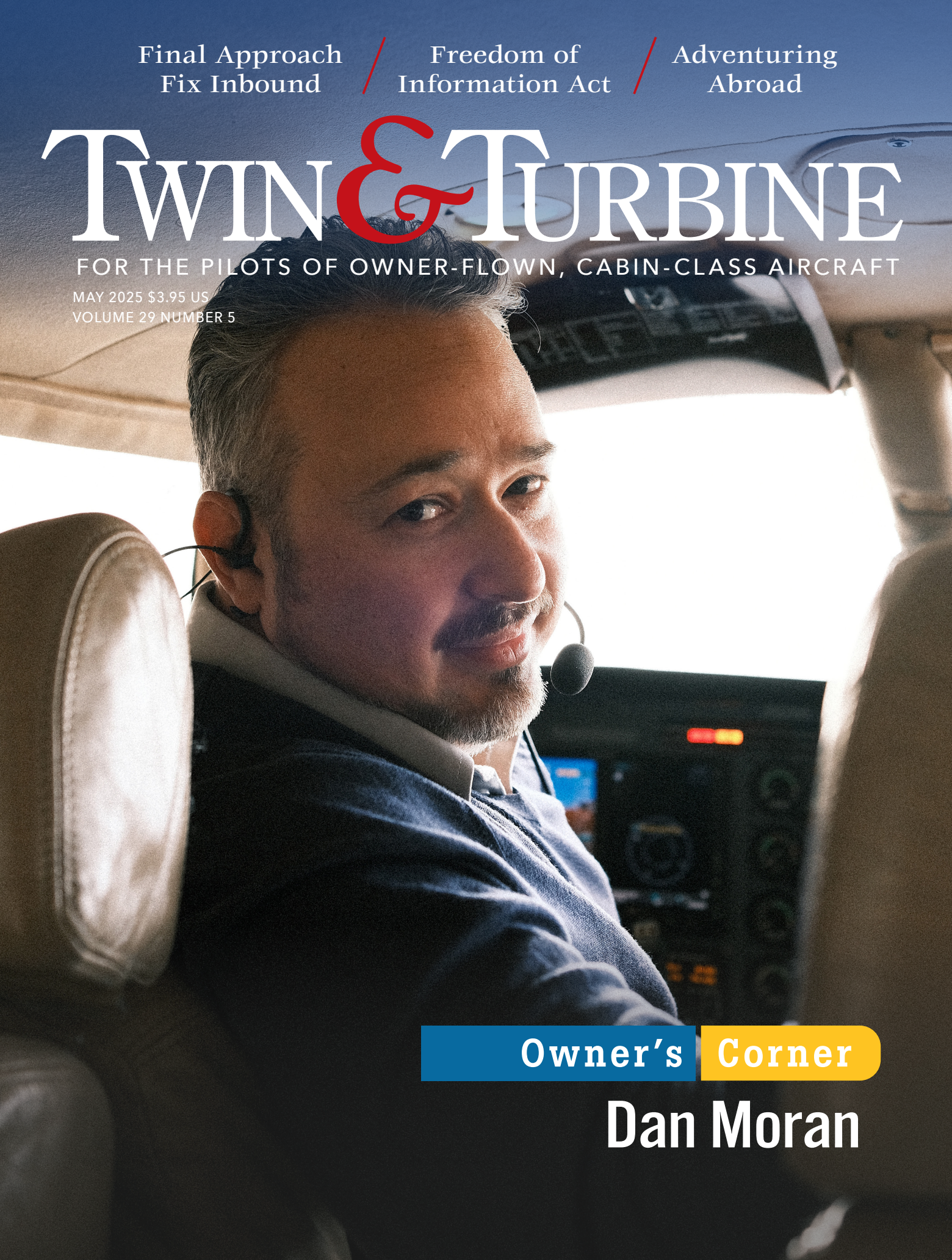
Final Approach Fix Inbound / Freedom of Information Act / Adventuring Abroad

# TWIN & TURBINE

FOR THE PILOTS OF OWNER-FLOWN, CABIN-CLASS AIRCRAFT

MAY 2025 $3.95 US
VOLUME 29 NUMBER 5



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## Dan Moran

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**COVER PHOTO:**
*Dan Moran in his Piper JetPROP.*
*Courtesy of Concierge Diamonds*

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# NBAA's Value

As we prepare to go to press for this issue, I have been attending the NBAA maintenance conference in Columbus, Ohio. The opportunity to connect with so many great people in the industry in one place is valuable. In a short one-day time span, I was able to accomplish multiple meetings and build those ever-important relationships that keep this industry going strong.

NBAA's leaders always want to understand their members' needs to provide the best services possible. The association, based in Washington, D.C., aims to foster an environment that allows business aviation to thrive in the United States and around the world. Founded in 1947, NBAA is the leading organization for companies that rely on general aviation aircraft to help make their businesses more efficient, productive and successful. The association represents more than 11,000 companies and professionals, and provides more than 100 products and services to the business aviation community, including the NBAA Business Aviation Convention & Exhibition (NBAA-BACE), the world's largest civil aviation trade show. NBAA collects, interprets and disseminates operational and managerial data related to the safe, efficient and cost-effective use of business aircraft. The association is the focal point for identifying and understanding advances in technology and procedures important to the business aviation community.

In other news from the other side of the planet, Australian businessman and aviation advocate Dick Smith has put up a $22,000 trophy for the first person to fly an electric airplane from the UK to Darwin, Australia. Conceived in the spirit of the 1919 flight between the same two points, Smith commissioned sculptor Linda Klarfeld to create the trophy.

Dubbed Lightning Woman, the trophy is intended to encourage aviators to take up the challenge of pioneering long-distance electric flight. "As more electric aircraft are now being built, I decided to issue this challenge because there will come a time when someone will be able to fly from England to Australia," Smith explained to Australian Flying magazine. "The first one to do it gets the beautiful trophy."

Good luck to all those who attempt to meet Dick Smith's challenge.

Lightning Woman will be presented to the first person to fly an electric airplane from the UK to Darwin. (Dick Smith)

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# TWIN & TURBINE

FOR THE PILOTS OF OWNER-FLOWN, CABIN-CLASS AIRCRAFT

## Written By Pilots For Pilots


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Product Reviews | Turbine & Piston Operations | Safety & Training
Market Trends | Aircraft Upgrades | Industry News | Lifestyle Features

# Final Approach Fix Inbound

by **Thomas P. Turner**

From notes written on paper or annotations on an electronic tablet, through heading and altitude bugs and perhaps even an audible "minimums" advisory set, you've briefed the approach and are prepared to fly it using every resource available in your cockpit. When the glidepath or glideslope centers or, in that increasingly rare approach without at least advisory vertical guidance, the FAF slides behind you, you adjust the airplane's power, attitude and configuration (flaps, landing gear) to optimal for the type to follow the charted descent toward the airport.

CLIMB/DESCENT TABLE 10042

INSTRUMENT TAKEOFF OR APPROACH PROCEDURE CHARTS
RATE OF CLIMB/DESCENT TABLE
(ft. per min)

A rate of climb/descent table is provided for use in planning and executing climbs or descents under known or approximate ground speed conditions. It will be especially useful for approaches when the localizer only is used for course guidance. A best speed, power, altitude combination can be programmed which will result in a stable glide rate and altitude favorable for executing a landing if minimums exist upon breakout. Care should always be exercised so that minimum descent altitude and missed approach point are not exceeded.

| CLIMB/ DESCENT ANGLE (degrees and tenths) | | ft/NM | GROUND SPEED (knots) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 60 | 90 | 120 | 150 | 180 | 210 | 240 | 270 | 300 | 330 | 360 |
| 2.0 | | 210 | 210 | 320 | 425 | 530 | 635 | 743 | 850 | 955 | 1060 | 1165 | 1275 |
| 2.5 | | 265 | 265 | 400 | 530 | 665 | 795 | 930 | 1060 | 1195 | 1325 | 1460 | 1590 |
| VERTICAL PATH ANGLE | 2.7 | 287 | 287 | 430 | 574 | 717 | 860 | 1003 | 1147 | 1290 | 1433 | 1576 | 1720 |
| | 2.8 | 297 | 297 | 446 | 595 | 743 | 892 | 1041 | 1189 | 1338 | 1486 | 1635 | 1783 |
| | 2.9 | 308 | 308 | 462 | 616 | 770 | 924 | 1078 | 1232 | 1386 | 1539 | 1693 | 1847 |
| | 3.0 | 318 | 318 | 478 | 637 | 797 | 956 | 1115 | 1274 | 1433 | 1593 | 1752 | 1911 |
| | 3.1 | 329 | 329 | 494 | 659 | 823 | 988 | 1152 | 1317 | 1481 | 1646 | 1810 | 1975 |
| | 3.2 | 340 | 340 | 510 | 680 | 850 | 1020 | 1189 | 1359 | 1529 | 1699 | 1869 | 2039 |
| | 3.3 | 350 | 350 | 526 | 701 | 876 | 1052 | 1227 | 1402 | 1577 | 1752 | 1927 | 2103 |
| | 3.4 | 361 | 361 | 542 | 722 | 903 | 1083 | 1264 | 1444 | 1625 | 1805 | 1986 | 2166 |
| 3.5 | | 370 | 370 | 555 | 745 | 930 | 1115 | 1300 | 1485 | 1670 | 1860 | 2045 | 2230 |
| 4.0 | | 425 | 425 | 640 | 850 | 1065 | 1275 | 1490 | 1700 | 1915 | 2125 | 2340 | 2550 |

Figure 1. Rate of Descent Table, FAA AC 120-108

Although flying the final part of an approach requires the greatest precision and concentration, it may be the easiest part of instrument flight. All the decisions are already made (or should be), and all you have to do is fly (or monitor as the autopilot flies). FAF inbound done right allows you to do nothing but focus on the procedure for the last five or so horizontal miles and 1500 or so vertical feet of a trip. Still, the difference between wallowing your way to the airport and precisely riding the beams to the Missed Approach Point and beyond is your ability to anticipate many variables and smoothly correct for them even before they become evident. What are the variables, and how do you control them? What turns an acceptable approach into a masterful one?

## Rate and angle

The standard glidepath/slope for FAF inbound follows a 3° descent angle. What you really need to know is the rate of descent you need to fly that angle. To answer, you need two things: your current ground speed and basic geometry. The FAA publishes a rate of descent table in various places, including Advisory Circular 120-108 (*figure 1*). This Descent Table compares ground speed to glidepath angle and provides the necessary vertical speed. It's designed for flying continuous descents from the FAF to Minimum Descent Altitude for approaches without vertical guidance. But it helps us fly glidepaths and glideslopes precisely as well.

Glidepath angles are published on instrument approach charts (*figure 2*). With the standard 3° descent, such as on the ILS 17 at Newton, Kansas, go to the Descent Table (*figure 3*). If your ground speed inbound from the FAF is 120 knots, it will take a sustained 637 feet per minute descent from FAF to the MAP to remain precisely on glideslope. If your ground speed is 150 knots, it requires 797 fpm. In a lighter piston airplane or bucking into a headwind with a 90-knot ground speed, you must descend at 478 fpm to keep the glideslope centered.

A standard angle implies nonstandard angles as well. Obstacles or other factors may require a steeper approach (and sometimes, a shallower one). Flying one of the nonprecision approaches into Hutchinson, Kansas, a constant

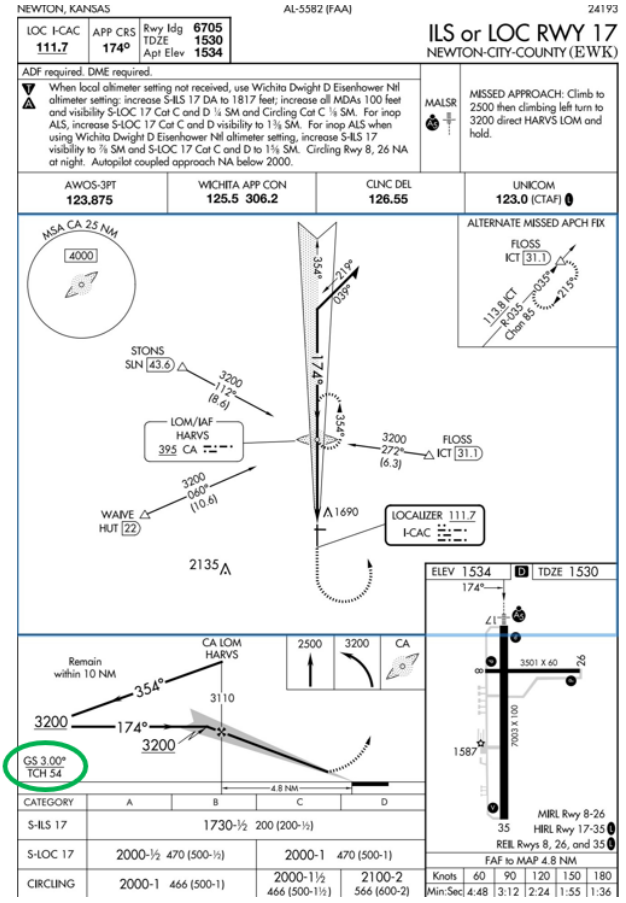



Figure 2. Glideslope angle shown on an instrument approach chart (circled)

| CLIMB/ DESCENT ANGLE (degrees and tenths) | ft/NM | 60 | 90 | 120 | 150 |
|---|---|---|---|---|---|
| 2.0 | 210 | 210 | 320 | 425 | 530 |
| 2.5 | 265 | 265 | 400 | 530 | 665 |
| 2.7 | 287 | 287 | 430 | 574 | 717 |
| 2.8 | 297 | 297 | 446 | 595 | 743 |
| 2.9 | 308 | 308 | 462 | 616 | 770 |
| 3.0 | 318 | 318 | 478 | 637 | 797 |
| 3.1 | 329 | 329 | 494 | 659 | 823 |

VERTICAL PATH

Figure 3. Rate of descent required for a 3° glidepath

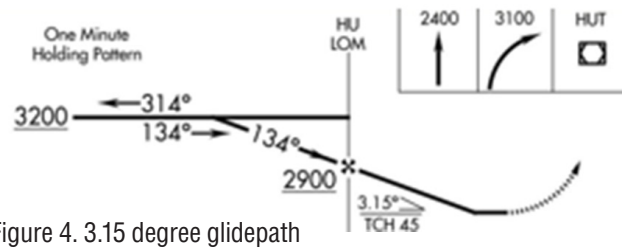



Figure 4. 3.15 degree glidepath

descent from FAF to MAP is at 3.15 degrees (*figure 4*). The Descent Table and a little interpolation (*figure 5*) tell us that at that angle it takes about 502 fpm at 90 knots, 670 fpm at 120 knots and 837 fpm at 150 knots groundspeed. On another KHUT approach, the descent angle is 3.4 degrees (*figure 6*). The table tells us a constant-angle descent requires 542 fpm at 90 knots groundspeed, 722 fpm at 120 knots across the ground, and 903 fpm at 150 knots groundspeed.

Call it 500-600 fpm at 90 knots, 600-700 fpm at 120 knots, and 800-900 fpm at 150 knots ground speed, and you'll be close. In configuration, trimmed on airspeed and established inbound from the FAF, increase power slightly from your target approach power setting if your groundspeed is lower than your airspeed, and decrease power slightly if your groundspeed is higher than your airspeed or the descent angle is steeper than standard. But have a target rate of descent in mind to predict whether your trend is to stay on glidepath, go high, or go low, and to control it as variables change on the way down.

| | | | | | | |
|---|---|---|---|---|---|---|
| PATH | 3.1 | 329 | 329 | 494 | 659 | 823 |
| | 3.2 | 340 | 340 | 510 | 680 | 850 |

Figure 5. Rate of descent for a 3.15 degree glidepath

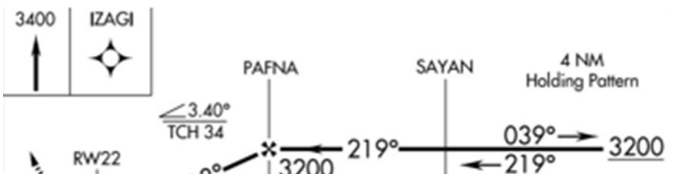



Figure 6. 3.4 degreee glidepath

## Power and precision

One of those variables is power. There is roughly 1500 feet vertically between the height you cross the FAF and the altitude of the MAP. In the lower levels of the atmosphere, air pressure changes at about one inch of mercury for every 1000 feet of altitude change. That means manifold pressure in a normally aspirated piston airplane will increase about 1.5 inches in the descent FAF inbound. That's about a 5% increase in power at a sea level airport, even more of a percentage increase at higher elevations. What does that do to precision as you fly down the glidepath?

At a constant airspeed, increasing power reduces the rate of descent. The airplane will tend to go high on glidepath. You can correct this with pitch, although that gets the airplane out of trim, destabilizing the approach, or with power. I prefer to anticipate it by making two slight throttle reductions as I fly down the approach, one about halfway to the MAP and the other about 100 feet above minimums. It doesn't take much to make a couple of well-practiced adjustments to maintain airspeed and vertical speed so the needles stay centered and I reach the minimum altitude and the MAP at the same time.

Turboprops and jets are normally aspirated engines, too. They will develop more power as they descend down the glidepath. Like piston fliers, turbine pilots should make small power adjustments once or twice FAF inbound to avoid ending up high on glidepath at the MAP. Only pilots of turbocharged piston engines with automatic wastegate controls can set power before the FAF and forget it.

## Winds of change

Compounding this, wind speed and direction usually change in the last 1500 feet above ground level. Ground speed will change, requiring an adjustment to vertical speed to keep the glidepath centered. Knowing the target rate of descent for the approach and managing power as you descend, you'll need only small corrections if your groundspeed varies because of changing wind conditions.

With local exceptions, in the northern hemisphere, winds tend to change direction to the right in the last 1000 feet above ground due to friction with the surface and Coriolis effect. If you're crabbing to the right to keep the course needle centered crossing the FAF, you'll usually need to increase the crab angle as you descend. If you start the descent crabbing to the left, you may need to decrease the angle to cancel drift closer to the ground. Wind velocity also tends to decrease closer to the ground, which may increase or decrease the crab angle required.

## In the thick of it

Given the choice, I'll take an RNAV(GPS) approach over an ILS. GPS approaches are easier to fly because they are based on a grid. Inside the FAF, the beams are of constant width and height, respectively. If I have the needles centered crossing the FAF and I adjust power and heading correctly as I descend, I'll still have the needles centered when I reach the bottom of the approach.

An ILS, on the other hand, is a pair of beams projecting from a transmitter, one for localizer, the other for glideslope. The localizer beam is between three and six degrees wide, depending on runway length and location of the ground-based transmitter, and at what angle it takes, so full-scale left-right, the beam is 700 feet wide at the runway threshold. Further up-approach, the beam is wider, so the left/right distance for a given needle indication is much wider at the FAF. You can have the localizer perfectly centered FAF inbound and cancel drift precisely and still have the needle drift left or right because what was centered further out is not centered closer in. Similarly, the glideslope beam is 1.4 degrees wide vertically, with its height broadening the further you get from the airport. Nail the groundspeed vs. glideslope angle math, and a centered needle can still move from centered to "fly up" or "fly down" as the beam narrows. Flying an ILS for precision, you not only need to master vertical speed and wind, but you must constantly correct for reduced left/right and up/down tolerances.

An RNAV (GPS) LPV glidepath is thinner than an ILS localizer. Its lateral course is designed to have a full left/right course deviation of 0.3 nm (1800 feet) at the runway threshold, more than twice the width of the ILS localizer at that point. That's why, even in our GPS-driven world, the ILS is still the gold standard for precision approaches. Still, the beam-width part of the equation remains constant on a GPS approach, whereas an ILS does not. That makes a GPS approach easier to fly, even if it is somewhat less precise.

Sometimes, local conditions may interfere with approach path signals or otherwise cause indications that make an autopilot overcorrect. In those cases, the approach chart will advise (in the notes) that use of the autopilot is not authorized below some altitude. *Figure 7* shows such a note, requiring the autopilot to be disengaged no lower than circling minimums or 270 feet above decision height on this chart for the ILS 17 at Newton, Kansas. You may use the flight director below that height, but expect it to make jerky motions close to minimums. Ignore quick changes below that height and manage pitch and heading if the FD indicates something else.

When local altimeter setting not received, use Wichita Dwight D Eisenhower Ntl altimeter setting: increase S-ILS 17 DA to 1817 feet; increase all MDAs 100 feet and visibility S-LOC 17 Cat C and D ¼ SM and Circling Cat C ⅛ SM. For inop ALS, increase S-LOC 17 Cat C and D visibility to 1⅜ SM. For inop ALS when using Wichita Dwight D Eisenhower Ntl altimeter setting, increase S-ILS 17 visibility to ⅞ SM and S-LOC 17 Cat C and D to 1⅜ SM. Circling Rwy 8, 26 NA at night. Autopilot coupled approach NA below 2000.

Figure 7. Coupled approach not authorized

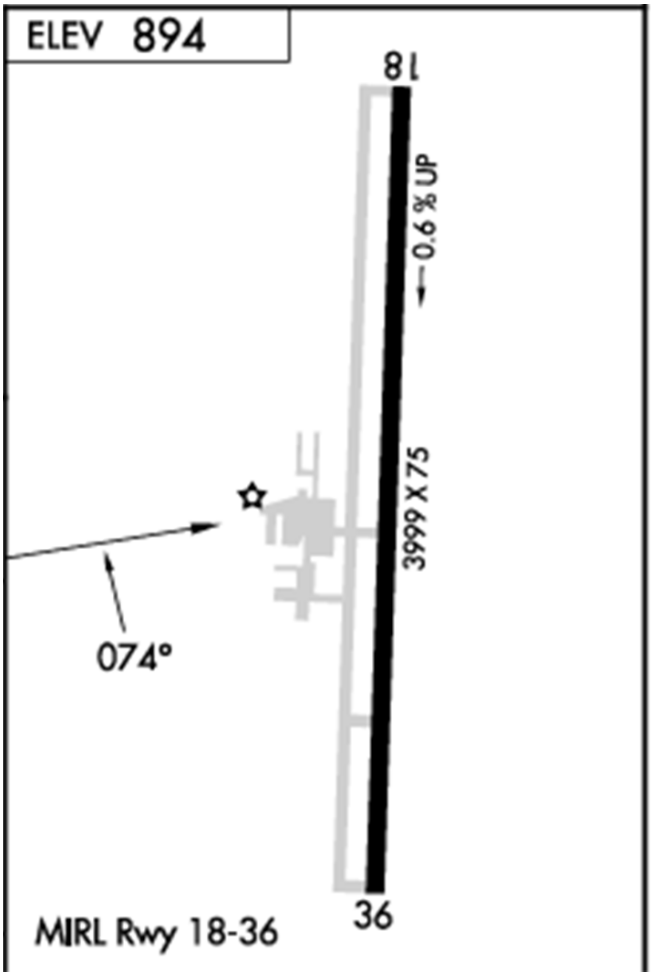



Figure 8. Approaching the runway from an angle

Ground-based or space-based, flying an approach precisely requires small, measured corrections. Read my article "The Rule of 10s" in the August 2017 Twin and Turbine, available at www.twinandturbine.com.

## Breaking out

Nearing the bottom of your approach, it's helpful to know where to look for the runway. Most of the time it will be almost directly in front of you when you look up. But it's possible even on a precision approach for there to be a slight turn required to line up for landing. Instrument approach charts include an arrow on the airport view that shows the direction you'll arrive, assuming you're aligned on the approach and the heading you'll be flying (*figure 8*). You may need to look left or right to find the runway at minimums.

Looking at the notes as you brief for an approach, you may find "VGSI and Glideslope/Glidepath not coincident." There's an obstacle or displaced threshold that requires a visual glideslope indicator (VGSI), such as a PAPI or VASI, to be set at a steeper angle than the electronic glidepath. If you continue to fly the approach glideslope or glidepath before decision height/altitude, you may hit a hard-to-see obstacle or risk overshooting the touchdown zone. If you see the note, you'll anticipate the need to shallow your rate of descent after breaking out until you intercept the visual glidepath, then change it again to fly that glidepath to touchdown.

There's a lot said about—and a lot to be said for—flying a stabilized approach. But the speed, configuration, and sometimes glide path that gets you precisely to the MAP will have to change as you to transition into a flare. Remember also that the touchdown zone is not landing on the numbers. A constant angle of descent from FAF to the runway takes you to where you begin your flare. The marked touchdown zone accounts for the extra distance you'll travel in the flare, and is 1000 feet from the runway threshold or 1/3 the total runway length, whichever is less. This is the landing target around which obstacle clearance is designed.

## Going missed

There's a lot to flying a missed approach, but that's a subject for another time. Suffice it to say the missed procedure is part of an instrument approach, and you need to be briefed and ready to fly it before you pass the FAF inbound, because you won't have time to figure it out at the MAP.

I stand by my observation that FAF inbound is one of the easiest parts of instrument flight. The decisions are already made, and all you have to do is fly. Still, there's a lot to consider and do to fly FAF inbound like an expert. T&T

**Thomas P. Turner** *is the author of the FLYING LESSONS Weekly blog (www.thomaspturner.com) that inspires pilots to pursue Mastery of Flight.™ A prolific writer, speaker and flight instructor, Tom has been inducted into the National Flight Instructor Hall of Fame.*

# Luma Technologies brings LED relief to the Cessna Conquest Family

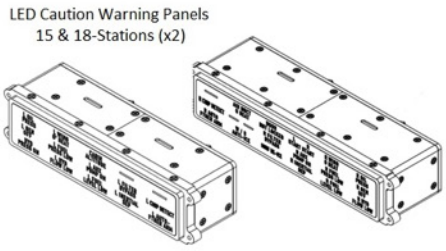
A Conquest I (425) awaits taxi instructions

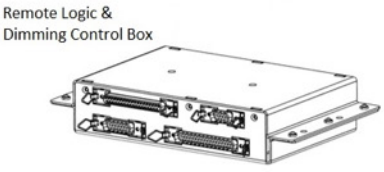
Luma Technologies, known for their broad line of Lumatech LED Caution Warning Display Panels, announced the introduction of two new LED upgrade suites soon to be available for Cessna Conquest 425 and 441 aircraft. Luma was established in March of 2006 with a primary focus on the design and manufacture of high-performance lighted products incorporating LED and other solid-state technologies that allow for increased safety, reliability, and value to its customers across the aircraft industry. Luma's products include Integrated LED Caution-Warning Systems & Display Panels, Low-profile LED Switches & Annunciators, Gear Status Lights, and other electromechanical controls.

While the Conquest I and Conquest II models are uniquely different, Luma's packaged approach is similar for both. The installation includes two new multi-celled LED Display Panels, a new solid-state Logic & Dimming Control Module, and an integrated LED Gear Status Module that combines both lights into a single rugged unit.

The difference with Conquest II is that the 441's Display Panel also includes all new LED Fire Suppression


Conquest I (425)





Conquest I (425)


The 441 display panel also includes all new LED Fire Suppression and Test switches in a single unit

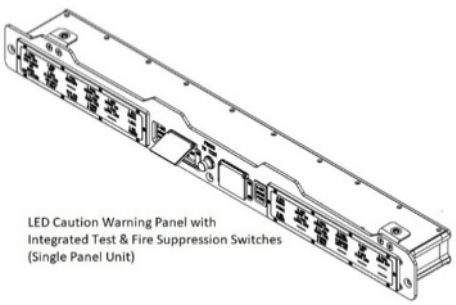
and Test switches incorporated into a singular one-piece unit.

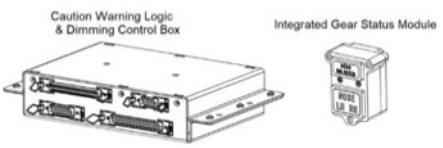
Both kits can be installed on a same-day basis or easily combined with other scheduled maintenance out on the horizon.

The Conquest 425 suite is nearing completion of final testing and is slated for FAA approval by June 1st.

Conquest II is just entering test and is planned to be available in the October-November timeframe.

Luma is showing working examples of both systems at numerous industry trade shows and conferences in the coming weeks, including the Twin Cessna Fly-in, ALI Conference/Seminar, and elsewhere. There will also be one or both systems installed on partner aircraft in attendance at some of these and other shows in the coming months. T&T




Conquest II (441)

“All the lessons came in handy in 2022 over Beaumont, Texas, when I declared an engine out emergency at 17,000 feet.”

The business end of the PA-46 Malibu Mirage, better known these days as the M350

# Power loss at 17,000 feet over Beaumont, Texas

by **Lawrence S. Searcy Jr**

When I first began taking flight lessons in Alexandria, Louisiana, I did what a lot of aspiring pilots do - I asked a friend for a flight instructor recommendation. I was given a contact and made my first lesson appointment. I drove out to the local airport in Pineville, Louisiana (2L0) and met J.D.  J.D. was in his mid-70s and had been every kind of pilot you could imagine. He hauled oil-field parts in the middle of the night, crop dusted, flew charter and taught the occasional aspiring pilot. The first thing he told me was that he would teach me to fly the plane more than he would teach me to pass the written test or pass my check-ride. Instead, he would teach me how to fly the old-style stick and rudder skills, which would make me a good pilot. Sure, I would learn all of the required maneuvers, but more importantly, he would teach me what to do when something went wrong. J.D. preached that if you fly long enough, something will eventually go wrong.

J.D. and I got along great, and he did as he promised – he taught me to fly the plane in just about any scenario. All the lessons came in handy in 2022 over Beaumont, Texas, when I declared an engine out emergency at 17,000 feet.

On June 12, 2022, I flew my 1989 Piper Malibu Mirage from Alexandria, Louisiana (KAEX) to Refugio, Texas (KRFG), where we own a working cattle ranch and commercial deer hunting operation. The ranch has been in our family for 138 years and has some historical oil and gas activity, like so many other ranches in South Texas. The purpose of the trip was to attend a mediation with an energy company regarding a saltwater disposal well that suffered a casing leak failure in 2002 and continues to be remediated some twenty years later. I have flown the same route to and from the ranch hundreds of times over the years, so the trip was not at all unfamiliar. Just the day before, I flew the exact same route, taking my wife and family back home after a weekend vacation because she did not want to stay at the ranch for the few days it may take for the mediation to conclude. So, after dropping off my wife in Alexandria on Sunday, I loaded up again on Monday, retracing the same route in reverse from the prior day.

I met my sister at the ranch (she is also an attorney and one of the three ranch owners) before meeting with our lawyer and the opposing attorneys at the well site. The purpose of the trip was to inspect the ongoing remediation and then travel to neighboring Victoria, Texas (30 miles north) to discuss closing the remediation.

After the mediation, we ate lunch in Victoria and headed back to Refugio, where I would take off from Rooke Field and fly home.

The route of flight is always the same – direct from the airport to Palacious VOR (PSX), intersect Victor 70 (V70) to Sabine Pass (SBI), to Scholes VOR (VUH), and then direct destination (KAEX). This is a flight I have made hundreds of times over the years, and did not expect any issues having just completed the annual and logged more than 40 hours since picking up the plane. The flight to Refugio earlier that morning was uneventful without any abnormal indication on any of the instruments or unusual sounds from the engine.

With that said, I had experienced a few issues over some previous flights that now may seem consequential. On a couple of previous trips to Alpine, Texas (E38) from my home base in Alexandria, Louisiana, I thought I was experiencing an oil leak since my oil consumption seemed high for the number of hours being flown. The recent annual revealed some historical crankshaft spalding that could explain some unusual oil consumption. Spalding occurs when the crankshaft shows degradation because of moisture-related rust on the crankshaft that can lead to costly engine repairs. Traditionally, this happens either when a plane is not flown often or with planes that live in a rust-prone environment, such as airports near the coast. In my case, N891AW lived in Houston for many years before my purchase and flew less than 50 hours a year. I was told that the spalding likely began before I purchased the plane and was just now revealing itself. Because of the crankshaft spalding, I was planning for, and had started the process of, having a second engine that I owned sent off to be field overhauled. Two years of COVID supply disruptions created extensive lead times and parts shortages for overhauls. I was told that the spalding was not significant to worry about and would be fine until the second engine was completely overhauled. It turns out that the spalding and crankshaft issues did not cause the failure that occurred on this flight.

With the flaps out and gear down, I was able to lose speed and altitude to make the runway at Beaumont

I was told after annual to keep a close watch on oil consumption. I did so and probably added more oil than necessary on some occasions, knowing that there would be some blowout. However, our routine trip from Alexandria to Alpine is a long one because of the easterly flowing jet stream, and I wanted to be sure that my oil levels remained within operating specs.

On one occasion in Alpine, I went to the airport and filled the plane with gas the day before to expedite our departure the next day. Summer months in mountainous West Texas lead to high density altitude and result in longer take-off rolls and a sluggish climb-outs. It is always better to leave early before ambient temperatures rise too high. Even in the early mornings, the density altitude at the 4500-foot elevation airport can see density altitudes above 7,000 feet before 10:00 a.m. After filling the tanks, I started the plane and re-parked it for the next day. I thought at that time I saw some white smoke on shutdown, and thought maybe I had spilled some oil when adding a quart of oil before filling up with gas. I checked the engine from above, looked in the nose gear wheel well, and even removed the top cowling to check for any visible leaks. None were found, and the next day we flew home without incident.

On another trip, I climbed up to flight level 190 through some clouds and mist in below-freezing temperatures. At altitude, I noticed a slight RPM loss and assumed I needed to add alternate air to overcome a frozen air intake filter from the moist outside air. I was still maintaining adequate manifold pressure, so I continued the flight. Once in warmer, clear air, normal manifold pressure returned, confirming my initial troubleshooting.

In an abundance of caution, I took the plane for maintenance the next day and asked the shop to check for an oil leak and troubleshoot the alternate air door. The shop was not able to locate any oil leaks, and the engine continued to make full power on ground run-ups. A missing bolt on the turbocharger was discovered and replaced, but no other signs of trouble with the turbocharger were noted.

When I picked up the plane, there were no issues returning home and several long flights thereafter. Accordingly, there was no way to know if the oil leak and the loss of manifold pressure were related to the ultimate failure that caused my emergency landing.

Turning back to the incident flight, on my return trip from Refugio, I arrived at the airport about 3:00 p.m. Rooke Field is typical of most small South Texas airports with a 4300-foot north-south runway, a small county-owned FBO and self-serve gas. There is a small building with restrooms and instructions inside for using the crew car.

I untied the aircraft, did a normal walk-around inspection and prepared to depart. I went through the normal pre-flight checklists and run-up procedures with no issues. I took off and filed for 15,000 feet. About 15 minutes into the flight, I was advised that the approach would keep me at 11,000 feet to stay out of the way of Houston arrivals and departures. I asked for 17,000 feet, and Houston Center cleared me to 17,000 feet and sent me direct to Alexandria. I climbed to 17,000 feet and flew along without issues for another hour and fifteen minutes.

About 20 miles northeast of Beaumont, Texas, I was 35 minutes from my destination, had copied the ATIS at Alexandria and was preparing for the usual descent instruction after crossing the Sabine River marking the Texas and Louisiana state line. Without warning, I felt a sudden loss of power. At first, I assumed I had a throttle rollback or had accidentally hit the throttle reducing power. I shoved the throttle, propeller controller, and fuel mixture forward instinctively and realized immediately that those actions had no effect. On reflection, this sequence could cause additional complications. With a turbo failure at this altitude and flying rich of peak, shoving the mixture forward can result in total engine loss due to flooding the engine. But we are all taught to shove everything forward if there is a loss of power, so I did just that. At the moment, I did not suspect a turbo failure.

Because of annual recurrent training, I immediately began a mental checklist – boost pump, switch fuel tanks, full throttle and mixture, and I still did not receive increased performance.

I next tried opening the alternate air in the event the air filter was blocked, even though the weather was VFR with no clouds. Again, there was no response from the engine. I was asked later if I checked oil pressure, and frankly, I did not look at it as I was already turning towards Beaumont, descending and declaring an emergency with ATC (The full audio of my communication with ATC can be found in this video https://youtu.be/RXZEw81E2zA?si=oQMq5Mpcax1pZG2Q). I did not actually pull out my written checklist until I had already declared the emergency and had turned towards Beaumont. J.D. taught me to fly the plane first and troubleshoot second. We all know the adage - aviate, navigate, and communicate - and that is exactly what I did. What I did not do was check my fuel flow to determine if I was dealing with a fuel starvation issue. If I had checked the fuel flow, I would have realized that the fuel was still flowing to the engine, and the event was not fuel-related.

I punched "nearest" on the Garmin 750 GPS, and Orange, Texas, was the closest airport at about 11 miles, and Sulphur, Louisiana, was the next closest at 20 miles. Orange has a 5500-foot asphalt runway and no real services. Sulphur has a 5,000-foot runway and no services. I checked my glide ring on Foreflight to confirm all of these were viable alternatives. Beaumont was in the opposite direction and about 23 miles away with a 6750-foot runway that was much wider than both Orange or Sulphur. Additionally, having made this trip many times, I knew that once I crossed the Louisiana border, the landscape would be made up primarily of large pine timber plantations with fewer options for an open-field emergency landing. Lake Charles / Chenault, at almost 30 miles, was a viable alternative, but

there was an open water crossing between me and the airport. Additionally, diverting to Lake Charles required flying over a huge industrial oil and gas infrastructure that I did not want to contend with. Beaumont was my best choice, and I made the turn back in the direction I had already come.

I called Houston twice to declare an emergency with no response. Finally, the controller responded with "aircraft calling Houston Center, repeat, I was offline." I repeated that I was declaring an emergency and heading to Beaumont (KBPT). The controller initially wanted to send me to Lake Charles, as that was the direction of my flight, but quickly realized I was already in a left turn towards Beaumont. He asked the standard questions of souls on board, fuel on board and the nature of the emergency. I gave him all of that information and continued descending towards Beaumont.

Houston Center asked if I could accept a frequency change, to which I replied that I could. Houston Center transferred me to Houston Approach. The approach controller started me on vectors to set up for a left base to runway 12 at KBPT. I asked for runway 16, which was closer and had better wind direction, but 16 was closed for maintenance and re-striping, so it was not a viable option.

The controller advised that he would set me up for an ILS even though it was scattered at 3500 feet. I declined and asked for vectors. At the time, he was trying to set me up for an ILS I was IMC in the scattered layer at 3500 feet and could not fathom the process of entering the ILS information into the GPS and radio. The cloud layer was thin, and I knew I would be through it in a few hundred feet. I was still really high at this point, but had the airport in sight. I was also too fast trying to get down to the airport from 17,000 feet and 20 miles. In retrospect, it may have been better to make one circle of the airport to get lower, but at the time, I just wanted to be on the ground. The controller even asked if I was going to get low enough to make the airport when I was about a three-mile final.

Because of my excessive speed, I nosed up to bring my speed within gear deployment range and dropped the gear and the first notch of flaps. This slowed the plane down considerably, such that I could concentrate on getting on the PAPI lights and setting up for a normal landing. I then entered a slip to get lower and continue bleeding speed. Second notch of flaps and finally the third notch were selected once the runway was assured. I was still high but remembered in training that during an emergency landing, the goal is not to aim at the approach end of the runway but more towards the middle to ensure you would make the runway. I looked out of the pilot window briefly to see the green emergency vehicles standing by to trail me down the runway after landing. I touched down long and taxied off the

runway with the emergency vehicles immediately behind me.

At this point, I noticed I still had about 25 inches of manifold pressure, which was enough to power me off the runway and onto the ramp, and confirmed in my mind the turbo failure. I pulled off to the ramp per the tower's instructions, turned the plane around and shut down. I gathered my important belongings, opened the door and hopped out quickly. I was met by the emergency personnel who asked if I was okay and then asked about the problem. I explained the loss of manifold pressure and that there did not seem to be any fire risk. They replied that they could see me trailing black smoke from 10 miles out. I examined the area under the bottom cowling and saw oil pouring out of the engine compartment. When the engine was finally torn down, there was only a few ounces of oil left in the crankcase. The engine, even at reduced power, was on borrowed time.

The Emergency personnel escorted me to KUSA (the FBO), where I was met by the owner, Kyle Knupple, who was extremely helpful.

On Wednesday, the FBO mechanic, Buck Scherer, called me to tell me what he found. Buck had come in during his vacation to look at the plane. The turbo on the co-pilot side failed. The impeller was destroyed, and the shaft was completely broken. The damage was to the cold intake side of the turbo. Oil was everywhere in the cowling. Pulling the oil filter and oil cooler line revealed excessive aluminum and bronze particulates from the damaged turbo impeller and shaft. The engine was severely damaged from metal flakes bypassing the safety screens and being injected into the engine, and would have to be replaced. Because of COVID-related supply chain issues, I was out of commission for more than 6 months waiting on parts. The one bright side to all of this is that the A&P at KUSA was a former Piper factory worker and had extensive knowledge of the Malibu and could complete all of the work on the field.

I learned several lessons from the flight. First, JD was right when he told me during training that if you fly enough, you will eventually have an emergency, and it is best to train often for these scenarios. Two, the adage is correct – Aviate, navigate and communicate. First and foremost, fly the plane and make a plan immediately. Don't hesitate while you're losing altitude. Also, as pilot in command, you are the boss, and you can tell ATC where you are going. Third, ATC is extremely professional and helpful. They have their hands full daily (especially in the Houston sector), but they handled my situation and the other traffic as if it were a normal day. Fourth, if you have a choice of fields like I did, try to choose one with as many amenities as possible – a long runway, emergency services, access to an FBO that can assist with a car and hotel, and hopefully a mechanic. Fifth, stay calm and rely on your training. With high-performance airplanes, annual extensive recurrent training is required by insurance. In my opinion, it should be required for all pilots, regardless of whether they are flying high-performance aircraft or not. That critical emergency training comes back to you quickly. It was crucial to my successful landing. Finally, get on the ground as soon as possible. I could have made another circle to lose altitude, but I wanted to be on the ground. Gear, flaps, and a slip are always available to help lose speed and altitude to get you on the ground. If you have the runway in sight, treat it as a normal landing and make adjustments as necessary to get on the ground. T&T

**Lawrence S. Searcy Jr** *is an attorney and instrument-rated private pilot with over 1,500 hours of flight time. He currently owns and operates a TBM 700. In the past, Lawrence has owned and operated a Mooney M20J and a Piper Malibu Mirage.*

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## JETS - 22,379

### CHIEF PILOTS & OWNERS

| COUNT | AIRCRAFT |
|---|---|
| 8 | ASTRA 1125 |
| 41 | ASTRA 1125SP |
| 59 | ASTRA 1125SPX |
| 21 | BEECHJET 400 |
| 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 |
| 192 | CITATION ENCORE |
| 85 | CITATION ENCORE+ |
| 405 | CITATION EXCEL |
| 13 | CITATION I |
| 277 | CITATION I/SP |
| 436 | CITATION II |
| 50 | CITATION II/SP |
| 164 | CITATION III |
| 173 | CITATION LATITUDE |
| 58 | CITATION LONGITUDE |
| 376 | CITATION M2 |
| 510 | CITATION MUSTANG |
| 142 | CITATION S/II |
| 366 | CITATION SOVEREIGN |
| 118 | CITATION SOVEREIGN+ |
| 315 | CITATION ULTRA |
| 289 | CITATION V |
| 27 | CITATION VI |
| 135 | CITATION VII |
| 324 | CITATION X |
| 39 | CITATION X+ |
| 314 | CITATION XLS |
| 358 | CITATION XLS+ |
| 17 | DORNIER ENVOY 3 |
| 33 | ECLIPSE 550 |
| 317 | ECLIPSE EA500 |
| 20 | EMBRAER LEGACY 450 |
| 83 | EMBRAER LEGACY 500 |
| 113 | EMBRAER LEGACY 600 |
| 72 | EMBRAER LEGACY 650 |
| 16 | EMBRAER LINEAGE |
| 379 | EMBRAER PHENOM 100 |
| 580 | EMBRAER PHENOM 300 |
| 113 | EMBRAER PRAETOR |
| 57 | FALCON 10 |
| 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 |
| 11 | 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 |
| 87 | GULFSTREAM G-III |
| 175 | GULFSTREAM G-IV |
| 319 | GULFSTREAM G-IVSP |
| 202 | GULFSTREAM G-V |
| 113 | GULFSTREAMG 600 |
| 32 | HAWKER 1000A |
| 5 | HAWKER 1000B |
| 7 | HAWKER 125-1A |
| 2 | HAWKER 125-1AS |
| 1 | HAWKER 125-600A |
| 55 | HAWKER 125-700B |
| 66 | HAWKER 4000 |
| 216 | HAWKER 400XP |
| 53 | HAWKER 750 |
| 142 | HAWKER 800A |
| 16 | HAWKER 800B |
| 408 | HAWKER 800XP |
| 44 | HAWKER 800XPI |
| 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 |
| 2 | SABRELINER 40R |
| 5 | SABRELINER 60 |
| 9 | SABRELINER 60ELXM |
| 48 | SABRELINER 65 |
| 11 | SABRELINER 80 |
| 1 | SABRELINER 80SC |
| 1 | SUKHOI SBJ |
| 3 | SYBER JET SJ30 |
| 52 | WESTWIND 1 |
| 14 | WESTWIND 1124 |
| 47 | WESTWIND 2 |

## TURBOPROPS - 16,319

### CHIEF PILOTS & OWNERS

| COUNT | AIRCRAFT |
|---|---|
| 210 | AVANTI |
| 1 | AVRO RJ70 |
| 483 | CARAVAN 208 |
| 2275 | CARAVAN 208B |
| 37 | CHEYENNE 400 |
| 140 | CHEYENNE I |
| 21 | CHEYENNE IA |
| 218 | CHEYENNE II |
| 49 | CHEYENNE III |
| 39 | CHEYENNE IIIA |
| 58 | CHEYENNE IIXL |
| 238 | CONQUEST I |
| 292 | CONQUEST II |
| 77 | DAHER TBM-700A |
| 96 | DAHER TBM-700B |
| 113 | DAHER TBM-700C |
| 383 | DAHER TBM-850 |
| 134 | DAHER TBM-900 |
| 70 | DAHER TBM-910 |
| 102 | DAHER TBM-930 |
| 138 | DAHER TBM-940 |
| 66 | DAHER TBM-960 |
| 165 | DE HAVILLAND DHC |
| 49 | EPIC E1000 |
| 1 | FOKKER 70 |
| 37 | JETSTREAM 31 |
| 70 | JETSTREAM 32 |
| 64 | JETSTREAM 41 |
| 32 | KING AIR 100 |
| 474 | KING AIR 200 |
| 21 | KING AIR 200C |
| 8 | KING AIR 200T |
| 261 | KING AIR 250 |
| 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 |
| 112 | KING AIR C90GTI |
| 165 | KING AIR C90GTX |
| 18 | KING AIR C90SE |
| 257 | KING AIR E90 |
| 172 | KING AIR F90 |
| 29 | KING AIR F90-1 |
| 5 | MERLIN 300 |
| 14 | MERLIN IIB |
| 5 | MERLIN III |
| 27 | MERLIN IIIA |
| 45 | MERLIN IIIB |
| 14 | MERLIN IIIC |
| 4 | MERLIN IV |
| 11 | MERLIN IV-A |
| 34 | MERLIN IV-C |
| 91 | MITSUBISHI MARQUISE |
| 16 | MITSUBISHI MU-2F |
| 1 | MITSUBISHI MU-2G |
| 11 | MITSUBISHI MU-2J |
| 28 | MITSUBISHI MU-2K |
| 10 | MITSUBISHI MU-2L |
| 18 | MITSUBISHI MU-2M |
| 23 | MITSUBISHI MU-2N |
| 25 | MITSUBISHI MU-2P |
| 46 | MITSUBISHI SOLITAIRE |
| 70 | NEXTANT 400XT |
| 1 | NEXTANT G90XT |
| 1081 | PILATUS PC-12 NG |
| 836 | PILATUS PC-12/45 |
| 216 | PILATUS PC-12/47 |
| 300 | PIPER JETPROP |
| 91 | PIPER M500 |
| 263 | PIPER M600 |
| 601 | PIPER MERIDIAN |
| 292 | QUEST KODIAK 100 |
| 3 | QUEST KODIAK 900 |
| 15 | ROCKWELL COMMANDER |
| 6 | STARSHIP 2000A |
| 54 | TURBO COMMANDER 1000 |
| 21 | TURBO COMMANDER 690 |
| 134 | TURBO COMMANDER 690A |
| 136 | TURBO COMMANDER 690B |
| 80 | TURBO COMMANDER 840 |
| 27 | TURBO COMMANDER 900 |
| 26 | TURBO COMMANDER 980 |

## TWIN PISTON - 7,649

### OWNERS

| COUNT | AIRCRAFT |
|---|---|
| 37 | BARON 56TC |
| 1677 | BARON 58 |
| 428 | BARON 58P |
| 119 | BARON 58TC |
| 3 | BARON A56TC |
| 355 | BARON G58 |
| 108 | CESSNA 310 |
| 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 |
| 59 | CESSNA T303 |
| 112 | DIAMOND D42 |
| 20 | DIAMOND IA |
| 186 | DUKE B60 |
| 80 | PIPER 600 AEROSTAR |
| 3 | PIPER 600A AEROSTAR |
| 45 | PIPER 601 AEROSTAR |
| 4 | PIPER 601B AEROSTAR |
| 201 | PIPER 601P AEROSTAR |
| 24 | PIPER 602P AEROSTAR |
| 589 | PIPER CHIEFTAIN |
| 26 | PIPER MOJAVE |
| 301 | PIPER NAVAJO |
| 255 | PIPER SENECA |
| 74 | ROCKWELL COMMANDER |
| 168 | ROCKWELL SHRIKE |

## HIGH PERFORMANCE MOVE-UP SINGLES - 10,002

### OWNERS

| COUNT | AIRCRAFT |
|---|---|
| 393 | BEECH BONANZA |
| 441 | CESSNA 182 |
| 55 | CESSNA 206 |
| 428 | CESSNA P210N |
| 22 | CESSNA P210R |
| 58 | CESSNA T182 |
| 1220 | CIRRUS SR20 |
| 3733 | CIRRUS SR22 |
| 2048 | CIRRUS SR22T |
| 121 | MOONEY ACCLAIM |
| 37 | MOONEY ACCLAIM ULTRA |
| 407 | MOONEY OVATION |
| 12 | MOONEY OVATION ULTRA |
| 263 | PIPER MALIBU |
| 199 | PIPER MATRIX |
| 565 | PIPER MIRAGE |

# How to Submit a Freedom of Information Act Request

## to the Federal Aviation Administration

by **Lawrence S. Searcy Jr**


The search page on the FOIA.gov website

On June 12, 2022, as we learned in my previous article, I planned to fly my 1989 Piper Malibu Mirage from Alexandria, Louisiana (KAEX) to Refugio, Texas (KRFG), where we own a working cattle ranch and commercial deer hunting operation.

After the incident described in the previous article, finally landing in Beaumont, Texas, I was curious whether I handled the situation professionally and wanted to hear how I sounded in my communications with ATC and the tower. I searched www.LiveATC.com, but Beaumont, Texas, is not one of the airports reported on LiveATC. As a lawyer, I knew I could submit a Freedom of Information Request (FOIA) to the FAA, but was not sure of the procedure or whether the FAA would respond.

Like most amateurs, I Googled the process, and the FAA website has detailed instructions on how to go about submitting the request. My Google query was simply "FAA Freedom of Information Request." The first link that comes up is "Make a FOIA Request." Clicking on the related links within the website gave me all of the information I needed for submitting the request and the fees that might apply.


The FAA-specific page at FOIA.gov

I submitted the following email to the FAA:

*From: Lawrence Searcy <lsearcy@walkerautomotive.com>*

*Sent: Wednesday, June 15, 2022 4:09 PM*

*To: 7-AWA-ARC-FOIA (FAA) <7-awa-arc-foia@faa.gov>*

*Subject: Audio Recordings for N891AW on June 14, 2022 - Houston Center and Houston Approach / Departure Control*

> *I am seeking the audio transmissions between a Piper Malibu Mirage (PA46) (N891AW) and Houston Center and Approach Control, and KBPT Tower on June 14, 2022, between the times of 17:40 (4:40 p.m.) and 1805 (5:05 p.m.). The recordings are of a declared emergency by the aircraft (N891AW) and a request to divert to KBPT due to low manifold pressure. At the time of the declaration of the emergency, the plane was traveling eastbound at 17,000 feet. I am the pilot of the plane that was involved in the emergency and am requesting the information for purposes of debriefing and training. The incident occurred approximately 20 miles northeast of KBPT.*

Six days later, I received the following response from an FAA FOAI coordinator:

> *This email acknowledges receipt of your FOIA request concerning the audio transmissions between a Piper Malibu Mirage (PA46) (N891AW) and Houston Center and Approach Control, and KBPT Tower on June 14, 2022, between the times of 17:40 (4:40 p.m.) and 1805 (5:05 p.m.).*

I received several emails in the interim advising that my request was being reviewed, and once a determination was made that the files could be released, I would be notified.

In August 2022, I received a hard copy CD-ROM from the FAA with the time-stamped recordings from my incident. The audio was a bit grainy and distorted in some instances, but was easily cleaned up with the audio software on my computer.

I reviewed the audio to assess how I handled the emergency and to retrace the flight path on a YouTube video with the recording overlayed on top of the flight path animation. The link to the audio and video can be found at https://youtu.be/RXZEw81E2zA?si=lHqtt4uS3Flqm_tX

The process of asking for and receiving the audio was straightforward. The professionalism from the FAA was refreshing, and all of the employees were extremely helpful. I would highly recommend contacting the FAA for these types of recordings if you ever have an incident or emergency. The review was extremely helpful for training for a future emergency I may have. My annual recurrent training instructor and I reviewed the transmission with the intent of planning for any future emergency and assessment of what could have been done differently. T&T

**Lawrence S. Searcy Jr** *is an attorney and instrument-rated private pilot with over 1,500 hours of flight time. He currently owns and operates a TBM 700. In the past, Lawrence has owned and operated a Mooney M20J and a Piper Malibu Mirage.*

“The South Island of New Zealand is a dramatic display of nature’s finest work—rivers carving through lush valleys, snowcapped peaks rising from the horizon, and famed fiords.”

Milford Sound is sometimes referred to as the Eighth Wonder of the World

# Adventuring Abroad

## How a Scenic Flight over Milford Sound Changed the Way I Vacation

by **Mindy Lindheim**

Usually, on vacation, I tend to avoid aviation. My daily life is saturated with flying—both personally and professionally—so I usually welcome the chance to take a break from airplanes. But a recent trip to New Zealand shifted my mindset. An unexpected invitation from Glenorchy Air sparked an aviation adventure that reminded me just how rewarding it can be to explore a new part of the world from the air.

The South Island of New Zealand is a dramatic display of nature's finest work—rivers carving through lush valleys, snowcapped peaks rising from the horizon, and famed fiords. One of the most iconic is Milford Sound, a breathtaking fjord located off the Tasman Sea within Fiordland National Park. It lies within the Te Wahipounamu World Heritage site and is often described as the crown jewel of New Zealand's natural wonders. Rudyard Kipling even called it the Eighth Wonder of the World.

Despite its name, Milford Sound is actually a fjord formed by the erosion of ancient glaciers. It stretches nearly 10 miles from its head to the open sea and plunges to depths of over 1,300 feet in places. It's also home to a small, tight-knit population of around 120 residents, nearly all of whom work in the tourism industry. Milford Sound is remote, surrounded by steep cliffs and dense rainforest, and is one of the wettest inhabited places on Earth, receiving large amounts of rainfall. All of this contributes to its untamed beauty and the challenges of reaching it, especially by air.

Shoreline of Lake Wakatipu departing Queenstown

That's where Glenorchy Air comes in. Based in Queenstown, the tour company operates a fleet of several rugged aircraft, including the Kodiak 100, Cessna Grand Caravan EX, and a GippsAero GA8 Airvan—perfect performance for New Zealand's mountainous terrain and advanced enough for the unpredictable weather. I had the opportunity to ride in the right seat in a stunning Kodiak 100 alongside pilot Michael Rutherford for a flight that blended technical intrigue with jaw-dropping scenery.

We departed Queenstown and, within just 12 minutes, were soaring over the Southern Alps. The views were nothing short of spectacular—endless snow-covered peaks and glacial

Pilot Michael Rutherford navigating a flight to Milford Sound

Views out the window of the Kodiak 100 on a short 12-minute flight to the Southern Alps

expanses such as the Olivine Ice Plateau, Earnslaw Burn Glacier, and Mt. Tutoko Glacier. One of my favorite moments on the flight was spotting hidden alpine lakes on the mountainsides that no one has access to except sky-bound viewers from above, as no roads or tracks lead to them. Thanks to the aircraft's configuration and high-wing design, every passenger had a window seat, and there wasn't a bad view in the house.

Michael pointed out landmarks and shared bits of local aviation knowledge between passenger briefings. "What I really love about this trip is that, depending on the direction you're flying in or out of Milford Sound, you never see the same thing twice," he told me. "On the way in, we usually take a northern route over three large mountain ranges, passing over glaciers while sharing local history with our passengers. On the way home, we fly past one of the tallest waterfalls in the Southern Hemisphere, standing at 1,904 feet."

He added that Lake Erskine is a personal favorite. "It sits 5,000 feet above sea level and stretches about 1.2 miles long. Depending on the season, it can appear as a vivid blue from snow and ice melt, cascading into a large waterfall—or, in winter, it can look like a massive ice-skating rink, frozen solid just beneath the inversion layer."


Mindy Lindheim and her husband, Kevin Lindheim, flying in the Kodiak 100

Despite being in unfamiliar territory, I felt right at home using the Garmin G1000 NXi avionics to track our route. The situational awareness made the terrain feel more approachable, and the Kodiak easily handled the conditions. We quickly stopped at a grass strip along Lake Wakatipu to pick up two more passengers. Though this strip at Glenorchy Aerodrome was on the shorter side, 2,215 feet long, it was well-maintained, and even with a full load, the Kodiak both landed and later climbed out effortlessly.

The final stretch to Milford Sound was the kind of flight that stays with you—one I immediately shared with friends and family and later went viral on social media (@schmiiindy on Instagram). Descending into the fjord, we flew a slightly offset, but generally straight-in approach to runway 11 at NZMF, entering a deep valley lined with waterfalls and towering cliffs. Below us, boats navigated the waterway, and while I scanned for local wildlife, such as penguins, dolphins, and seals, I came up short. Even so, the landscape more than made up for it.

Milford Sound Airport is not for the faint of heart. The terrain, weather patterns, and confined approach all demand respect. Most tour operators require their pilots to undergo specialized training and complete supervised flights before they're cleared to operate into NZMF on their own, and from this approach, I can easily see why. Michael explained, "Milford's weather is a beast of its own—it gets about 23 to 28 feet of rain yearly. For a VFR (Visual Flight Rules) scenic flight company, that's a serious challenge. We average about a 60% success rate for completing a full day of flying. Getting there means crossing three major mountain ranges, some peaking around 9,000 feet. Each wind direction brings new complexities you must consider


A view of the traffic on the Garmin G1000 condensed into Milford Sound

before leaving the base in Queenstown. Then there's the airport itself—a 2,500-foot runway with one way in and one way out, affected by strong venturi-style sea breezes in summer and turbulent katabatic southeast winds off snow-covered peaks in winter."

As we began our descent, Michael walked me through the approach planning. "Approach planning starts early—while I'm still cruising near glaciers around Mt. Tutoko, the tallest mountain in Fiordland National Park. You must be at certain points at specific altitudes to maintain traffic separation. Two key reporting points are Dale Point and Stirling Falls. I aim to be at Dale Point at 5,000 feet outbound—this sets up a scenic descent over the coastline and the Tasman Sea. By the time you're over Stirling Falls, you should be at 1,500 feet."

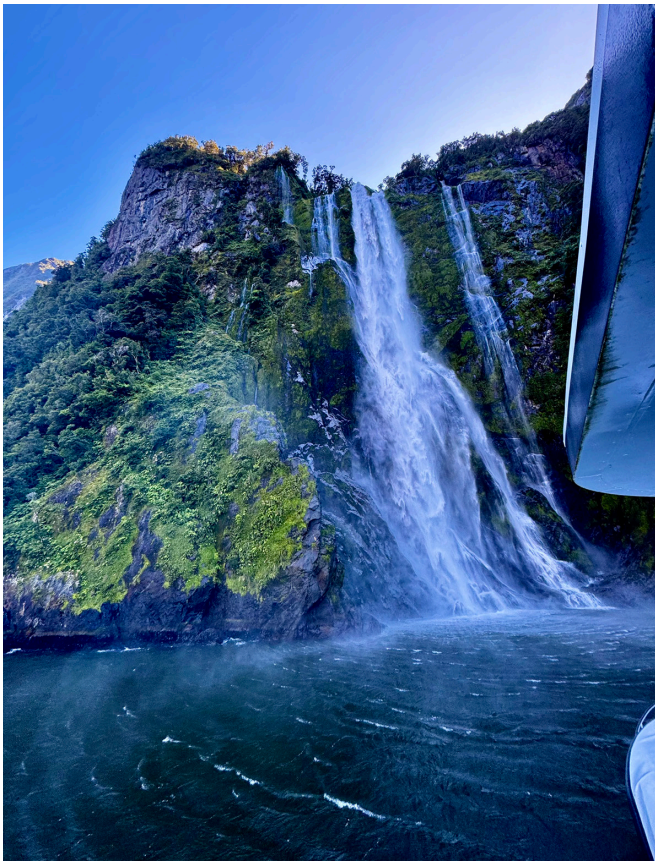
It was surreal to touch down at the foot of Mitre Peak, which rises 5,551 feet above sea level. The ramp was filled with Caravans, Kodiaks, Airvans, and Stationairs, all framed by towering cliffs and deep green vegetation.

And the adventure wasn't over yet. A short walk brought us to the marina, where we boarded a cruise ship for an up-close tour of the fjord. From sea level, the same waterfalls we had flown past now danced in the sun above us, misting our faces as we got close. We enjoyed a picnic lunch on board the ship before returning to the airstrip to fly back to Queenstown.

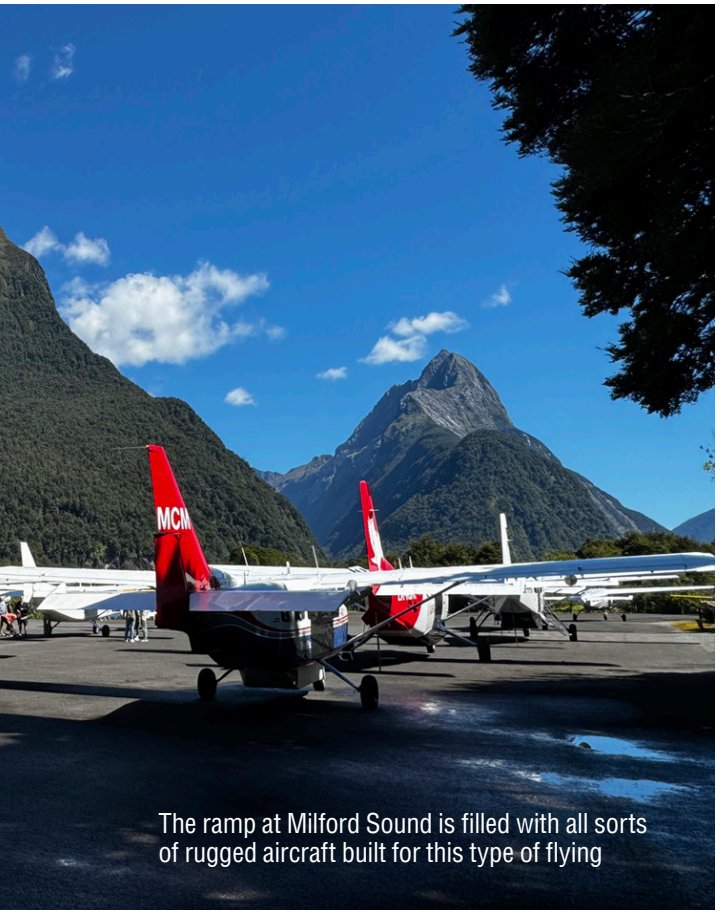
Reflecting on the experience, Michael put it best: "It's made me prouder than ever to be a Kiwi. I love what I do


The Garmin G1000 Synthetic Vision gave great perspective on Milford Sound's landscape

The straight-in approach for Runway 11 at Milford Sound brought us very close to the cliffs



Getting a closer look by boat at the waterfalls we flew by when landing in Milford Sound



The ramp at Milford Sound is filled with all sorts of rugged aircraft built for this type of flying

and what I get to share with people visiting our country. For many, Milford Sound is why they come to New Zealand—and I get to make that dream real. Living here is a blessing. Flying here? Even better."

We really lucked out with gorgeous, sunny weather, but it made me realize just how delicate and rare such days can be here. Michael later told me, "We always take a conservative approach. People come to us for a once-in-a-lifetime experience—they pay good money and expect to see something amazing, not get bounced around feeling sick. We won't go unless we're confident the weather will allow for a quality experience."

This trip inspired me to stop hanging up my wings during vacations. Whether you're the one flying or simply enjoying the views as a passenger, general aviation can offer an entirely new way to engage with a destination. And sometimes, all it takes is an unexpected invite to remind you why you fell in love with flying in the first place. T&T

**Mindy Lindheim** *is an experienced pilot, aircraft broker, and aircraft owner. She has Textron Aviation factory experience as both a sales director and demonstration pilot and has since worked her way up to earning a Citation 525S type rating, Citation Longitude C700 type rating, and sells airplanes for Lone Mountain Aircraft. Mindy is very active on social media to educate, inspire, and share aviation experiences on her accounts* **@schmiiindy.** *You can contact Mindy at* **Mindy@ChasinTailwinds.com.**

# Dan Moran

by **Grant Boyd**

PHOTOS COURTESY OF 'CONCIERGE DIAMONDS'

When you think of the tools that a jeweler uses, calipers, pliers, and loupes most likely come to mind. Not airplanes.

While Dan Moran, the owner of Concierge Diamonds, uses the tools synonymous with the trade, he also relies upon his Piper JetPROP to ensure his clients receive the best jewelry and customer service possible. Moran explained that he wanted to be a pilot for as long as he could remember but wasn't able to pursue flying until little over a decade ago.

"I was always that toddler who screamed 'airplane!' whenever there was one nearby. I was always into aviation, but it didn't ever seem like something people could actually do, right? It always seemed far away and impossible. But I used to ride motorcycles enthusiastically and met guys through riding who were all pilots. They were kind enough to take me as a passenger on some hundred-dollar hamburger flights. I became hopelessly addicted, and at some point, they asked me if I was going to learn to fly or not. So, I gave it a shot!"

Moran's first training flight was in September of 2013. He learned to fly behind the yoke of rented Cessna 172s, and after several hundred hours logged, decided to buy an aircraft of his own.

"My home field was Torrance Municipal Airport (KTOA) in Southern California, where there was a small flying club that was called the Sling Flying Club. Of course, these days, Sling is a huge force in LSAs and experimentals, but at the time, they were relatively unknown. They were using South African light sport aircraft, and I decided to check those out. I really liked the airplanes and the people that were involved and bought their demo aircraft, which was a four-seat experimental."

After 300 hours flying the Sling 4, a new model, the Sling TSi was announced. Moran wound up being the first in the United States to purchase it.

"I flew that for about five years or so, and it was a tremendous aircraft. But it became clear to me that my mission was exceeding the capabilities of the airplane. I was starting to fly longer distances and needed better weather capability. There were a few scary flights where I said to myself, 'This airplane really has no business being here.' So, I decided it was time to either move up or move out. I decided to move up into the turbine world and bought a Piper JetPROP, which I took delivery of in late 2023."

Moran's aircraft is a 1985 Malibu that was converted in 2010 with the JetPROP STC. Several aspects drew him to this aircraft over other airframes.

"I am an efficiency-minded guy and really like doing as much as you can with as little as possible. When you compare the JetPROP to a Meridian and you're getting a better climb rate and similar cruise speeds for 25 percent lower fuel burn. That was really appealing to me," he said.

"And even though the JetPROP is a higher workload airplane to fly than the Meridian, it gives you more control. I equate it to driving a stick shift versus driving an automatic. There is more work with the stick shift, but you have better control when you are driving. I like being able to control my inertial separator. I like being able to control where fuel is being drawn from. I like having manual control of the propeller. I am willing to accept the higher workload for higher efficiency, so for me it was a no-brainer."

Moran explained that safety was his primary motivator for buying his current aircraft. Going faster, higher, and further were secondary benefits.

"For me, the first and foremost motivating factor was safety. It's a cliche at this point in aviation that moving from a piston to a turbine makes you safer. When you start looking at the statistics, it's really eye-opening just how much more reliable a PT6 is than even the best piston engine you can ever possibly find. Even though the Rotax is a great, reliable engine, I had a power failure in my Sling. It's a pretty scary thing when you're below 300 feet AGL and your engine goes quiet. That day, I landed and decided that I needed to step up," Moran explained.

"Safety was the primary motivator, but you get numerous other benefits when moving to something like a JetPROP. I now go 100 knots faster in cruise flight, which is very significant. One of the most important additional benefits is pressurization. Once you've flown pressurized, it's hard to imagine going back to putting cannulas in your nose and flying in the teens. Being up at the flight levels, pressurized, is a big deal. And then, of course, knowing that I can punch through an icing layer and handle some adverse weather gives me a lot of comfort. I have a much broader mission envelope now in terms of how far I can go and how reliably I can get there. I am planning a trip the day after tomorrow to Sun Valley, Idaho, and the weather looks a bit sketchy. I'm comfortable doing it in the JetPROP but wouldn't have even considered going in my last aircraft."

Moran has flown his current airplane more than 200 hours since

acquiring it and is extremely enthusiastic about its impact on his business and life.

"I don't find myself being too terribly range-limited. When there are two people in the airplane, you can go a thousand miles. I don't usually fly with full fuel, and I am actually taking the sixth seat out when redoing my interior later this year. By the time you've filled all the seats, you don't really have much range left," he said.

"One of the main reasons I use the plane is to fly to private events for my jewelry business, where I need to be able to pack showcases. Even though they are collapsible, it's still a pretty big box. So, having the space for stuff is more useful to me than having that sixth seat is. I also use the airplane to see clients directly, whether that's to do diamond presentations and show them stones that they are considering, or to deliver finished rings. Sometimes I'll also travel for appraisals. There was a situation last year where someone's family member passed away, and their jewelry had more value than they were comfortable shipping. I flew out and was able to support them effectively in person."

Most of Moran's flights are business-oriented and are predominantly west of the Mississippi River. The furthest he has flown so far is to Chicago, and he anticipates travelling more to Denver and Salt Lake City, as he finds those areas underserved in the jewelry business.

"My most common mission, I would say, is to the Bay Area. In the Sling days, I had to cancel quite a few missions, especially in the wintertime, because of icing or bad weather. Now

I can make most of those trips easily. I also fly to Arizona with some regularity, and a flight to Phoenix would probably be at flight level 250 or 270. I will be cruising at about 245 true burning 29 gallons an hour, depending on the OAT," Moran said.

"[The] typical climb rate is 2,000 FPM or more at sea level, coming down to about 1,000 FPM by FL200. I've had ATC misidentify me as a Meridian on more than one occasion, and then marvel that I was climbing much faster than they expected."

There is an additional unexpected benefit of the JetPROP, too, Moran |explained.

"There's also the marketing benefit, if you will, as clients think it's really fun to meet in an FBO, walk around the ramp, and see the airplanes. Most people don't get a window into that world, and I've taken clients for flights over the Golden Gate, for instance, where they're taking pictures of their rings with the Bridge in the background. Not only do they really love it, but then they post the photos on social media, and their friends start calling me wanting the same thing. So, it's good for business, and it's a lot of fun. It lets me share aviation with friends and clients, which is something I love to do."

Every aircraft has its downsides. What does Moran say are the JetPROP's?

"Stepping up from a 141 horsepower Rotax to a 550 horsepower PT6 was a huge step in performance, but also in costs. I was very spoiled when I had the Sling. The Sling is a very economical airplane in the first place, but it was even more economical for me because I enjoyed a unique relationship with the owners of Sling USA. As it happens, my home airport is their U.S. headquarters. So, when I bought their demo aircraft 10 years ago, I made a deal with them that I would buy the plane and leave it there, since it was my home base anyway. We agreed that I would let them use it whenever I was not flying it, in exchange for them handling the maintenance. That deal held for two airplanes over 10 years, and I saved a lot on maintenance, and the guys at Sling effectively got an extra airplane to use at no cost. So, it was great for everyone," he said.

"Not only that, but it was also very convenient if there was ever an issue. I could notice something making a funny noise, and 15 minutes later, someone was opening up the cowling. Now, with the JetPROP, if I want to see a PA-46 specialist, I have to take it someplace that's potentially pretty far away from me. It's a much more logistically involved endeavor. So, cost and convenience of maintenance are really the only two downsides that I see. I decided that owning one was worth it after hearing how reliable these airplanes are. Most PA-46 turbine owners tell me that typically the cowling comes off once per year, at annual, otherwise, there isn't anything to do."

Moran noted that he has been working to fix a few issues he suspects were the result of deferred maintenance by the previous owner but expects those to be resolved shortly. In addition to having those gremlins corrected, he is excited to continue using his aircraft for business, start flying more for Angel Flight, and hone his skills in the cockpit.

"Next on my list is that I need to go start the book work and finish my commercial rating that I've been working on," he said. "I have a 15-year-old who turns 16 in September, so I am hoping that this summer the two of us will have the time to start flying in gliders. And then I would love to be able to add a seaplane rating at some point. There is always more to learn, which is the beauty of aviation. As a pilot, you are a student your whole life." 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.*

## Ad Index

# Avoidance

No, this is not a piece about how people shy away from me at a party. Rather, it's a review of best practices for how to handle thunderstorm challenges. A mid-summer flight with friend and CJ2+ owner, Kirk Samuelson, provided the opportunity.

Weather surrounding Dallas was going to be an issue


A large cell was dead ahead

We departed Colorado Springs (KCOS) on a late July morning for a return to my home base in Dallas. There were scattered TRWs on the departure, requiring deviations to the east. The CJ2+ has a wonderful tool for avoidance with its ability to climb quickly to FL450. The view from "on high" is a huge plus in that individual cells poking above that lofty level are easily discernable.

But Kirk's excellent skills were about to be put to the test in the descent to Dallas.

"November three five eight kilo, an arrival change when you are ready to copy," came the request from Fort Worth center. Arrivals from the northwest were shut down due to significant convective activity. "Cleared to AXXEE intersection and the SLANT 3 arrival to Dallas Addison." We were being rerouted to the Northeast corridor arrival. In his pre-departure planning, Kirk decided to take some extra fuel. Now, he was pleased with that decision since the extra reserves reduced the stress of low fuel situations.

From the enclosed picture, it was clear that the weather surrounding Dallas was going to be an issue. Kirk advised center he was slowing to give us some additional cushion for the cells to move through. He navigated the Nexrad display and radar screens like a symphony maestro analyzing the intensity and movement of each thunderstorm. He monitored the digital ATIS for nearby Dallas Love, but he had another trick up his sleeve. He knew the surrounding airports had AWOS weather, which updates every few minutes, and he used his Airtext receiver to query the changing conditions through his iPhone.

It was fun watching him take advantage of everything available in the system.

But we weren't home free yet. As we made the final turn on the arrival, a large cell was dead ahead. Kirk used the Collins radar on the Citation and made several requests to the controller to deviate. He had me remind our passengers to buckle up for the expected bumps. And he asked for direct to the final approach fix to avoid another cell.

When communicating with the tower controller, he asked for a wind check. He recalculated his landing performance numbers due to a wet runway, and he used CJP's "Safe to Land" callout recommendations on the final segment of the approach.

We touched down on a slick runway in light rain after a real workout.

Fly safe. T&T

**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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