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Expansion

Insurance  
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Owner's Corner:  
Matt Waits

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MAY 2026 \$3.95 US  
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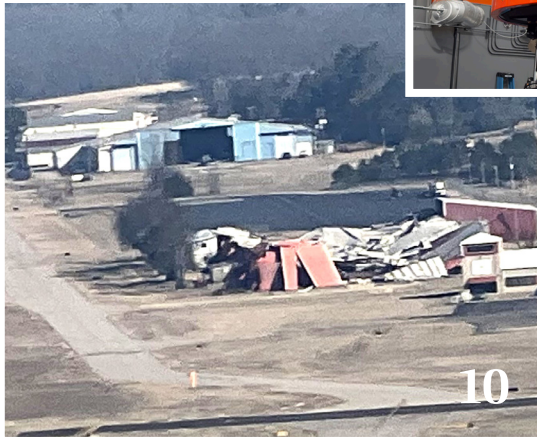
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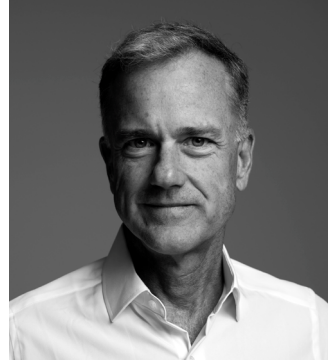
**COVER PHOTO:**

Photo courtesy of Matt McDaniel.

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# Editor's Briefing

by Lance Phillips



## Just a Non-Stop Away


Living in Dallas, Texas, provides advantages over just about anywhere else in the U.S. One is that I get to see lots of people I otherwise wouldn't have the opportunity to. If you can stand the heat and humidity of our summers, the winters are relatively mild, except for the occasional ice storm, and the spring and fall are just amazing. It's the access to DFW Airport and Love Field that brings so many people here, especially those in the aviation business.

This spring, I met up with two college fraternity brothers who now both fly the Global Express, and they both have been featured in *Twin & Turbine*. Pete Ruskay has written several articles for us over the last few years, and Dan Fagnoli was featured on the cover of the February 2026 issue.

In early April, Dan happened to be dropping a Global off at Love Field. We took the opportunity to catch up

and relive some of the old days while grabbing a burger at Bowen House (highly recommended), followed by seeing some of my neighborhood locals at the Uptown Pub, both in Uptown Dallas.

As I write this, Pete just hopped in an Uber to reposition back to DFW for a flight to Detroit. While in Dallas, we caught the Yankees get spanked by my Rangers (sorry, Pete), feasted on chicken parmesan at Hudson House (another great restaurant), visited my classic Porsche dealer, HCC Specialty Cars, toured my photo studio and gallery, and finally, met up with the usual locals at Uptown Pub with my dog, Remy.

Being a non-stop away from just about anywhere in the world has its benefits. Hosting friends and keeping up relationships that otherwise would be close to impossible is invaluable. 



The editor (left) and Pete Ruskay (right) watching the Yankees get spanked.

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# LOFT Expands Training with the Citation CJ3

by Rich Pickett



LOFT CJ3 Sim Exterior

Scheduling a Cessna Citation CJ3 initial or recurrent training has improved. LOFT in Carlsbad, CA, one mile from Palomar airport (KCRQ), has added another full-motion simulator to its expanding capability. In addition to its two Cessna Citation CJ1, Citation Ultra, and Citation 560XL simulators, the new CJ3 offering helps fill gaps and provide a more robust training selection for LOFT's customers.

## Building the Simulator: Authenticity from the Ground Up

The LOFT CJ3 simulator is not an approximation of the aircraft — it is the flight deck. Built around the actual cockpit of a real Citation CJ3, every switch, knob, avionics screen, and system is present and functional. The only thing missing is the airframe around it. One of the CJ3s

I flew and managed for years was close in serial number range to the aircraft used in the simulator's development, which allowed me to contribute in-flight data and first-hand operational experience to support the project. LOFT also instrumented a Cessna Citation CJ3 to capture detailed flight data across numerous test flights, ensuring the simulator's aerodynamic model faithfully represents the real aircraft.

These complex simulators are far from off-the-shelf products. Every training device LOFT builds is meticulously designed to exactly emulate a specific aircraft. Each light, annunciator test sequence, and control force must match the actual aircraft. Using the authentic flight deck means pilots experience the correct tactile feel of every knob and switch from the moment they sit down. As a

practical bonus, the sim offers noticeably more legroom than the actual aircraft — a small but welcome comfort during long training sessions.

Visuals are provided by RSI Visual Systems, the same high-resolution platform integrated into LOFT's Citation 560XL simulator. The FAA certification process for a new simulator is rigorous and thorough. LOFT's development team — encompassing technical writers, simulator technicians, instructors, graphic designers, and others — collaborated over nearly two and a half years to bring this simulator and the training program from concept to approval. As part of that certification, FAA evaluators conducted multiple test flights in the simulator and used sophisticated audio measurement equipment to verify that sound levels for virtually every noise source in the sim matched the actual cockpit.

### The Training Program

LOFT's CJ3 training curriculum was built upon the foundation of its highly regarded CJ1 program, inheriting the proven structure while incorporating improvements that have since been folded back into its other courses. The initial program runs ten days and includes 48 hours of ground school along with 10 hours of simulator time — eight hours of training and two hours for the check ride. Recurrent training is structured as a three-day program and is available for both 61.58 and Part 135 requirements. All courseware was developed in-house at LOFT, ensuring a consistent, high-quality experience from ground school through final evaluation.

The training curriculum is scenario-based and was developed with a particular focus on challenging, real-world airport environments. Pilots can expect to fly approaches into destinations including KJFK, Aspen (KASE), Denver (KDEN), Eagle County (KEGE), and San Francisco (KSFO) — airports that collectively demand precision, situational awareness, and proficiency with the CJ3's systems under realistic conditions.

LOFT's training manuals reflect the same commitment to quality. Rather than relying solely on manufacturer documentation, their technical team researched every system independently, resolved inconsistencies across multiple sources, and produced pilot-friendly materials that clearly explain CJ3 systems architecture.

The LOFT CJ3 simulator features Rockwell Collins Pro Line 21 avionics, and to accommodate Garmin G3000 avionics in the CJ3+, they offer a differences course. Operators of the CJ1+, CJ2+, and CJ4 will find the CJ3 training architecture familiar, as the program was deliberately modeled to align with the broader CJ family.

One standout development during the program build was the creation of a suite of electronic flight bag applications, including an innovative weight and balance app. Having used many weight and balance tools over the years, I can say without hesitation that this is the finest training tool of its kind I have encountered. It is intuitive, accurate, and genuinely useful both in the classroom and in the cockpit.



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## Instructors

The quality of any simulator program ultimately depends on the people delivering it. LOFT's CJ3 instructor cadre brings a combination of deep type-specific experience and current, real-world flying. Many of their instructors continue to fly professionally, which keeps their instruction grounded in the practical realities pilots face flying these aircraft.

### Flying the Simulator

While I conduct turbine instruction in actual aircraft, nothing compares to the efficiency and the ability to fully explore the aircraft envelope that a full-motion simulator provides. My son Tigre and I recently spent time in the LOFT CJ3 simulator evaluating the new platform, and I came away genuinely impressed.

Much of the simulator training is conducted under simulated night conditions, which is where the RSI visual system truly proves its worth. Circling approaches at night are one of the most demanding tests of a visual system's accuracy, and the CJ3 sim handles them exceptionally well. Flying the RNAV approach to Runway 4R circling to Runway 31R at KJFK, for example, requires precise visual reference management from minimums all the way to touchdown. Reaching MDA, executing a slight turn to parallel RWY 4R, acquiring the lead-in lights, and completing the circle to land — the sim's visuals tracked every element accurately, even when flying just below the cloud layer. The runway environment was crisp and usable with enough time to configure the aircraft for landing.



Tigre and Rich in LOFT's CJ3 Simulator

Daytime VFR operations proved equally convincing. Flying departure and arrival profiles around complex terrain — including mountain airports in the curriculum — the RSI system rendered ground texture, terrain relief, and environmental lighting in a way that supports genuine situational awareness rather than simply providing a visual backdrop. The control feel throughout matched my experience with the actual aircraft well, and the motion platform conveyed acceleration, buffet, and turbulence in a manner consistent with what you would experience in the airplane.



Another view of the LOFT CJ3 Exterior


## Summary

After nearly two and a half years of development, LOFT Aero has delivered a CJ3 training program that is thorough, well-crafted, and operationally relevant. For operators and pilots seeking initial type ratings, 61.58 recurrent training, or Part 135 recurrency, LOFT's new CJ3 program deserves serious consideration.

The combination of a meticulously built simulator, a rigorously developed curriculum, experienced instructors who are actively flying, and a location convenient to the western United States makes this a standout offering in the Citation training landscape. Whether you are transitioning into the CJ3 for the first time or working to maintain currency in an aircraft you know well, LOFT Aero has built a program worth your time. **T&T**



With 14,000+ hours of piloting more than 100 aircraft models, **Rich Pickett** is still passionate about flying. Rich holds an ATP, CFII SME, SES, glider license, and type ratings in the following aircraft: L29, L39, Citation 500/510/525, Eclipse 500S, Beechcraft Premier and Dassault Falcon 10. He runs his company, Personal Wings, with his son Tigre. Personal Wings provides training, mentoring and aircraft services. You may contact Rich at [rich@personalwings.com](mailto:rich@personalwings.com).



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# Editor's Pics

Photo & Story  
by Lance Phillips



Galaxy FBO

IN MARCH OF 2025, DAVID MILLER TOLD US ALL ABOUT HIS PURSUIT AND ACQUISITION OF A VERY SPECIAL PRESSURIZED BEECHCRAFT BARON (“REMAKE OF A CLASSIC”). HE HAD DITCHED TURBINE ENGINES A COUPLE OF YEARS AGO, BUT STILL HAD THE ITCH TO FLY. AFTER UPDATING AND REFURBISHING THIS BEAUTIFUL TWIN, DAVID WENT TO SCHOOL (FLIGHTSAFETY) AND TRAINED TO BECOME PROFICIENT ONCE AGAIN IN THE PISTON WORLD. FOR HIS STORY, I ELECTED TO PHOTOGRAPH THE P BARON WITH THE NIKON ZF AND THE NEW 40 MM PRIME LENS.



# Insurance Considerations During Maintenance

by Lawrence S. Searcy Jr.



I took this picture when landing to pick up my plane. My plane was in the blue hangar in the back.

On January 21, 2026, meteorologists warned of a large-scale winter storm bearing down on much of the Midwest and southern states. The next day, I drove to work listening to updates about Winter Storm Fern (the name the Weather Channel gave to the storm). The dire predictions called for rain, wintry precipitation, snow, ice, and freezing temperatures in parts of the country that do not usually see severe winter weather. The fear across the southern states and further up the East Coast was that the rain occurring during the day would freeze on the roads overnight and then be covered again with sleet and ice.

As soon as I got to my office, the state police were announcing closures of the interstate, river bridges, and other rural roads. With that notice, I informed our employees to lock up and head home to wait out the storm. With so

many of our employees living out of town and in rural areas, the closure of the interstate and many rural roads would imperil their ability to get home safely.

Luckily, for our area, Fern's threat was worse than the reality. The same was not true just a few miles north of us in Louisiana and Arkansas, and east into Mississippi, Alabama, and the eastern seaboard. North Arkansas and Biloxi, Mississippi, may never look the same because of the Live Oak limbs giving way to the weight of the ice on the branches and toppling over. The total economic and emotional toll of the storm won't be measured for years.

Sitting at home on Sunday in front of my fire and watching stories of the storm's impact, I heard my phone chime indicating a new text message. My former flight instructor (and sometimes current commercial pilot of my plane) texted me a picture from Facebook of a destroyed hangar

Glad you went to Rose and not Crider

Wow! I did get a call from rose saying they would be closed until probably Wednesday or Thursday.

Yeah. I was supposed to pick up the 182 we dropped off at Crider on Thursday.

Is yours in that shop now? Is it totaled?

Don't know. Just saw this post. Guess we'll find out next week

Text message between me and my part-time pilot, Lonnie Lucious, about the hangar collapse.

at Mena Intermountain Municipal Airport (KMEZ). Under the photograph, his message read: "Glad you went to Rose and not Crider." The title of the Facebook post was from another pilot and said, "The paint shop in Mena, where I had my plane painted, just collapsed."

No more than 1,500 feet to the east, my TBM 700 also sat in a Mena hangar awaiting new paint. As soon as I got the photo of the Crider collapse, I started calling and emailing Keith Rose at Rose Aircraft Services for proof of life of my TBM. I had no idea of the condition of any other hangars at the airport, and the only pictures online were those of the Crider hangar. Keith Rose wrote me back quickly and said, "Thanks for checking in. We are fine. Hope you are too. Working on your plane, actually, with a skeleton crew. I'm sorry about your friend's plane; that big old hangar just collapsed." I was thrilled that my plane was spared, but sad for Crider and all the other owners who had planes that were destroyed in the collapse. Luckily, no one was injured in the incident.

This was my first and only brush with a disaster that could have rendered my plane a total loss. But these kinds of incidents are not unusual. Think back a few years ago to the tornado in Nashville, Tennessee, that destroyed more than 90 planes at John Thune Airport. Or the monsoon at Falcon Field in Mesa, Arizona, destroying several World War II aircraft tied down on the field. Similar stories occur every year from weather-related events. We tuck our planes to bed on the ramp or in the hangar and feel that the risk of loss is now over. That is often not the case.

One thing I had not thought about before bringing the plane to Mena was to ask about their insurance coverage in the event of a loss. I did not check Rose's limits, ask for copies of their insurance, or inquire whether they had any coverage exclusions, including an "act of God" exclusion. Likewise, I didn't check my policy beforehand to determine coverage if the plane is damaged or destroyed while in someone else's care.

Like most insurance, whether for your plane, car, or home, we rely on our agents to recommend the best insurance for each ownership experience. Every year, I get an email from my broker, a month or so after binding insurance, attaching my new policy and encouraging me to read it. This year, the email stated:

*Attached you will find your aviation insurance policy... Please carefully read the policy in its entirety and pay close attention to the endorsements, as some may have changed. If you have any questions, please contact us immediately for further explanation.*

*Aviation insurance policy wordings are not standardized and may vary widely among companies. If you have had coverage in the past with another aviation insurance company, you will notice certain portions of this policy may be worded differently. Also, the terms and coverage offered may not be the same. While reading the entire policy, please pay particular attention to the policy wording regarding the approved pilots and approved uses.*



Another angle of the collapsed hangar.



The flight school plane was damaged when the Crider hangar in Mena, Arkansas, collapsed.

Even after getting the email, I filed the policy away in its appropriate email folder. In reality, these policies are hard to read, they are boring, and they go on for twenty or thirty pages. There are pages of definitions, exclusions, endorsements, and riders. To navigate the coverages, you either must be in the insurance business or a lawyer litigating insurance issues.

When I had an engine issue in my Piper Mirage, forcing an emergency landing, I assumed my insurance company would pay for the engine overhaul. While flying along at seventeen thousand feet, my turbocharger shaft failed, causing the turbo fan to wobble and eventually detach. Consequently, shards of metal flowed through the engine into the prop governor and resulted in catastrophic engine and propeller hub failure. My insurance denied coverage at first, stating:

*"The Aircraft Damage Coverage does not apply: (S). to loss or damage due to wear, tear, abuse, deterioration, freezing, mechanical or electrical failure, hidden or latent defect, or any combination of the foregoing causes, unless such loss or damage is the direct result of other physical damage covered by this Policy; or."*

It wasn't until I argued forcefully that I was not seeking coverage for the damaged Turbo, but for the physical damage it caused after its failure that the insurance agreed to pay. I argued that it was no different than a blown tire on the runway that results in a crash with damage to the airframe. The blown tire is not covered, but the resulting damage to the plane from the blown tire is covered. The insurance eventually settled, covering some but not all the repair costs.

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I emailed my insurance agent, Sean Kerr, with CS&A insurance, with two questions after learning of the Crider Hangar collapse: (1) In the Mena case of the hangar collapse, would their insurance be primary? and (2) If not, would my insurance cover any damages to my plane? His short answer was that because the snow/ice storm was an "Act of God" and not a negligent act on behalf of the hangar owner, the shop insurance would likely have an exclusion. The result is that my insurance would be primary. "From a coverage standpoint, most aircraft hull policies provide an 'All Risks of Direct Physical Loss or Damage' coverage. This means the insurance accepts physical damage regardless of fault unless an exclusion applies." Kerr specifically mentioned the occurrence at John Tune airport in 2020, noting that in that instance, it was the owner's policies that paid out because it was an "Act of God" and not negligence on the part of the hangar owners or the FBOs on the field.

With every occurrence, whether it is from a hangar collapse or an in-flight emergency, the detailed policy language will control. There is an old saying that insurance companies are in the business of collecting premiums and not paying claims. That does not make insurance companies bad. Like any contract, the language controls the outcome, so it is critical that your aviation policy cover all aspects of your flying mission. Don't ignore your agent's

email delivering the policy. Sit down and read it, and be sure it covers everything for your particular mission. If you fly for personal reasons and for work, consider whether the company needs coverage as well. Do you need workers' compensation coverage if company employees fly with you? Do you leave the country in your plane and need special coverage for your destinations? The number of questions is endless because, as pilots, all our missions differ. Find an agent who has experience and will address all your personal issues.

In the end, the Rose Aircraft hangar did not collapse, and I did not have to worry about their coverage or mine. The paint job was completed satisfactorily (an article about that experience is forthcoming), and my rates remain unchanged for not having filed a claim. The process of reviewing my policy, considering the potential claim, turned into a good exercise as I prepare for my renewal in the fall. 

**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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That all-important first impression was waiting on a parking pad, outside a private hangar.





# A Profile in Power: Turbine Motor Conversions, LLC

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by **Matt McDaniel**

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Growing up, I was taught that you only get one chance to make a first impression. It's a concept that Kenny Meines obviously understands well. As founder and owner of Turbine Motor Conversions, LLC (TMCX), Meines had graciously offered to show me what his young company was up to. My airline flight arrived at the Pullman-Moscow Regional Airport (PUW), situated between the towns of Pullman, WA, and Moscow, ID, in the beautiful rolling hills and croplands of the Washington/Idaho Palouse Region. Kenny picked me up and drove us to the other end of the airfield, exchanging pleasantries along the way. That all-important first impression was waiting on a parking pad, outside a private hangar.

The unmistakable profile of a Helio Courier soon came into view. No ordinary example, though. The long-tapered cowling flowed perfectly between the immense fuselage lines and the flat-black spinner. The huge exhaust stacks on either side and the 4-bladed prop, resting in full feather, removed all mystery of what the cowling was hiding. After a causal preflight inspection and discussion, we climbed aboard. Soon, the familiar clicking of ignitors, whining of turbine wheels, and meshing of reduction gears culminated in a satisfying whoosh as the engine lit off and spooled up.

After the Start and Before Takeoff Checklists were complete, and the required two-minute warm-up was



accomplished, we made a radio call over the common traffic frequency. Meines lined up on the centerline, locked the tailwheel, and taxied forward a few feet to verify it was locked. The blustery wind was mostly down the runway, with a 10 to 15-knot headwind component. Brakes held, the PT6's power was advanced and allowed to stabilize. Control yokes neutral, brakes released, the giant Helio rolled forward perhaps two fuselage lengths before leaping into the air. Meines pitched for best angle of climb ( $V_x$ ) while reducing power, and our mutual laughter could not be contained. Still giggling like schoolboys, Kenny leveled off at pattern altitude. Looking straight down, I could see we were roughly halfway down PUW's 7,100-foot runway. We had taken off and climbed 1,000 feet vertically in roughly 3,500 feet horizontally. Expressed another way, we'd gained one foot of altitude for every 3.5 feet of forward travel. First impression made!

### Low Aspirations

Meines never aspired to soar to great heights in business jets or airliners. His sights were not set upon the heavens; they were more along the low horizons. He was a young man and private pilot flying a classic 1947 Bonanza for recreation when he inquired about becoming a crop duster

pilot. Soon, an unusual offer came along. Greg Beck, owner of Beck's Spray Service in Ontario, OR, told Kenny that if he'd complete an aerial application training school and buy his own ag plane, there would be work for him. In fact, he promised Kenny 50% of his company's ag flying the following season.

In a giant leap of faith, Meines headed off to Georgia for training in early 1993. Initial training was conducted in Super Cubs. Having been taught to fly in a Champ in 1989 by a 50,000-hour octogenarian, Kenny had an instant leg up but still had to be taught how to fly low. Very low! He quickly advanced into the single-seat Piper Pawnee, where he was largely on his own to learn the trade. Transition into larger ag aircraft soon followed. All this, while also completing the academic side, learning the rules that regulate aerial application operations and the chemicals used by farmers and ag pilots. Once he'd completed the course, Kenny sold his beloved V-Tail Bonanza.

Using the Bonanza proceeds, he purchased a Cessna 188 AgHusky. The AgHusky was the ending model of Cessna's AgWagon series, which began production in 1966. The original AgWagon design borrowed heavily from the C-180 airframe, including the same 230 hp engine. The 188 line eventually evolved into the 310 hp AgHusky, which closed out C-188 production in 1985. After spraying for Beck through the 1993 season, Meines moved to Pullman, OR, and started his own spray business. He progressed through a series of ever larger and more powerful spray planes, mostly turbine-powered. Over the course of a 31-year career, Kenny logged some 17,000 hours flying low over crops. He earned his stories of taking off loaded with every ounce his burly ag plane could lift from some super-sketchy farm strips.

For the past 20 years, Meines has also been a test pilot for Cascade Aircraft Conversions (CAC) in Garfield, WA. CAC specializes in converting piston-engine ag aircraft to turbine power. Over the years, they did this for many different types of

ag planes. When a turbine conversion emerged from their hangar, it was usually Kenny at the controls for the first test flight. Between the day job and this side gig, Meines developed a deep respect for the reliable power of Pratt & Whitney's PT6 family of turboprop engines, not a single one ever letting him down. He tells the story of when his son would fly all day applying load after load to the crops, before Kenny would take over to continue spraying through the night, using night-vision goggles (for which he carried special certification). During those spraying marathons, the PT6 on their Thrush spray plane would often run continuously for 24+ hours as they hot-fueled and hot-loaded, over and over, for the quickest possible turnaround times!

### A Family That Whines Together

Over the years, Kenny and his wife, Beth (a Private Pilot herself), owned several aircraft for fun and adventure. The one that impressed Kenny the most was a Murphy Moose he bought nearly completed in 2022. Moose builders commonly install the Vedeneyev M-14P radial, which

produces 360 to 400 horsepower, depending on variant and factory options. Aftermarket options can push these 9-cylinder Russian radials up to 460 hp. While the M-14 is well regarded for its power, it wasn't designed with the long life span and dispatch reliability most Western pilots have become accustomed to.

Kenny longed for a rugged STOL bush plane (like the Moose) for taking his family camping in the backcountry. But he wanted turbine reliability supporting high-altitude takeoffs at Max Gross Weight (MGW). While he often jokingly whined about this turbine dream machine, it was his wife who initially pushed the dream towards reality. Beth and Kenny had flown the Moose to Sunriver, OR. When it was time to depart for their second destination in southern CA, the M-14 experienced a hydraulic lock on the two lower cylinders. Kenny was soon pulling plugs and draining oil on the tarmac to clear the lock. They'd already experienced multiple flights with engine roughness and constant headaches with the engine monitor system. Beth's confidence in the plane had hit bottom. She suggested they cancel the trip across the





rugged terrain to California and return home to Pullman, adding, "Once home, you are going to order that turbine engine you've been wanting to put on this thing!"

The Moose needed a turbine whine, and Kenny knew just how to get the ball rolling. He headed over to his old friends at CAC and told them what he wanted, laying out strict ground rules. The turbine Moose needed to be engineered as well as any of their certified ag plane conversions. It needed to be designed and executed so that it looked natural, rather than cobbled together. He wanted a robust bush plane, but it needed to also look like a factory engine installation. CAC and Meines agreed that they would all work together to do it right, or not at all.

### **The Beast with Two Heads**

The plane that Meines would eventually dub "The Beast" began coming



together in early 2023. By June, it was ready to fly and, of course, Kenny was at the controls. The first-ever Murphy Turbine Moose was better than he'd hoped for. He reported to CAC that it was one of the most uneventful initial test flights of his career. The offset CAC had engineered into the motor mount for the turbo-prop engine seemed perfect, and the turbine Moose needed less rudder on takeoff than it had with the M-14 radial. His synopsis of the flight was that it was "flawless."

Concurrently, the 2023 aerial application season was extremely slow for Meines and his company, Ranch Aero, Inc. He began to reevaluate his retirement plans. The need for his services was dwindling in the Palouse Region. Plus, he was feeling the toll of the long hours, high stress, and physical labor the job required. Reluctantly, he decided maybe the time had come to hang it up. His company and his beloved turbine

Thrush ag plane sold at the asking price so quickly that he didn't have an opportunity to change his mind.

With new freedom and time, he posted some videos of his Beast Moose online. It didn't take long for pilots to start asking how they could get one too. Retirement began to look different. Thus, TMCX was born. The Beast was displayed at Oshkosh AirVenture 2023, and TMCX was introduced to the aviation world. What began as simply wanting turbine reliability and performance had grown a second head. Suddenly, he was in the turbine conversion business, looking to the future and other airframes with modification potential.

A friend soon approached Kenny about a turbine bush plane, but he didn't want to build a Moose. Kenny suggested he consider a Helio Courier. Kenny explained the history and capabilities of the legendary bush plane, made famous by the JAARS airshow demonstrations of the Helio's

incredible STOL capabilities. The Courier airframe was big, stout, and more than capable of handling turbine power. In fact, the final version of the Courier (the H-800) was produced with an 8-cylinder Lycoming IO-720 engine weighing much more than the Pratt & Whitney PT6A-20. They soon struck a deal, and Kenny expanded his arrangement with CAC as they again engineered a Helio turbine conversion. Meines found his client a 1984 H-700 Courier (considered a late-model) that was a good candidate for conversion. Today, that Turbine Courier serves double duty as the owner's personal turbine bush plane and TMCX's demo plane.

### **Design and Installation**

Regardless of the airframe, Meines insisted on some unique features for these turbine conversions. First and foremost, they are designed to operate from remote, unimproved strips. So, some specific threats were



addressed from inception. The biggest was preventing the expensive turbine engine from ingesting FOD. Remote strips and off-airport operations can require reverse thrust and heavy braking, which throws up dust and dirt that could be sucked into the engine. Traditional inertial separation doesn't work well in such conditions, as there is little to no forward motion of the aircraft at that point. The solution was quadruple K&N intake air filters instead of particle or inertial separators. Of course, filters can clog (with backcountry dust or in-flight ice). To prevent engine intake air starvation, an alternate intake air system was incorporated via a cockpit-controlled Alternate Air Valve.

Custom exhaust stacks move exhaust air further outward than on most PT6 installations. This allows stock fresh-air vents on the fuselage sides to remain without fear of introducing exhaust gases into the cockpit or cabin. Such vents don't

exist on aircraft designed originally with turbine power. On aircraft originally piston-powered (with exhaust usually exiting under the cowl/fuselage), it was easier to design custom PT6 stacks than to redesign all the cabin air vents. Of course, there is a second benefit to these custom stacks; one that is not trivial. They almost eliminate fuselage soot residue, greatly reducing the amount of cleaning required to prevent metal or paint discoloration.

Meines also wanted a fuel purge collector tank installed. Many PT6's purge a small amount of fuel at shutdown. Usually, this fuel is dumped overboard. However, because these conversions are designed for bush planes (sometimes operating on floats), Meines wanted to be environmentally friendly and prevent even small fuel dumps into pristine lakes or onto backcountry soil. The purge tank can be drained manually, and its contents poured right back into the

fuel tanks (a small, but noteworthy, economic savings).

The PT6A-20's 550 shp is converted to 2,500 pounds of static thrust at the propeller. Considering the largest conversion so far (an H-800 Helio Courier) has a MGW of 4,000 lbs., that is an impressive thrust-to-weight ratio. The Murphy Moose and the lighter Helio conversions have lower MGWs, producing even better ratios. Thus far, TMCX has installed 3 and 4-blade, full-feathering, reversible props from three manufacturers, ranging from 99 to 104 inches in diameter.

Of course, when strapping 550 shp to the front of a taildragger, directional control is paramount. CAC already had much experience taming left-turning tendencies, via their ag plane conversions. On The Beast, they designed in offset thrust angles both down and 2 degrees right. Similar offsets were applied to the Helio conversions and have already been



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engineered for future conversions on other airframes. The custom-made engine mounts are also engineered to be extra-beefy, absorbing the punishment of the backcountry and/or on floats. CAC's hearty 5-point mounts have proven more than up to the task.

TMCX's conversions do not stop at the firewall, however. Each aircraft is customized to order, spinner to tailcone. The most typical requests are avionics-related. Since the engine instrumentation and throttle quadrant must be updated anyway, most buyers opt for a full Garmin glass panel (VFR or IFR, depending on the future mission). The Garmin G3X system is robust and feature-packed, especially when combined with a Garmin digital autopilot and touchscreen navigators. Airframe mods or existing STCs can be applied upon request, as well (such as baggage door mods, various tundra tire options, etc.). Upgraded upholstery, interior appointments, and exterior

paint work can all be accommodated and customized by request, whether optimized for backcountry durability or flashy show-plane glitz.

To meet federal regulations, each conversion is delivered with a serial-number-specific Pilot Operating Handbook (POH) and maintenance manual with instructions for continued airworthiness. For the conversion of certified aircraft, this starts with their existing manuals, upgraded for the firewall forward conversion, and any other upgraded equipment or features installed. For aircraft that were in the Experimental category to begin with, this means Meines and his team are carefully crafting such procedures and manuals where none existed before, adding significant value and safety to those airframes.

### The Bottom Dollar

The most common questions that TMCX fields are those related to cost, both for conversion and operation. The numbers are surprisingly

economical in the grand scheme of turbine aircraft. Firstly, TMCX is not ordering or offering brand new PT6 engines (which can go for more than \$750,000). Such an expenditure makes little sense for an experimental aircraft that is unlikely to be flown more than a couple of hundred hours per year. Instead, TMCX sources mid-time PT6A-20s that have more remaining hours than most recreational owner-pilots fly in a lifetime. These engines usually have around 3,600 hours total time and have a typical lifespan of ~11,000 hours. They also have zero time since hot section inspection, next due after 1,800 hours. As a result, TMCX offers the firewall-forward conversion for around \$250,000 (including prop), depending on the specifics of the package requested.

Operationally, the -20 burns approximately 25% more fuel than the reciprocating engines it replaces (generally big-bore Lycomings



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or Continentals or the M-14 radial). Takeoff fuel burns can be as high as 50 GPH. However, rarely, full takeoff power is actually required in these aircraft, given their natural STOL capabilities. Reduced power takeoffs can be utilized to minimize engine wear and fuel burn for most non-extreme takeoff scenarios. These conversions truly astound in high-density altitude operations. Operators can still expect 2,500 FPM climbs departing at density altitudes up to 12,000 feet. Takeoff distances have been reduced from 500 feet in the piston-powered models to under 150 feet in the turbine version. In cruise, 25-30 GPH is typical, depending on altitude and cruise speed desired. None of these airframes will ever be speed demons, as they are too draggy with their STOL-optimized designs. Turbine Helios typically cruise up to 150 MPH, while the Moose can see 200 TAS at altitude. Yet, it's not the top end that drives conversions.

Rather, it's the turbine's takeoff and stopping power. The PT6 also shines in low oil usage. With a whopping 500-hour oil change interval recommended, typical consumption is only 1 qt every 30-50 hours.

### Present and Future

As of this writing, TMCX has facilitated eight turbine conversions, including four Murphy Mooses and four Helio Couriers (including H-295, H-700, and H-800 models). As this article was submitted, a 5th Moose is beginning conversion, and a 5th Helio had been purchased for conversion. Engineering work is already complete for the Bushliner 1850, the Bearhawk 5, and the Cessna 185. If a buyer is interested in one of these conversions, they can opt to supply a completed airframe, or TMCX can help procure an airframe that both parties deem acceptable for conversion.

Meines and his team are turning out stunning work, well-engineered

and rugged, with eye-popping performance. Thus far, their turn-around time has been three to four months, and their goal going forward is five conversions per year. As they expand into additional airframes and demand soars, TMCX's expectations could push even further. **T&T**

**Matthew McDaniel** is a Master & Gold Seal CFII, ATP, MEI, AGI, & IGI, and Platinum CSIP. In 36 years of flying, he has logged over 23,500 hours total and over 6,100 hours of instruction given. As owner of Progressive Aviation Services, LLC ([www.progaviation.com](http://www.progaviation.com)), he has specialized in Technically Advanced Aircraft and Glass Cockpit instruction since 2001. Currently, he is also a Boeing 737-series Captain for an international airline, holds 8 turbine aircraft type ratings, and has flown over 160 aircraft types. Matt is one of fewer than 10 instructors worldwide to have earned the Master CFI designation for 12 consecutive two-year terms. He can be reached at: [matt@progaviation.com](mailto:matt@progaviation.com) or 414-339-4990.

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41	ASTRA 1125SP
59	ASTRA 1125FPX
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266	BEECHJET 400A
250	BOEING BBJ
513	CHALLENGER 300
317	CHALLENGER 350
29	CHALLENGER 3500
29	CHALLENGER 600
25	CHALLENGER 601-1A
108	CHALLENGER 601-3A
52	CHALLENGER 601-3R
351	CHALLENGER 604
283	CHALLENGER 605
78	CHALLENGER 650
3	CHALLENGER 800
53	CHALLENGER 850
5	CHALLENGER 870
504	CIRRUS VISION SF50
130	CITATION 500
375	CITATION 525
345	CITATION BRAVO
207	CITATION CJ1
107	CITATION CJ1+
255	CITATION CJ2
245	CITATION CJ2+
489	CITATION CJ3
267	CITATION CJ3+
464	CITATION CJ4
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85	CITATION ENCORE+
405	CITATION EXCEL
13	CITATION I
277	CITATION I/SP
436	CITATION II
50	CITATION II/SP
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58	CITATION LONGITUDE
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366	CITATION SOVEREIGN
118	CITATION SOVEREIGN+
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135	CITATION VII
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39	CITATION X+
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83	EMBRAER LEGACY 500
113	EMBRAER LEGACY 600
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580	EMBRAER PHENOM 300
113	EMBRAER PRAETOR
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21	FALCON 100
15	FALCON 200
272	FALCON 2000
5	FALCON 2000DX
23	FALCON 2000EX
162	FALCON 2000LX
148	FALCON 2000LXS
25	FALCON 20C
15	FALCON 20C-5
17	FALCON 20D
1	FALCON 20D-5
1	FALCON 20E
48	FALCON 20F

75	FALCON 20F-5
182	FALCON 50
5	FALCON 50-4
8	FALCON 50-40
115	FALCON 50EX
282	FALCON 7X
70	FALCON 8X
173	FALCON 900
28	FALCON 900C
21	FALCON 900DX
351	FALCON 900EX
99	FALCON 900LX
22	GULFSTREAM G100
130	GULFSTREAM G150
238	GULFSTREAM G200
305	GULFSTREAM G280
13	GULFSTREAM G300
11	GULFSTREAM G350
324	GULFSTREAM G450
131	GULFSTREAM G500
641	GULFSTREAM G550
465	GULFSTREAM G650
16	GULFSTREAM G-I
15	GULFSTREAM G-II
12	GULFSTREAM G-IIB
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100	HAWKER 850XP
176	HAWKER 900XP
213	HONDA JET
4	LEARJET 23
44	LEARJET 24
64	LEARJET 25
3	LEARJET 28
614	LEARJET 31
22	LEARJET 35
56	LEARJET 36
140	LEARJET 40
470	LEARJET 45
102	LEARJET 55
418	LEARJET 60
17	LEARJET 70
158	LEARJET 75
294	PREMIER I
6	SABRELINER 40A
2	SABRELINER 40EL
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5	SABRELINER 60
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218	CHEYENNE II
49	CHEYENNE III
39	CHEYENNE IIIA
58	CHEYENNE IIXL
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292	CONQUEST II
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96	DAHER TBM-700B
113	DAHER TBM-700C
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134	DAHER TBM-900
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102	DAHER TBM-930
138	DAHER TBM-940
66	DAHER TBM-960
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70	JETSTREAM 32
64	JETSTREAM 41
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474	KING AIR 200
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8	KING AIR 200T
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46	KING AIR 260
190	KING AIR 300
10	KING AIR 300LW
695	KING AIR 350
91	KING AIR 350C
35	KING AIR 350ER
397	KING AIR 350I
6	KING AIR 350IER
73	KING AIR 360
7	KING AIR 90
7	KING AIR A/B90
65	KING AIR A100
155	KING AIR A200
32	KING AIR A90
89	KING AIR A90-1
93	KING AIR B100
1154	KING AIR B200
118	KING AIR B200C
121	KING AIR B200GT
6	KING AIR B200SE
8	KING AIR B200T
46	KING AIR B90
306	KING AIR C90
40	KING AIR C90-1
193	KING AIR C90A
402	KING AIR C90B
78	KING AIR C90GT
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165	KING AIR C90GTX
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5	MERLIN III
27	MERLIN IIIA
45	MERLIN IIIB
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167	CESSNA 340
552	CESSNA 340A
50	CESSNA 402B
124	CESSNA 402C
27	CESSNA 404
317	CESSNA 414
452	CESSNA 414A
42	CESSNA 421
28	CESSNA 421A
309	CESSNA 421B
707	CESSNA 421C
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3733	CIRRUS SR22
2048	CIRRUS SR22T
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37	MOONEY ACCLAIM ULTRA
407	MOONEY OVATION
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263	PIPER MALIBU
199	PIPER MATRIX
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## Matt Waits

by Grant Boyd

PHOTOS COURTESY OF MATT WAITS

“

And I don't have to tell anybody else in aviation, but the Bonanza is probably about the best plane you are going to get in that category if you're not looking to spend a fortune.



Matt Waits' 2016 Piper M600, which is the fourth aircraft he has owned

**M**att Waits is an instrument-rated private pilot from Stillwater, Oklahoma, who has followed a fairly standard path to turbine ownership. He started his aviation pursuit by flying rental planes before owning a Cessna 182, which was followed by a Beechcraft Bonanza, a Piper M350, and a Piper M600.

“When I had the 182, my wife was pregnant with our third child – so I was like, ‘Oh man, this plane isn't going to work forever.’ I ended up selling that and going to a Bonanza, so that we would have a six-seater,” he said.

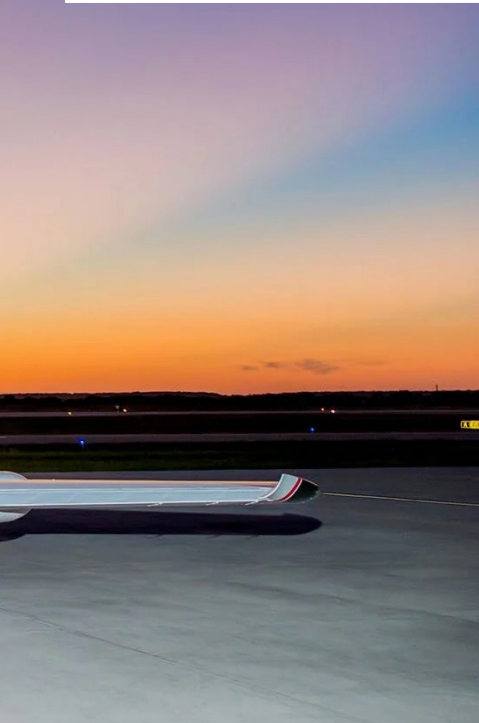
“And I don't have to tell anybody else in aviation, but the Bonanza is probably about the best plane you are

going to get in that category if you're not looking to spend a fortune. Buying it was a great move from the 182 and probably put 700 hours on that in seven years.”

The next aircraft transition came after selling his agricultural technology company. Moving up to the M350, again, felt like a natural progression.



The M600 fits Waits' mission well, and he says that it's a great airplane if you are flying trips around 800 nautical miles or less



Waits is the co-owner of Stillwater Flight Center – the lone FBO in Stillwater, Oklahoma

Three years later, in 2021, an M600 replaced its smaller counterpart. There were a few sticking points about the 350-horsepower piston single that led Waits to consider moving up to the turboprop world.

“[Choosing the M600] was a combination of mission and cost. The M350 was great, but the thing I didn't like

about it was I had to be pretty careful with weight and balance going into the mountains and in the summer. I have a house up in Crested Butte [Colorado], so we are going in and out of Gunnison. And I hardly ever flew it at night because I didn't feel real comfortable flying a piston at night over the mountains. So, I decided I

would get a turboprop,” he explained.

“I looked at TBM's and a few other models, but they cost more. The PA-46 airframe was fine in terms of size and capacity, so the M600 felt like a good place to be. It's a fantastic airplane and relative to a lot of other planes in that category, the Piper is more affordable. The operating and maintenance costs

are pretty low, and you're still doing 274 knots for 1,400 nautical miles. You can cover more ground than your bladder can usually stand."

The PT6A-42A in front makes Waits feel much better when flying over the mountains at night with his family in tow. A flight over open water wasn't something he had done in the M350, but he has flown to The Bahamas and Cancun in the M600. The airplane has also taken him to Canada, as well around a lot of the United States.

The 492 nautical mile flight to Gunnison-Crested Butte Regional Airport (KGUC) from Stillwater Regional Airport (KSWO) is about 45 minutes quicker in the M600 than it was in the M350.



Waits with his children in front of his M600



The M600 in the hangar

"Usually, I'd say the trip is about two hours on average; 2:15 going out there and 1:45 coming back home. Fuel burn is about 45 to 50 gallons an hour. I'll pretty much always fly in the twenties, but when you get higher than FL250 – you can get the 274 knots that they advertise. When you are a bit lower, it's around 260 knots. But you're still moving along pretty good."

The M600's 260-gallon tank equates to about five hours' worth of air time comes in handy on this trip, especially

as it allows Waits to tanker fuel from his home base. The cost of fuel in Stillwater is considerably lower than the Colorado airport, in part because he owns the fueling operation there.

"I have been a tenant at the field since 2009 and knew the people at the FBO well. When it came up for sale, I felt confident buying the business because I knew my way around the airport environment and had been to hundreds of FBO's around the country. I partnered with a few friends

and bought Stillwater Flight Center in 2020."

Waits of course sees a lot of aircraft on the ramp there that catch his eye. But he doesn't have his sights set on anything bigger or faster than the M600, as he doesn't see value in doing so with his current mission. One circumstance that has changed during his ownership of that aircraft is purchasing (along with a friend) the Part 61 flight school located on the same field as the FBO.

"We've been growing Crosswind Aviation significantly, and have added several planes, including a twin Tecnam P2006T. Oklahoma State University's aviation program made a change to their curriculum where

they are allowing for a single engine commercial track, because they're so backed up [with aircraft availability] on the twin side of things. They are now allowing students to get their single engine commercial, then come to us to get their multi. That's something we are really trying to capitalize on," Waits explained, noting that the other local opportunity he sees is the construction of more hangars to meet the growing need for additional aviation infrastructure.

“My partners and I can provide leadership to the community that can help people get involved in aviation out here. How can we help people build hangars, run the hangars once built, or get new people into buying aircraft?” he said, noting that making and building these local connections is important in the tight-knit community where he’s located.

Waits is currently not flying the M600 as much as he originally was, so he decided to sell a third of it about a year ago. He is again looking to partner on the remaining third to ensure its flying regularly and costs are reduced.

Since he has so much experience with the airframe, an overview of the pros and cons of M600 ownership comes easy when potential partners want the rundown.

“You can get to the east coast all day long from Oklahoma but getting back may be a challenge without stopping if there are strong headwinds. The M600 is not really a plane you want to fly to the coast, because it doesn’t have a lavatory. You have a relief tube, which is fine when alone, but not in a mixed crowd,” he said, noting that one potential partner decided the plane wasn’t a good fit because they would frequently be flying to Massachusetts and California.

“The plane was great distance wise for the other guy [that looked at joining the partnership], but he’s a big hunter and has a ranch over in New Mexico. He just wanted to take a lot of people, guns, ammo, and other stuff, so he would be better off in a PC-12 or something else,” Waits said.

“So really, the only downsides with the M600 are if you want to go far without stopping or need to carry a ton of people and payload. But if you are going to fly trips that are less than 600 to 800 nautical miles, then this is the plane for you. I’ve been super happy with it and think it’s probably the best single engine turboprop option out there.” **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.



A common flight is the 492 nautical mile trip to Gunnison-Crested Butte Regional Airport (KGUC) from Stillwater Regional Airport (KSWO)

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# On Final

by David Miller



## Think of It as a School Zone

We love going fast. We buy an airplane and immediately start wishing we could go faster. If there is a performance-enhancing mod, we add it to the airframe. We dream of the 300-knot turbine single, or the ultimate single-pilot jet, so we can go just a little faster.

Faster is better.

There are times, however, when going slow is the best choice.

"November nine two one x-ray tango, turn right heading zero nine zero, climb and maintain two thousand, cleared for takeoff runway three-one." This was the clearance from the tower controller at Dallas Executive as I rode right seat with friend and M2 owner, Larry King.

It was Larry's first takeoff from this runway. Without the immediate, 140-degree turn, you are in the traffic pattern for Dallas, Love (KDAL). And the level off at 2,000 feet

comes very quickly. To increase the challenge, our destination was only eighteen miles away at Mesquite (KHQZ).

"V<sub>1</sub> and rotate," I called out. At our light weight, we were a rocket ship. Larry left the climb power selected as we leveled at 2,000 feet. I could sense what was about to happen. At 220 knots IAS, I suggested a power reduction.

"Oops," said Larry. It was a learning experience. By the time we got to Mesquite, Larry had everything under control. He had his approach speeds nailed.

There are so many examples of excessive speed, both on departure and approach. It's probably the number one contributing factor in runway excursions and even loss-of-control accidents.

Something is ingrained in our pilot mentality that pushes us to go fast. We brag to our pilot friends about tailwinds, not headwinds.

Recently, I spoke at the TBM Owner's convention in Savannah, Georgia. There, they introduced a new safety initiative, the TBM Advanced Aviator Program (TAPP). One of the pillars of that program is airspeed control in all phases of flight.

The folks at Citation Jet Pilots (CJP) have been working on this effort for several years with their Safe To Land™ initiative. They reported recently that member accident rates are now seven times less than the non-member group.

For many of us, flying slowly is just not as much fun. But flying precisely can be just as satisfying as barreling down the localizer at 240 knots IAS. Yes, a Citation Mustang crew did this on multiple occasions in Germany until they lost control in IMC and perished.

And with new insurance underwriters like 5X5 entering the market, precise flying can be profitable. They will monitor your ADSB or aircraft-generated flight data and offer you a significant discount if you qualify. Precisely.

Things are changing in the safety world. Make sure you are on the right side of the power curve.

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](mailto:davidmiller1@sbcglobal.net).

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