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Owner's Corner:
James Keyes

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Seth Lockard's Twin Comanche.
 Photo courtesy of Wil Easterwood.

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Some Things Change, Some Stay the Same

As we close out the first quarter of 2026 and adjust our outlook for the rest of the year, with so many unknowns, it's comforting to have the consistency of in-depth knowledge imparted by T&T's diverse cadre of writers. This month, Grant Boyd profiles one of general aviation's most well-known advocates. Matt McDaniel provides a deep dive into the world of Piper's high-performance light twins from yesteryear. And Lawrence Searcy takes us along a flight that proves the importance of safety in the cockpit.

Mark Baker has been synonymous with AOPA for years. From 2013 through the end of 2024, his mission at the association included protecting our general aviation freedoms in the United States, advocating for and expanding BasicMed, lowering the cost of ADS-B regulatory adherence, and raising money for the "You Can Fly" program promoting general aviation. When asked about his next mission, he said, "I'm going to fly a lot more. [It's] hard to believe, but I am. Actually, my number one objective is to do something I should have done when I was in my 20s—get my flight instructor certificate."

When we think of Piper's light four-place piston aircraft, the word speed demon doesn't often come to mind. However, back in the 1960s and early 70s, that's exactly what the (then) Lock Haven, PA, company was known for, especially regarding its PA-24 and PA-30 Comanche and Twin Comanche lines. The PA-24s were much less expensive than Beech's J35 or Mooney's M20 speedsters. Competitors to the PA-30 Twin Comanche included the more expensive and less efficient Beech Travel Air and Cessna's 310. The Beech and Cessna were faster but vastly thirstier. Matt McDaniel details the rise and fall of Piper's Comanches, while Wil Easterwood's photos give us some of the most beautiful air-to-air images of the light twin.

Aviators talk a lot about proficiency. Lawrence Searcy describes the personal pitfalls he has experienced and the simple ways in which we can all avoid them.

There might be a great deal of unknowns these days, but there are also many things that don't change much: great leaders in aviation, great airplanes, and safety in the cockpit. 

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An Industry Leader's Fleet

by Grant Boyd



Amphib Caravan taking off

Mark Baker has owned more than 120 aircraft in 49 years as a pilot, including a Cessna 185, a TBM 700, a CitationJet, a Bell JetRanger, and more. While he has enjoyed each for its own reasons, the former AOPA chief is particularly drawn to a certain single-engine turboprop.

"I have owned six different Caravans, both new and used. I bought my first Caravan from Jimmy Buffett in 2002 and sold it in 2005. I have logged over 2,000 hours in that one and another 2,000 hours in others. Caravans are hard to beat!" he exclaimed, noting that the aircraft is a frequent choice of his when needing to fly across the country.



Baker's Caravan, formerly owned by Jimmy Buffett, in a neighbor's farm field in Iowa

“

The Caravan is just a remarkable airplane. It's so reliable. It's so simple. It's so rugged.



Caravan in Alaska



Hangar in Minnesota

Baker's long, and continually growing, aviation saga began in his home state of Minnesota. There was a grass strip near his childhood home, where kids would ride their bicycles so that they could watch planes take off and land. The spark was further ignited as a teen, as the high school that he attended offered a ground school course. As they say, the rest is history.

He thought that he would pursue candidacy at the United States Air Force Academy, but the rules at the time excluded him since he didn't have 20/20 vision. Baker wound up earning his pilot's license while attending the University of Minnesota.

"I then bought my very first airplane with a friend of mine and had to sell my Dodge van to do it. The 1968 Cessna 150 was \$3,000, and I flew the buggie out of that thing, and went through one engine," he said, noting that costs were otherwise minimal with a fuel burn of five gallons per hour.

"I flew that plane for a long time, and then as life progressed, I started commuting to Kansas City using a Piper Arrow. I stayed in retail and became part of the early days of Home Depot. In my role as division president for the upper Midwest, I commuted from Minnesota to Chicago. I transitioned to a Beech Bonanza at that time and encountered icing one night. I then decided to buy a Baron the next day."

As Baker's commute grew in frequency and distance, he moved into a King Air to make the now regular flight to Atlanta, before getting into Citation ownership. Aircraft would continue being invaluable in his next role as the CEO of the outdoor sports retailer Gander Mountain, which grew from 25 to more than 100 stores under his leadership. Baker stated that he has flown to every city in the country with more than 50,000 residents to conduct site visits for potential stores.

Caravans have largely been used for adventure and family flying when he has been behind the yoke.

"The Caravan is always my go-to-go-somewhere airplane. We have

a home on an airstrip in the Florida Keys and own a private strip in Northern Wisconsin. Both of those are [roughly] 2,000 feet long, so the 'van takes us there direct!" Baker said.

"The little grass strip here is about 1,800 feet long and has pretty rough grass. The other strip is only 20 feet wide. The Caravan has no difficulty at all going in and out of those kinds of places. Most of the time, it's four or six people and gear in the plane. So, it's kind of big for what you really need. But nobody has ever complained about having too much space in an airplane.

Put simply, the Caravan is a useful aircraft because it was designed to be

a useful aircraft. Baker explained that 208s share a lot of similarities with the venerable Beech 18, which was being retired as freighters when the Caravan was being developed.

"The Caravan is just a remarkable airplane. It's so reliable. It's so simple. It's so rugged," he summarized. "Once you get used to seeing the world from a thousand to 5,000 feet (the service ceiling is much higher), it's so enjoyable [to fly] down low, and it's got great visibility for all passengers. I have flown to Alaska in Caravans more than 15 times, and down to the bottom of the Caribbean. I've been everywhere in Caravans. It's such a fun airplane. Once you fall in love

with them, you can't go without."

In addition to owning the Mayor of Margaritaville's exemplary 208 (that Baker bought back after selling it), he currently has a Beechcraft Baron E55, a Piper Super Cub, and a Beech 18.

"A couple of them I've owned twice, including my E55 that I bought from the original owner, and put a bunch of money into making it really nice [before selling it]. They just weren't flying it much, so I bought it back," Baker said, explaining why the light twin is so well regarded and why he has owned 15 different serials to date.

"The E model Baron is probably the best bang for the buck of any



Super Cub on water; Baker bought this from the original owner



1953 Super Cub panel



Baron E55 panel

little airplane. It generally does 200 knots. They hold a lot of fuel and, if you can handle it, can fly for seven hours. And you can go in and out of pretty much any little airstrip in it, which I do."

Even with how glowingly he speaks about Caravans, Barons, and other planes, nothing tops a classic yellow Piper. His 1953 Super Cub was a barn find with only 300 hours on it. Since purchasing the aircraft, Baker has restored it a couple of times, gone



through two engines, and has logged 3,000 hours in it.

Since retiring from AOPA in 2025, Baker has gained more time to, you guessed it – fly. Among things like BasicMed (which would now allow a pilot to fly a Caravan, by the way) and advocating for different, novel ways for aircraft owners to comply with the 2020 ADS-B mandate, the other endeavor he is most proud of the organization for championing in recent years is the You Can Fly program.

Having first learned about general aviation in a secondary school classroom himself, Baker understands the power of bringing aviation to youth. The You Can Fly initiative is only growing, and he said that the program is now available in all 50 states, with 32,000 high school students currently enrolled.

And in an effort to bring his more than 15,000 hours of experience in the cockpit to others, Baker would like to pursue his CFI rating next.

"I bought all the books last spring to become a CFI. I should have done it when I was in my 20s," he said. "I have exposed so many people to multiengine flying, tailwheel flying, float flying, and warbirds. I enjoy getting people exposed [to different aircraft] and would like to be able to sign them off for doing that." **T&T**




Grant Boyd is a private pilot with eight years of experience in aviation business, including marketing, writing, customer service, and sales. Boyd holds a Bachelor's and a Master's of Business Administration degree, both from Wichita State University, and a Doctor of Education degree from Oklahoma State University. He was chosen as a NBAA Business Aviation "Top 40 Under 40" award recipient in 2020.

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Only five years after Piper's PA-24 Comanche had entered production, it was already beloved by owners and pilots alike.

Enduring Efficiency: Piper's Twin Comanche

by **Matt McDaniel**

PHOTOS COURTESY OF WIL EASTERWOOD AND MATT MCDANIEL



In fairness, I'd been warned. Both the owner/instructor seated to my right and the back seat passenger (also a CFI) had cautioned me about pitch sensitivity. It wasn't that I didn't believe them, or that I hadn't made a mental note of it either. Yet, the authority of the big stabilator about 20 feet behind me still injected me with a dose of humility.

With the lower red line speed (V_{mc}) of 90 MPH past and blue line speed (V_{yse}) of 105 MPH quickly approaching, the little twin was light on its gear and clearly anxious to launch. A slight pull on the yoke broke it free from Lebanon Municipal's (M54) Runway 19, outside of Nashville, TN. The next ten seconds were likely a comical display for any ground-based observers, as I oscillated around the pitch axis searching for equilibrium throughout the gear retraction cycle. Almost in stereo, my two fellow instructors on board laughed audibly and said, "We told you so!"

Double The Love

Only five years after Piper's PA-24 Comanche had entered production, it was already beloved by owners and pilots alike. It had developed past its original 180 hp model and was, by then, available with 250 hp. That model competed nicely against Beechcraft's mature V-tail Bonanza models. While the PA-24-250 cruised about 20 MPH slower than a J35 Bonanza, it also sold for 25-30% less (depending on optional features). That substantially more economical price tag was enough to drive steady sales. All the Comanche line seemed to lack was multi-engine redundancy.

Piper also had two twins in production; the Apache and the Aztec (both designated PA-23). The 160 hp Apache G & H models had just been superseded by the Apache 235 (which not only came with a big horsepower boost, but also an additional fifth seat). The Aztec line had just introduced the long-nosed, and 6-seat, B-model. Both were solid aircraft, selling relatively well. Neither, however, were speed demons, nor particularly fuel efficient.

Concurrently, soon-to-be-famed designer Ed Swearingen was busy developing and installing various modifications to a variety of certified aircraft, including the PA-24



Comanche. With Piper's encouragement, his San Antonio company completed and flew a modified Comanche, fitted with twin, fuel-injected, 160 hp Lycoming IO-320 engines. By early 1962, Piper had decided to further develop that design as a possible replacement for the Apache line. They built a prototype at their Lock Haven, PA facility, first flying it in Nov. 1962. Designated "PA-30," it was given the decidedly uninspired, yet undeniably accurate name, "Twin Comanche."

Things moved fast in that era, and Piper achieved FAA certification within three months. Two months

hence, in April 1963, the first production model was completed (only two years after Swearingen's proof of concept twin-engine Comanche had first flown). By mid-1963, deliveries of the original PA-30-160 Twin Comanche were underway. Soon, the B-model incorporated third fuselage side windows and optional 5th and 6th seats (sacrificing most of the baggage area to do so). By late 1965, B-models were being delivered with a choice of normally aspirated or turbo-normalized IO-320 engines (both still rated at 160 hp). In Nov. 1968, the first Twin Comanche C was delivered, featuring many



interior and exterior refinements contributing to a slight improvement in cruise speed and a more ergonomic cockpit and cabin space.

Calendar year 1969 proved the busiest of all for the Twin Comanche. A variety of improvements were flight tested, the most significant of which was changing the right engine to a LIO-320, which spun the prop opposite of a standard IO-320. Of course, this improvement created a counter-rotating (C/R) twin design, eliminating the critical engine. Initially, this was referred to as the D-model, but Piper soon decided to redesignate this model the PA-39. The first production PA-39 was completed at the end of 1969.

A Flood of Emotion

On June 18, 1972, Tropical Storm Agnes was upgraded to Hurricane Agnes as it moved northward across the Gulf of Mexico. It made landfall near Panama City, FL, as a Category 1 storm, with 85 MPH winds. It weakened rapidly, crossing Georgia as a tropical depression. Over North Carolina, it resumed tropical storm strength. By June 22nd, it was over the Atlantic and curving northward along the U.S. eastern seaboard, making landfall again near New York City. It morphed into an extratropical cyclone, moving slowly while spinning massive bands of rain far out from its low-pressure center. Damage was heavy across the eastern states. Nearly all of Pennsylvania experienced over seven inches of rain, with central PA receiving over ten inches. Some parts of the state were deluged with over 19 inches of precipitation. Rivers surged, and over 100,000 residents were forced to evacuate their homes while the rains were still falling. Before the clouds cleared, over 220,000 Pennsylvanians were homeless, and 50 were dead. The highest toll taken on any state. At the time, it was the most damaging and most expensive hurricane in U.S. history. To this day, Agnes is listed as the wettest tropical cyclone to ever impact Pennsylvania.

Directly under some of the heaviest rain swaths was Piper's historic Lock Haven factory. The Susquehanna River flowed immediately past the

factory and what is now the William T. Piper Memorial Airport (LVH). Its waters reached record depths, leaving some buildings under as much as 13 feet of water. The Piper factory was heavily damaged, dozens of aircraft were obliterated or washed away, and a variety of production tooling was destroyed. Included in the heavy losses were important tooling and dies for building Comanches and Twin Comanches. Difficult decisions would have to be made.

economics. Firstly, there would have been the cost of retooling for PA-24 & PA-39 production. Such costs would be difficult to recoup when the designs in question were already dated. The market for the aircraft had already been largely saturated, and post-flood sales numbers would likely have never been high enough to achieve profitability. Additionally, Piper's single-engine PA-28 and PA-32 lines incorporated a wide variety of models and capabilities. They were far simpler designs



Matt McDaniel (left) and Seth Lockard (right)

Theories regarding Piper's decision are numerous. Reactions to the announcement that Comanche and Twin Comanche production would come to an end were emotional. After all, the "Twinkie" (a lighthearted nickname often attached to the Twin Comanche) hadn't even been in production for a full decade yet. The single-engine Comanche design had matured into a 260 hp model and a fire-breathing 400 hp version, powered by a Lycoming IO-720. All Comanches had devoted fans who insisted the designs were too good to end so soon. Owners, of course, were concerned about future factory support and maintainability.

In the end, Piper's unpopular decision was likely just a matter of

than the PA-24 and were exponentially easier and cheaper to mass-produce.

Piper had also just recently put their PA-34 Seneca into production. The Seneca was essentially a twin-engine PA-32 (Cherokee Six / Lance) and thus incorporated the same simplified design and production advantages as the PA-28 and PA-32 lines. While not as economical to operate as a Twin Comanche, the Seneca had a larger fuselage, capable of seating 6 without sacrificing most of its baggage space to do so.

Finally, Piper's Vero Beach, FL, facility was up and running and able to continue production after the Lock Haven flood. There, production of the models that would fill the

gaps left by the loss of the Comanche and Twin Comanche could be spooled up at minimal cost. Conversely, the Lock Haven facility would have to be extensively repaired to restart production. Forced to play the hand they were dealt, Piper could ill-afford to allow PA-24 and PA-39 production to go forward to a more natural conclusion. Although popular opinion is that Piper had already decided to terminate Comanche series production anyway, and that the flood simply accelerated their plans.

Between 1963 and 1969, Piper pushed right around 2,000 PA-30s out the factory doors in Lock Haven. In Dec. of 1969, PA-39 production replaced the PA-30. Only a bit north of 150 of the counter-rotating PA-39s were completed before the famous flood in 1972 scuttled production forever.

In Their Heyday

Before the flood, the Twin Comanche had weathered other storms. Its performance and economics (both in acquisition and operating costs) were attractive. Its fuel burn versus speed

bested anything in the category at the time. Lycoming's O-320 engine family was both long-lived and common, numbering into the tens of thousands across the many aircraft types that utilized them. Thus, engine maintenance costs were also appealing. The diminutive size of the PA-30 was of little concern to multi-engine students and instructors, who weren't hauling families or cargo. Plus, as a replacement for the Apache, it was a huge jump forward in performance and ramp appeal. Soon enough, storm clouds gathered around the TwinCom anyway.

Almost as soon as it was introduced, the PA-30 inserted itself into the multi-engine training market. Like its single-engine sibling, it had a laminar flow airfoil that is great for low-drag and high-speed, but not quite as forgiving in the low-speed regime. It soon racked up an unusually high accident rate attributed to loss-of-control accidents, usually during low-speed one-engine-inoperative (OEI) operations. All this in the era when multi-engine students were rou-

tinely asked to do OEI stalls, slow flight, drag demos, and Vmc demos at low altitudes (where asymmetric thrust effects are greatest). Instructors were also not yet required to hold a specific Multi-Engine Instructor (MEI) rating on their Flight Instructor Certificate.

The FAA and NASA put the Twin Comanche through a re-evaluation, and no deficiencies were found. Out of an abundance of caution, the red radial speed (Vmc) was raised from 80 to 90 MPH, and the airspeed indicator marking was adjusted accordingly. Yet, no changes were made to the aircraft design. In the late 1960s, the FAA revised its rules for multi-engine training and checkrides. Higher OEI altitude safety margins and other changes were introduced. Additionally, in this time frame, the Multi-Engine Instructor (MEI) Rating was implemented as a separate and required rating for CFIs to teach in multi-engine aircraft. So, it's likely no coincidence that by the early 1970s, accident rates had dropped. Nonetheless, it took the better part of 30 years for the Twin Comanche to shake off



Fuel selectors and strainer



Circuit breakers recessed into the floor

the stigma of being “dangerous” at low speeds. In 1997, AOPA’s Air Safety Foundation published findings, attributing the PA-30’s early high accident rate to required high-risk maneuvers being conducted at insufficient altitudes, combined with so many Twin-Coms active in the training fleet at the time, often commanded by under-qualified instructors.

Spanning Generations

Seth Lockard grew up watching airplanes flying over his house, to/from

the nearby Taylorsville, IL airport (TAZ). At 12, he scored a Young Eagles flight and was hooked immediately. In 2007, at age 17, he took his first lesson in an ultralight. He earned his Private Pilot Certificate in 2009, in a Piper Warrior. From a teenager, he’s owned a series of aircraft. Initially, they were antique and/or experimental taildraggers, before earning his Complex and High Performance endorsements in a Comanche 250. In 2013, Seth became a registered nurse and moved to Lebanon, TN.

Twin Comanche N43B Data [Table 1]

Wing Span/Area	36.0 feet / 198 feet ²
Length	25.2 feet
Height	8.2 feet
Cabin Dimensions	Width: 45.0” Length: 9.0’ Height: 47.0”
Baggage Area	20 cubic feet
Empty Weight	2,260 lbs.
Max. Gross Weight	3,600 lbs.
Useful Load	1,340 lbs.
Fuel Capacity	90 Gallons (540 lbs.), 84 Usable All fuel was listed as usable in the early PA-30, but 84 usable is commonly used by experienced owners. [15 Gal tip tanks introduced on later models, bringing total capacity to 120 gallons.]
Fuel System	30 Gal. Per Inboard Wing Tank 15 Gal. Per Outboard Wing Tank Right Tanks Feeds Right Engine Left Tanks Feeds Left Engine Crossfeed Available for Emergencies
Electrical System	12 Volts 1 x Battery (35 Amp) 2 x Alternators (both upgraded from factory 50 Amp Generators to STCed 70 Amp Alternators)
Avionics System	King KMA-24 Audio Panel Lynx 9000 Transponder / ADS-B Garmin GNC-355 GPS/NAV/COM King KX-155 NAV/COM Garmin Aera 660 GPS (Panel Mounted) Garmin GI-275 CDI/MFD S-TEC 50 Autopilot

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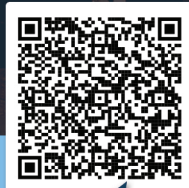
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Two years later, he bought his first Comanche (a 180) to pursue his instrument rating. Within the next few years, he would also earn his Commercial, CFI, and CFII in that plane. Soon after, he added multi-engine privileges in a Beech Duchess and an MEI in a Piper Aztec.

Despite a strong desire to own a twin, he couldn't really justify it. That is, until his Comanche 180's engine failed on takeoff. While the resulting emergency landing on a golf course was successful with no injuries, insurance wrote off the plane. In 2020, after test flying several Twin Comanches and being impressed with their performance and economy, he purchased N43B, a 1963 model.

Along the way, Seth transitioned from student to teacher and used his free time to flight instruct. He provided hundreds of hours of dual-given, including a beautiful full-circle moment where he provided a Comanche 250 check-out to the Young Eagles pilot who'd given him that first airplane ride. Soon convinced the time had come to leave nursing behind and pursue aviation as his primary career, Seth entered the airline world in 2021, flying the E-170/190 series for a regional carrier. A year later, he moved to a national airline on the Airbus A320 family. In 2025, he reached the Captain seat on that aircraft.

Like its owner, N43B has had its own journey. Built as Serial #30-226, it was completed at the very end of the first year of production, 60 years to the day after the Wright Brothers' first successful powered flight at Kitty Hawk. In the six-plus decades since, it has cycled through many owners, and a few N-numbers, as both a personal pleasure machine and a workhorse survey plane. As an original, A-model Twin Comanche, it had remained mostly stock. Now living in its retirement years, it's far from being put out to pasture, thanks to its decades-younger owner. Seth has upgraded most of the avionics and gotten them to interface well with the existing S-Tec 50 autopilot. Wanting to ensure it would be a safe and comfortable cross-country platform, he had all fuel and oil hoses

replaced and had the seats redone. Both plane and owner are still dedicated to the TwinCom's most common early mission: molding future multi-engine pilots. Under Lockard's tutelage, N43B is still put through its paces by novice hands, learning the ways of twins (or how to teach in them).

Just a Taste of Twinkie

Before flying N43B in Jan. 2026, I had zero time in a Twin Comanche and only one opportunity to fly a Comanche (and 260 hp 260B model). So, we took our time doing a thorough preflight and cockpit familiarization. The original PA-30s have some cumbersome features that it's good to be aware of in advance. Circuit breakers are below the throttle quadrant, recessed into the floor (see page 12). A protective door covers them. Fortunately, they were moved up into a more accessible sub-panel in subsequent models. Also on the floor, below another door, are the fuel sump handles (see page 12). All tanks drain into a single sump exit on the belly. While the central location might be convenient, having to put a catch basin or a second crewmember under the aircraft to collect the sample is certainly less so. Careful inspection of the nose gear is warranted, as its turn limits are fairly low and unfamiliar

Twin Comanche N43B V-Speeds [Table 2] All Speed In MPH Indicated Airspeed, Unless Noted

Rotation (Vr)	90
Best Angle of Climb (Vx)	90
Best Rate of Climb (Vy)	110
Best Rate of Climb, Single-Engine (Vyse)	105
Min. Control, Single-Engine (Vmc)	90
Maneuvering (Va) @MGW	162
Normal Cruise (Vnc)	190 True
Never Exceed (Vne)	230
Max. Landing Gear Operation (Vlo)	150
Max. Landing Gear Extended (Vle)	150
Max. Flap Extension (Vfe)	125
Landing Reference (Vref – Final)	95
Clean Stall (Vs)	76
Stall in Landing Configuration (Vso)	69

line personnel have damaged many by exceeding those limits. During taxi, the nosewheel is correspondingly sensitive to pedal steering inputs (easily overcome with a bit of practice).

Runup and preflight checks are conventional with no surprises. Aside from the pitch sensitivity mentioned

earlier, so is takeoff. In climb, one adapts to the effective stabilator and learns to trim it precisely to help minimize chasing pitch. Like all Pipers of this generation, trim is controlled via an overhead crank. Fortunately for me, I've flown vintage Pipers often enough to have a feel for this trim



Seth Lockard (left) and Matt McDaniel (right)

system. For those who don't, you're almost guaranteed to turn it the wrong way initially. Pitch feedback will quickly encourage you to reverse inappropriate input.

After level off, I wanted to see real cruise numbers for this early, unmodified, normally aspirated bird. The verdict: A GPS-verified 170 KTAS (196 MPH) at 24.5-squared, burning a total of 17 GPH, at 5,500' MSL. Pretty impressive economy for a 63-year-old light twin! On the slower side, normal maneuvers are all quite, well, normal. Steep turns and slow flight look and feel like they would in a similar size/weight single. The pitch is still sensitive, but you're used to it by this point. In contrast, roll always retains a heavier feel than pitch. Yaw is neither sensitive nor heavy; a characteristic that is ideal for OEI operations.

Soon enough, that's right where we were, with Seth walking me through drag and Vmc demos with the critical left engine set to zero-thrust to

simulate a secured engine and feathered prop. The Vmc demo proved anticlimactic. In spite of having three adults on board and being less than 500 pounds below max gross weight, the aircraft remained controllable to a speed below the designated Vmc. In fact, by the time the aircraft actually began to yaw towards the dead engine, with full opposite rudder applied, it was also hinting at an impending stall. A quick reduction in power on the operating engine, combined with a definitive pitch reduction, quickly brought 43B right back under full pilot control.

As any pilot of light or cabin-class twins knows, understanding the drag formulas of your aircraft is critical to ensuring a safe outcome after an engine failure. Few light twins are capable of sustained flight with OEI in anything other than a clean (or nearly clean) configuration. Properly managed, an OEI scenario results in stabilized flight at something very

close to best rate of climb speed, single engine (Vyse). If the scenario began at a higher altitude, drifting down to the single-engine service ceiling occurs before level flight can be attained (drift down is typically -150 FPM). Once additional drag is introduced, all bets are off.

On this day, in #30-226, a stable OEI cruise was easy enough to achieve in clean configuration, slightly above Vyse. With zero thrust on the failed engine, a climb of about 250 FPM could be achieved at Vyse (105 IAS). With flaps at 10°, maintaining altitude was possible, but only if speed was held precisely at Vyse (so that first notch of flaps equated to -250 FPM). Gear extension forced a 500 FPM descent to maintain Vyse (net performance loss, -750 FPM). Finally, flaps 20° subtracted another 100 FPM, while full flaps pushes the sink rate above 1,000 FPM! In a real situation, delaying gear extension until landing is assured would likely be necessary,

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as would choosing to land with partial flaps. The drag demo is not just a checkride maneuver. Knowing your twin's numbers could make all the difference in a real-world OEI event.

One pleasant surprise was that throughout all the OEI maneuvers, the PA-30's required rudder forces were never overwhelming or exhausting. Of course, in a real OEI situation, you'd trim the rudder to neutral both to prevent pilot fatigue and to maintain the desired flight path when distracted by other piloting tasks. In learning the aircraft, however, I wanted to feel what was truly required in yaw force with OEI and was surprised to find it manageable, for long duration, via muscle alone. Obviously, this is attributed to the fairly low horsepower of Twin Comanche engines, combined with more than adequate vertical stabilizer and rudder area.

The Twinkie's Preservatives

Like the classic snack food, the Twin Comanche seems to have also

been injected with an abundance of preservatives. The PA-30 & 39 have retained a cult-like following in their post-production years. Parts availability remains adequate and, in fact, better than for many aircraft mass-produced in the same era. Multiple companies have certified a wide variety of drag reduction and speed enhancement modifications for the sporty little twins, many of which are still available for purchase and installation today. The turbo-normalized models can routinely exceed 200 Knots (230 MPH) TAS at altitude, even in fairly stock condition, on 17-18 GPH (total, both engines). With several cumulative speed mods applied, any model can best their POH numbers by 20 MPH or more, flown high or low. Zinc chromate was liberally applied at the factory before major components were joined, which has kept the fleet well protected against corrosion. Airworthiness Directives stabilized years ago, and,

properly maintained, Twin Comanches continue to age well and soldier on. Within their niche, they remain a favorite for owner/pilots who want multi-engine redundancy, yet prioritize efficiency above all else. **T&T**

Matthew McDaniel is a Master & Gold Seal CFII, ATP, MEI, AGI, & IGI and Platinum CSIP. In 34 years of flying, he has logged nearly 22,000 hours total and over 5,900 hours of instruction given. As owner of Progressive Aviation Services, LLC (www.progaviation.com), he has specialized in Technically Advanced Aircraft and Glass Cockpit instruction since 2001. McDaniel is also a Boeing 737-series Captain for an international airline, holds eight turbine aircraft type ratings, and has flown over 135 aircraft types. Matt is one of less than 15 instructors worldwide to have earned the Master CFI designation for 11 consecutive two-year terms. He can be reached at matt@progaviation.com or 414-339-4990.



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Editor's Pics

Photo & Story
by Lance Phillips





IN SEPTEMBER OF 2023, ARMED WITH MY LEICA M10 AND ITS 135 MM F4 LENS, CIRCA 1975, I ENDEAVORED TO PHOTOGRAPH THE FINAL ITERATION OF THE NATIONAL CHAMPIONSHIP AIR RACING ASSOCIATION'S RENO, NV, CONTEST. I HAVE BEEN TO THE RENO AIR RACES MANY TIMES, BUT 2023 WAS BITTERSWEET DUE TO THE UNCERTAINTY OF ITS NEXT LOCATION. NOW IN ROSWELL, NM, SANS UNLIMITED CLASS RACING, WE GET TO ENJOY FORMULA 1 RACING, T-6S, JETS, BI-PLANES, AND THE STOL DRAG CLASS. CHECK IT OUT THIS YEAR, SEPTEMBER 16-20, AT THE ROSWELL AIR CENTER.

Do You Need a Safety Pilot?

by Lawrence Searcy



On a recent Friday, my friend Michael called and offered a right seat in his Cessna Citation M2 for a round trip to Austin. The mission was to pick up his dad from Austin Bergstrom Airport and return home. If we left on time, we would be back for a late lunch. Although I don't have a twin rating or a jet type rating for the Citation, it is still fun to act as an unofficial safety pilot and learn the processes and procedures of flying an unfamiliar plane.

I told my wife Friday evening about my plans for the next day, and she gave me the go-ahead with the caveat that I had to go to a movie with her on Sunday as a compromise. She likes going to the actual movie theater to see movies. Acknowledging that with the tickets, snacks, and a drink, the movie would cost about the same as the trip to Austin, I acquiesced to the movie. I considered it a fair trade and made plans to meet Michael the next morning.

That Saturday, we agreed to meet at the FBO at 10:00 a.m. for a 10:30 a.m. departure. At 10:20 a.m. Michael called and said he was running late because he had to update the Garmin databases since he had not flown in a few weeks. We were not time-constrained with any weather concerns, and his dad lived close enough to the Austin airport that we could text on departure for him to meet us when we arrived. Weather was clear skies with a cold north wind blowing 15 knots, gusting to 20.

We anticipated some turbulence on departure and then again as we arrived in Austin. We climbed into the cabin, let the databases finish updating, and fired up the two engines for the first leg.

On the way over to Austin, we discussed how nice it is to have a second pilot in the right seat (even if not type-rated) after not flying for some extended period of time. Although not commercial pilots, classic crew resource management can be used to assist with ATC communication and reduce the pilot's workload with checklists and systems confirmation. The flight to Austin was a quick up and down, taking just under an hour at 26,000 feet. A rapid turnaround with fuel, and we headed back home.

On the way back, Houston center called up and asked us to verify our routing as we headed east, just north of the Conroe, Texas, airport. We filed the ILEXY4 departure with the ZENZI transition LFK, then the destination. We advised that we were direct destination about 20 miles east of IAH (Houston Intercontinental). ATC's response was to keep the direct destination, and admonished that we had missed a filed waypoint at LFK. Michael and I were momentarily confused, but somehow, even with both of us in the cockpit, we failed to notice that after the departure's last waypoint, we were supposed to turn north to Angelina VOR (LFK). LFK is not part of the departure out of Austin, but instead was filed in the route by the pilot,



Back in the cabin of the M2

but not transferred to the avionics in the plane. He simply missed transferring it to the flight management system. He was quick to point out his mistake and commented that not flying for a few weeks had made him a bit rusty. The mistake was innocent, but a good reminder that time out of the cockpit can lead to inconsistent results.

I knew exactly how he felt. Often, after not flying for even a couple of weeks, I get butterflies when I climb back into the plane. Longer absences cause more anxiety to the point that I often take an instructor with me when I pick up my plane from maintenance. My annual usually takes about three to four weeks. The shop test flies the aircraft before I pick it up, so my concern is not the mechanical worthiness of the plane but my own time away from flying as pilot in command. Like any learned skill, flying requires practice. Having a safety pilot in the right seat after not flying for a while provides the assurance of redundancy.

I have spoken with multiple friends and acquaintances over the years who talk about their own flying journey and comment, "I got my private pilot's license, but just didn't fly enough, so I gave it up." Or "I tried it and just did not trust myself to take it seriously enough to be good at it all the time." These are the type of pilots we want to step away from flying. Not because they cannot become excellent pilots if they tried, but because they realized their passion limitations. They simply were not passionate enough to become experts. It doesn't mean they are not passionate about something else equally as dangerous or even requiring much more intellectual

capability to perform. They are just not confident in their own skills as a pilot.

In 2022, I had a mechanical failure in my 1989 Piper Malibu Mirage and executed an emergency landing in Beaumont. The plane was down for more than two months until the new engine was installed, then it was ready to be picked up. I had flown with friends in the interim but had not been a pilot in command for several months. When it came time to retrieve the plane, I called my instructor and asked that he meet me in Beaumont and fly home with me. The purpose was to ensure that my skills were still sharp after my time away from flying. The flight home was uneventful both mechanically and piloting, but I just felt better having a second set of eyes and ears in the right seat, reading back checklists and helping confirm ATC instructions.

After an annual in Atlanta, I could not find a "safety-pilot" to accompany me to retrieve the plane at Gwinnett Field (KLZU) outside Atlanta. It had been about a month since I dropped the plane off for the annual. I hopped into the cockpit and began the engine start checklist, taking a little more time with it than a normal flight. The engine fired up fine, and I went through the pre-taxi portion of the checklist. When testing the autopilot, I continued to get a fault, such that the pre-flight test failed, and the trim switch was not working. I was frustrated, shut down the engine, walked back into the shop, and explained the anomaly. About an hour later, the problem was solved when the mechanic who had worked on the plane admitted to pulling the trim breaker during maintenance. The technician commented that I had not done my checklist thoroughly because it requires checking all breakers. I was frustrated with the comment, but he was correct. I had done a cursory check of the breakers as the normal part of the checklist, but I somehow missed the autopilot /trim breaker being pulled. A second pilot may have suggested checking the breakers again, avoiding the time wasted to shut down the engine and diagnose the cause.



The front office

On another occasion, I was leaving a busy Class B feeder airport in Atlanta that serviced a lot of jet and turbine traffic as well as a local flight school. I had to wait for a long while to take off behind a number of flight school planes doing pattern work and other landing and departing business traffic. During the waiting period, I feathered my prop to reduce the possibility of foreign object damage (FOD) from ingesting items from the taxiway into the engine while I sat and waited for my departure slot. I was finally cleared for departure with an instruction of “no delay.” As I began the takeoff roll, I immediately noticed reduced thrust and that my airspeed was not climbing rapidly enough to get to my takeoff speed. I aborted the takeoff, notified ATC, and exited the runway. I knew immediately that I had not moved the prop out of feather before beginning the takeoff roll. I was focused on the “no delay” instruction from the tower and frustrated by the long wait behind all of the flight school traffic. Embarrassed, I had to explain to the tower what happened, have them refile the flight plan, and wait again behind all of the departing flight school and GA traffic.

In both instances, I think a second pilot would have helped me avoid the two simple mistakes. First, having an observer makes you slow down during all of your processes because you know you are being watched. Second, a safety pilot, rated or not, helps with crew resource




Author Lawrence Searcy and owner Michael



Filed flight path in blue, actual in red

management. Simply reading off the checklist to the pilot and waiting for acknowledgement ensures that every check item is touched. When we fly our own planes, we don't expect anything to be changed because no one else has been in the plane. Checklists can become more routine. For instance, the breakers are something I usually just touch and press with my palm. I know they have not been intentionally pulled because I am the only one flying the plane. But after maintenance, everything requires a little more attention, and a safety pilot can help focus attention on necessary items. The same is true with my prop error and aborted takeoff. The tower hurried me, but not so much that I should have missed the prop setting. A safety pilot reviewing the checklist one last time would have prevented the error.

I know some private pilots who always take a safety pilot with them. These people have taken and passed their private pilot and maybe even their instrument rating, but still feel they need a safety pilot for each trip. Good for them. When we play golf, we hit at the practice range. When we give a speech, we practice in the mirror. Practice equals proficiency and confidence, so why is it not the same for very professional and proficient pilots to get a little practice when they have been away from the cockpit for a while? That decision is one every pilot should weigh. Is a week a long time, or a month, or three months? What is your comfort level? It may be that after a month, a pilot is perfectly comfortable until looking at the forecast and noticing an approach will probably be necessary. That information locks in another decision matrix, and maybe now a safety pilot would be a good idea.

I fly a lot of hours all over the country. I'm not embarrassed to say that in the more than 20 years I have been flying, I have made multiple mistakes. None of them led to anything serious, but all were learning experiences. We all make mistakes when flying. Not everyone wants to talk about them, and admitting mistakes is hard. But like everything in life, we learn from mistakes, and ultimately admitting to them makes all of us better pilots. Mistakes are also a function of being out of practice. If you want to minimize your mistakes, think about it as you think about getting to an expert level in any endeavor. Would a professional coach help you get to the next level or back to where you were after not practicing for a while? If the answer is yes, ask a CFI or another competent pilot friend to sit right seat on your next flight. The friend you ask will be as excited as I am every time I get to fly right seat with a friend, regardless of whether there's a propeller in front or two jet engines on the back. 

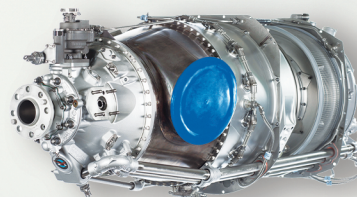
Lawrence S. Searcy Jr recounts stories from more than 20 years of aviation experience. A 1,600-hour private pilot with an instrument rating, he is also an entrepreneur, attorney, rancher, and outdoorsman who flies himself and his family across the country for both business and pleasure in their TBM 700A. His previous aircraft include a Mooney M20J and a Piper Malibu Mirage.



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James Keyes

by Grant Boyd

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The first airplane that Keyes owned was a Bonanza

James Keyes knew from a young age that he wanted to be involved in aviation in some fashion. His initial goal was to be an astronaut and has set his sights towards the stars ever since. As a boy he sought to learn as much as he could about space missions. While he had no lack of tenacity or ingenuity, money was a challenge growing up – so he built his own rocket out of a flashlight tube and a bag of gasoline.

These same skills have served Keyes well in business and have enabled him to purchase a cadre of aircraft over the years. While he hasn't yet been to outer space, he has landed his own jet at the Kennedy Space Center and has flown in zero-gravity with an astronaut turned friend.

Keyes' foray into general aviation first started after graduating from college, he explained.

"I was applying for ROTC just as the Vietnam War was ending, so they were furloughing all the pilots, and I aban-

doned my plans for military training. As soon as I graduated and had my first job, I began taking flying lessons. I went from Cessna 152s to a Beechcraft Sierra and then eventually bought my first plane in the mid 1980s, an A36 Bonanza, after tiring of rental airplanes with their varying levels of equipment."

In business, Keyes ultimately ascended to the C-suite, where he held the chief executive officer role at both 7-Eleven, Inc. and Blockbuster, Inc. He is now the chairman of Key Development, LLC, an investment group that promotes growth and expansion in diverse business areas. A resident of Dallas, he also serves on a collection of corporate/advisory boards, as well as philanthropic boards. General aviation makes getting to various commitments across the country possible.

"I had a gradual evolution from the normally aspirated Bonanza to a turbo-normalized Bonanza with tip tanks



During a period of not owning an aircraft, Keyes pursued floatplane instruction at the Aero Club Como in Italy

that gave me a lot more range, as well as a lot more power and climb performance. I flew that for a while and then decided to upgrade to a Baron, which I flew three different ones over the years. At that point I diverged a little bit and was minus an airplane for a while and was going crazy because I wasn't flying. My wife actually signed me up for helicopter lessons," Keyes recalled, noting that a trip to Italy to get his seaplane rating at the Aero Club Como followed shortly thereafter.

"From there, I ended up in the turboprop world and started flying Piper Malibu Meridians. I didn't buy one, but did do a dry lease and then started to get a little bit of King Air time logged. Around that time, I decided that I wanted to upgrade to a Citation and bought my first CJ1 around 2005."

The light jet market was really abuzz back then, and Keyes considered several models before choosing this Cessna airframe. He really liked the Eclipse but chose the CJ1 because of its range, reliability, Textron's parts support, as well as the ability to move up the lineup with a common type rating.

"I flew the CJ1 for a couple of years and had a very good experience with it," he said. "I then upgraded to a CJ3 and right about that time I took on the role of CEO of Blockbuster, so I was travelling all over the country. The CJ3 ended up being a great platform for business travel because I could virtually cover almost every market in the country from Dallas without stopping for fuel."



Keyes plans to host a podcast from the cockpit, called Plane Talk. Episodes will be filmed in the M2 during a flight and the conversations will be with different business leaders and other notable individuals



Brigadier General Charlie Duke and Keyes at Kennedy Space Center



The Husky is great for low and slow flying

The FJ44-3A powered Citation was paired with another Cessna, a TTx that had a similar paint job and tail number. Keyes really felt that he had the best of both worlds with these aircraft, as the single-engine piston was a great choice when flying in Texas, often to Austin or Houston.

“The TTx was very comfortable and I enjoyed flying it. What happened is that it got me hooked on the Garmin G2000, whereas I had the Collins Pro Line 21 in the CJ3. Single-pilot operations with the Garmin avionics systems are so comfortable, and you have so much information at your fingertips,” he said.

“I ended up selling the CJ3, but my timing was terrible. I bought it new from the factory in 2008 and sold it in 2016. I ended up keeping the TTx for a while and then bought a CitationJet before getting another CJ1.”

Sticking true to form, Keyes kept his mind within the Citation family when considering his next move, settling on a 2015 Citation M2 that he got in September of 2020. He no longer needed the legs of the larger Citation that he once had, and this 525 is a great fit for the trips that he often makes alone. If weather is particularly adverse, or his schedule is packed or has him coming home late after a speech – Keyes will often elect to fly with a safety pilot.

“The M2 is a semi cross country airplane but it’s perfect for me because I very seldom take passengers,” he said. “A frequent mission of mine is Los Angeles. I fly into Hawthorne (KHHH) and can usually make that trip out there with 700 pounds of reserve. The only times I sometimes can’t make it is in the middle of the winter, when there are strong headwinds.”



The M2 on the ramp at Kennedy Space Center



Keyes with Suni Williams on the ramp at Kennedy Space Center, prior to her extended mission aboard the International Space Station

Keyes lives only five minutes from Addison Airport (KADS) and has an office above the hangar, providing him additional convenience and flexibility. On longer flights, he gets the plane up to FL400/410 as quickly as he can. Speeds are usually around 385 to 395 KTAS, and fuel burn is close to 1,000 pounds in the first hour – including the climb. Consumption falls to about 390 pounds per side once at FL410. In ISA conditions and with a light load, it only takes him 20 minutes to get up to that altitude.

Overall, Keyes doesn't have much to say when asked how the M2 could be improved. An extra 300 pounds of fuel space in the tank would be appreciated by all operators, he stated – noting that he would be in favor personally of giving up two seats for the extra fuel capacity.

Keyes estimates that he flies the M2 about 150 hours per year and enjoys the cerebral challenge of annual recurrent training. He has tried several different recurrent training options over the years, but has decided that FlightSafety works best for him.

“FlightSafety upgraded their use of technology after buying TRU [Simulation] and what I like best is the ability with the 525 rating to do all your ground school work online. There is the interactive capability where you can turn systems on and off – watch the flow of hydraulics and electricity. This is incredibly valuable and I learned so much more through this, than in the classroom with PowerPoint presentations.”

As Keyes has progressed in his career, and in the cockpit, he has become more intentional about applying the science of learning.



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“One of the things that I’m doing now, is that about a year and a half ago I released a book called Education is Freedom. I talk a lot about aviation lessons, because they provide so much that can be carried over into regular life. For example, when you get your pilot’s license it’s a license to learn – right? The goal with aviation is to keep learning. The more you learn, the better you will be as a pilot and the longer you will get to fly,” he explained.

“The same principles apply in the boardroom. I’ve had the privilege of leading two Fortune 500 companies and characterize the role of CEO as ‘Change Equals Opportunity.’ The biggest killer of careers often is fear; people are afraid. It took me so many years to realize that when I’m training in a simulator, what the instructor is doing is trying to reprogram my brain. So instead of relying on my pre-programmed human patterns that keep us from being eaten by a lion, you learn to react properly in an emergency and there is no room for fear because your brain has been reprogrammed using a concept called neuroplasticity. Now, instead of being afraid, I know where my emergency checklist is, and how to methodically find a solution.”

When not in the simulator or in the flight levels, he can be found flying around Texas in an Aviat Husky – and recently sold his T-6 Texan. Taildragger and aerobatic flying are both ways to keep your skills sharp.

And with thousands of hours flying jets and other aircraft over more than four decades, Keyes has never turned his eyes away from the stratosphere. The back-of-the-mind thought of wanting to be an astronaut never went away.

“I had the privilege of getting to know a number of astronauts over the years. Buzz Aldrin and I were both inducted into an organization called Horatio Alger [Association of Distinguished Americans] and have become good friends. We have flown together on several occasions, and he introduced me to his peers, Charlie Duke, Walt Cunningham, and Al Worden, among others. So, I’ve had four or five different Apollo astronauts and several shuttle pilots in my cockpit, which has been such a privilege,” Keyes said.

“One day Charlie Duke, from Apollo 16, called me up and said ‘Hey, Jim. Nicole Stott (another astronaut) and are going to do an Omega Watch commercial in zero gravity. Do you want to come?’ It took me a nanosecond to accept that invitation. But the best part was that I flew to Greenville, South Carolina to pick General Duke up and since he was with me, we got permission from NASA to land on the Kennedy Space Center shuttle strip. That was such a blast; it was an amazing experience!” 



Grant Boyd is a private pilot with eight years of experience in aviation business, including marketing, writing, customer service, and sales. Boyd holds a Bachelor’s and a Master’s of Business Administration degree, both from Wichita State University, and a Doctor of Education degree from Oklahoma State University. He was chosen as a NBAA Business Aviation “Top 40 Under 40” award recipient in 2020.

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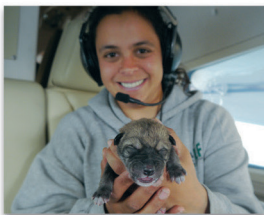
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Left: Chris Crisman/TNC/LightHawk; Right: Lincoln Athas/WCC/LightHawk



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On Final

by David Miller



Pressing Problems

"Today, we will focus on pressurization issues forcing an emergency descent. You can hand-fly the procedure or let the autopilot assist with the EDM (emergency descent mode)." My wonderful instructor at FlightSafety, Dax Beal, had me prepared for the ritual.

But in real life, a true pressurization emergency will not happen exactly how you trained for it.

Some real-life examples:

Over Cape Girardeau, MO, at FL 270 in a B200 King Air, the captain left the cockpit to retrieve something in the cabin. Before he could return, the outer pane of the windshield cracked with a loud thud. The pilot returned to the cockpit and decided to de-pressurize the cabin even though the checklist said to maintain pressure, and that the aircraft could be flown up to 25 hours after such an event. Both pilots in the front seats tried to don their oxygen masks but received no O₂. The captain had turned off the system to save it for another flight.



Within a few seconds, they both passed out. For the next seven minutes, the CVR (cockpit voice recorder) recorded sounds of increased propeller noise, the landing gear and overspeed warning horns, and altitude alerts. The King Air descended out of control to 7,000 feet, whereupon the pilots regained consciousness and landed. Major portions of the tail departed the aircraft, and the wing was deformed during the high-speed descent.

Let's call this a "self-induced" pressurization emergency. Here's another one:

A pilot picks up his Citation CJ3+ out of maintenance. During climb out, the CABIN ALT light illuminates, indicating that the cabin altitude has exceeded 10,000 feet. He dons his mask, declares an emergency, and initiates an emergency descent. Safely on the ground, he notices that the pressurization controller has been moved to OFF during maintenance, and he has failed to notice it during his pre-flight inspection or climb checklist.

Sometimes, we simply skip the checklist and improvise.

In flight, at FL 400, the M2 pilot notices an amber PRESSURIZATION CNTRL light. The checklist calls for monitoring the situation and descending if the cabin altitude increases above 14,500 feet. Instead, he dons his mask, declares an emergency, and begins a rapid descent. At least he gets credit for putting on his mask.

My point here is that the sequence of events and how you handle them will be different from the rote training repetition in the simulator or airplane. In two of the three scenarios above, the pilots accomplished the most important step.

PUT YOUR MASK ON.

There are scores of examples where pilots took precious seconds to contemplate the situation, only to pass out before they could take action. Donning the mask affords you the time necessary to diagnose the situation.

Can you remove the mask from the receptacle, fiddle with your glasses, and put it in place in time? And what if those prescription glasses are broken or thrown under the rudder pedals during the melee? Do you have another pair nearby?

You might want to have your companion practice the maneuver, too. Patty calls it a really bad hair day.

Fly safe. 

David Miller has owned and flown a variety of aircraft from light twins to midsize jets for more than 50 years. With 6,000 plus hours in his logbook, speaks nationally and writes on a variety of aviation safety topics. You can contact David at davidmiller1@sbcglobal.net.

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