Trends to Watch in 2024 / Instrument Departures Briefed / When to Shutdown

TWIN & TURBINE

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

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VOLUME 28 NUMBER 2

Pilatus Owners & Pilots Association

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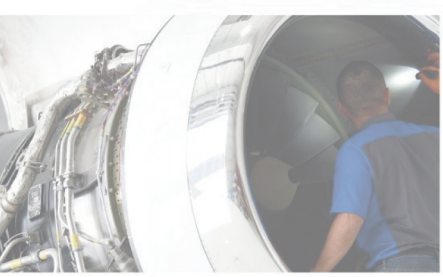

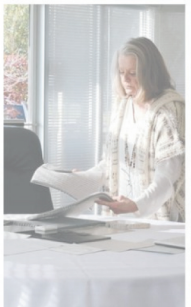

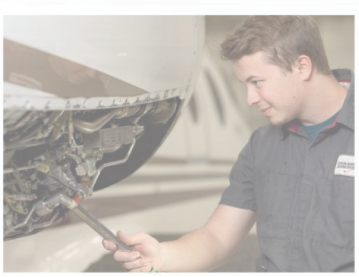

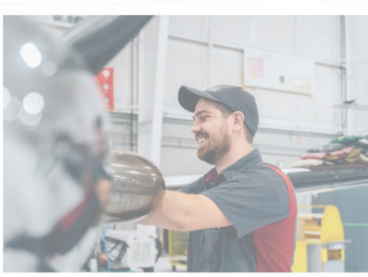

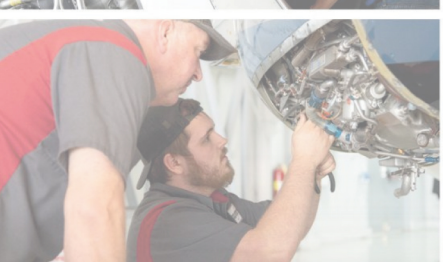

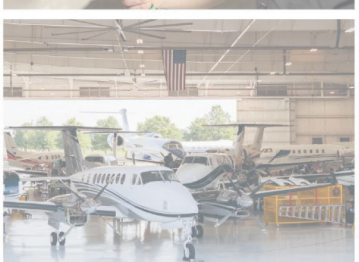

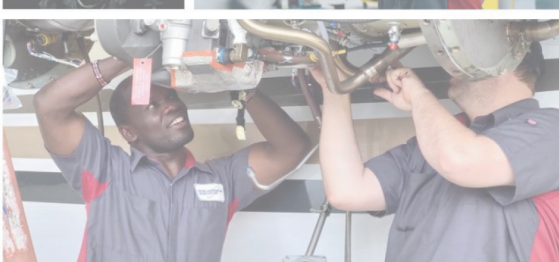

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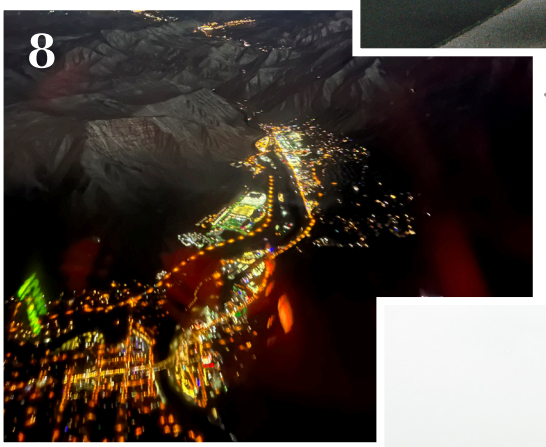

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Courtesy of
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Waiting for Spring Flying Weather

We are one-twelfth of the way through 2024, and already, I cannot wait until spring and some real (fun) flying weather. Texas has been unusually cold this winter after being unusually hot last summer, so let's hope for a mild one the rest of the way. Crossing fingers.

Here are a few historical aviation accomplishments that occurred throughout the years in February (courtesy of *www.centennialofflight.net*):

- 1921 - The U.S. Army Air Service establishes the first in an expanding series of airways – routes safely surveyed by the army civilian and commercial users linking towns and cities by air – by leasing land between Washington and Dayton, Ohio, to facilitate a stopover.
- 1968 - A standard Learjet 25 sets a new "time-to-climb" record by climbing to 40,000 feet in 6 minutes 29 seconds.
- 1979 - Former astronaut Neil Armstrong climbs to 50,000 feet in Kitty Hawk, North Carolina, in just over 12 minutes in a Gates Learjet Longhorn 28, breaking five world records for business jets.
- 1984 - Racing driver Henri Pescarolo and Air France pilot Patrick Fourticq land their Piper Malibu in Paris after a flight from New York, setting a speed record of 14 hours 2 minutes for single-engine lift aircraft across the North Atlantic.

In this month's Twin & Turbine, we welcome back Dianne White with a new Position Report. If you need a concise review of everything from aircraft financing and markets to the latest in data-driven safety initiatives, look no further than Dianne's Position Report.

Ed Verville takes through the intricacies of FAA instrument departures. Get the low-down on those SIDs, ODPs and maybe some "gotchas" that haunt the unpracticed. Ed has a great way of taking some pretty dry language and making it fun and understandable.

We get to highlight Pilatus this month. Grant Boyd takes us to the Pilatus Owners & Pilots Association and gives a front-row view of the association's leadership, its priorities, and the relationships between the OEM and its customers. Later, Boyd provides a deep dive into the decisions leading Wally Obermeyer to his Pilatus and why he feels blessed to fly the Rockies in his PC-12.

When should you accomplish a precautionary engine shutdown in a twin? Thomas Turner delivers some intriguing answers to that question, along with how and when to facilitate an air start and cross-feeding. His insights are enlightening.

My Editor's Pics takes us to Tulsa, Oklahoma, to see the elusive Piaggio Avanti. I take a look into some of the things that make this airplane unique and, in many ways, class-leading. The camera used to capture the Avanti is almost as captivating.

To close out February, David Miller takes us to the picturesque Southwest U.S. and what it's like to operate high-performance airplanes around a balloon festival.

Enjoy, and thank you!

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Trends to Watch in 2024

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As we make our flight plans for 2024, here's a look at some of the trends that are worth watching.

Aircraft Market

As we reach the 4th anniversary of the COVID pandemic, we are starting to hear less about "struggling supply chains" that hobbled manufacturing and more about "resets" and "market rebalancing." This is especially true in the single-pilot turboprop and jet markets. From major OEMs to avionics and component manufacturers, a new normalcy is taking shape, resulting in more reliable and reasonable lead times and backlogs.

In the pre-owned owner-flown business market, 2023 sales were steady but down compared to the brisk sales activity in 2022. In 2023, many aircraft owners were hanging onto their aircraft, as manifested in the percentage of aircraft available worldwide. By the end of October, only 3.8% of the turboprop worldwide fleet was for sale. Less than 7% of the business jet fleet was for sale. Both are well below the traditional industry average of 10%.

Is 2024 going to turn more toward a buyer's market? Probably not to any significant degree, based on the market performance in late 2023. Going into a U.S. presidential election year with geo-political tensions sparking uncertainty, none of the industry soothsayers have 100% confidence in what will happen. But with the U.S. economy continuing to perform well, those looking to buy, sell, or trade up will have the confidence to carry on with their plans.

Insurance

One major pain point for the owner-flown segment of business aviation is attaining insurance. The good news is that there is plenty of insurance capacity, and premium increases are tempering, according to Tom Hauge of Wings Insurance. The sweet spot in terms of hull value is under $3 million. Once you go above $5 million, there are fewer insurers interested in quoting the owner-flown aircraft. This is all stated with one big caveat: low-time pilots requesting coverage for a high-hull value aircraft should expect headwinds in attaining coverage, and premiums will be high.

In other good news, new underwriters are entering the owner-flown segment of the market. For example, three new underwriters – Eiger, Mach 2, and Applied Underwriters –are now writing policies for Piper Mirage and Meridian owners.

Now, the bad news: the lack of underwriters willing to write policies for turbine aircraft pilots over the age of 70 is unlikely to change. There are no good answers on the horizon for the senior single-pilot operator except to fly with a second qualified pilot or step down to a piston aircraft, such as a Cessna 182 or Bonanza. For piston singles, most pilots are insurable until at least age 80.

Aircraft Financing

It's been an ugly couple of years of rising inflation and interest rates. But through it all, the availability of aircraft financing has generally remained good. Interest rates topped out in early November, and most financial forecasters predict them to decrease somewhat this year.

The Federal Reserve's Dot Plot, which capsulizes each Fed official's short-term interest rate projection for the year, is one guidepost that provides some insight into the Fed's thinking and expectations for the economy at large. The most recent Dot Plot suggests the Fed expects the federal funds interest rate to decrease 0.75 percentage points in 2024 with the caveat that inflation and economic

growth will gradually slow. Over the next three years, the Dot Plot forecasts a decrease of 300 basis points (or 3 percent). Although it is an imperfect crystal ball as it's only a snapshot in time of the Fed presidents' thinking, it provides confidence rates will head down and not up.

How does that translate to aircraft financing? According to a study commissioned by Airbus Corporate Jets, eight of 10 U.S.-based business aviation financiers and private jet brokers expect access to business aviation financing to increase over the next three years. Some 98% of survey respondents believe business aviation finance rates are still attractive, and it is better to use credit when buying an aircraft than tying up capital.

Jim Blessing, president of AirFleet Capital Inc., is one of the leading finance providers in the single-pilot, high-performance piston and turbine market. In a recent conversation with him, he told me financial market liquidity has been good and will continue to be so, indicating that access to financing is readily available. "We're expecting some modest decreases in interest rates this year now that inflation is better controlled. The indicators are encouraging."

In other positive news, he said he's not seeing changes in cash or credit tightening from where they stand today. "The sweet spot for the single-pilot aircraft buyer is $7.5 million and below."

Data-driven Safety Management

Many of the safety and risk management tools and practices used by Part 121 for years are now finding their way into the owner-flown market. The goal: to improve pilot performance, reduce deviations from standard operating procedures, and ultimately reduce accidents.

TBMOPA, the owners' group for TBM aircraft, formally started the trend by introducing a FOQA (flight operational quality assurance) program in 2017 to track landing performance, focusing on reducing runway excursions, prop strikes, and other landing mishaps.

Last year, the Citation Jet Pilots Association rolled out its CJP-FOQA program in partnership with CloudAhoy (now ForeFlight). The program gathers flight data from each flight, analyzes it, and then provides pilots post-flight feedback. As an organization, CJP is aggregating trend data to develop a big-picture view of how the fleet is performing. CJP recorded more than 5,000 flights by its members using the data-gathering program. Focusing on the approach-to-landing phase of flight, the system provides objective feedback to the pilot, which they can use to improve and/or address in training.

Some trends are starting to emerge: Regarding unstable approaches, CJP members are flying better than the industry standard. But, on visual approaches, the data indicates exceedances, such as high sink rates. All this helps inform CJP on areas to focus their educational content on and how to help their pilots fly safer.

Look for other owner groups to jump on the bandwagon with similar programs. If you don't have access or don't want to participate in a formal program, check out ForeFlight's CloudAhoy as a flight debrief tool to get an objective and quantitative review of how you're flying. For example, you can check your lateral and vertical accuracy and how stabilized your approach was and compare your path to the published approach using a 2D and 3D overlay. It even gives you a "segment score," highlighting problem areas you can address in future training or on your next flight. Go to ForeFlight.com to learn more.

Hangar Capacity

Go to any general aviation airport near an urban area, and you'll find hangar space in high demand and short supply. Many have waiting lists that stretch for years, and few FBOs are adding community hangar space. I spoke to airport directors in the mid-size metro area where I live, and they said the challenges are multi-faceted: the costs associated with site development and building materials have dramatically increased since COVID. And then there are costs associated with insurance, engineering, and building code compliance. A private developer at a local airport near me has been trying to build a big-box, community-type hangar for several years and has been stymied by the city's bureaucratic approval process and architectural code requirements, such as having the street-facing façade be constructed with brick and other eye-pleasing features you'd see in a retail development. (The airport is located in an industrial park setting.) The excess cost for those demands upset the financial equation for that developer.

And if you can get a hangar built, there is concern about recouping the development costs at lease rates that are palatable to the local market. Many times, those are grossly mismatched.

Some airports are under siege from anti-airport activists originating from nearby homeowners and developers eyeing the prime real estate on which the airport resides. Recently in the news, homeowners near the Rocky Mountain Metropolitan Airport (KBJC) near Denver sued the county over what they define as violations of airspace, lead emissions, and decreased property values. The outcome of that lawsuit won't be known for some time, but we can be assured it's being watched by other anti-airport groups nationwide. All of this will have a chilling effect on new hangar builds at many airports where urban development has filled in around the property.

In this column, I didn't cover it all. Other simmering topics facing general aviation include the progress (or lack thereof) of an unleaded avgas replacement, the long-term FAA reauthorization bill before Congress, and the airlines' perennially favorite activity of targeting GA as a source of its ills.

What aviation plans do you have for the new year? Here's to a safe, turbulent-free year of flying! T&T

Dianne White *is a 35-year aviation industry veteran and the past editor-in-chief of Twin & Turbine Magazine. She is the former executive director of Malibu/M-Class Owners & Pilots Association (now known as PMOPA) and has worked with numerous general aviation companies throughout her career as a consultant and executive. She is an active instrument & multi-engine-rated pilot and owns several aircraft.*

Editor's Pics

Photos & Story
by Lance Phillips

The steeply raked windshield.

Piaggio elected to turn the big PT6A-66Bs around backward.

I don't think I am unique in holding the Piaggio Avanti P.180 in a place of high regard. There also seems to be just a little mystery around it. Operators measure speeds in Mach numbers, it has a very accommodating and quiet interior, and it is one of the most efficient twin-turboprops ever to fly. And didn't Enzo Ferrari's son have a stake in Piaggio?

Its fuselage looks like a low-drag airfoil, the steeply-raked windshield creating the front end of the cross-section. Although Gates Learjet had a part in its development, the cabin was closer to a mid-size jet than a small Lear. The first few Avantis were even manufactured in Wichita near Lear and shipped to Italy for completion. Like its Learjet cousins, the Avanti is fast. The Avanti's website proclaims a maximum speed of 402 knots at FL310 and ISA, and right next to the max speed, Avanti lists an MMO of .70. That's 70% of the speed of sound–in a turboprop.

The sleek design is deceiving. The fastest twin-turboprop around is also one of the most comfortable. The cabin is over six feet wide and five feet nine inches tall. Compare that to a King Air 360 at four and a half feet wide and four feet nine inches tall. The Avanti is not quite as long as the big King Air, but it accommodates an executive passenger list in more comfort–and that Italian style.

Avanti is powered by 2 Pratt & Whitney Canada PT6A-66B engines flat rated to 850 shp up to ISA+28. The King Air 360 uses Pratt's PT6A-60A, rated at 1,050 shp per side. But Avanti turns its engines backward, which actually makes sense. By rotating the big Hartzell props to the rear, along with the exhaust, Piaggio substantially lowers the noise levels inside the cabin.

Faster, more comfortable, and more efficient. The Avanti is an amazing machine that has encountered obstacles throughout its development and manufacturing life cycle. Ferrari came in to help Piaggio Aero but then sold his interest to a potential Formula One sponsor. And it continues to face headwinds. We can only hope that this class-leading design forges ahead.

A few years ago, in Tulsa, Oklahoma, with my 90s-vintage Contax G1 in hand, I came across a beautiful Avanti. The Contax G1 was a marvel all on its own. Contax, an old German camera maker, had sold the rights to the name to Kyocera in Japan. And like the Contax of old, it also partnered with Zeiss optics for the detachable lens G system (which later consisted of the G2).

The G1 is unique for lots of reasons–it's a rangefinder that uses a now obsolete autofocus system. Although obsolete compared to the unreal autofocus systems today, I think it's just fine and gets the job done for film photography. The G1 also includes auto film loading, auto rewind, and auto advance. Everything auto. Even the film speed is automatically read by the camera, so the user doesn't have to set an ISO speed. It was a marvel of technology in the 90s, and the Zeiss lenses made specifically for the G system cameras are still considered some of the best made ever. And it was just a beautiful design, like the Avanti. T&T


The front of the Contax G1


The Contax G1 from the side


The Contax G1 top view

Instrument Departures

by **Ed Verville**

Approach to Rifle, CO

Whether I am doing an FAA Instrument Checkride, CFI-Instrument Airplane, 61.58, 135.293, 135.297, or a 121.141 proficiency check, I see pilots struggle with Standard Instrument Departures (SIDs) and Obstacle Departure Procedures (ODPs). The standard instrument departure is based on a minimum climb gradient of 200 feet per nautical mile (NM). However, when a SID or an ODP shows a minimum climb gradient of, say, 310 feet per NM, I ask the student if that is higher or lower than the standard climb gradient. I have been dismayed that nearly half of the responses are wrong. So, I thought we should take a closer look at this topic. This subject gets even more confusing when we discuss One Engine Inoperative (OEI) or engine out procedures.

Standard Instrument Procedures

Standard Terminal Instrument Procedures (TERPS) typically assume a climb gradient of 200 feet per nautical mile (unless a greater climb gradient is specified). This means that for every one NM (6076 feet) the airplane moves forward horizontally, it needs to climb 200 feet vertically. During development, departure procedures first look for an obstacle clearance based on a 40:1 ratio. This is about one foot of obstacle rise for every forty feet of horizontal distance or the length of a school bus. At mile one, the highest obstacle can be 152 feet. Then, the FAA TERPS adds 48 ft/NM to come up with the standard climb gradient of 200 ft/NM. At two nautical miles horizontal distance, the highest obstacle may be 304 feet (adding another 152 feet to the obstacle height for each NM of horizontal distance)

and another 48 feet for obstacle clearance. Straight-out obstacle clearance is provided within 500 feet of each side of the runway centerline at the departure end of the runway (DER), then spreads out to 15 degrees. The standard departure is designed to ensure required obstacle clearance to a minimum of 1000 feet in non-mountainous areas and 2000 feet in mountainous areas. The procedure is also based on the airplane crossing the departure end of the runway (DER) by at least 35 feet and climbing to 400 feet above the DER elevation before making any turns. Chapter One of the FAA Instrument Procedures Handbook is an excellent resource for studying this topic.

Clearing terrain after departure

Low, Close-in Obstacles

Of course, there are exceptions to most rules, including standard climb gradients. TERPS does not provide the standard obstacle clearance for what they call "low, close-in obstacles." These are obstacles within one NM of the departure end of the runway (DER) and are less than 200 feet above the DER elevation. This is to prevent publishing excessive climb gradients for these low, close-in obstacles. These obstacles are noted in the departure procedures, so the pilot may identify and avoid them. These are the multitude of entries titled "TAKEOFF OBSTACLE NOTES" that are listed in the Departure or Takeoff Minimums/ Obstacle Departure Procedures area of the charts. These "low, close-in obstacles" also have consequences to approach minimums, but we will save that for another time.

Pilots can avoid these obstacles by 1. increasing weather minimums to "see and avoid" and maneuver around them; 2. incorporating a greater climb gradient to cross above the obstacles; 3. following a specific departure route to avoid the obstacles.

So, what happens if an obstacle penetrates the 40:1 ratio or is higher vertically than the 152 feet allowed for each nautical mile?

Here are six methods to comply with a SID or ODP.

1. Standard Climb Gradient 200 ft/NM
2. Non-standard Climb Gradient-gradient more than 200 ft/NM
3. Non-standard weather minimums-i.e., 1200-3
4. RTRL-Reduced Takeoff Runway Length
5. VCOA-Visual Climb Over Airport to the en route structure
6. Procedure/Route

Here are some examples of how to comply.

1. Most departure procedures apply the standard climb gradient requirement of 200 feet/NM. The FAA only assesses the need for an ODP at airports with an instrument approach procedure.
2. If an obstacle penetrates the standard climb gradient, TERPS can just require a steeper climb gradient to clear the obstacle. The THERMAL SIX DEPARTURE for Runway 13R at Palm Springs International (KPSP) requires a minimum climb gradient of 422 feet per NM to 2300 feet (MSL). This is a little more than twice the normal required climb gradient of 200 feet/NM. The difficult part is determining if your airplane can maintain that rate of climb by analyzing the AFM performance charts and converting the required climb in feet per nautical miles to feet per minute (FPM). Jeppesen makes it easy by printing a table on the chart of their departure procedures (SIDs) that show the required vertical speed based on the required climb gradient and ground speed (GS) (Table indicates 1055 PFM for 150 kt Ground Speed). For FAA SIDs and ODPs, you will have to look at the FAA Rate of Climb/Descent Table, which is located on the last page of the Digital Terminal Procedures Supplement (Must interpret the table indications between 1000 and 1130 FPM). Another way is to do some simple math. GS x feet per NM divided by 60 = FPM. (150 x 422 = 63,300 divided by 60 = 1,055 FPM). It becomes much more difficult with steep climb gradients to a higher altitude, such as the Truckee Tahoe Airport (KTRK) TRUCK FIVE Departure from Runway 29 that requires a climb to 11500 feet with a climb gradient of 500 FT/NM. For "low, close-in obstacles" with Jeppesen, you will have to look at another page, "TAKEOFF OBSTACLE NOTES" (KPSP pg. 10-3OBA1).

Takeoff from St. Maarten

The FAA "low, close-in obstacles" are referenced with the ODPs in the "TAKEOFF MINIMUMS, (OBSTACLE) DEPARTURE PROCEDURES, AND DIVERSE VECTOR AREA (RADAR VECTORS)" indicated with a non-standard takeoff negative "T".

3. Weather minimums can be increased to see and avoid obstacles while climbing in visual conditions. This can be seen on the Jeppesen Chart No. 10-9A (KPSP). The Take-Off & Obstacle Departure Procedure for Runway 13R at KPSP indicates that you may "Climb in Visual Conditions" using standard climb gradients if the Ceiling is 5900 feet and the visibility is 3 SM (5900-3). The FAA chart indicates the same 5900-3 in the "Takeoff Minimums, (Obstacle) Departure Procedures, and Diverse Vector Area (Radar Vectors) on page L20. This section is also highlighted by the negative "T." By the way, Diverse Vector Area means random vector or in any direction. (A Diverse Vector Area (DVA) has been surveyed by the FAA and meets all ODP criteria for departures, obstacles and terrain sufficient to allow the controller to issue radar vectors within the coverage of the DVA. They also allow for radar vectors below the controller's normal Minimum Vectoring Altitude (MVA)).
4. RTRL-Reduced Takeoff Runway Length. In our example at Arkadelphia, Arkansas (KADF), takeoff notes for Runway 4 state: "Alternatively, with standard take-off minimums and a normal 200 feet/NM climb gradient, take-off must occur no later than 1900 feet. prior to the departure end of the runway." In this example, if we start our climb early and are well above the normal minimum of 35 feet above the departure end of the runway, the runway provides additional obstacle clearance. We do not need to comply with the increased climb gradient of 237 feet/NM to 400 feet.
5. VCOA-Visual Climb Over Airport to the enroute structure. You must obtain ATC approval or advise ATC at non-towered fields. Circle over the airport and avoid the obstacles visually until you get to the enroute segment. At Reno Tahoe International (KRNO), the SPARKS 1 OBSTACLE DEPARTURE for all North and South runways requires a 3200-foot ceiling and 3-mile visibility for a Visual Climb Over Airport. Be advised that the 3200 feet is AGL (not MSL), or the ceiling would be below the airport elevation of 4415 feet.
6. Procedure/Route. A route or heading to avoid the obstacles is a common course of action to comply with a SID or ODP. Boyne Falls, MI/Boyne Mountain Airport (KBFA) states that for runway 17, you need to climb, heading 175 degrees to 1400 feet, before proceeding on course. This is, of course, so you do not fly into the mountain. The procedure may be a simple heading like at Boyne Falls or much more detailed such as at Aspen, Colorado (KASE) runway 35, LINDZ 9 Departure that has a much more detailed route, altitude restrictions, and a 465 feet/NM climb gradient to 10,000 feet.

The word "Standard" or "STD" by itself is usually a reference to the standard takeoff minimums requirements. They are referencing the required visibility only. These are applicable to Part 121 and 135 operations but do not apply to Part 91 operations. The standard requirement for airplanes with two engines or less is 1 SM. The standard requirement for operations with three engines or more is ½ SM. Part 91 pilots are allowed to assume more risk, so the requirements do not apply to them. Now, we have all seen airliners take off with much less visibility than these. Operation Specifications allow Part 121 and 135 operators to have lowered minimums if trained and approved by the FAA. Most operators train to 500 RVR, but only on long runways with full lighting systems, including centerline lights. If a visibility limitation is listed in other areas, such as 3 SM for a VCOA, it becomes a limitation to Part 91 operators as well as commercial operators (parts 121 and 135).

SIDs need to be issued by ATC to fly them. You may not fly a SID without a clearance. ODPs are not issued by ATC except in some cases for traffic separation. It is helpful to ATC if you advise them that you will be flying an ODP. It will also be very helpful to you by guaranteeing you terrain and obstacle avoidance, something most pilots are highly fond of.

Some Gotchas

The RUUDY SIX RNAV Departure at Teterboro, NJ (KTEB) for Runway 24 indicates a top altitude of 2000 feet. However, the plan view and the notes both indicate a mandatory altitude of 1500 feet to cross WENTZ Intersection and then resume the climb to 2000 feet after passing WENTZ Intersection. Many pilots have busted this altitude

by setting 2000 feet, hand flying, or just not paying detailed attention to the quick level-off required for this departure.

The SQUAT FIVE RNAV Departure at Rifle Garfield Airport in Rifle, CO (KRIL) for Runway 26 directs you to fly 26 NM down the valley toward the Southwest to SQUAT Intersection. This SID is also listed as an ODP. The ODP for Runway 26 states to "use SQUAT DEPARTURE." I had two clients/jet student pilots who received an FAA violation for departing from their planned flight. There is not a control tower at KRIL, so the pilots took off with a clearance void time. They advised Denver Center that they were flying the SQUAT FIVE Departure. ATC said "OK", so this departure procedure became part of the crew's most recent clearance. (There were likely more words, but I do not have the tapes). When the crew was at a safe altitude, but not to SQUAT Intersection, they made a turn to the East (Red Table/DBL VOR) as that was the direction of their destination. Remember to let ATC know before deviating from a flight plan, even if it was not your originally filed flight plan.

In our third example, a crew was flying out of Denver, CO (KDEN) and cleared from Runway 16R with a "Climb Via" the EEONS EIGHT RNAV Departure. The top altitude is listed as FL230, so the pilots set this number into the airplane's altitude selector for the autopilot. The departure has you cross GISTT Intersection at or above 7000 feet, but it next states to cross KIDNG Intersection at or below 10000 feet. My clients were new to the jet and not comfortable with the use of the "new to them" VNAV button on the autopilot's flight control panel. So, they used the Vertical Speed (VS) button to climb and busted the altitude restriction of 10000 feet at KIDNG Intersection by several thousand feet. They could have set 10000 feet in the altitude selector until passing KIDNG Intersection.

I will end this article by quoting a paragraph from the FAA's Instrument Procedures Handbook pg. 1-43 that ends with a strong statement:

When planning for a departure, pilots should:

- Consider the types of terrain and other obstructions in the vicinity of the airport.
- Determine if obstacle clearance can be maintained visually or if you need to make use of a DP.
- Determine if an ODP or SID is available for the departure airport.
- Determine what actions allow for a safe departure out of an airport that does not have any type of DPs.
- By simply complying with DPs in their entirety as published, obstacle clearance is guaranteed! T&T

Ed Verville *is an experienced FAA instructor and examiner for business jet pilots and aircrew programs. He has 15,000 flight hours in more than 100 different makes and models and holds type ratings in the Bombardier CL-65, CL-30, CL-604, and Boeing 747. Ed has been instructing RNP-AR Approaches for the past three years.*

The Pilatus lineup of PC-12s and PC-24s

Pilatus Owners & Pilots Association

by **Grant Boyd**

The Pilatus Owners & Pilots Association (POPA) was founded in 1996 to help educate Pilatus owners and pilots on their aircraft and to ensure the safety of the fleet. And just as the installed base of Pilatus aircraft has grown, the group has, too, over the last 27 years. Now, POPA's membership consists of 700 unique aircraft serials, including more than 50 PC-24s.

The organization has three employees: an executive director (Laura Mason), a marketing director, and a convention director. POPA's eight-member board has re-elections every two years, and members can serve up to eight years in total.

Paul Bell, the board's president, has been a member of POPA since 2012, a year after he purchased his first Pilatus from the factory. Bell has been a member of the board for five years and now owns a PC-12 NGX. When asked about the organization's biggest accomplishments during his tenure, he points to one of POPA's main focuses – safety.

"The overwhelming top priority is safety. We take a lot of pride in the fact that the platform itself, which has forever been the PC-12 and, more recently, the PC-24, is safe. For example, the accident rate in the PC-12 is lower than a lot of comparable platforms. We think that's a combination of the great airplane and, more importantly, the seriousness of the pro pilot and owner-pilot community that flies these aircraft. And POPA itself is a fantastic resource for helping drive safety in the fleet."

The increased number of accident-free operations, he contended, is enabled by an enthusiastic membership base that's willing to get together and be introspective about their flying abilities. Each year, the organization hosts a two-day long conference that engages members through training, insightful speakers, and presentations from industry partners. This year, the 28th Annual Operations & Safety Conference is planned for June 5th through the 7th at The Broadmoor in Colorado Springs, Colorado.

The emphasis on safety occurs outside the walls of the convention center, as well. POPA offers a unique training offering tailored for transitioning pilots.

"We do things to encourage our members to train more than is required, especially in the simulators, by providing a very significant discount for FlightSafety International training and discounts for SIMCOM as well," Bell began. "The TPPI (Transitioning Pilatus Pilot Initiative) is designed for new owners and pilots transitioning to the PC-12. If [they have] less than 150 hours in type, we will cover the cost of an additional course through FlightSafety. Additionally, our discounts for training with SIMCOM and Aviation Performance Solutions (LOC-I courses) are all beneficial to our members," Mason added.

In addition to the convention and tailored training recommendations, POPA has a quarterly published magazine, as well as a member forum. This chat board is integral in keeping members active throughout the year and is a breeding ground for productive discussion.

"The forum is our most dynamic and ongoing membership benefit. The way we engage with the community, and they engage with each other, is also a fantastic place not only to pick up ideas, stories, and information that will help make you a safer pilot but also just tips and tricks for operating the plane and saving money here and there," Bell said.

Some recent highlights in the forum include maintenance issues people are dealing with, correct procedures for international flights (flight plan filing, border controls, etc.), debriefing accident reports, a member's adventurous flight, including one to the North Pole, tips on getting insurance coverage, and recommendations on airport and FBOs to use when flying to a new area, such as Alaska.

In addition to the forum, in-person networking opportunities with other owner pilots are a key benefit of the group. Speaking with fellow Pilatus aviators provides a natu-

Members greet each other at the conference

Paul Bell speaks to the members

The annual conference attracts many vendors


OEMs and suppliers are present for the conference

> The forum is our most dynamic and ongoing membership benefit." The way we engage with the community, and they engage with each other, is also a fantastic place not only to pick up ideas, stories, and information that will help make you a safer pilot but also just tips and tricks for operating the plane and saving money here and there."
>
> — Paul Bell

Executive Director Laura Mason interacts with the board

> Board members regularly get requests to speak with prospective owners, messages that get farmed out to us based on the specific type of airplane that they're interested in."

ral sounding board for owner pilots, and these relationships pay dividends, the duo stated.

"This is especially important for those of us who fly single pilot so that we don't stay isolated and cut off from the information flow. Actually, many of us, if not most of us who are owner pilots, fly single pilot. If you're a pro pilot or you fly with someone else in the cockpit, you're always interacting with others, and you're picking up information that way. For those of us who fly single-pilot, this community is the place where you can learn and swap stories but also just find like-minded men and women. I find that at each of these conferences, I meet new people that I want to stay in touch with. It's somebody else that I can text or call up and ask a question or occasionally end up in the same place and meet up."

POPA is useful not only for current owners and pilots of Pilatus aircraft but prospective ones as well. The organization's website has a dedicated 'Buyers Info' tab, which contains resources related to operational costs, model variants, resale value, and much more.

"We are very active in helping out people who are considering buying a Pilatus aircraft. We have a place on the website where people can go, even if they are not a member yet. And there's a place you can go in and say that you are interested in talking to a member and picking their brain," he said.

"Board members regularly get requests to speak with prospective owners, messages that get farmed out to us based on the specific type of airplane that they're interested in. We have PC-12 legacy pilots, NG, NGX, and PC-24 pilots all involved in the board. Whenever we get a request like that, we always reach out to them and answer questions any way we can to be helpful."

The organization's impact is amplified through its relationship with the OEM. Mason explained that this symbiotic relationship dates back to POPA's founding.

"We have the best relationship with our manufacturer. Pilatus representatives have been here since day one and continue to serve on our board as advisors. We, in turn, have a direct line of communication with them for our members. We also have built up great relationships with many of the equipment manufacturers on the aircraft."

Bell agreed, providing additional detail surrounding how his relationship with the airframes has made him a more informed owner.

"We have a very tight relationship with Pilatus that is best manifested at the annual conference because pretty much the entire senior executive team comes regularly. So even when I was not a board member, I got to meet them, talk with them, hang out over dinner, and ask questions. So, there's that kind of personal connection that they invest in. And we really value that."

He continued, "If people have questions about, well, what service center should I go to? Or. You know, what's the most cost-effective way to get something done? Do you have a reference for somebody? Who should I go to if I'm moving my airplane to a different region? All those kinds of things come from having personal contact with Pilatus and with the team that shows up [to events]. They also get on the forum, interact with people, and answer their questions there as needed. They are a great asset to our members." 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.*

TWIN & TURBINE

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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
186	BARON B60
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
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

Mastery of Flight
When Would You...?

by **Thomas P. Turner**

Flying a twin, you have a lot of capabilities that your friends in single-engine airplanes do not have. You also have a lot more choices to make. Most of the additional options are a direct result of having that second engine. Let's take a look at some of the unique options presented to the multiengine pilot and when you might actually use them.

Precautionary shutdown

One option available to the pilot of a twin that is not usually considered an alternative for the single-engine flyer is a precautionary shutdown. A precautionary shutdown means just that—shutting one of the engines down before it might fail. You might do this for one of two reasons:

1. To prevent or minimize damage to an engine as a result of indications that suggest additional damage may occur, and/or
2. To make the engine failure happen on your terms instead of just as you're turning inbound on the approach or entering the traffic pattern.

Personally, I think reason #2 is at least as important as the first reason, at least from a safety standpoint.

So, when would you perform a precautionary shutdown? The most likely reason is a loss of oil pressure combined with an increase in oil temperature (which confirms the oil loss), especially if there is a visible oil leak on the cowling of the engine in question. Whereas in a single-engine airplane, similar indications would suggest reducing power, staying high (for greater glide radius if the engine seizes) and aiming for the nearest suitable airport; in the twin, you can shut down the ailing engine, transition to single-engine flight, then fly an almost-normal descent, approach and landing on one engine at the nearest good option...including flight to an airport with better weather within the one-engine range of the fuel left on board if conditions at closer airports aren't good.

Other possibilities include a surging propeller, a propeller overspeed, or a severe vibration that suggests a propeller problem that could quickly lead to blade separation. Vibration could also be the result of a mechanical

failure of the engine itself or an engine mount issue, with the possibility the vibration could tear the engine off its mounts. A strong vibration might also break hoses or fuel lines and lead to a fire. So, any wild vibration of a propeller or engine is grounds for a precautionary shutdown. You certainly would not want to land trying to manage this vibration when it could impair control or suddenly develop into a catastrophic condition close to the ground.

The condition need not be dramatic for you to at least consider a precautionary shutdown. If something just isn't working right with an engine or propeller, you might decide to shut it down and feather the propeller to prevent damage or at least additional damage. This is less obvious than the other scenarios and may open you up to criticism if it turns out the condition wasn't as bad as you thought. But don't listen to the nay-sayers. It may be hard to determine exactly how bad something is in the air. It's always better to troubleshoot on the ground, so a precautionary engine shutdown is an option.

So, oil loss, overspeed, vibration, or something else prompts you to perform a precautionary shutdown. Just perform the Precautionary Engine Shutdown checklist, right? Except many Airplane Flight Manuals or Pilot's Operating Handbooks (AFMs/POHs) do not provide one. We can, however, co-opt the Engine Fire in Flight checklist for this purpose. The Beech Baron 58 Engine Fire in Flight checklist, for example, reads:

In Flight

Shut down the affected engine according to the following procedure and land immediately. Follow the applicable single-engine procedures in this section.

1. Fuel Selector Valve – OFF
2. Mixture Control – IDLE CUTOFF
3. Propeller – FEATHER
4. Fuel boost pump – OFF
5. Magneto/Start Switch – OFF
6. Alternator Switch – OFF

If all you do from memory is to shut off the fuel selector, pull the mixture control and feather the propeller (being very careful to pull the correct prop handle), you can transition to and trim for single-engine flight, then reference the checklist to "clean up" by performing the remaining checklist steps.

Air Start

On the other end of the engine spectrum, from an inflight precautionary shutdown, is an air start. That is, taking an engine you shut down for some reason (or that shut down on its own) and firing it back up. For that, most AFMs/POHs do have a checklist in the Emergency Procedures section. For our example Baron 58, this checklist directs:

AIR START

Caution: The pilot should determine the reason for engine failure before attempting a restart.

1. Fuel Selector Valve – ON
2. Throttle – SET approximately ¼ travel
3. Mixture Control – FULL RICH
4. Fuel Boost Pump – ON
5. Magnetos – CHECK ON
6. Propeller:

WITH UNFEATHERING ACCUMULATORS

a. Move propeller control forward of feathering detent until engine obtains 600 rpm; then back to detent to avoid overspeeding. Use starter momentarily if necessary to accomplish unfeathering.

b. If propeller does not unfeather or engine does not turn, proceed to WITHOUT UNFEATHERING A CCUMULATORS procedure.

WITHOUT UNFEATHERING ACCUMULATORS

a. Move propeller control to full decrease rpm.

b. Engage Starter to accomplish unfeathering.

c. If engine fails to run, clear engine by allowing it to windmill with mixture in IDLE CUT-OFF. When engine fires, advance mixture to FULL RICH.

7. When Engine Starts – ADJUST THROTTLE, PROPELLER and MIXTURE CONTROLS
8. Fuel Boost Pump – OFF (when reliable power has been regained)
9. Alternator Switch – ON
10. Oil Pressure - CHECK
11. Warm Up Engine (approximately 1500 rpm and 15 in. Hg)
12. Set power as required and trim.

That's a fairly complex procedure. The good news is that none of it must be done from memory. If you're performing an air start, you're already under control in single-engine flight. When you're ready, pull out the checklist, review it before actually performing checklist steps, and then read a step and do a step until the engine has restarted.

So when would you perform an air start? The key is in that caution at the top of the checklist: only if you know why the engine was shut down in the first place. More importantly, only if you know the engine should start back up and run properly.

This means you would only perform an air start if you had shut the engine down yourself for something other than a known or suspected mechanical reason. In

practical terms, the air start is only really done after a practice engine shutdown for training. You might come up with some unusual precautionary shutdown or engine failure in flight scenario that can be rectified in flight, such as:

- You ran an auxiliary tank dry in an airplane with independently selectable aux tanks, and when the engine quit, you pressed rapidly through the engine failure checklist through shutdown and feathering—then remembered there was fuel in that wing's main tank. So, you may try to restart the engine with that tank selected.
- You encounter airframe ice, and an engine's induction system is blocked so that even the alternate induction air source is unable to run the engine. After entering warmer air that melts the ice, you restart the engine.

Even in these scenarios, you might think twice before attempting a restart because there is a hazard. To prevent propeller feathering when you shut down at the end of a flight, most propellers have a set of anti-feather locking pins. These engage and prevent propeller feathering during a normal shutdown with no air load on the propellers. For the pins to disengage, the propeller must usually be spinning more than about 600-800 rpm. If you try an air start but the attempt is unsuccessful, the prop may come out of feather but not spin fast enough to allow you to re-feather the propeller. You'd be in a far worse situation than if you had kept the prop feathered and used your training and proficiency to land on one engine.

About the only time you'd perform the Air Start procedure (in my opinion) is after shutting down a perfectly good engine for training. Even then there's the chance it might not restart, which is why I suggest doing training shutdowns at a good altitude close to a runway suitable for a single-engine landing.

Crossfeed

Most multiengine airplanes have fuel crossfeed lines, so the engine on the left wing may burn fuel from the right fuel tanks and vice versa. Crossfeed cannot transfer fuel from one wing's tanks to the other's; it can only direct fuel across the centerline to the engine on the other side. The purpose of crossfeeding is to extend the airplane's range on one engine and to balance the airplane laterally when only one powerplant is burning off fuel.

In every twin AFM/POH I've seen, an airframe limitation (in Section II of the AFM/POH) tells us something to this effect: "The fuel crossfeed system is to be used during emergency conditions in level flight only." The level flight stipulation is the important part; fuel unporting may occur in some flight attitudes while in crossfeed, and you wouldn't want one or both engines to quit when you still have fuel available.

For our example Baron 58, the ONE ENGINE INOPERATIVE OPERATION ON CROSSFEED checklist starts with a note repeating that limitation, then says:

Left engine inoperative

1. Right Fuel Boost Pump – LOW
2. Left Fuel Selector – OFF
3. Right Fuel Selector – CROSSFEED
4. Right Fuel Boost Pump – LOW or OFF as required

There is a similar checklist for when the right engine is inoperative.

Often, the AFM/POH gives us a checklist for getting the engine into crossfeed, but it does not provide guidance for getting out of it. I teach the exit by starting at the bottom of the checklist for the inoperative engine and working your way back up in reverse order, i.e., starting at step 4, then steps 3, 2, and 1, turning the boost pump on LOW at the beginning and OFF at the end. Talk to type-experienced instructors, or look at the AFM/POH for the twin you fly and see what works best in that type. The good news is that, whether entering or exiting crossfeed, none of this is so time-critical that you must do anything from memory. Pull out the checklist, review what you're going to do before you do it, then perform the procedure step by step.

So when would you use crossfeed? For almost all of us, almost never. If you lose an engine anywhere in the continental United States, there will almost always be a suitable airport within one-engine range using that engine's normal main fuel tank. Pilots flying in the Australian Outback or someone ferrying a twin across the ocean or remote parts of Africa or Asia, Canada, Alaska, or South America may have different circumstances and a need to extend the airplane's range or balance the fuel load before landing. It's possible even in the mainland U.S., you were at just a bit more than an hour of fuel remaining (total for both sides) and just about to land when an engine quit, and to get to better weather, you decide to divert to a nearby airport. In this case, you might choose to operate in crossfeed for a short while to avoid a very low fuel level on the main tank for descent and landing. But that seems much less likely, at least to me.

If you do use crossfeed, use it in level flight. Before you begin descent, exit crossfeed and use the main tank on the same side as the running engine to avoid unporting and interruption of fuel flow to the one engine that is still earning its keep. All this, of course, unless otherwise directed in the AFM/POH for the airplane you fly.

Flying a multiengine airplane gives you options unavailable to the single-engine pilot. It also requires you to consider whether, when and how to execute those options. 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.*

Wally Obermeyer

Wally Obermeyer with his PC-12 at the time of purchase

PHOTOS COURTESY OF WALLY OBERMEYER

Wally Obermeyer is an ATP-rated pilot and Pilatus owner from Aspen, Colorado, who has logged more than 4,000 hours in the cockpit. Obermeyer is the president of Obermeyer Wood Investment Council, an investment management firm with roughly two billion dollars under management. He is also vice-chairman of the Obermeyer skiwear company his 104-year-old father, Klaus, founded in 1947.

Obermeyer presently flies a 2011 PC-12 NG for both business and leisure. His busy schedule takes him across the state of Colorado, as well as occasionally to each of the coasts – and as far as Eleuthera in the Bahamas. Considering the mix of short- and long-range missions, as well as varied payload needs and his love for Swiss culture, Obermeyer stated that the PC-12 is his dream airplane.

"With the Pilatus, I feel like I have arrived. Every time I approach the plane, even almost five years after

purchase, I'm just as happy as when I first got the keys. I am a happy camper," he stated.

Owning a PC-12 is the pinnacle of Obermeyer's aviation journey, which began in 1978. Just like the indelible mark that Klaus left on him in the business world, he has his dad to thank for his foray into the cockpit. As Obermeyer's business demands and mission profile changed, so did the aircraft he owned. Prior to purchasing his PC-12 in June of 2019, he had flown a TBM700, a Cessna 414 with a RAM VI conversion, and a Cessna P210.

"The TBM was a great machine, and I think it was a nice progression, too, from the 414. The TBM was also newer than my 1976 Cessna. You have more things that break as airplanes age, so the reliability of a newer plane makes a big difference. Also, the TBM was a game-changer with the increased speed, the reliability of its turbine power, the ability to go up to 28,000 feet and to have better de-ice systems."

Obermeyer contends that moving into the PC-12 was another big jump in his ownership journey.

"With the Pilatus, considerations for buying it over other aircraft or staying in the TBM 700 included the greater redundancy of the dual electrical systems and the dual FMS systems on the left and right side. It also has a bathroom, a wider cabin, and greater carrying capacity," he stated before noting that fuel capacity was another crucial consideration of his. Also helping to justify the higher price was the historically lower depreciation of the Pilatus versus TBMs.

"I remember a flight in the TBM out to northern California with bad weather. You really stress on the fuel planning. Well, how many missed approaches can you shoot in Napa and still make it back to Reno? It gets pretty tight. In the Pilatus, it's a piece of cake. I've gone from Tucson with three passengers to Jacksonville with no stops and an hour and a half of extra fuel. The airplane has amazing range."

Wally and Helen Obermeyer with the PC-12 at the time of purchase

Wally Obermeyer parked with his PC-12 in Omaha, which he visited for a Berkshire Hathaway meeting

“I feel blessed to live in the Rocky Mountains. It’s literally God’s country. Aspen is a beautiful area to get out and fly.”

Obermeyer said that his life would look significantly different if it weren't for aviation. Take, for example, two of his most frequent flights, one to the site of a long-time renewable energy project of his in southwestern Colorado and the other to the Obermeyer Wood satellite office in the state's capital city. Collectively, these route pairs make up more than 75% of the Coloradan's missions.

"I have a hydroelectric project in Durango that, in the summer, produces power for about 5,000 homes. And the drive from Aspen, just because it's so mountainous, is about six hours. Whereas when flying, you can cut that by 80% or more. It's about a 30-minute flight to Denver. The ability to get around more fluently is a huge thing for me."

Centennial Airport serves as a convenient second base not only for visiting his investment firm's second office in Cherry Creek but for training at FlightSafety as well.

"If airline pilots train twice a year, and they're flying many more hours than we are, it makes sense for us to continue training as much as possible. If a person is going to fly a high-performance plane, they will need to spend a lot of time to be safe in it. They should be spending a lot of time developing and maintaining a high level of competency," he prefaced.

"I endeavor to train two or three times a year. One time is always at FlightSafety, and I'm really lucky that they have a PC-12 NG simulator in Denver. I also like to do thorough in-aircraft training once a year, and I keep flashcards that I use to stay current with the numbers. It is amazing how those little things help."

He is keen to focus not only on the stick and rudder portion of flying but also on the systems of his aircraft – especially the avionics. Obermeyer contends that gaining an advanced understanding of the Honeywell Apex system has been beneficial for him as a PC-12 owner, as has flying with others and learning from them. He said that he aims to fly with pilots who have different skill sets and backgrounds. He recently flew with a local Part 135 PC-12 pilot on the way to a Berkshire Hathaway meeting in Omaha. He learned a lot during that flight, he said.

Obermeyer has recently joined the board of the Pilatus Owners & Pilots Association (POPA) and appreciates and respects the organization's focus on safety.

"One project that POPA is working on is creating a series of videos that are being shot within the simulator. They show a pilot under a particular emergency situation, a trim runaway, or some failure and response and demonstrate how we, as normal pilots, might (likely incorrectly) respond. The videos then show an instructor going through the same situation, discussing the common

Wally Obermeyer sharing his aviation passion with his grandson William, cleaning the windshield before a flight

mistakes and demonstrating the correct actions – per the emergency procedures and the POH."

"I am also a member of Pitkin County/Aspen Airport Safety Committee. I have learned a ton from the other members, sharing experiences with them. We are working on creating a website that gives people access to a variety of information that we believe will be helpful for pilots flying in and out of Aspen. A big issue is that because of the mountainous terrain, Aspen has steep approaches with multiple step-downs. We are encouraging the FAA and private designers to develop newer, more stabilized approaches into Aspen as well as

looking at some longer-term considerations that we think will add to ease and safety [flying into KASE]."

When not flying the PC-12, which he flies roughly 120 hours per year, Obermeyer can be found behind the yoke of a 1968 Cessna 180H with an IO-550 conversion. This aircraft provides the ability to see some of America's most stunning landscapes from a different vantage point.

"I feel blessed to live in the Rocky Mountains. It's literally God's country. Aspen is a beautiful area to get out and fly," he concluded. T&T

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

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Hot Air

"Now, what do we do?"

This phrase is not something you normally hear when about to take the active runway in a Citation M2.

From owner-pilot Larry King, it was something I heard numerous times on a cool August morning in Heber Valley, Utah. Through no fault of his own, Larry was being attacked by a swarm of hot air balloons. These magnificent creatures, with their thunderous gas burners and gondolas scraping along the wet grass, are a beautiful throwback from a previous time.

They do not, however, mix well on an active runway with a jet accelerating at over one hundred knots.

As we entered the taxiway at KHCR early that morning, several balloons were hovering a few hundred feet above runway 22.

"Which way should we go," Larry asked. "Well, they seem to be moving east, so let's try 22, and we will be past them before we rotate," I said. Heber Valley is an uncontrolled airport, so a phone call was needed to get a void time for our IFR departure clearance. Larry explained the situation to Salt Lake departure, and they seemed to understand our predicament.

As we reached the end of runway 22, two more balloons sprung up at the departure end of the runway. Now, we would be right in the middle of the floating dinosaurs as we lifted off the surface.

Another phone call to departure. Could we have five more minutes for our void time to allow the balloons to drift off the departure course? "I feel your pain," came the response, along with an approval to delay.

But in the calm morning winds, the balloons weren't going anywhere. Now, a departure off runway 4 was the better idea. Another call to ATC. Another clearance. Another taxi to the opposite runway.

And you guessed it, by the time we got to 4, the balloons had multiplied. The picture is a sample of what we were seeing. A Pheonom was on the approach. "Is somebody advising him about all these balloons," Larry asked departure.

Over Unicom, we heard, "I'll put some gas to this thing and drift up to five hundred feet so you can takeoff." It was a five-balloon circus. And colorful at that.

We taxied back to runway 22 with another call to departure. By now, he was becoming our close friend.

And suddenly, the skies opened, or closed. Anyway, we had a window of no balloons over the runway. Flight plan and V-speeds modified, we made a run for it. Or perhaps a roll for it.

As we departed the traffic area, we could hear the Phenom pilot asking where all the balloons were.

Everywhere was our answer. Everywhere.

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, David is the Director of Programs and Safety Education for the Citation Jet Pilot's Safety Foundation. You can contact David at* **davidmiller1@sbcglobal.net**.

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