is there an ODP (Obstacle Departure Procedure) or SID (Standard Instrument Departure) that apply, or has Air Traffic Control assigned a specific route or climb requirement?
- **Emergencies.** What will you do in the event of an emergency or abnormality? Where will you go? What is the arrival procedure? How will you call it up on your GPS if needed? Have you briefed yourself on that procedure, have any required charts handy, and have the frequencies in the backup, ready to activate?

Obviously, there are a lot of decisions involved in the T-E-N-E checklist. You don't have time to make them all at the hold line. The checklist does, however, give you a structure for considering all these items during your preflight planning and a format for quickly reviewing and reinforcing those decisions before you take off. The T-E-N-E checklist was exactly what I was looking for and now teach to instructors and pilots.

## Santa Fe Departure

Let's say I'm taking off in a Beechcraft Baron from Santa Fe, New Mexico for a trip home to Wichita. Skies are clear, and winds are light for departure, but there are low clouds partially obscuring the mountains east of the field on a direct route of flight. Before ever getting in the airplane, I consider all of these items:

## Threats

- *High-density altitude affecting takeoff distance and climb rate*
  - Mitigations:
    - o Calculate takeoff speeds, distance and obstacle climb distance
    - o Lean to Target EGT (~1300˚F exhaust gas temperature) for maximum horsepower
    - o Use "50-70 Rule": at 50 percent of the takeoff distance, the airspeed should be 70 percent of the liftoff speed
    - o Lower-than-normal pitch attitude for liftoff, VXME and VYME because of reduced thrust
- *Airplane weight*
  - Mitigations:
    - o Calculate weight and balance
    - o Consider effect of weight and center of gravity location on performance
- *Slight crosswind*
  - Mitigation: Employ proper crosswind takeoff technique
- *High traffic*
  - Mitigations:
    - o Follow procedures precisely to be predictable to ATC and other pilots
    - o Aviate, navigate, then communicate
- *Possible interruptions to Before Takeoff checklist*
  - Mitigations:
    - o Use checklists carefully and re-confirm actions
    - o Make use of passenger as a cockpit resource to point out any missed items
- *High mountains just east of the airport*
  - Mitigations:
    - o File a route around mountains, not the "direct" route home that goes over mountains
    - o Consider wind flow, and stay on the upwind side of high terrain
- *IMC on the southeast and east sides of the mountains*

- Mitigations:
  - o File IFR
  - o Remain on the ground until receiving an IFR release, instead of departing VFR to pick up a clearance in the busy airspace

- *Possible delay contacting Albuquerque Departure because of terrain at my climb rate*
  - Mitigations:
    - o Follow procedures precisely to be predictable to ATC and other pilots
    - o Aviate, navigate, then communicate. Don't worry if it takes time to talk to Departure. I'll be on aN IFR clearance even if I can't talk right away

## Expectations

- *Full throttle will be about 23 inches manifold pressure at this pressure altitude and 2700 rpm*
- *Fuel flow and EGT will be higher than optimum; lean to about 1300˚F and crosscheck this is about 21 gallons per hour per side at the beginning of the takeoff roll*
- *Takeoff roll is computed at 1,740 feet, obstacle clearance 2,690 feet*
  - I should lift off a little less than one-third of the way down the runway
  - I should be at 50 feet above the ground about halfway down the runway
- *Takeoff speed 84 KIAS and initial climb speed is 91 KIAS*
  - I should be at about 60 KIAS at about 900 feet (approximately five runway stripes) down the runway
  - I will reach my liftoff speed about 11 stripes down the runway
    - o Reduce the usual 12˚ up VXME attitude to 10˚ to compensate for reduced power
    - o Delay gear retraction beyond initial "positive rate" until confirming that the positive rate of climb is sustained (sometimes airplanes "settle" at high-density altitudes)
- *Accelerate/stop distance is approximately 3,700 feet, leaving about 2,500 feet of runway remaining if I start my takeoff roll from the departure numbers*
- *Cruise climb will initially be about 700 feet per minute with leaning to target EGT each 1,000 feet in the climb*

## Normal Departure

- *The Obstacle Departure Procedure for Runway 28 calls for a climbing left turn to the SAF VOR, then a climb in the published hold to MEA before departing en route*
- *From there a left turn to the southeast takes me toward my first fix, around the southern edge of the obscured mountains*
- *My filed altitude is 10,000 feet, which is the minimum obstacle clearance altitude along my direction of flight*
- *Altitude and precise departure route may be modified by ATC*

## Emergencies

- *Power loss:*
  - FLY THE AIRPLANE
  - Any failure to attain my target manifold pressure, RPM, fuel flow and/or EGT at the beginning of the takeoff roll, or any abnormal oil or electrical indication, calls for an immediate abort: reduce power and apply braking as necessary, then call the tower after I come to a stop
  - Any failure to meet power or performance targets during the takeoff roll call for an abort: throttle to idle, braking as necessary, and call the tower after I stop
  - Any failure to maintain power targets after takeoff, including total engine failure:
    - o PUSH the nose down to maintain VYSE and HOLD wings level with coordinated rudder
    - o Climb straight ahead to pattern altitude (7,500 MSL) if possible before returning for a visual landing
    - o Turn slightly to the left if necessary to the area a Google Maps view shows to be open and relatively clear of obstacles
    - o Call tower and declare an emergency when time permits
    - o If unable to climb, treat as a total engine failure
- *Total engine failure:*
  - FLY THE AIRPLANE
  - PUSH the nose down to the VYSE attitude and HOLD wings and rudder in the zero sideslip positions
  - Identify, verify and feather the failed engine
  - Best-case, single climb rate will be approximately 200 feet per minute straight ahead in zero-sideslip flight
  - Turn slightly to the left if necessary to the area a Google Maps view shows to be open and relatively clear of obstacles
  - Call tower and declare an emergency when time permits
  - If unable to climb or if unable to maintain directional control, pull BOTH throttles to idle, lower the nose to a normal landing attitude and make an off-airport landing
- *Any abnormal condition requiring a return to the runway (door open, electrical failure, etc.):*
  - o FLY THE AIRPLANE
  - o Climb to pattern altitude before making any turns
  - o Coordinate with tower for a normal, visual landing
  - o Employ high-density altitude landing techniques

That's a lot to consider – and every bit of it potentially vital to a safe takeoff. Consciously thinking about it as you plan your departure, however, makes it possible to quickly make most of the decisions before you're actually flying the airplane, and to review all this information in an abbreviated fashion just before taking off:

**THREATS:** "I'm making a high-density altitude takeoff in a fairly heavy airplane in a high traffic area. I've confirmed all checklist items are complete. I have a slight crosswind from the right."

**EXPECTATIONS:** "I'll attain about 23 inches manifold pressure at full throttle and lean to approximately 1300˚F EGT. I should be at 60 knots at five stripes down the runway and lift off about 11 stripes down the runway." Brief any front-seat passenger to count runway stripes aloud during your takeoff roll to help evaluate takeoff performance. "At liftoff I'll raise the nose to 10˚ up for VXME at first, then 5˚ up for VYSE. I'll delay gear retraction until I confirm a sustained positive rate of climb."

**NOTE:** An alternate method is to estimate your liftoff spot using references off the left side of the runway, where you can see it during liftoff, and then a second reference about halfway to that spot. This works on contaminated or unpaved runways as well, which are often short runways when you need to know this information the most. You may even have to pace off this distance before you get into the airplane—you need to select these references with some degree of accuracy.

**NORMAL:** "After reaching 400 AGL, turn southeast toward the VOR and climb to 11,000 feet unless directed otherwise. On course is southeast from the VOR once reaching 11,000 feet. Alternately, if conditions permit, request ATC for a visual climb, assuming obstacle clearance responsibility myself. If granted, turn left toward my first fix while climbing to 11,000 feet. The hold at SAF has an inbound course of 334˚ and an outbound heading of 154˚. Hold entry will be by teardrop with an initial heading of 120˚."

**EMERGENCIES:** "Any failure to meet power targets on the runway: abort. Any power loss in the air: PUSH and HOLD; if able to climb, climb straight ahead to 7,500 feet and return to land. If unable to climb or a total engine power failure, PUSH attitude and HOLD heading, identify and verify the failed engine and feather its propeller, climb to at least 7,500 feet before making all but very small changes in heading, and aim slightly left if needed for an off-airport landing. Best-case, single climb rate will be approximately 200 feet per minute straight ahead in zero-sideslip flight. If I need to return for any other reason climb straight ahead to 7,500 feet and contact the tower."

Remember this "teeny" pre-takeoff checklist—Threats, Expectations, Normal departure and Emergencies, and incorporate it in your preflight planning. Then review your decisions in a pre-takeoff briefing just before you pull onto the runway. It's quick, it's easy, and it's a great last-minute reminder of the many decisions you make preparing for every takeoff. T&T

**Thomas P. Turner** *is an ATP CFII/MEI, holds a master's 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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# Great Getaways

## Gaston's White River Resort


PHOTO COURTESY OF CLINT GASTON

by **Grant Boyd**

Gaston's White River Resort, located in the picturesque Arkansas Ozarks, understands the value of an on-location runway. The popular pilot destination boasts a 3,200-foot grass strip and welcomes a wide range of aircraft including Piper Cubs, Beechcraft Barons, Quest Kodiaks and Pilatus PC-12s. Clint Gaston, the current owner and grandson of Gaston's founder, claims guests fly or drive in from all parts of the country because they "become family when they stay here."

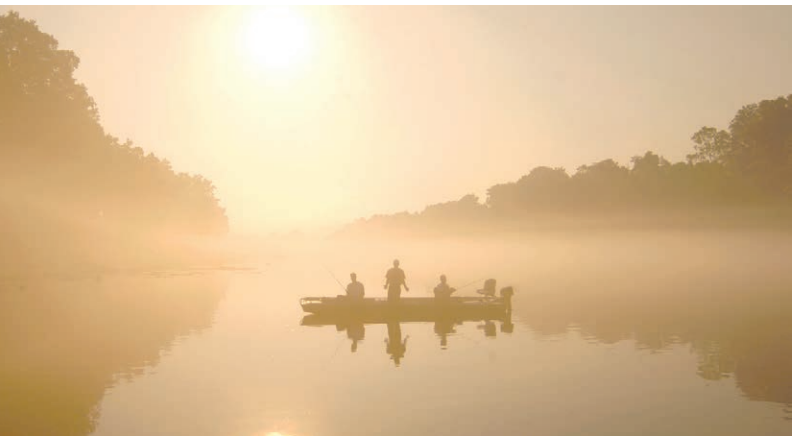
## Activities and Amenities

While there are dozens of ways to enjoy oneself at the 400-acre resort, the key emphases of Gaston's have remained the same since its founding 61 years ago: fishing and lodging. Directly adjacent to the resort is the White River (2.5 miles south of Bull Shoals Dam) where guests often catch Rainbow Trout, Brown Trout (the "Gaston's Trophy Fish" due to their size), Cutthroat Trout and Brook Trout. Sometimes, parties get so lucky as to catch the "White River Grand Slam," meaning all four of the noted trout species during the same trip.

Though beginner's luck could be a contributing factor for some in catching fish, the only proven way to become a better angler (or pilot for that matter) is instruction and practice. To that end, the resort offers a fly-fishing school which is led by a 25-year veteran guide and master fisherman, Frank Saksa. The school is a one-day course capped at two people to ensure ample one-on-one instruction. The course combines classroom teaching with hands-on experience, and is suitable as either a beginner or refresher class.

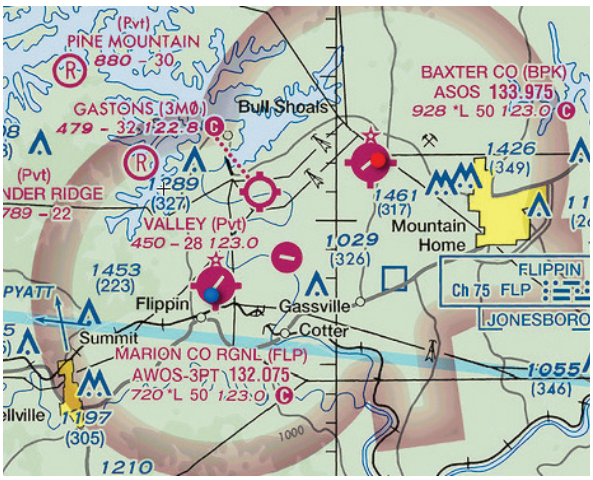
For those ready to jump into the action right away, there are also guided fishing tours available. Guests have the option of choosing "float" or "local" guided tours which are offered in half- or full-day increments and allow for a small group to join a guide on one of Gaston's many fishing boats. Or if doing things on your own is more your speed, there are more than 70 boats available for rent. And not to worry if you forgot your rod and reel (or do not own one) as the resort has plenty available for rent along with various other items to complete your fishing excursion.

After angling and relaxing on the river, guests often opt for a meal at Gaston's on-site restaurant. This award-winning dining establishment offers one of the best views on the property as the large picture windows provide a panoramic view of the river and surrounding scenery. Headed by Executive Chef



Wilkinson added that Gaston's reminds him of why it's important to stay sharp with seat-of-the-pants flying, even today. "Tucked in the White River Valley south of Bull Shoals Lake, you approach the downwind from the south over a high ridge then let down into the curve of the river for base. It leads you to an open area for approach to the field. Eyes must always be up and out with mind on pitch and power to control the approach. With a steady eye out for power lines along the way and trees at the end, you can set down smoothly on the 3,200 feet of well-kept turf."

John Young, a pilot who has flown multiple aircraft models (both piston and turbine) into the airport, offered up advice for first-timers. "If it's your first time to visit Gaston's, the




(and avid fly fisherman) Rick Gollinger, the restaurant serves a variety of steakhouse fare and of course, trout and other seafood. And what better way to enjoy your days' work than to hand over your fish to the kitchen for the "You Catch 'Em, We Cook 'Em" option on the menu. Chef Gollinger's team will fillet, clean and cook your trout however you prefer – broiled, fried or pan seared.

If you prefer to cook your catch yourself, be sure to select a kitchenette-equipped cabin complete with pots, pans and appliances. In all, there are 79 total riverfront cabins with assorted layouts. Aside from lodging and dining, the resort also features tennis courts, a pool, a playground, a wild-bird sanctuary, a gift shop, a game room, a duck pond, three nature trails and a conference center.

"What truly makes this place special is we go out of our way to accommodate guests' needs," said Gaston. "The various activities and hospitable demeanor of the staff culminate to create one of the most inclusive resorts in the Arkansas Ozarks."

## Flying into Gaston's

Approaching Gaston's White River Resort is scenic as the backdrop is sweeping, tree-covered hills and backcountry. The final approach into 3M0 is relatively simple, although there are power lines on short final that might surprise anyone new to the airstrip. Zachary Wilkinson, a pilot who has flown a Quest Kodiak into the strip, described the experience as "the kind of flying the first pilots did. The ones who were free to fly low, enjoy the view and land anywhere with an open area of grass."

key is thinking ahead as you would for any flight. Talk to people who've been there before, watch videos online and plan your first visit in fair weather conditions. Backcountry flying is all about knowing your aircraft, your capabilities, having a plan and executing it. What a fantastic way to hone your skills and expand your flying adventure. And for those of you with float planes – Bull Shoals lake is right next door!"

If your aircraft is not suited for off-field landings, there are two alternate airports within a 15-minute drive of the resort: Baxter County Airport (BPK) and Marion Country Regional Airport (FLP). Both airports offer a 5,001-foot by 75-foot asphalt runway, lighted approach and Jet-A. While BPK is around four nautical miles to the northeast of Gaston's, FLP is about four nautical miles to the southwest. Transportation to and from the airports can be covered by the Gaston's staff.

With its beautiful scenery, world-class fishing and convenient landing options, Gaston's White River Resort easily deserves recognition in this pilot destination series. Stay tuned for our next "Great Getaways" feature in the April issue. T&T

**Grant Boyd** *is a recent marketing graduate of Wichita State University. A private pilot, Boyd is currently working toward his instrument rating and MBA, with the ultimate goal of combining his love of business and aviation with a career at a general aviation manufacturer. You can contact Grant at* **grantboyd2015@gmail.com**.

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# An Unforgettable Journey

by **Randy Groom**

The first time I heard the Skyhawk check in on frequency, I was 30 miles off the coast of Georgetown, Guyana. From the sound of it, they appeared to be about 60 miles behind me and based on our mutual headwind, probably only doing about 90 knots. I had no idea who they were or where they were coming from, but it was comforting to know that another small single was sharing the airspace on this long leg from Trinidad to Cayenne.

On their next call, they reported that they would be diverting to Georgetown for fuel. I had been told that, if possible, try to avoid Georgetown. Not sure exactly why, but visions of Jim Jones and the nightmare that occurred in that country decades ago were enough to keep me focused on assuring my reserves were enough to make Cayenne. Good luck guys, I thought to myself.

It was mid-October of 1996, and I was on a delivery trip of a Beech Bonanza F33A from North Carolina to Southern Brazil – my first big international trip on my own. My day job was vice president of sales for Beechcraft dealer Piedmont Aviation, which did not entail being a professional delivery pilot. And while the trip was a grand adventure, it was definitely a bit out of my comfort zone, so a certain level of anxiety was ever present in my consciousness. There were the long overwater legs to think about and, of course, the engine didn't quite seem as smooth as it did over land. And knowing that ahead of me was going to be about 1,000 miles of jungle and if by chance that trusty Continental IO-520 decided to give up at the wrong time, it would be doubtful anyone would ever find me, even if I did survive the impact.

But I was probably most anxious about the customs and importation process when clearing into Belem, Brazil. I had been told that the customs agents in Belem didn't speak any English and my Portuguese was limited to essential things like how to order a beer or asking for directions to the bathroom. How in the world was I going to be able to communicate? My customer had given me a package to give to the officials with specific instructions and theoretically all the required documentation filled out. And I had a case of Scotch whiskey in the back that I had been told might be useful to "grease the wheels" of any bureaucratic hold-ups.

After a pleasant overnight in Cayenne, it was off to Belem. About an hour into the flight, the Skyhawk made another appearance checking in on frequency, now clearly in front of me. Gosh, I thought, those guys must have got up awful early in Georgetown. They reported that their destination was Belem as well, so I looked forward to meeting them and was curious to find out about their Georgetown experience.

After about two hours, the mouth of the Amazon appeared below. It was an incredible sight with the fresh water appearing to boil as it entered the Atlantic after completing its 4,000-mile journey from the Andes of Peru and Ecuador. And the amazing thing was the mouth with its tentacles stretched over the next 100 miles.

The landing and taxiing to customs was uneventful – and I noted the Skyhawk on the ramp. I marched into the office and was greeted by half a dozen uniformed officials. All the paperwork was handed over and I coughed up my planned and probably butchered "Nao Falo Portugues," which translates "I don't speak Portuguese."

They began pouring through all the paperwork and started talking to themselves pointing to each document. The more they talked, the louder their voices became to the point where it appeared to me that they were quite angry about something. One of them turned to me and was aggressively flipping through the pages pointing and shouting that I only could guess translated to "these documents are not in order and what the hell do you think you are doing!?" He was turning more and more red in the face, and I'm sure that I was turning white as I was wondering what the prisons in Belem would be like.

"Is there something that I can help you with?" It was a voice that came from the doorway of a nearby room. A handsome, slender twenty-something-year-old guy strolled into the office. "My name is Ernesto Igel and my friend Fares and I are ferrying a Skyhawk from Boston to São Paulo. We heard you on frequency. Please explain what you are trying to do, and I will see if we can straighten things out."

My first thought was this guy just rode in on a golden chariot wearing a Superman cape and was going to save me. My second thought was Boston? Are you kidding me? My trip is 30 hours and theirs is probably 50! Holy cow, their rear ends are going to be sore when this is over.

I explained that my company had sold the Bonanza to a customer in Londrina, Brazil and that I am the ferry pilot and somehow needed to get through the customs and importation process.

Ernesto started talking to the officials explaining what I was doing. They still seemed angry. Ernesto started to raise his voice back to them. Back and forth they went, pointing at the documents almost yelling at each other.

Finally, Ernesto turned to me and said, "they want to see your airplane."

We all walked out to the F33 and they looked over the engine compartment, the front seat and back seat, and finally the baggage compartment. Then they saw the case of Scotch and started pointing and yelling at Ernesto again. The conversation I assume was something like, "What the hell is this? Is he trying to sneak this into our country without declaring it?"

I told Ernesto that the Scotch was actually a present for the customs officials in appreciation for all their help. Ernesto frowned at me but proceeded to explain the situation. The official scooped up the Scotch and we returned to the office where at least a hundred stamps were pounded on the documents and I was shown the door and cleared to go. I'll never know what the fuss was about but what I did know was that I felt like hugging Ernesto as the stress melted from my body. But I didn't.

"Thank you so much. You have no idea how much I appreciate you coming to my rescue. Thank you, thank you, thank you," I told him over and over. His friend Fares appeared, and I introduced myself. Fares was the new owner of the Skyhawk and Ernesto, a much more experienced pilot, was helping with the ferry flight. It was about four in the afternoon and I wanted to get some more miles behind me, but I also wanted to buy these guys dinner. "Where are you guys headed tonight," I asked. "Imperatriz. It's about 300 miles south of here and I know a great restaurant and bar there," Ernesto responded.

We agreed to meet up at Imperatriz but also to try to rendezvous in-flight to snap some pictures of each other. They took off about 15 minutes ahead of me as I still needed to top off with fuel.

It was a brilliant blue-sky day but with tons of puffy cumulus building up from the jungle below. After a bit of searching, we located each other and I brought my power back to about 18 inches and dropped the approach flaps to try to match the Skyhawk's speed. We snapped pictures of each other for five minutes before I powered up and pushed ahead to Imperatriz.

A few hours later we were sitting together at a restaurant table located right on the Tocantins river that runs through the jungle town. It was hot, incredibly humid and I could literally smell the moist earth that surrounded me. And I loved it. I was in an exotic place in a foreign land but completely relaxed for the first time on the trip.

During dinner, Ernesto brought something up that made me a bit uncomfortable and embarrassed. "I don't agree with your idea to give the case of Scotch to the customs people. It makes us feel like you think of us as a corrupt banana republic that needs to be bribed to get anything done," he said after a big swig of beer. "Gosh, I'm sorry. I didn't think of that," I responded, feeling like an ugly offensive American. "Don't worry," he said trying to make me feel better. "You're not the only one to do such a thing, and I suppose those guys are back there enjoying their Scotch right now."

After dinner, we went to a bar for a few more beers and to share work history and flying stories. I learned that Ernesto was the son of a leader of a fuel and chemical company called Ultra (it was only later when I would understand just how powerful his family was in Brazil). It was obvious he had a strong upbringing as he exuded a maturity and confidence that is rarely seen from such a young man. He then invited me to visit him in São Paulo after I was done with my customer delivery, saying I could stay at his house and he would introduce me to some other aircraft salespeople – an incredibly generous offer. I accepted the offer and told him I would call when I was done later in the week.

Four days later, after delivering the Bonanza and spending time with my customer, I flew TAM airlines to the Congonhas airport in São Paulo, which is in the heart of the city with huge buildings surrounding it. It serves as both a general aviation airport as well as a hub for many of the regional flights around Brazil. I caught a cab through all the traffic to Ernesto's apartment. It was spacious, well-appointed and located in a very nice part of the city. Later that evening, Fares joined us, and we went out on the town to several bars and a terrific Italian restaurant.

The next day, as promised, Ernesto offered to take me around town to introduce me to some fellow aviation professionals. He apologized that his only transportation was his motorcycle, and would I mind sitting on the back. I was to fly out later that day and couldn't imagine

riding around downtown traffic straddling a motorcycle and holding my bags. So, I politely declined and said I would follow him around in a cab. For the next five hours, the cab and I chased after Ernesto weaving in around the city making stops at different airports to meet a lot of nice, well-connected aircraft dealers and brokers. He was incredibly generous with his time and wanted to do his best to ensure that I was able to build a stronger network and business in Brazil. Toward the end of the day, it was time for me to make my way to the international airport to fly home to North Carolina. Again, I thanked Ernesto profusely and was certain that I had developed a great new friend for life.

Then, early one morning after being home about a week, I was back in my routine of 30 minutes on my treadmill before going to work and was watching the "Today" show. The news broke that there had been a terrible airline accident at the Congonhas airport in São Paulo. TAM flight 402 had apparently been unable to climb after departure and crashed into the city killing 89 passengers, six crewmembers and eight people on the ground. I shuttered to think about the fact that I had just flown TAM into Congonhas only a week before and was aware of the congestion surrounding the airport. Such a tragedy, but like most bad news that we get, we carry on. So, I went to work not thinking too much more about it.

After returning from work, I checked my emails and got more news that brought me to my knees. Fares had sent me a note that Ernesto had been on TAM 402 and was killed. I was stunned and literally cried. How in the world could this happen? You don't think about general aviation pilots dying in the back of airliners. What are the chances that he happened to be on this particular flight?

The loss of life of any friend or family member is difficult to take, but I have always felt that the loss of life of a young person is the ultimate tragedy. The thought always crosses my mind of "what could they have become?" In Ernesto's case, he was clearly destined for greatness. I found out later that his father was CEO of the multi-billion-dollar company and was grooming his young 27-year-old to take the reins in the matter of a few years. I am certain he would have been a fabulous leader. He had the strength of character to

rise to the highest level of politics as well. Hell, he could have become the President of Brazil.

Ernesto's family and the country of Brazil lost a lot with his passing. But for me, I lost a new and dear friend who I never will be able to adequately thank for his kindness and generosity. I wish I could give him that hug that I owed him.

Today, on my office wall, I keep and treasure the picture that he took of my Bonanza cruising over his beautiful country. God speed my friend.

**Author's Note:**

*Post-accident investigation of TAM Flight 402 revealed that after rotation the Fokker F100 right engine thrust reverser inadvertently deployed and the aircraft rolled to the right. A safety system in the aircraft then automatically pulled the right engine and associated power lever to idle. The copilot, noting the power lever position pushed it forward again creating enormous drag from full power being applied to the reverser. There was no other indication in the cockpit that the reverser had deployed. The safety system again snapped the power lever to idle and this time the captain pushed the power lever forward and called for auto-throttles off. The aircraft was unable to climb in this high drag condition and crashed into the city. The crew had not been trained for this scenario as it was considered extremely unlikely.* T&T

**Randy Groom** *can be contacted at* **randy@groomaviation.com**

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## Jets – 15,487

### Chief Pilots & Owners

| Count | Aircraft |
|---|---|
| 55 | AIRBUS ACJ319 |
| 25 | ASTRA 1125 |
| 31 | ASTRA 1125SP |
| 51 | ASTRA 1125SPX |
| 36 | BEECHJET 400 |
| 238 | BEECHJET 400A |
| 124 | BOEING BBJ |
| 371 | CHALLENGER 300 |
| 55 | CHALLENGER 600 |
| 38 | CHALLENGER 601-1A |
| 109 | CHALLENGER 601-3A |
| 51 | CHALLENGER 601-3R |
| 289 | CHALLENGER 604 |
| 9 | CHALLENGER 800 |
| 166 | CITATION 500 |
| 285 | CITATION 525 |
| 266 | CITATION BRAVO |
| 153 | CITATION CJ1 |
| 85 | CITATION CJ1+ |
| 194 | CITATION CJ2 |
| 163 | CITATION CJ2+ |
| 357 | CITATION CJ3 |
| 92 | CITATION CJ3+ |
| 240 | CITATION CJ4 |
| 152 | CITATION ENCORE |
| 50 | CITATION ENCORE+ |
| 297 | CITATION EXCEL |
| 18 | CITATION I |
| 242 | CITATION I/SP |
| 451 | CITATION II |
| 58 | CITATION II/SP |
| 161 | CITATION III |
| 64 | CITATION LATITUDE |
| 171 | CITATION M2 |
| 381 | CITATION MUSTANG |
| 125 | CITATION S/II |
| 256 | CITATION SOVEREIGN |
| 68 | CITATION SOVEREIGN+ |
| 241 | CITATION ULTRA |
| 236 | CITATION V |
| 28 | CITATION VI |
| 97 | CITATION VII |
| 255 | CITATION X |
| 25 | CITATION X+ |
| 212 | CITATION XLS |
| 209 | CITATION XLS+ |
| 1 | DIAMOND I |
| 42 | DIAMOND IA |
| 3 | DORNIER ENVOY 3 |
| 232 | ECLIPSE EA500 |
| 52 | EMBRAER LEGACY 500 |
| 135 | EMBRAER LEGACY 600 |
| 58 | EMBRAER LEGACY 650 |
| 232 | EMBRAER PHENOM 100 |
| 261 | EMBRAER PHENOM 300 |
| 75 | FALCON 10 |
| 21 | FALCON 100 |
| 19 | FALCON 200 |
| 186 | FALCON 2000 |
| 21 | FALCON 2000EX |
| 58 | FALCON 20C |
| 15 | FALCON 20C-5 |
| 23 | FALCON 20D |
| 2 | FALCON 20D-5 |
| 31 | FALCON 20E |
| 9 | FALCON 20E-5 |
| 68 | FALCON 20F |
| 64 | FALCON 20F-5 |
| 194 | FALCON 50 |
| 8 | FALCON 50-40 |
| 91 | FALCON 50EX |
| 153 | FALCON 900 |
| 23 | FALCON 900C |
| 102 | FALCON 900EX |
| 180 | GLOBAL 5000 |
| 127 | GLOBAL EXPRESS |
| 19 | GULFSTREAM G-100 |
| 206 | GULFSTREAM G-200 |
| 8 | GULFSTREAM G-300 |
| 22 | GULFSTREAM G-400 |
| 283 | GULFSTREAM G-450 |
| 7 | GULFSTREAM G-500 |
| 471 | GULFSTREAM G-550 |
| 62 | GULFSTREAM G-II |
| 22 | GULFSTREAM G-IIB |
| 128 | GULFSTREAM G-III |
| 170 | GULFSTREAM G-IV |
| 283 | GULFSTREAM G-IVSP |
| 170 | GULFSTREAM G-V |
| 34 | HAWKER 1000A |
| 5 | HAWKER 125-1A |
| 7 | HAWKER 125-1AS |
| 4 | HAWKER 125-3A/RA |
| 11 | HAWKER 125-400A |
| 13 | HAWKER 125-400AS |
| 12 | HAWKER 125-400B |
| 11 | HAWKER 125-600A |
| 3 | HAWKER 125-600AS |
| 103 | HAWKER 125-700A |
| 59 | HAWKER 4000 |
| 187 | HAWKER 400XP |
| 34 | HAWKER 750 |
| 180 | HAWKER 800A |
| 33 | HAWKER 800B |
| 353 | HAWKER 800XP |
| 40 | HAWKER 800XPI |
| 81 | HAWKER 850XP |
| 155 | HAWKER 900XP |
| 6 | JET COMMANDER 1121 |
| 4 | JET COMMANDER 1121B |
| 1 | JETSTAR 6 |
| 5 | JETSTAR 731 |
| 12 | JETSTAR II |
| 8 | LEARJET 23 |
| 17 | LEARJET 24 |
| 1 | LEARJET 24A |
| 11 | LEARJET 24B |
| 34 | LEARJET 24D |
| 10 | LEARJET 24E |
| 7 | LEARJET 24F |
| 11 | LEARJET 25 |
| 36 | LEARJET 25B |
| 9 | LEARJET 25C |
| 92 | LEARJET 25D |
| 3 | LEARJET 28 |
| 28 | LEARJET 31 |
| 167 | LEARJET 31A |
| 33 | LEARJET 35 |
| 352 | LEARJET 35A |
| 13 | LEARJET 36 |
| 32 | LEARJET 36A |
| 30 | LEARJET 40 |
| 192 | LEARJET 45 |
| 166 | LEARJET 45XR |
| 100 | LEARJET 55 |
| 4 | LEARJET 55B |
| 12 | LEARJET 55C |
| 256 | LEARJET 60 |
| 467 | PILATUS PC-12/45 |
| 110 | PREMIER I |
| 6 | SABRELINER 40 |
| 17 | SABRELINER 40A |
| 3 | SABRELINER 40EL |
| 1 | SABRELINER 40R |
| 21 | SABRELINER 60 |
| 18 | SABRELINER 60ELXM |
| 2 | SABRELINER 60EX |
| 62 | SABRELINER 65 |
| 13 | SABRELINER 80 |
| 6 | SABRELINER 80SC |
| 71 | WESTWIND 1 |
| 5 | WESTWIND 1123 |
| 29 | WESTWIND 1124 |
| 62 | WESTWIND 2 |

## Turboprops – 11,093

### Chief Pilots & Owners

| Count | Aircraft |
|---|---|
| 2 | PIPER MALIBU |
| 362 | CARAVAN 208 |
| 1206 | CARAVAN 208B |
| 2 | CARAVAN II |
| 33 | CHEYENNE 400 |
| 137 | CHEYENNE I |
| 13 | CHEYENNE IA |
| 262 | CHEYENNE II |
| 57 | CHEYENNE III |
| 38 | CHEYENNE IIIA |
| 51 | CHEYENNE IIXL |
| 22 | CHEYENNE IV |

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|---|---|
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| 249 | CONQUEST II |
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| 60 | JETSTREAM 32 |
| 61 | JETSTREAM 41 |
| 30 | KING AIR 100 |
| 514 | KING AIR 200 |
| 20 | KING AIR 200C |
| 17 | KING AIR 200T |
| 153 | KING AIR 250 |
| 177 | KING AIR 300 |
| 11 | KING AIR 300LW |
| 558 | KING AIR 350 |
| 61 | KING AIR 350C |
| 314 | KING AIR 350I |
| 19 | KING AIR 90 |
| 11 | KING AIR A/B90 |
| 58 | KING AIR A100 |
| 210 | KING AIR A200 |
| 54 | KING AIR A90 |
| 106 | KING AIR A90-1 |
| 93 | KING AIR B100 |
| 886 | KING AIR B200 |
| 100 | KING AIR B200C |
| 8 | KING AIR B200CT |
| 95 | KING AIR B200GT |
| 4 | KING AIR B200SE |
| 21 | KING AIR B200T |
| 79 | KING AIR B90 |
| 332 | KING AIR C90 |
| 34 | KING AIR C90-1 |
| 188 | KING AIR C90A |
| 369 | KING AIR C90B |
| 78 | KING AIR C90GT |
| 93 | KING AIR C90GTI |
| 119 | KING AIR C90GTX |
| 13 | KING AIR C90SE |
| 242 | KING AIR E90 |
| 155 | KING AIR F90 |
| 25 | KING AIR F90-1 |
| 8 | MERLIN 300 |
| 25 | MERLIN IIB |
| 19 | MERLIN III |
| 26 | MERLIN IIIA |
| 47 | MERLIN IIIB |
| 19 | MERLIN IIIC |
| 4 | MERLIN IV |
| 9 | MERLIN IV-A |
| 8 | MERLIN IV-C |
| 63 | MITSUBISHI MARQUISE |
| 1 | MITSUBISHI MU-2D |
| 23 | MITSUBISHI MU-2F |
| 18 | MITSUBISHI MU-2J |
| 33 | MITSUBISHI MU-2K |
| 11 | MITSUBISHI MU-2L |
| 18 | MITSUBISHI MU-2M |
| 17 | MITSUBISHI MU-2N |
| 24 | MITSUBISHI MU-2P |
| 36 | MITSUBISHI SOLITAIRE |
| 567 | PILATUS PC-12 NG |
| 149 | PILATUS PC-12/47 |
| 228 | PIPER JETPROP |
| 46 | PIPER M500 |
| 59 | PIPER M600 |
| 481 | PIPER MERIDIAN |
| 3 | ROCKWELL 680T TURBO |
| 5 | ROCKWELL 680V TURBO II |
| 5 | ROCKWELL 680W TURBO II |
| 4 | ROCKWELL 681 HAWK |
| 98 | SOCATA TBM-700A |
| 68 | SOCATA TBM-700B |
| 292 | SOCATA TBM-850 |
| 102 | SOCATA TBM-900 |
| 5 | STARSHIP 2000A |
| 70 | TURBO COMMANDER 1000 |
| 38 | TURBO COMMANDER 690 |
| 140 | TURBO COMMANDER 690A |
| 139 | TURBO COMMANDER 690B |
| 79 | TURBO COMMANDER 840 |
| 24 | TURBO COMMANDER 900 |
| 56 | TURBO COMMANDER 980 |

### Twin Piston – 6,507

**Owners**

| Count | Aircraft |
|---|---|
| 37 | BARON 56 TC |
| 1433 | BARON 58 |
| 2 | BARON 58 PA |
| 345 | BARON 58P |
| 108 | BARON 58TC |
| 3 | BARON A56TC |
| 321 | BARON G58 |
| 188 | BEECH DUKE B60 |
| 162 | CESSNA 340 |
| 520 | CESSNA 340A |
| 70 | CESSNA 402B BUSINESS LINER |
| 133 | CESSNA 402C |
| 24 | CESSNA 404 TITAN |
| 247 | CESSNA 414 |
| 357 | CESSNA 414A CHANCELLOR |
| 43 | CESSNA 421 |
| 38 | CESSNA 421A |
| 335 | CESSNA 421B |
| 607 | CESSNA 421C |
| 53 | CESSNA T303 |
| 106 | PIPER 601P AEROSTAR |
| 24 | PIPER 602P AEROSTAR |
| 442 | PIPER CHIEFTAIN |
| 314 | PIPER MERIDIAN |
| 25 | PIPER MOJAVE |
| 315 | PIPER NAVAJO |
| 13 | ROCKWELL 500 SHRIKE |
| 24 | ROCKWELL 500A SHRIKE |
| 77 | ROCKWELL 500B SHRIKE |
| 44 | ROCKWELL 500S SHRIKE |
| 5 | ROCKWELL 500U SHRIKE |
| 12 | ROCKWELL 520 COMMANDER |
| 5 | ROCKWELL 560 COMMANDER |
| 11 | ROCKWELL 560A COMMANDER |
| 7 | ROCKWELL 560E COMMANDER |
| 7 | ROCKWELL 560F COMMANDER |
| 13 | ROCKWELL 680 SUPER |
| 3 | ROCKWELL 680E |
| 14 | ROCKWELL 680F COMMANDER |
| 14 | ROCKWELL 680FL GRAND COMMANDER |
| 6 | ROCKWELL 680FLP GRAND LINER |

### High Performance Move-Up Singles – 5,668

**Owners**

| Count | Aircraft |
|---|---|
| 225 | BEECH BONANZA |
| 429 | CESSNA 182 |
| 54 | CESSNA 206 |
| 393 | CESSNA P210N |
| 21 | CESSNA P210R |
| 52 | CESSNA T182 |
| 1 | CESSNA T206 |
| 782 | CIRRUS SR20 |
| 2920 | CIRRUS SR22 |
| 238 | PIPER MALIBU |
| 104 | PIPER MATRIX |
| 449 | PIPER MIRAGE |

### 38,755 TOTAL AIRCRAFT

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# B-29 "Doc" Finds Forever Home

by **Jenna Reid**

*When I first saw Doc in 2013, the B-29 was in a Boeing Quonset hut hangar unpolished with faded nose art and missing engines. Today, after more than 16 years of restoration, it is an active flying tribute to the Greatest Generation. As its third airshow season approaches, we received a private tour of the airplane's newly opened hangar and education space.*

In November of 2018, nonprofit Doc's Friends officially welcomed its restored B-29 ("Doc") into a brand new 32,000 square-foot facility located at Wichita's Dwight D. Eisenhower National Airport. After nearly five years of architectural planning, fundraising and construction, it all came together.

"The most exciting part was when they opened the hangar door and rolled Doc inside," said Sam Frey, Doc's Friends hangar design committee chair and partner at Schaefer Johnson Cox Frey Architecture (SJCF). "I was enormously relieved he fit!"

Upon arriving to the hangar, visitors are immediately greeted by the B-29 through the building's expansive glass windowpanes. Frey likes to think of the hangar's frontal design as a metaphor; the large glass window is the frame with Doc as the big picture.

Frey and his team were tasked not only with creating a functional hangar space but a place to honor previous generations and inspire future ones.

"The vision behind the hangar was to build something where the public could see and experience the B-29," said Josh Wells, Doc's Friends general manager and executive director. "There is no other facility in the world where you can walk right up to a B-29, touch it, crawl in it and learn about it as it's being worked on."

The facility's layout offers ample space for school groups, large events and conference rooms for crew training and pilot briefings. An enormous image of Doc flying over its hometown of Wichita is featured on the wall behind the reception desk. The lobby also features a gift shop area, gathering space (situated under a B-29 wing replica) and a commemorative "Veterans" wall.

## The Hangar

To enter the hangar, you must walk through two (secured) double glass doors. Doc is showcased on a gleaming, well-polished floor with organized supply and maintenance rooms on both sides (you can imagine the amount of tooling required to keep a 1944 aircraft flying).

The warbird faces the front glass overlooking the "hero plaza." The plaza displays numerous bricks and stones purchased by people from all over the world

looking to honor loved ones and support the Doc's Friends mission.

From the second-floor balcony, visitors can overlook the entire airplane while also browsing the various displays and artifacts lining the walls and floor. The Doc's Friends hangar design committee visited museums for inspiration as well as turned to a local space museum, the Cosmosphere, to help bring Doc's story to life. With a simple stroll, visitors are able to gain a solid appreciation and understanding of the B-29's role in WWII.

## Operations

Doc previously operated out of McConnell Air Force Base where the aircraft was at the mercy of the Federal Government, Air Force and Air Capital Flight Line security. Now in its new home, Doc's Friends expects operations of the B-29 to be simpler but the group must still adhere to security measures laid out by the FAA, TSA, Airport Authority and the Airport Police Department.

One of the issues Doc faced during the restoration phase was the Kansas weather. The aircraft was often required to be outside in the elements, and if the temperatures dropped below 50 degrees, the oil in the engines started to thicken and grounded the aircraft – halting any engine runs or flying. But now, in its new heated hangar, the B-29 is well protected and can withstand a longer flying season.

B-29 Doc "ride experiences" will begin in April, with the 2019 tour season kicking off in May. The group plans to travel to 12 to 15 air shows throughout the year. The ultimate goal is for the aircraft and the facility to be self-sustainable. All proceeds from airshow fees, ride experiences and merchandise sales go directly into maintaining the aircraft and facility.

## Crew and Volunteers

Support from the Commemorative Air Force and FIFI crew is instrumental as Doc's Friends works toward finding and training its own full crew. Former KC-135 and B-1 Bomber pilot Mark Novak is the group's chief pilot and also handles the scheduling of the crew. While crewmembers are primarily based in the Midwest, the team is open to bringing in others from across the country.

Doc's Friends currently has around 100 active volunteers with 30 to 40 being day-to-day regulars. The team has been busy with standard winter maintenance with the year's first test flights scheduled for late March. The hangar also opens to the public this month.

"We are always looking for ways to bring more people on, and will soon start a volunteer recruitment process to start bringing in that next generation," said Wells. "The greatest compliment we can give our volunteers is that their legacy will continue. We want Doc to outlive all of us."

For more information or to support the Doc's Friends mission, visit *www.b29doc.com*. T&T

**Jenna Reid** *is known among the avionics community from her time as the copy editor for Avionics News. It was there that she developed her love for flight. With nearly a decade of promoting GA throughout the world, she continues to indulge her passion for aviation while also owning a business in Wichita, Kansas. Jenna can be contacted at* **jenna.f.reid@gmail.com**.

# Engine Maintenance Programs: *Are They Worth It?*

by **Rich Pickett**

If you want to start a lively discussion with turbine and turboprop aircraft owners, ask their opinion about engine maintenance programs. Some owners consider them cost-effective, while others believe it is financially advantageous to pay directly for repairs and inspections as required. I own turbine-powered airplanes as well as assist owners with acquiring or selling their aircraft, and this is always a topic of discussion. One question is how do the engine programs affect the value of an aircraft?

Turbine engine maintenance programs or service contracts (sometimes called "power by the hour") provide parts and inspection coverage on engines to owners in exchange for a set fee per hour. Providers of these programs include the engine manufacturers, aircraft manufacturers and independent companies such as JSSI and Aviall. Similar to insurance, these plans are a way to mitigate financial risk.

Each provider offers a variety of maintenance packages. Some include the most common components used during the typical life of an engine while others include time-limited parts such as rotor disks and varying levels of labor coverage. While usual wear and tear is covered under most programs, corrosion and damage from Foreign Object Debris (FOD) are only included with some plans. This can be a significant differentiator when evaluating maintenance programs since potential corrosion, and FOD damage can easily double, or triple, the cost of a maintenance event. With multiple options, it can be a challenge to evaluate the numerous program offerings.

For owners who decide not to participate in a program, the assumption is they can obtain a higher rate of return by investing the money rather than paying a provider a set fee per hour of operation. In essence, their view is the programs are a bad investment in comparison to other options. Whereas, owners with programs have determined that participation provides them with a capitalized cost to operate the engines with a known maintenance expense per hour.

## Scenarios

Let's look at two scenarios: purchasing a new turbine aircraft and purchasing a used jet. The jet in our analyses is a composite of multiple business aircraft currently flying with a per engine maintenance program average cost of $150 per hour over the life of the program. Let's assume the jet engines have a TBO of 4,000 hours, with a hot section inspection (HSI) due at mid-life of 2,000 hours. Using a composite analysis for this engine, the HSI would cost $100,000 and the overhaul $500,000. Our examples reflect the costs for a single engine with simplified alternative investment assumptions.

## Purchasing a New Turbine Aircraft

Our first scenario is the purchase of a new jet. For this analysis, let's assume the aircraft operates 200 hours per year, which is slightly higher than many owner-operators and less than corporate-owned aircraft (and certainly less than charter operators). It would take 10 years to reach HSI and 20 years for engine overhaul at this usage rate.

Over the 4,000 hours, the owners of this aircraft would have incurred $600,000 in scheduled maintenance for each engine. Since these programs also cover unscheduled, as well as scheduled, events we will assume the engine would consume $30,000 to $50,000 in additional covered maintenance during its overhaul interval. This brings the total cost of maintaining each engine on this airplane to $650,000 after 4,000 hours of operation. If the operator had elected to participate in the engine programs under this scenario, they would pay about $2,500 per month for an average usage of 16.7 hours and benefit from an 8 percent return on their expenditures at the end of the 20-year period.

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On the other hand, if the owner self-funded their engine maintenance and invested the $150 per hour at 5 percent annual rate of return, they would have amassed $388,000 (before taxes), less any engine maintenance that would have been incurred. At 2,000 hours, when the hot section inspection was due, the owner would have a $100,000 expense. Assuming $20,000 in unscheduled maintenance, not including periodic service, they would have amassed $268,000 in their reserve.

Continuing to the next phase in the engine's life, overhaul, assume the same 10 years and the reserve balance of $268,000. At 4,000 hours and 20 years of total engine life, their reserve balance would $829,000 with the same investment assumptions and before taxes. After they pay for the overhaul cost of $500,000 and $30,000 in non-covered repairs they are still ahead by $299,000. Who says you can't make money flying airplanes?

So, you ask the question what happens if the operator flies 400 hours per year? The time value of the self-funded investment is compressed, however, the monthly payment doubles. The self-funded owner would have accrued $340,000 and netted $220,000 after HSI and miscellaneous expenses after five years of operation. At overhaul, they would have accrued $622,000. After paying for the overhaul, and another $30,000 in maintenance outside of the scheduled events, the owner would be left with $92,000.

The next question is: What is the value proposition for engine programs when selling, or purchasing, a used jet aircraft?

It is impossible to cover all potential purchase combinations, so I'll present one that is common and can give you ideas on how it might impact your sale or purchase.

## Purchasing a Used Jet

You are now in the market for a pre-owned turbine. You are looking at jets with 1,000 hours on the engines. You are now presented with multiple available aircraft, some on engine programs while others are not. The question is how much do engine programs affect the value of these similar airplanes?

In purchasing the used jet with an existing (and assumable) engine service contract, the new owner would be taking advantage of equity accrued for maintenance. With HSI at 2,000 hours, the new

owner would pay an additional $150,000 to the maintenance provider. If the owner then continued operating the aircraft until TBO, an additional $300,000 would have been paid through the contract. The new owner would have paid $450,000 for $600,000 of scheduled maintenance plus any other covered maintenance over their ownership. Of course, they would have also incurred expenses for non-covered maintenance during their 3,000 hours of operation.

If the purchaser decided in favor of the airplane without a program, their direct cost for an HSI would be $100,000 and $500,000 for the full overhaul at TBO. They would lose some time value of an alternative investment since one-quarter of the time before overhaul passed prior to purchasing the aircraft. Using our same 200 hours per year, investment model and $20,000 of unscheduled maintenance, they would be ahead at HSI by $50,000. Since they would be starting with a lower reserve balance after HSI, at TBO they would have a negative balance of approximately $70,000.

The advantage between the two paths is with the used aircraft not on the engine programs at HSI by $50,000, with the advantage reversing by a slightly larger amount at TBO. If you don't consider the cost of any expensive repairs that might be covered by the service contracts, then the aircraft not on a program should sell for $50,000 to $70,000 less than the program-protected jet. With this scenario, the value of the engine program during the first 1,000 hours on our hypothetical jet has depreciated 46 to 67 percent. The first owner did receive value for his payments during ownership since they were protected for covered maintenance. So, it makes sense that the engine program value has depreciated along with the airframe.

As the used aircraft under consideration increases in hours, the comparison changes. The new owner would have even less time for an alternative investment if they didn't participate in the engine programs. With two aircraft at 1,500 hours, the jet covered by an engine program would have a $25,000 to 30,000 advantage at HSI and $120,000 to 160,000 lead at TBO.

Of course, all the above examples assume the owner without engine-program coverage directly invests the equivalent service contract funds and their engine does not incur significant expenses not covered by the programs. Covered repairs, outside of scheduled maintenance, can be a considerable expense far exceeding most alternative investments.

## Conclusion

How lucky do you feel? There is no clear conclusion with a preference for, or against, the engine programs. I wanted to illustrate just a few of the myriad scenarios that are possible. The programs are worthwhile for individuals and businesses that want to limit their risk and have a known engine operating cost, at least for covered events. For pre-owned turbine aircraft, the existence of a current engine maintenance program enrollment does add value. However, it is depreciated from the full investment before the sale, and the exact residual value is difficult to determine. For my recent turbine purchase, it was clear that obtaining a plane on an engine program was cost-effective in comparison with other options.

For those operators that understand the risks of operating without coverage and the advantages of alternative investments, the choice is clear for them. Over time, as the fleet ages, there are also more serviceable parts, complete engines and PMA options available at a lower cost, which can be utilized by the operators to reduce their maintenance costs if they are not covered by an engine program.

For purchasers of used aircraft not on programs, there are hybrid service programs offered by the engine manufacturers and others that allow them to reduce their upfront expenditure and share in the future repair risk with the providers. Owners also have the option of purchasing a used engine with time remaining on it or joining hybrid service programs that allow them to share the risk with the contract providers. T&T

*After 11,000 hours of piloting over 90 aircraft models,* **Rich Pickett** *still has a passion for flying. Rich holds an ATP, CFII SME, SES, glider licenses, and type ratings in the L29, L39, Citation 500/510s/525s, Eclipse 500S and DA10. His company, Personal Wings, provides training, mentoring and aircraft services. You can contact Rich at* **rich@personalwings.com**.

# FIVE on the FLY

by **Rebecca Groom Jacobs**

**WHO:**
**Susan Carastro**

**POSITION:**
**Veterinary Ophthalmologist, Owner-Pilot**

**HOME BASE:**
**West Palm Beach, FL (LNA)**

**RATINGS:**
**CFI, MEI, ATP**

**FLIGHT HOURS:**
**2,300**

### 1. *Can you describe your introduction to general aviation?*

Aviation is in my DNA. My father was a pilot in the Air Force while my mother got her private ticket in 1956 and was a member of the Civilian Air Patrol. As kids, every Sunday after church, my family would go out to the airport to fly and hang around other pilots. My father instructed my brother and me from a very young age, so we actually earned our pilot's license before our driver's license. I can remember sitting on top of cushions to reach the rudder pedals.

While my brother went on to become an airline pilot (and now owns a flight school in Biloxi, Mississippi), I attended veterinary school and took a hiatus from flying. Later when I moved to south Florida, I promised my mother I would visit her in Alabama once a month. But invariably, my airline flight would be late or cancelled. That's when I realized I should get back into flying and fly myself.

### 2. *What led to the purchase of your aircraft? Your typical mission?*

After adding my multi-engine rating, I planned to rent an airplane from the local flight school, but as it turned out, I did not meet their required hours. So, I decided to find my own airplane (which my father quickly asserted needed to be a twin-engine if I was going to be doing any night flying). A friend of mine through the Ninety-Nines found my Cessna 310R. I loved it, bought it and haven't looked back. I have owned it almost nine years now, flying all over the Southeast for veterinary appointments and personal trips to visit family. Key West is an area I fly to regularly to see patients and provide consulting.

### 3. *How does aircraft ownership benefit and enhance your career in veterinary medicine?*

There are only 450 veterinary ophthalmologists around the entire country, so aviation allows me to be more consistent and more available for appointment days. I can provide specialty care to four-legged animals all over the South, specifically less populated areas hard to reach by commercial travel (while being much more reliable than the airlines). It also helps that I can come and go

as I please, and I am never rushing off to catch a flight. Clients are often impressed I fly myself, but I just look at is a family tradition.

**4. *You and your mother have now competed in the Air Race Classic for 18 consecutive years. What led to (and has kept) this tradition?***

My mother and I were looking for an activity to do together and instead of a cruise or traveling commercially, we decided to sign up for the Air Race Classic. She had competed in the Powder Puff Derby in 1960 and enjoyed the flying and competitive aspect. Though my father was not a fan of the idea at first, we convinced him that it is very controlled and safe. And once the first race came around, he was there with navigation maps spread everywhere and keen to help.

Today, around 55 teams compete with two to three women per team. It's really been a fun thing for my mother and me to share and connect. She's going to be 90 this year and says it's going to be her last race, but she has said that every year the past five years!

**5. *Can you describe one of the most unusual or exciting airports you have ever landed?***

Every air race is a different experience, and emergencies can obviously happen at any time. On this particular day, we were performing really well until a big red annunciator come up on the Cessna 182's G1000 while flying over Texas. So, we decided to land at a nearby crop duster field and check the oil.

The runway was about 2,000 feet long, and as soon as we landed, three or four trucks came charging toward us with clouds of dust billowing up from behind them. Our visitors were eager to help and find out what we were doing, where we were headed, etc. They just wanted to talk while we were hurriedly trying to get back in the air. The oil turned out to be fine –just a sensor issue. Finally, we said our goodbyes, took off and jumped back into the race. Certainly, an unexpected stop in the middle of nowhere Texas. T&T

Susan Carastro and her mother competing in the Air Race Classic.

PHOTOS BY AUTHOR

# Fly Cooler: The story of Jet Shades

by **Rich Pickett**

Kevin Duggan, the founder of Jet Shades, loves flying but often found himself unbearably hot while in the cockpit on the ground in his home state of Florida. He faced the same dilemma above the clouds (even with air conditioning), struggling to shade his eyes from the bright sun. He tried the usual solutions like cling plastic panels, suction cup screens and aircraft charts jammed in the windows. Each helped but had drawbacks such as low UV protection, potential window damage and user difficulty. Kevin, an engineer by training, decided there must be a better way.

At the time, Kevin owned an Eclipse 500 and in 2016, developed his first protective shade prototype. He had several goals: lightweight, high UVA and UVB protection and sufficient solar radiation reduction to help cool the aircraft. Kevin and his team experimented with various materials and coatings which resulted in an optically perfect polycarbonate shade layered with a proprietary and patented coating. The resulting shade blocks 99.9 percent of UVA and UVB radiation, 72 percent of visible light and 47 percent of total solar energy – and is extremely durable.

Author Rich Pickett experimenting with Jet Shades panels in his Eclipse.

Kevin designed a clever installation method that doesn't rely on suction cups or even touching the window. Using a surround seal and pull tabs, the shades fit securely within the window rim with precision. Jet Shades released their first production version for the Eclipse in 2018. Since then, the demand for that version (and others) has exploded. I've personally tried numerous options to shade the cockpit in my airplanes, including building my own tinted acrylic inserts. So, I looked forward to chatting with Kevin and giving Jet Shades a try in my Eclipse.

## On the Ground

Since there is an air gap between the shade and the window, you can actually leave the side panels in place on the ground. But I would not recommend

doing so on a really hot day. I'm probably overly cautious and would remove them when in doubt.

As Kevin told me, I found the installation to be very simple and the fit to be perfect in our Eclipse. In some aircraft models, the window surround is not consistent so designing a precise fit may be a challenge. In that particular situation, Jet Shades will work with operators to customize and ensure a good fit in all of the airplanes they support. Jet Shades is also in the process of developing a dealer network which will help customers and even create a custom set for operators.

On the ground, I found the visibility through the side panels to be more than adequate to leave them in place while taxiing during the day. The optical clarity of the panels is similar to looking through high-quality sunglasses which was a nice improvement over other options. Jet Shades recommends removing them at night, which I agree. They offer an optional custom storage bag to protect them when removed.

## In Flight

On departure from Montgomery Airport (KMYF) in San Diego, flying into the bright afternoon skies, I quickly experienced the value of Jet Shades. I had installed both the side and windshield eyebrow panels. I actually found it to be safer with them in place since I could visually see the traffic in our busy airspace rather than searching with the bright sun directly in my eyes. While my wife Jane and I flew a low-level flight through San Diego Harbor in the bright sun, I observed the glare reduction and improvement in contrast were very impressive, enabling us to see clearly even in direct sunlight.

Usually in cruise, I'm searching for ways to block the sun. At FL410, with the Jet Shades in place, it made the cockpit much more comfortable. Not only was the glare gone, but I was also able to keep the cockpit cooler, reduce the UV radiation (and skin cancer risk) and still have excellent visibility outside. My wife and I both remarked on the sharp view, which is likely enhanced by the shades' slight bronze tinting. These benefits also have the potential to reduce pilot fatigue, especially after long cross-country flights.

So, how do they perform in turbulence and higher G situations? In brief light to moderate turbulence episodes, I found the shades to stay firmly in place. At lower altitudes, I loaded up the airplane in a 60-degree, 2G banked turn and they did not budge.

Jet Shades pricing varies for each aircraft, ranging from $299 for a Cessna 182, $599 for larger pistons, $799 for the Eclipse and $1,199 for numerous Citations. The company is also developing products for larger jets including a set they recently made for a Boeing 737.

If you are on the search for a high-quality cockpit shade option, it is worth looking at Jet Shades. And if you get a chance to talk with Kevin in person, you will learn more about cockpit comfort than you ever thought existed. To learn more, visit jetshades.com. T&T

*After 11,000 hours of piloting over 90 aircraft models,* **Rich Pickett** *still has a passion for flying. Rich holds an ATP, CFII SME, SES, glider licenses, and type ratings in the L29, L39, Citation 500/510s/525s, Eclipse 500S and DA10. His company, Personal Wings, provides training, mentoring and aircraft services. You can contact Rich at* **rich@personalwings.com**.

# It's All About the APU

by **Kevin Ware**

It is 8 degrees Fahrenheit on the ground in Lincoln, Nebraska with ice and snow on the ramp, and a nasty wind blowing down from somewhere near the Arctic circle. Having just arrived by airline, fellow Lear pilot Tim and I are cautiously slipping and sliding our way across the icy ramp to the FBO hangar where there is a Lear 45 awaiting us. One of the companies we fly for recently purchased this Lear to replace their old Lear 35 (see "Old Dogs & Old Airplanes," *T&T*, October 2018). Assuming we don't freeze to death first, we are going to fly it home later in the afternoon.

A Lear 45 is almost identical to the model 40 we commonly fly except it is four feet longer and has two additional passenger seats (for a total of nine). The airplanes also have a common type rating, which is an advantage in that it makes pilot scheduling easier and training costs much lower. But, the real benefit of the 45 for us is that it has an APU (auxiliary power unit), which as we stand shivering at the FBO's frigid entrance door, is something we think will make our cold weather operations much more comfortable, particularly to isolated parts of Alaska.

Just as we get done stomping the snow off our shoes, the FBO's office door is opened by the airplane's salesman. He is a friendly fellow wearing jeans and has a somewhat scraggly long grey beard, all of which strikes me as rather odd for a business jet sales guy – most of whom look like they shave twice a day and dress in dark suits with white shirts and ties. But hirsute appearance notwithstanding, he gives us a big smile, welcomes us to Nebraska and invites us into the warm room where fresh hot coffee awaits. He says our airplane is out in the hangar ready to go and asks if we would like to the line crew to pull it outside. To someone from the Pacific Northwest where the weather, by comparison, is just plain balmy, that seems like a funny question. The idea of a pre-flight out in the snow and freezing cold is not at all appealing, and something we are not well-practiced.

Upon hearing this, our new bearded friend takes us out into a very large hangar with a clean white floor and five other business jets in various stages of repair scattered about. It feels like 80 degrees, and I cannot help but note the space has some very large natural gas-fired radiant heaters hanging down from the ceiling, which are roaring away like a jet engine afterburner. We see our "new to us" airplane parked in the corner under one of the radiant heaters, and a couple of technicians with polishing rags still in hand doing the finishing touches. They have it so shiny that when I get closer, I can see my face mirrored in the paint.

Tim and I begin our pre-flight, and other than the extra feet of fuselage length, find little difference between this airplane and the Lear 40 we left back at home base. Entering the cockpit to look over the gauges and switches, I can see the white lettering and switches on the APU control panel on the center console are almost worn off, whereas those of the HF radio control panel look brand new. Years ago, an old airline pilot told me that when getting in a new (to

you) airplane, pay particular attention to the location of switches and signage that is well worn because those are the ones previous pilots have used a lot and you probably will too.

Finally, after spending nearly an hour carefully going over the airplane and making extra sure the air intake and exhaust for the APU are clear, we tell the line guys they can pull the airplane out when they are ready. This turns out to be a complex process because several other airplanes are in the way and need to be moved first, during which the hangar door is open with heat escaping at a prodigious rate, and snow blowing in making everything wet. But the line guys, decked out in fur hats with ear muffs, thick down coats and snow boots take it all in stride and soon have our airplane outside.

We promptly board the airplane and quickly close the two-section door before all the heat escapes, then get involved starting our new toy, the APU. This $200,000 extra piece of airborne equipment is little jet engine about the size of a five-gallon paint bucket, which is mounted in the tail section with an air intake on the top aft fuselage and a jet exhaust opening on the right side just above the engine pylon. It puts out enough energy to nicely heat the cabin and makes starting the engines much easier. I push the APU's start switch and the little turbine cranks up right away, then engage the "pack" switch that controls the heating. Shortly thereafter, it is noisily blasting out hot air into the cabin at a phenomenal rate. Ah, very nice indeed. In this weather, definitively worth the price.

The line guys then come out with fresh coffee for the small galley, and we spend four to five minutes fiddling with the tanks. It turns out the Lear 45 has a heated container for coffee and an identical one next to it for hot water, which is a well thought out system as not all passengers like drinking FBO coffee. When that task is completed, plus some lunches boarded, we complete the checklist all the way down to the "engine start" section. Then while basking in hot air from the APU and sipping coffee, we relax and wait for our single passenger (one of the airplane owners) to show up.

When getting in a new-to-you airplane, it is helpful to note any well-worn switches and signage (like the APU ones seen here). ▼


After sitting awhile, with the snow drifting down on the airplane, we start thinking if we stay put here much longer, we will need to get the airplane de-iced. You have to be careful when you pull a warm airplane out of a heated hangar and park it out in the snow, as the snow can melt on the warm wing surface, then re-freeze, often being hard to see. Although there is a de-ice truck parked nearby, we would rather not use it as it is very expensive, probably between $750 and $1,000. It would also leave a messy film of deicing fluid all over our nicely polished "new" airplane. While we are debating our options in this regard, our passenger shows up, helps himself to coffee and settles in one of the very comfortable leather passenger seats.

Tim and l look at each other trying to figure out who will be the lucky one to exit the aircraft and inspect for ice. Unfortunately, I have a hat and he doesn't, which becomes the determining factor. I climb back out in the blowing snow, do a careful walk around and not finding any worrisome ice, I jump back in and quickly close the door.

With the APU running, the engine starters each promptly light up in spite of the fact the intakes are not facing into the prevailing wind as you would normally want them to be. Once everything is running, we shut down the APU, get our IFR clearance and notify ground control we would like to minimize any ground delay due to potential ice accumulation. She seems to be well versed with this issue and immediately clears us to Runway 35 via the nearby Alpha taxiway. We roll down the taxiway working our way through the pre-takeoff checklist, finding that some switches are not where we expect them to be. It also turns out that the FMS in this particular airplane will not automatically calculate take-off speeds, which sends us scrambling into the flight manual behind the seat.

While we are doing this, the helpful controller in the tower calls while we are still on the ground control frequency and clears us for takeoff, but adds that there is inbound airline traffic some five miles out – her polite way of saying "hurry it up." Yikes, professional pilots as a matter of training and habit avoid situations where they feel rushed, but that is how we are starting to feel. Luckily, with two people in the front, we get the numbers out of the book and complete the "line up" checklist just as we pull the airplane onto the runway. We stop there for five seconds making sure we have completed everything then add power.

With the airplane light, the conditions cold and the wind blowing straight down the runway at 25 knots, acceleration through $V_1$ and $V_r$ is almost immediate. Following our departure clearance, we make a 50-degree turn heading 300 and are in the clouds and snow climbing through 10,000 feet at more than 4,000 fpm when we are switched to the center frequency. In reply to our first call, the center controller immediately clears us to FL410 and direct to KBVS – some 1,300 nm to the west. When we activate the NAV switch on the autopilot/FMS control panel, the airplane makes a 3-degree turn to the right to compensate for winds that are slightly from the north then heads straight for home. What a pleasant surprise, weather factors aside, that there are some real advantages to flying

in the Midwest. That kind of clearance would be a true rarity in the LA Basin.

Twenty minutes later, we are at FL410 and notice that the ball on the turn coordinator is slightly to the left when the wings are level. We fool around with the rudder trim but cannot fix it without causing the airplane to with one fly wing down slightly. It seems the airplane is somewhat out of rig, and make a note to have that looked into later. We next notice the airplane has a slight wing wag, going 3 to 4 degrees to the left or right in about 15-second intervals. Sometimes this can happen when on NAV as the system is seeking the centerline of the GPS course, so we switch the autopilot mode to HDG, yet it still continues. We decide it must be something to do with the yaw dampener and add that problem to the list. Other than these minor issues, our "new" airplane flies like a champ.

An hour later, I go back to visit the small bathroom and get some lunch. In the process, I chat with our passenger, who was the decision-maker in the aircraft purchase. We review not only the airplane's useful load, fuel burn and range but also mundane things such as the seat controls, leather interior, lighting and phone capability. But more than anything else, what he really likes is how the APU had the cabin toasty warm and well-lighted when he first arrived. I think to myself, no wonder it is those switches that are so worn.

Three hours later, we are 50 nm east of the Cascade Crest with the TOD (top of descent) showing up on the panel-mounted map. The power comes all the way back, and we start down at 350 knots indicated and 2,500 fpm. We are still a bit fast when arriving over the IAF, so we switch off the autopilot, manually pitch up slightly to slow down, then trigger the gear at 200 and full flaps at 150. Four feet longer or not, the 45 on approach behaves just like its little brother, the 40, and we make a smooth landing without any issues. Taxiing to our home FBO, it is not really that cold but we cannot resist starting up the APU anyway. Tim and I tell each other the ostensible reason for doing so is to keep the cabin heated and all the interior lights on so our passenger can comfortably disembark. But sure, the real reason is we want everyone to hear that little jet engine whining back there, with the smell of burnt jet fuel wafting about after we pull up to the ramp and shut the engines down.

The truth of the matter is a noisy little APU wailing away when the airplane is otherwise quietly parked on the ramp is a pilot status symbol. The noise itself is probably worth the whole airplane purchase, let alone the cabin pre-heating. T&T

**Kevin Ware** *is an ATP who also holds CFI, MEII and helicopter ratings, has more than 10,000 hours and is typed in several different business jets. He has been flying for a living on and off since he was 20, and currently works as a contract pilot for various corporations in the Seattle area. When not working as a pilot he is employed part time as an emergency and urgent care physician. He can be reached at* **kevin.ware2@aol.com**.

by **Kevin R. Dingman**

NOT AUTHORIZED

# Enfoque No Autorizado (Approach Not Authorized)

## *Trees, TERPS and Bilingual Lingo*

Perhaps our litigious, lawsuit-happy society is to blame for the migration of carefulness into all aspects of our lives. With the plethora of scattered notes and cautions, even our instrument procedures can seem as if they're written in a foreign language. But threatening cautions, warnings and notes usually appear after something malo (bad) happened to someone. Usually by someone not paying attention or not thinking lo suficientemente por delante (far enough ahead): don't drink el cloro (bleach), don't swallow anzuelos de pesca (fish hooks), and don't put any persona (person) in your washing machine, or la mascota (pets) in the microwave oven. And that steaming cup of caliente coffee? That's Español for hot, not the flavor. Have these types of low-IQ cautions made us so numb that we sometimes ignore warnings and notes? After all, do we really need to be told to keep our tongue away from a frosty (escarchado) flag pole or a running chainsaw from our sensitive body parts (lindas nalgas)? Luckily for us pilots, procedural cautions and notes are not as silly as these; they are foot-stomping, attention-getters that can prevent something bad from happening – if we read them.

### Read 'em and Weep

As the above diligently researched (not really) bilingual examples often times imply, we are spoon-fed and coddled by manufacturers, the FAA and our mother in order to avoid shooting our eye out with a BB gun, burning our tongue on coffee, slicing our anatomy with power tools or flying into an obstruction with our airplane. Imagine how much more difficult it would be for us gringos if Aviation English was not the universal language on the radio and in our flying publications. Fortunately, U.S. in-flight publications are written in plain-old, El English-o. So then, if we are spoon fed the restrictions on ODP's, SID's, STAR's and approaches, all in our native tongue, why then do we sometimes mess them up? Recently, one reason was addressed on a Beechcraft Owners and Pilots discussion board. The thread was about ATC clearances being issued despite the procedure not being "legal." The case in point was an instrument approach, at night, to a runway in which the approach had been changed by a note that said the procedure was now "NA at Night." A TERPS (Standard Terminal Instrument Procedures) review had determined that some trees had grown tall enough to become an official obstruction to night operations. The chart change had snuck by many users due to familiarity with the old procedure and an inadequate review of the new one. Most of the participants in the conversation believed, however, that it would be helpful if ATC would not issue a clearance to do an unauthorized thing such as this approach at night. An understandable desire because it's easy to confuse an ATC "clearance" with an FAA "authorization."

### Leaders, Lemmings and Legality

The English language is replete with synonyms, antonyms, homonyms, homophones, homographs, heteronyms and words with subtle (potentially dangerous) and similar, but different, meanings depending on their use, context and intent. For example, a current English word-use that bugs me with ATC is this: "Follow the Citation, taxi to 17R via delta, foxtrot and bravo. Cleared to cross 9R." Sometimes the "follow" means "go after" the Citation that is crossing in front of you and sometimes it means "follow them" to where they're going, which may not be along the described route or even to 17R. What's a literal, English-speaking piloto (pee-lot-toe) to do? If I follow ATC's instructions literally, without context, common sense or a query to ATC, my 737 could end up at the FBO parked next to a Citation instead of at 17R. And by the way, the "authorization" notes on the airport diagram page likely say that the GA ramp is restricted to wingspans less than xxx and weight less than xxx – despite ATC's "clearance" to "follow" the Citation. There may also be wingspan restrictions on the taxiways themselves headed to 17R that permit the Citation to take that route but not my 737. Other times it's not the clearance, the authorization or the English language that is confusing; it's the sneaky changes that occur every 28 days to previously familiar restrictions and notes – like those pesky trees that caused the night approach to become illegal.

## In Lumber-Lingo: Size Matters

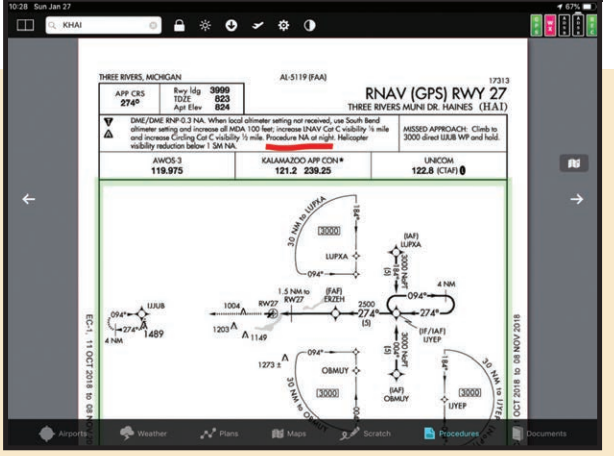
As PIC, there are a million "gotchas" lying in wait and it's our job to check for any new ones each time we fly a procedure; especially one to familiar fields with familiar procedures because complacency will bite us in the nalgas (buttocks). An example of a chart change that snuck by some of us (i.e. me) was a recent change to the identifier, frequency and climb restrictions on the O'Hare Five Departure in Chicago. The ORD (Orchard Field) departure and VOR frequency had not been changed as long as anyone could remember (complacency). The old VOR was ORD/113.9 and the climb restriction on departure was 3,000 by 5 miles and 4,000 by 8 miles. I remembered and briefed the climb restrictions in nominal lumber-lingo as 3x5 and 4x8 (three by five and four by eight). The new name/frequency is GCO/108.25 and the climb restriction is 3,000 by 5.5 miles and 4,000 by 8.5 miles. Now, we all know that a modern 2x4 isn't really 2 inches by 4 inches, but why'd they go and mess up an easy to remember DP (Departure Procedure) with dimensional lumber sizes instead of nominal? The change was less restrictive but this is not always the case and ATC may not be there to pry our tongue, or flying certificate, from the escarchado flag pole of a piloto deviation.

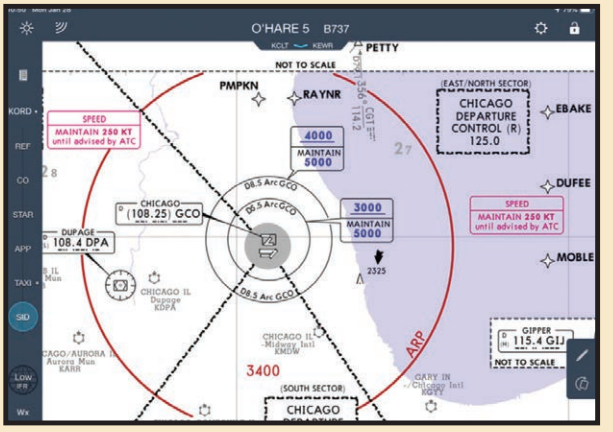
## Coddled

Since we've grown accustomed to being coddled while in U.S. airspace, or perhaps because ATC cleared the airplane in front of us to do the thing that we want to do, we may wrongly assume that all is well with the wind, the weather, the runway and therefore, that once cleared by ATC, the procedure is "authorized." But consider takeoff minimums, our aircraft category and a Cat III ILS. If we are so inclined (and I am not), when operating under Part 91, a zero-zero takeoff is authorized—not true for Part 121. And, as part of a full standard weather briefing, not to incriminate one profession because of another's actions, I once had a weather briefer needlessly give me, in my Duke, the NOTAM's for a Copter ILS (helicopter category). On the other hand, if CAT III operations are in use at a busy airport, the sector controllers will often pro-actively query inbound aircraft to see if they are CAT III capable before allowing them into the terminal airspace—this is because non-Cat III participants would need to hold or execute a missed approach and thereby clog up the system. While a procedure may be loaded into our FMS database, we, our aircraft or the certificate under which we operate may not allow us to fly the procedure. Also, different crews operating under different certificates or FARs will have different weather, wind and runway requirements for both takeoff and landing. And this is the coddling-conundrum faced by ATC controllers in clearing us for a procedure. Neither ATC nor the weather briefer know the capabilities and qualifications of every crew and their aircraft. Just because the weather guy briefed the changes to the Copter ILS, it doesn't mean that I can fly my Duke at 50 knots on final to a 100-foot DH, nor your Citation to Cat III minimums, nor a P-51 into known ice.

## The Fed's Razor Strap

I have sat in a line of 50 cars at a four-way stop near O'Hare as drivers tried to advance their position by driving past the




▶ Chart changes can sneak up on many users due to familiarity with the old procedure and an inadequate review of the new one.

line and then "pushing" their way into the sequence. The apocalyptic symphony of turn signals, horns and hand gestures was exasperating. In contrast, the other day traffic signals were out in several small towns between my house and the AZO aeropuerto. Without help from a traffic marshal, and in the dark, each intersection had been successfully transformed into a four-way stop by the drivers. As I navigated each of several intersections, it was refreshing to see the efficiency and civility of the drivers taking turns. Not only do rules, restrictions and notes keep us safe from obstacles, but following them makes our actions efficient and predictable. With tens of thousands of instrument procedures around the world, being flown by tens of thousands of pilots, we must all agree to update our pubs on schedule and before we fly them, to review each for applicability, authorizations, restrictions and changes. Because if we miss a critical note, or we fly a procedure that is not authorized, the Feds may take a razor strap to our nalgas making us wish that we had swallowed anzuelos de pesca instead.

**Author's Note:**

*Since familiarity breeds, well, familiarity, reading at least one or two departures, arrivals and approaches every day will improve our chart reading competency. The following link is to the FAA's Terminal Procedure Publication. It's 47 pages and makes for an educational and razor-strap-free review. Don't fret, it's in Aviation English: https://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/aero_guide/media/editions/cug-tpp-edition.pdf.* T&T


**Kevin Dingman** *has been flying for more than 40 years. He's an ATP typed in the B737 and DC9 with 23,000 hours in his logbook. A retired Air Force major, he flew the F-16 and later performed as an USAF Civil Air Patrol Liaison Officer. He flies volunteer missions for the Christian organiz tion Wings of Mercy, is employed by a major airline, and owns and operates a Beechcraft Duke.Contact Kevin at* **dinger10d@gmail.com**.

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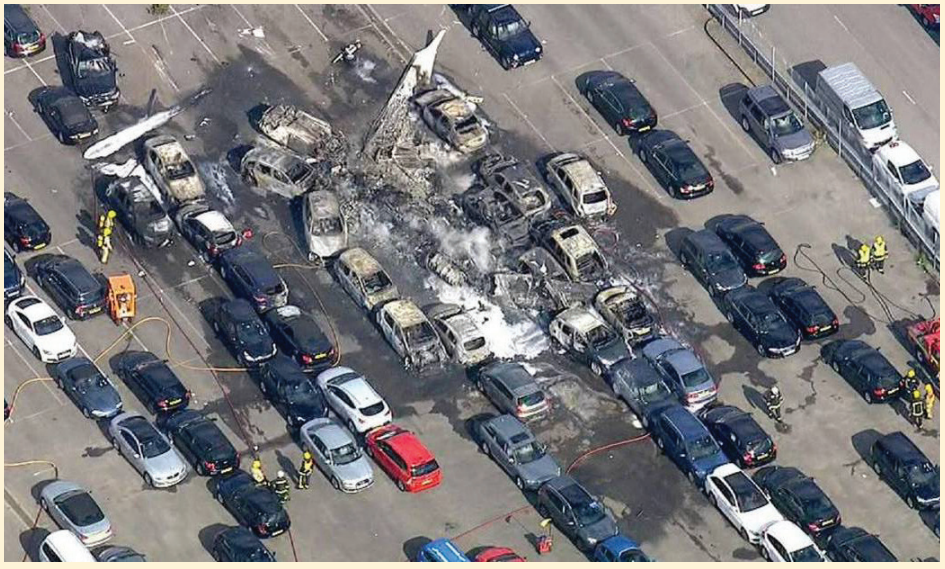
# Almost



I am not sure if you have noticed, but there has been a rash of landing accidents or "runway excursions" lately. Sometimes weather related, but often just plain poor planning. Mistakes so fundamental that the pilot could have predicted the result before he or she even took off. One fatal accident involving a Phenom 300 that crashed into a parking lot near London's Blackbushe airport in July of 2015 especially got my attention.

The 57-year-old professional Jordanian pilot, with 11,000 hours, had landed at Blackbushe 15 times in the previous 16 months. The weather was clear with light winds. During the approach, the pilot was confronted with several callouts for traffic, but nothing unusual for most of us. To say that his approach was "unstabilized" however, would be an understatement.

At 1 nm from the threshold, the aircraft was diving at 3,000 fpm with an airspeed of 153 knots and a pitch attitude of 13 degrees nose down. At 1,000 feet above airport elevation, a series of six TAWS "pull up" warnings sounded. The pull up warnings continued unabated for 25 seconds until 50 feet above touchdown elevation.

At the "five hundred" aural announcement, the airspeed was 156 knots with a rate of descent of 2,500 feet per minute. At 200 feet, the rate of descent was still 2,000 feet per minute. Crossing the threshold at 151 knots (about 43 knots faster than appropriate for the weight), the aircraft floated for nine seconds, landing 2,300 feet down the 3,474-foot runway. Even with ground spoilers deployed and hard braking, the Phenom departed the end of the runway overrun area at 83 knots.

Although the occupants survived the impact, they were overcome by the resulting heat and toxic fumes, partially fed by the burning cars. In a little irony, the passengers included three members of the Osama bin Laden family.

The British Air Accidents Investigations Branch (AAIB), said emergency warnings prior to landing may have "saturated the pilot's mental capacity." The investigators were able to extract some data from the pilot's previous flights and found one into Jedda Saudi Arabia to runway 34L which is over 12,000 feet long. That landing included multiple TAWS warnings, high rates of descent, a threshold speed of 150 knots and the flaps were still in transit at touchdown. This pilot almost made a successful landing.

That got me to thinking that the word "almost" is probably not appropriate in aviation. Like I "almost" had enough fuel to make the trip safely. Or, I could "almost" climb to FL410 in ISA+5 temps in my Mustang. It appears from reading this accident record that you CAN make a successful landing without regard to speed, or descent rate, or flap position almost every time. Almost.

Fly safe.

*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, Patty and David currently own and fly a Citation Mustang. You can contact David at* **davidmiller1@sbcglobal.net**.

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