Stabilized Non-Precision Approaches / Back in the Backcountry / Industry Insights Jim Irwin

TWIN & TURBINE

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

SEPTEMBER 2023 $3.95 US
VOLUME 27 NUMBER 9

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Photo Courtesy of Lance Phillips

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Editor's Briefing

by **Lance Phillips**

A World-Class Racing Event Like no Other

In the aviation world, September in northern Nevada has been known for something special for quite some time, National Championship Air Racing, or the Reno Air Races. At once, the event is a throwback to past eras and a showcase for the latest and greatest in the aviation industry. This month's cover feature pays homage to the race's home at Reno-Stead airport for almost 60 years.

I've had the pleasure to experience the races twice, once in 2011 and another in 2017, with a third coming this year.

The HawkerBeechcraft team at Reno in 2011. Our team photo was signed by brand ambassador, Robert "Hoot" Gibson, a Beechcraft pilot, Space Shuttle commander and Reno racer.

In addition to learning about and seeing the sights at Reno in this issue, Ed Verville teaches the importance of flying stabilized non-precision approaches.

The Irwin family of Fullerton, California, has provided aviators with specialty products for generations. We talk to the second-gen owner of Aircraft Spruce & Specialty Co., Jim Irwin, and learn about the third-generation preparing to take the reins in the future. Jim talks about what has made his family's business successful and tells us about the aircraft that have helped him get there.

Following on one of the historical Irwin family aircraft, I highlight a similar rarely discussed or seen plane. Editor's Pics looks into unique airplanes captured on film or digital sensors in sometimes unusual places. I found one of those rarities at a very high elevation a few years ago.

Finally, David Miller takes us through the decision-making process an aviator navigates after losing (selling) a much-loved aircraft.

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2017 Reno Air Races and the incredible Mooney M20 Acclaim Ultra.

As storms approached Reno-Stead in 2017, Strega and Voodoo were wisely taken to a hangar for the night.

The pit area for Merlin-powered P-51 Strega.

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Conducting a Stabilized Non-Precision Approach using CDFA

(Continuous Descent Final Approach)

by **Ed Verville**

Why do the airlines, 135 operators and the FAA use and recommend CDFA? Controlled Flight Into Terrain (CFIT) is one of the leading causes of fatal accidents, and an un-stabilized approach can lead to CFIT. Based on this, all major airlines and most Part 135 On Demand Operators use Continuous Descent Final Approach (CDFA) procedures for non-precision approaches rather than the old dive-and-drive method. It makes them safer. So, why not learn from this and do it in your privately flown aircraft as well?

This isn't something new, I was taught CDFA procedures at my first airline more than twenty years ago, but we still see accidents that might have been avoided using CDFA best practices. If you need just a little more motivation, the FAA recommends adopting CDFA as standard operating procedures for ALL operators in their Advisory Circular AC 120-108A.

In just one example, on August 14, 2013, an Airbus A300 was conducting a localizer-only approach (the glide slope was out of service) to Runway 18 at Birmingham, Alabama (KBHM). The airline's normal procedure is to use CDFA, but on this day, the crew mismanaged the final approach descent, set the vertical descent rate to 1500 fpm, switching to the dive-and-drive technique without briefing the change, and flew the airplane into the ground. (See NTSB Report AAR 1402 and the "video companion" for details).

A CDFA approach path might have more appropriately allowed the pilots of this aircraft to fly a continuous descent to minimums and then continue to a landing if the runway environment was in sight or execute a go-around and fly the missed approach needed instead of having a descent, a level-off, then re-establishing a descent if the runway environment were seen.

The main point is that a CDFA approach increases the probability of a stabilized approach. The FAA states that a "CDFA is a technique for flying the final approach segment of a non-precision approach as a continuous descent. The technique is consistent with stabilized approach procedures and has no level-off".

This definition also agrees with ICAO and the European Aviation Safety Agency (EASA), which has been a leader in using CDFA approaches for years. They even highlight this in their approach procedures when applicable. When reviewing the approach procedures for the VOR Rwy 36C Approach at EHAM/AMS (Amsterdam, Netherlands), you will see published DME altitudes for each mile on final approach and published "CDFA" minimums.

The advantages of CDFA include stabilized approach criteria, standardized procedures, improved situational awareness, reduced workload, improved fuel efficiency, reduced noise level, and safety. It also reduces the probability of infringement on obstacles, something even the least risk-averse pilot would agree is a good thing to avoid. Precision approaches provide vertical guidance and have a significantly better safety record, while non-precision approaches were originally designed without vertical guidance and sacrifice some of this safety margin. Flying a CDFA approach emulates some of the benefits of a precision approach and will provide a more stabilized descent.

The best part is that CDFA only requires what is necessary to fly the non-precision approach. Any FAR Part 91 operator may also adopt CDFA without any FAA approval process. Part 135 operators do not require FAA Operations Specifications for CDFA approval, but the procedure should be added to their manuals and training program.

Now, you may be thinking, how do I conduct a CDFA approach?

When flying a localizer, LDA, or back-course (LOC, LDA, or BC) approach, the pilots need to determine the vertical descent rate required for the approach from the table on the approach chart (Jeppesen Charts). (If you use U.S. Government Charts, you must determine the descent rate from the published Climb/Descent Table. You will then need to use Vertical Speed (VS) to descend. This sounds confusing if you have never done it, but I promise it is easy when you see how it works.

Let's look at an example.

To conduct an approach with a 3-degree glide path and an approach speed of 134 knots, look at the descent rate table and choose the next higher approach speed of 140 knots. Then observe that your target VS will be a descent rate of 743 fpm. You should be fully configured as you cross the Final Approach Fix (FAF). At the FAF, start your descent using VS. This should put you close to a 3-degree glide path, approximating an ILS Glide Slope. As you break out of the weather and see the runway or PAPI, you should make any necessary adjustments visually to your descent rate.

How you enter this in your avionics package might vary. If we considered the Rockwell Collins Proline 21, a pilot would select the lateral mode to "APPR mode" for navigation transfer from FMS to the localizer, then select NAV mode to prohibit capturing any glide slope. You would select "BC" for a Back-Course approach. For the

vertical mode, you would just need to select the vertical speed (VS) and adjust the descent rate.

You can do this for NDB or VOR approaches using the abovementioned procedures.

It's even easier if you have overlay options, such as in the Rockwell Collins Proline 21 avionics package, to fly an NDB or VOR approach. The system allows you to receive a computer-generated "Advisory Glide Path." This glide path provides the appearance of an RNAV LPV or RNAV LNAV/VNAV Glide Path but is advisory in nature. VOR and NDB approaches may be flown with the Flight Management System (FMS) if they can be selected from the FMS database. The advantages should be obvious with more stabilized approach guidance and a computer-generated advisory glide path.

CDFA procedures get even easier when flying GPS-based approaches such as an LNAV with an MDA.

The same procedures and calculations above certainly apply, but you may not even need to calculate these in some systems that depict a computer-generated "Advisory Glide Path." By selecting the Approach mode and the VNAV mode on the flight control panel, you will have vertical guidance as well as lateral guidance for the approach. Most modern GPS approach capable systems, such as the Proline 21 and the Garmin 5000, do this as a native function and facilitate easy implementation of CDFA approach benefits on GPS-based approaches that do not have LPV glide slopes.

While technically not a "precision approach," many modern avionics packages can also receive, depict, and operate LPV approaches. In approach terms, this is the latest and greatest addition to the RNAV approach category. The Localizer Performance with Vertical Guidance (LPV) approach generates a vertical Glide Path using a WAAS-generated glide path. This system provides a

Glide Path to a Decision Altitude (DA) and is considered "precision-like." They offer minimums comparable to traditional ILS minimums. This is possible due to some help from the Wide Area Augmentation System (WAAS) that improves the accuracy, integrity, and availability of the GPS signals. LPV minimums can be as low as 200 feet AGL, and 1800 RVR.

A couple of challenges to keep in mind.

Some approaches still have step-down fixes along their path.

The FAA cautions that pilots are still responsible for crossing any step-down fixes. If the FMS provides an advisory glide path and the step-down fix is in the database, the glide path should clear the step-down fix. But confirm with your avionics manufacturer to be sure.

Another is to learn the technique of "Predicted Monitoring." With a 3-degree glide path, the airplane will descend 300 feet per mile. The Pilot Monitoring (PM) should crosscheck the airplane altitude one mile before the step-down fix. If the airplane is 300 feet or more above the step-down altitude, and you are using the proper descent rate, the airplane will cross at or above the step-down fix altitude.

Oh, and this only applies if the approach path is straight. Pilots may only conduct a CDFA approach when it is a straight-in approach (no circling). Like any approach, you must also have a local altimeter setting.

This methodology only applies when the approach chart displays the descent angle and the glide path is within established restrictions. For example, the glide path angle for a category C airplane must be within 2.75 to 3.77 degrees. You cannot do this with a 2000fpm descent rate on a 6-degree glide path.

All right, enough details. The simple fact is that there is a reason that professional passenger-carrying operations such as airlines and Part 135 carriers have adopted CDFA procedures for their flight operations and that EASA and the FAA recommend adoption. Adding Continuous Descent Final Approach (CDFA) to your standard operating procedures will significantly reduce your chance of a Controlled Flight Into Terrain (CFIT) accident while conducting a non-precision approach. It's just safer to have a more stabilized approach. If you have questions, make them a part of your next recurrent training and figure out how to best implement them in your own flying. T&T

Ed Verville *is an experienced FAA instructor and examiner for business jet pilots and aircrew programs. He has more than 15,000 flight hours in 98 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.*


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| 01 |

Farewell to National Championship Air Racing in Reno

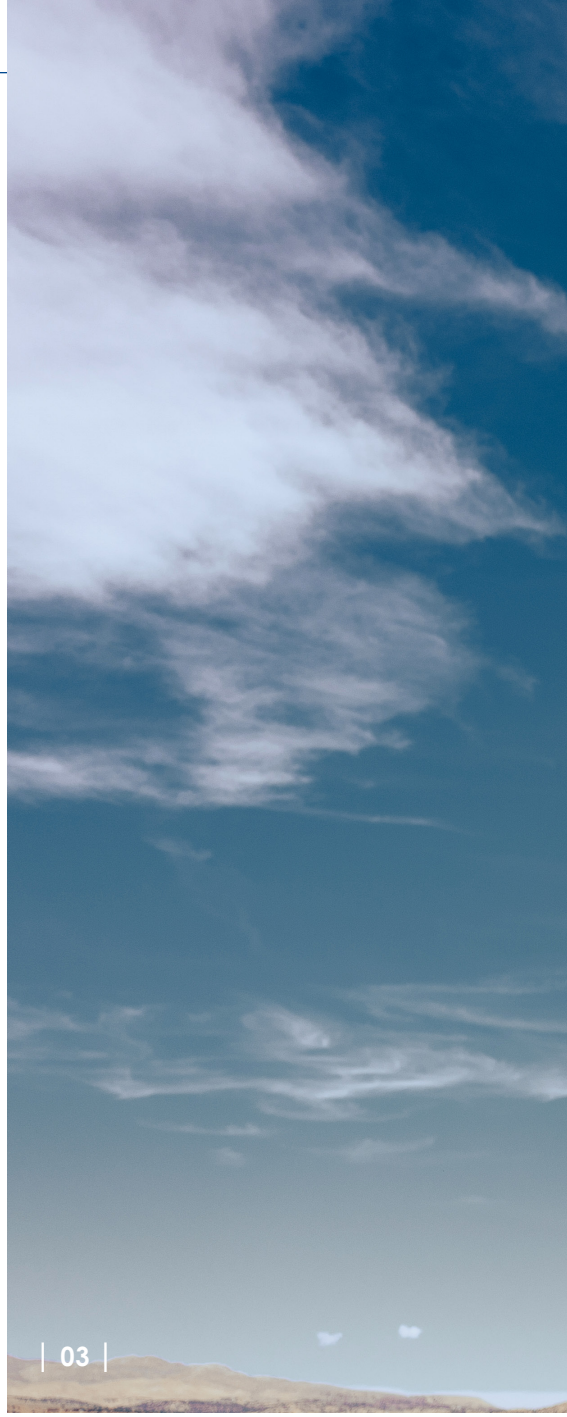
IN PICTURES

Photos and story by **Lance Phillips**

Based at Reno-Stead Airport for nearly 60 years, NationalChampionship Air Racing highlights some of the fastest racing on earth in several classes. T-6 Texans at over 200 mph, the Sport class at over 300 mph, the Formula 1 class, Jets, and the Earth-shattering Unlimited class.

The Unlimited class generally features stock or modified WWII fighters, with P-51 Mustangs, F-8F Bearcats and Hawker Sea Furies racing most often. In close formation, these speed demons often exceed 500 mph. It is an incredible experience to see and hear. And you cannot experience it anywhere else in the world. It is truly unique to the United States.

| 02 |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The National Championship Air Races is the last event of its kind, carrying on the tradition of the Cleveland Air Races of the 1920s, 30s, and 40s. In 1964, Bill Stead organized an air race near Reno, Nevada, and the Reno National Championship Air Races were born. In recent history, the event has attracted more than 1 million spectators and generated more than $750 million for the region's economy.

However, the Reno Air Races are now looking for a new home. After 2023, the National Championship Air Races will be moving. They're still determining where, but the organizers want the event to continue. The unique beauty of the Reno location will be hard to match, with its breathtaking desert mountains, skies exploding with color, and the roar of Merlin engines echoing throughout the valley.

In 2017, I had the opportunity of a lifetime to fly Mooney Aircraft's M20V Acclaim Ultra to Reno. I have to tell you all, landing at Reno-Stead was such an honor, one that will stay in my memory forever. During my stay in Reno at 2017's National Championship Air Races, I took some time to snap photos of the aircraft and scenery.

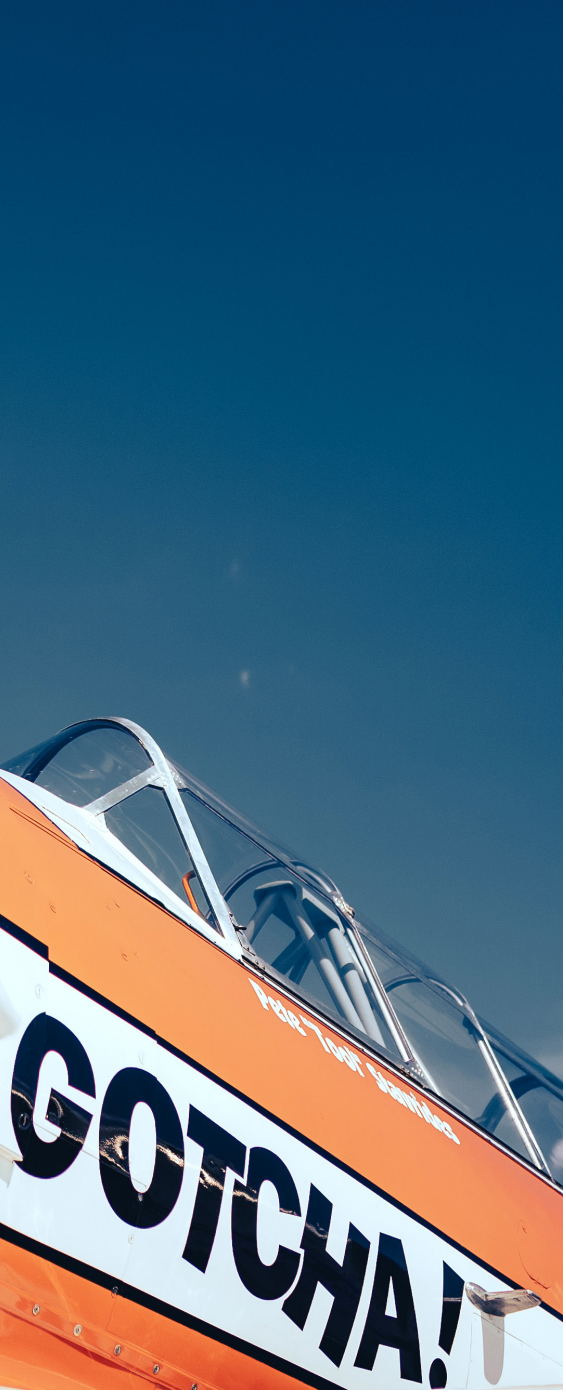
| 07 |

| **01** | At any time during the Air Races, you may find multiple aircraft on the tarmac. Here we see the cumulus clouds looming behind the mountains while high cirrus whip above. The Sea Furies and Mustangs on the time-honored tarmac at Reno Stead let the viewer know they're in for extreme excitement. That's not hyperbole.

| **02** | Rare Bear was a wreck; found, salvaged and restored by Lyle Shelton in 1969. Highly modified with a Wright R-3350 engine, new propeller and cowling, and canopy, this Grumman F8F Bearcat, originally called Able Cat at its first Reno Unlimited Class event, went on to win multiple class races at Reno and other locations throughout the years. Rare Bear holds the 3 km World Speed Record of 528.33 mph (850.26 km/h) set on August 21, 1989. It didn't race in 2017 when this photo was taken, but just being close to it was magical.

| **03** | Argonaut was built from a former Royal Canadian Navy Hawker Sea Fury fighter and has appeared regularly at the Reno Air Races since the 1990s, placing first in Unlimited Silver in 1997 and 2005.

| 09 |



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| 04 | A T-6 Texan watches as a racer flies by in a practice run. The views at Reno are stunning throughout each and every day. The cloud build-ups, the sunsets and the rare and beautiful racing aircraft will make the hair on the back of your neck stand.

| 05 | Sea Furies jockey for position amid the picturesque landscape.

| 06 | T-6 Texan pilots and technicians aren't overly serious. Texans have a little more bark than bite, but they're majestic, beautiful and smooth to watch whether racing or just sitting on the ramp.

| 07 | Gotcha! is a North American AT-6F first certified airworthy in 1957. The T-6 Class features racing between stock aircraft, including the original T-6 "Texan," the Canadian-built "Harvard," and the US Navy "SNJ" version aircraft. The fastest T-6 aircraft generally post speeds of 220 to 230 mph on the 5.06-mile course at Reno. Because the aircraft are all of the same type, the T-6 Class provides some of the most exciting racing at Reno, with an emphasis on strategy and pilot skill rather than raw horsepower.

| 12 |

| **08** | Voodoo in a crowd-pleasing high-g turn. This highly modified North American P-51 Mustang was the 2013, 2014 and 2016 Unlimited Class champion of the Reno Air Races. The pilot for these wins was Steven Hinton, Jr. The P-51D-25-NA (original s/n 44-73415) was built in 1944 by North American Aviation at Inglewood, California, for the United States Army. The aircraft was then transferred to the Royal Canadian Air Force as a Mustang IV with serial number 9289 in February 1951.

| **09** | My fire-breathing beast for a week. The Mooney M20V N240CV (the 240 referencing the max speed of 240 knots) Acclaim Ultra was one of the finest single-engine, high-performance aircraft I have flown. It's smooth, very fast, and handles like a Porsche. The G1000 NXi avionics package, with Mooney's unique data-entry keypad with physical keys, was a pleasure to use, especially on long flights. Making the approach and landing at Reno-Stead in the Mooney was a thrill of a lifetime.

| **10** | The Duchess of Dakota is a C-47 Skytrain operated by the Dakota Territory Air Museum at Minto, North Dakota. One of the C-47 pilots in WWII was Murray Lawler, who was born near Temvik, North Dakota, in 1921. On September 17, 1944, Lawler's C-47 delivered troops of the 82nd Airborne Division to a jump site near Groesbeek, Holland; and the next day towed Waco gliders filled with supplies to the same area. Lawler's original C-47, Duchess of Dakota, was destroyed after the war, but in 2004 a C-47, the one we see here, was bought and restored by Bob Odegaard of Kindred, North Dakota. In honor of Murray, this plane was painted like the original Duchess of Dakota and is now on display at the Dakota Territory Air Museum in Minot.

| **11** | One evening, prior to the races in 2017, I was walking around the flight line at Reno-Stead before heading to the hotel. There was a little party going on in one of the hangars, so my colleague and I poked our heads in to see what was going on. The folks inside invited us in. To our amazement, two of the most storied Reno racers were inside to avoid the anticipated weather that evening. We've already learned about Voodoo.

Strega is a highly modified P-51 Mustang, owned by Reno's legend Bill "Tiger" Destefani. The name of the airplane means witch in Italian. The aircraft's original operator was the Royal Australian Air Force (A68-679) from 1945 until 1948, the same year it was approved for disposal. Until 1981, the aircraft was on display at the Warbirds Aviation Museum in Mildura, Victoria, Australia. In 1980 Dave Zeuschel purchased and shipped it to the United States and rebuilt it as a racer. In 1983 the current owner Bill Destefani acquired the aircraft as N71FT Strega.

In 2017's Unlimited Class Gold Final event, Strega, flown by James Consalvi, edged longtime rival Steve Hinton Jr. in Voodoo, for the overall win.

| 12 | A scene like no other in the world. Where can you see a lineup including a Spitfire, a Corsair, a Mustang, a B-25, and a Grumman TBM Avenger? Probably nowhere other than Reno. Nothing more needs to be said.

| 13 | 232 September Fury is a highly modified Hawker Sea Fury. It was bought along with another partial airframe by the Sanders Family in November 1969. Frank Sanders restored the aircraft to airworthiness and raced in the California 1000 at Mojave in 1971. The aircraft would later be bought by Mike Brown and rebuilt with a Wright R-3350 engine.

| 14 | The B-25 Mitchell is such a historic and graceful aircraft. This one is part of the Texas Flying Legends fleet, called Betty's Dream. It's painted in honor of Captain Charles E. 'Pop' Rice, Jr. of the 345th BG Bats Outa Hell, assigned to Betty's Dream in June 1945. It flew at Reno quite a bit in 2017, and I am hoping to see it more this year.

This is just a little taste of the National Championship Air Races at Reno-Stead in Nevada. I don't know where the races will be held next, but I am certainly glad that I got to experience a part of it for several years.

Let me know about your Reno experiences over the years, and send some high-quality photos, too. I'd love to see them, especially since we won't see Reno's cinematic landscapes hosting the air races again. T&T

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| 14 |

Back in Time

by **Kevin Ware**

Flying B Ranch (12ID).

Pilots are very fortunate people. The airplanes we fly not only take us to places most never get to see, but they can also take us back in time.

For those of you following my stories over the past two years, I have been trying to return to a time when my flying was much simpler than the complex, turbine, high-altitude stuff I had been doing. My recent fight experience has involved single-engine airplanes, mostly VFR. Toward that end, I bought a Cessna 180, which I placed on amphibious floats, and I have since been flying it to places I never could land when operating flight-level capable turbines.

One of the areas I planned to visit in my new simplified flying life was backcountry Idaho, where, 30 years ago, I had flown into quite a bit in a Cessna 185 I owned at the time. The question, of course, was, to where exactly should I go back? That is a more complicated question than you might think because three decades ago, I had no problem camping out in a tent, sleeping on the cold, hard ground, not showering for a week, and eating out of cans for days. But now, somewhat older (hopefully wiser), I look for accommodations with more civilized amenities and comforts.

As I was considering this problem and wondering if I wanted to camp out again at Johnson Creek (a well-known Idaho backcountry airport) as I did years ago, I got an email from Gil Collver, a friend, Turbo Commander, owner and avid Twin & Turbine reader, who said I

My 180K on amphibious floats.


Flying B Ranch (12ID) airport terminal, signage and runway.


Ranch and airstrip a mile below on downwind.

Announce whether you are landing upstream or downstream.

really should fly into the Flying B Ranch (12ID). He told me his two sons, Chad and Kelly, and a group of grandkids would be staying there for a week in August, and we could join them as their guests. He added that the Flying B Ranch has a dedicated chef, horse wranglers, cabins with indoor plumbing, and electricity from a private hydroelectric plant to make the invitation more attractive. But, with no cell phone or internet service and no road access, everything has to be flown in. Now, that kind of 'backcountry' airport is precisely what I had in mind, but I couldn't fully admit it. How could I turn the offer down?

After reading Gil's email, I looked up 12ID and discovered the "Flying B" is about 50 NM east of McCall, Idaho, in the Frank Church wilderness. It has a 2,100-foot grass airstrip at an elevation of 3,647 feet, running alongside the Middle Fork of the Salmon River. The place was settled in the late 1800s as a cattle ranch named after a locally famous Idaho backcountry pilot, A.A. Bennett, who bought it in 1946 to convert it from a cattle ranch to a fly-in guest ranch. After several ownership changes, a group of Idaho hunters and outdoorsmen acquired it and formed an association. In addition, the group owns the Root Ranch, also located in the Frank Church Wilderness, once owned by Hollywood actor Wallace Beery. Both are now operated for the members by Flying Resort Ranches (flyingresortranches.com) out of Salmon, Idaho.

So, I asked my son Kenneth, a former professional Beaver float plane

Parked in a line of tail draggers.

pilot in Alaska, to join me, and we set the date. With an experienced backcountry pilot on board (my son) and me not wanting to look bad, I started to pay attention to the myriad details involved in this kind of flying in piston single-engine aircraft. After flying mostly turbines for the past 20 years, the details were fortunately still in my memory, but rather distantly so.

One of the most important details is the effect density altitude has on non-turbocharged airplanes. Density altitude is the pressure altitude corrected for temperature. The higher the temperature, the higher the density altitude, even though the pressure altitude remains the same. Density altitude is a critical factor when flying in and out of the high backcountry, so much so that many of the airstrips have signs that warn about high density altitude next to the departure end of the runway. It is so crucial that in non-turbocharged airplanes, arrival and departure times are usually planned for the cooler times of day.

For example, the temperature in that part of Idaho is usually in the 50s at night but then jumps to the high 90s during the latter part of the day. The density altitude at Flying B can be above 7,000 feet if taking off in the afternoon, making a high gross-weight takeoff on a short runway and a confined area just plain hazardous. A non-turbocharged piston engine loses about one inch of manifold pressure or about 3.1 % of the engine's total horsepower per thousand feet of density altitude, which means that at

a density altitude of, say, 10,000 feet, you have lost nearly a third of your engine's total power from that available at sea level.

From a practical point of view, the Cessna 180K I am now flying, which has the 300-horsepower Air Plains Continental 550 modification, would only put out 69% of its rated maximum power (207 horsepower) in that circumstance. Takeoff distances and climb rates are proportionate to the power available, meaning that in the above situation, the runway requirement would increase by at least 30%. The climb rate would be down in the 400-500 fpm range, often insufficient to clear surrounding terrain in the backcountry, even in a modified aircraft like my 180K.

But it is not only the engine that suffers from high density altitude. The wing is less efficient at higher density altitudes than down low. The aircraft must move forward at a higher horizontal speed to lift the same load as at a lower altitude. The combination of lower power output and higher true airspeeds required for takeoff is hazardous, especially when taking off from an unimproved surface, which creates additional rolling drag. Similarly, on landing, the airplane's ground speed will be much higher (even with the same IAS), requiring a much longer landing distance. Unfortunately, backcountry airports almost always have very short runways.

The solution to most of this (even if you prefer to avoid getting up early in the morning) is to plan your operations for the early hours of the day and keep the airplane's total weight as low as possible. If, for example, we depart or arrive at Flying B at 0700 with only two on board and the tanks half full, with a temperature of 50 degrees, the density altitude would be only 3,998 feet, and the adverse effect on both landing and takeoff performance would be much less.

Another problem to consider when operating these single-engine piston airplanes vs. the turbines I had been flying is you only know what the aircraft can do if you try it out yourself. Even in older jets like the Lear 35, we

had all kinds of paper charts to predict the airplane's exact performance at any given altitude and temperature. Newer jets have it done by the FMS in the center console. In single-engine pistons, the original Pilots Operating Handbook has some charts, but most of those aircraft are now 50 years old and highly modified. Those old charts become obsolete with bigger engines, STOL packages, VG installations, and gross weight increases. The best way to prepare for this challenge is to take off from a long paved sea-level runway while restricting power output to no more than 65%. You will soon become a real believer in the hazards of density altitude.

The other thing that is different in backcountry flying from operating turbines is there is no such thing as a stabilized approach. In a jet, if you don't have the airplane configured for landing, with the runway straight ahead at about a 3 to 3.5-degree glide slope when you are at the final approach fix, the correct thing to do is go around. In backcountry flying, the runways are typically at the bottom of a steep serpentine canyon, with ridges at 7,000 – 9,000 feet MSL, next to a river at 2,000 - 3,000 feet. And although the landing area is usually visible while on downwind at the ridge level, it is common to completely lose sight of it once on base and final. On base and final, the sightline can be blocked by terrain in the canyon you are weaving the airplane through while descending. When you finally come around the last bend in the river in a 30-degree bank and can see where you are about to land, it is 30 seconds ahead of you. At that point, you had better be ready with the gear down and all the flaps out and slowed down to the point the stall horn is starting to activate.


Gil Collver family in with their Turbo Commander at KMYL.

Once I re-familiarized myself with all this backcountry operational stuff (something I used to teach several decades ago), Kenneth and I set out for Flying B. We spent the night before in McCall (KMYL) to depart early in the morning and take advantage of the low temperature. We also ensured our fuel load was about half full to keep the weight and required speeds down.

Before taking off, we consulted with Tor Andersen, a McCall Air Kodiak charter pilot, about how to best land at 12ID. Tor advised that landing upstream and taking off downstream was the best way for terrain clearance reasons, assuming no significant wind. We found that most other


Backcountry airports provide beautiful vistas.


Free roaming horses keeping the grass trimmed.

pilots on the frequency also used the upstream and downstream terminology when reporting what they were doing. Rarely are runways numbered, the wind is usually calm, and the river and its direction are what you can actually see as you fly through the twisting canyon on approach.

The 30-minute trip from KMYL to 12ID required a climb to 9,500 feet to clear the terrain, and it was surprising how many aircraft were out in the area at that same time, all reporting their positions relative to the terrain on 122.9. We made a downwind entry to the pattern at 8,000 feet, just below the ridge line to our right, and could see the ranch buildings and green grass runway area nearly a mile below us on the left. We put out all the drag available, reduced power to idle, and turned base, dropping into the canyon with a 30-degree pitch-down attitude and completely lost sight of the airport. At that steep pitch-down angle, we flew toward the opposite canyon wall before turning final at 5,000 feet, continuing around the canyon's corner until the runway was visible.

The touchdown zone when flying jets is usually about 1,000 feet from the approach end of the runway, heavily marked with black rubber from tire marks. The touchdown zone on backcountry runways is plain dirt or mud, all the grass having rubbed off by airplane touchdowns. The stall horn started beeping just as we crossed the river, and we touched down precisely in the touchdown zone, as evidenced by a cloud of dust. The runout was a bit bouncy, but the Aerocet amphib wheels handled it just fine. We parked the airplane in the middle of a short line of taildraggers with tundra tires, and shortly after that, the ranch's beat-up old pickup arrived towing a squeaky passenger trailer. The ride back to the ranch took about 10 minutes and delivered us to a rather nice secluded cabin surrounded by free-roaming horses busily keeping the grass cut.

We spent the better part of the following week at the Flying B, with no phone service or internet. All we had to do was ride horses, fish, hike, and eat three well-prepared meals daily while sharing highly embellished and improbable flying stories with the other guests, most of whom were pilots. When the sun went down, we sipped wine on the cabin's porch and, in otherwise total silence, listened to the crickets as they announced the end of the day.

It was like living in another time.

T&T

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

Jim Irwin of Aircraft Spruce & Specialty Co.

by **Lance Phillips**

Bob and Flo with their Navion Rangemaster.

Aircraft Spruce & Specialty Co. has a rich history, and quite possibly, some aspects of the wide-ranging parts specialist aren't well known. Post-Oshkosh, I had the chance to have a call with Jim Irwin, the second-generation caretaker of Aircraft Spruce.

It was 1956 when Flo and Bob Irwin started Fullerton Air Parts at the Fullerton Municipal Airport in Southern California. For nine years, Fullerton Air Parts became one of the western United States' largest retailers of aircraft parts supplies. The Irwins sold the business in 1965; however, they immediately realized another opportunity to serve aviators within the same industry. They founded Aircraft Spruce Co., a supplier of aviation-grade spruce lumber for aircraft builders.

As they continued adding specialty parts to their new business's catalog, they felt a new name could better describe the burgeoning operation, Aircraft Spruce & Specialty Co. was born. Nowadays, Jim, Flo and Bob's son, runs the business. He acquired the company in 1970 after graduating with a marketing degree from Cal State Fullerton. Jim and his wife, Nanci, are both experienced pilots, and they're deep into preparing the third generation of Irwins to take over sometime in the future. All three of their sons are pilots and work in the family business.

Bob and Flo Irwin.

Jim and the Irwin boys receive the Freedom of Flight Award from Jack Pelton at the 2023 EAA AirVenture.

Mike Irwin, the oldest son, is vice president of procurement; Jeff, in the middle, is vice president of operations; and Rob, the youngest, is now the vice president of marketing. They all adhere to and maintain the mission statement tenets of Aircraft Spruce:

- Satisfying customers and giving the best experience possible.
- Quickly fulfilling orders (same day usually).
- Competitive pricing.

In Jim's words, the goal is simple. "We just want to do everything we can to satisfy our customers through ease-of-purchase, whether online, on the phone, or in person, with competitive prices."

Lance Phillips: Jim, I appreciate the time you can spend telling the Twin & Turbine readers a few things they might not know about Aircraft Spruce and your family. First, congratulations on the recent Freedom of Flight Award presented by Jack Pelton at the 2023 EAA AirVenture. You're now in rarified air with Burt Rutan, Neil Armstrong and Steve Wittman. How does an award like this translate into your family business, and what does it mean for your customers?

Jim Irwin: It was quite an honor to receive the Freedom of Flight Award from Jack Pelton. It's one of EAA's most prestigious awards, and for the family and the business to be recognized for integrity, entrepreneurship and innovation throughout the years, started by my mom and dad, is pretty special. It was unexpected.

Jim received the Homebuilders Hall of Fame award from Jack Pelton posthumously for his parents in 2021.

Two years ago, I accepted the EAA's Homebuilders Hall of Fame Award for my late parents. You'll hopefully be recognized if you've been in this business long enough and do a pretty good job. And we want to continue to conduct our business on the principles they started, and my sons buy into that philosophy, too. If we can do that and keep our customers happy, we'll continue to be successful.

LP: That is phenomenal. Congratulations to your whole family for those awards. Next topic: your website mentions that you recently implemented a newly expanded order history search function. Is that something you and your wife Nanci worked on, or was that left to the younger generation?

JI: Oh, that was definitely not Nanci or me. We're pretty old school. Our three sons are the innovative ones. Rob, our youngest, the marketing vice president, and his team implemented the search expansion and other usability updates to our website. That's just one example; they're working on it, improving it all the time. They aim to make it as simple and intuitive as possible for our customers to order online.

LP: I noticed an update listing Leading Edge Avionics as an affiliate avionics shop. How many affiliates do you have?

JI: Leading Edge Avionics is the only one. They're based at Chino airport, very close to us, and they handle warranty issues and things like that. We are a dealer for multiple avionics manufacturers, and since we don't have an avionics shop, we partner with Leading Edge. We had partnered with Advanced Avionics in the same location for 25 years or so, and they sold last year to Leading Edge, who then took over the affiliate relationship.

LP: You have a pretty robust show and event schedule. Does Rob count

Jim Irwin stands with his Cessna 425 Conquest I.

on those shows to meet retail sales goals only, or are they an opportunity for you to promote the brand and increase company awareness?

JI: Both, really. We take a lot of product to AirVenture and Sun N Fun, our two biggest shows. We sell a lot of product there and also take orders for shipping. Those are selling shows. But brand awareness and seeing our customers face-to-face is extremely important. We have been building those relationships for many years. I attended my first EAA convention in Rockford, IL, in 1967, and we've been going ever since.

LP: Let's talk about airplanes. You have a beautiful Cessna Conquest I. How long have you had it, and have you done any significant upgrades to it through the years?

JI: I've been flying since 1976 and have gone from an old Navion Rangemaster I shared with my dad to

Jim Irwin's Conquest running up.

owning a Cessna 210. I had that for ten years; then, I had a Cessna 340 for five years. After that, I jumped into the big Cessna twins with a 421 for three years. That's when the Conquest came around. I bought N425WT in 2000, so I've had it for 23 years. You can see the progression, I've been a loyal Cessna guy all the way, and the Conquest has done everything I expected. It's easy to fly and has been reliable for all those years.

We upgraded the engines to Blackhawk 135s in 2009, a great addition. We have upgraded the avionics a few times. Right now, we have a Garmin GTN 750 and a 650. Other than that, it has just been a super reliable airplane. DeBritton Aviation in Chino handles maintenance. They've done it all these years. I generally fly 130 to 150 hours per year.

LP: What are your thoughts on jumping into the turbofan world, maybe a small Citation down the line?

JI: My sons keep asking me: Don't you want to fly a Jet? I say for my mission, for what I do, I am comfortable in the Conquest; it does what I want it to do, and I can afford to get somewhere half an hour later than a jet. I don't think I would move to a jet, but I guess you never know. But I really do love the Conquest.

LP: What else would you like to get across to the Twin & Turbine readers?

JI: I love the magazine. There's always something of interest and value in Twin & Turbine.

A lot of people might have the perception that Aircraft Spruce is what we were 50 years ago—the homebuilt supplier that sold kits and maybe a few small general aviation products. Today, we carry products for twins, turboprops and light jets. We have batteries, tires, ignitors, wheels and brakes, too. Much of our current product line applies to that end of the market. We're here and ready to serve.

It has been a dream career for me to spend my life in general aviation. To be in this business has been great for the family, and we look forward to the third generation continuing as we move forward.

LP: Thanks so much for spending time with me, Jim, and I look forward to seeing you at the shows. T&T

Editor's Pics

Photos & Story
by Lance Phillips

Our last article, Industry Insights with Jim Irwin of Aircraft Spruce, delved into some of the Irwin family history. Jim's dad, Bob, had a Navion Rangemaster for many years, which Jim co-owned for a while before moving on to the Cessna brand.

Navions have always been compelling to me for a few reasons: I never really saw them at airports, so they held some mystery; I don't remember any articles about them in magazines; and, lastly, my friends never talked about them.

So, when I see one, I usually try to get a photo of it with one of my unique cameras. In May 2021, I was on a road trip from Vail, Colo. back to Dallas on the back roads that go south through Colorado to New Mexico. It's a beautiful drive and highly recommended if you've never done it.

After living in Wichita and Tulsa for a while, I got to know about the Arkansas River, which flows through both. You see where the Arkansas River begins while driving

south along Route 24 in Colorado. It's just a crystal-clear pool of water in a high valley between giant snow-capped mountains (FYI: the Arkansas River is not crystal clear in Wichita). Also, along that same route is a rather famous airport—the Lake County - Leadville Airport (aka the highest elevation public airport in the United States).

I had heard of Leadville for years. That's where manufacturers send their certification and test aircraft for high-altitude performance tests. At 9,934 feet elevation, an airplane will get a rigorous hot-and-high workout in Leadville, especially in the warmer months.

I was driving down Route 24 and Leadville Airport signs appeared (which wasn't planned). This pilot had to stop to check it out.

After driving through Leadville's cool, historic downtown area, I finally got to the airport. And there wasn't much to see there; after all, it was peak COVID in May 2021. The cordial FBO attendant let me walk around the tarmac with my camera, an old Hasselblad 500 C/M loaded up with Kodak Portra 400 film that day. I walked around the neatly maintained fuel farm to the main tarmac, and, again, there wasn't much out there—except for this unique yellow single-engine piston plane. I honestly didn't know what it was, but I knew I needed to get some photos.

This particular Navion is a B model built by the Ryan Aircraft Company. Before Ryan started manufacturing Navions, it was known as a North American Aviation product, originating in the 1940s. The original airworthiness date on the Leadville-based yellow Navion B was 1956. The B model was modified with a higher powered 260hp Lycoming GO-435-C2 engine, up from the 205-hp model A. It was also known as the Super Navion 260, and Ryan built 222 Bs. Gross weight is 2,850 lbs. with an empty weight of 1,930 lbs. The typical fuel capacity is 40 US gallons. That leaves around 680 lbs. of people and bags. The 6,400-foot Leadville runway must seem awfully short, though, with a couple of people and fuel on board.

In addition to the Leadville Navion, I wanted to share one reader's feedback (and his friend's photo). In the July T &T issue, my Editor's Pic was an old Twin Commander fuselage I had found around the side of a hotel in Tucumcari, New Mexico. Lonnie Blasdel of Washington State saw the old fuselage and sent a photo of an Aero Commander. Lonnie's friend Jody Maddox took the picture and allowed us to publish it. Notice the little Commander acting as a tetrahedron just below the real one. T&T

Please let me know if you have any unique photos to share that relate to my Editor's Pics. Many thanks to Lonnie and Jody for their Commander photo.

Ad Index

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The Process

I am a wreck.

It's been several months since I sold my Mustang. Now, I have no legitimate reason to go to the airport. No reason to perseverate over tomorrow's weather forecast. I took a commercial airline flight recently and actually enjoyed the little nuts in first class. The ones you eat, that is.

My irrational behavior must stop. I need to start looking for an airplane. Here's an update on my reasons for selling in the first place:

1. Continuing economic slowdown. Now, the Federal Reserve is slowing the interest rate hikes, and Congress avoided the national debt debacle. *Two reasons to start looking.*
2. Topsy-turvy world events. The near collapse of the Soviet Union. *Oops, not good news.*
3. Re-sale market peaking. This is a positive for potential buyers like me. *Prices are likely to be softening.*
4. Nice profit in the Mustang. *I invested that profit, but if I use those dollars to buy an airplane, I lose that interest income.*
5. Desire to leave something for my kids and grandkids. *What kids and grandkids?*

White or Red?

Sitting on my couch after one glass of wine, I fathom that I don't really need to own an airplane. This is a great time to hang it up. Fifty years of flying has been a wonderful experience.

After the second glass of wine, I re-think my ideas. At my age, I may only have a few years left to fly. My high school buddies are dying left and right. Patty is only buying ripe bananas for us. I may not have another chance to own the next best airplane.

And night after night, the same thought process. Sometimes with white wine, sometimes red.

I peruse "Controller" daily, envisioning myself in the cockpit of all sorts of airplanes. A Turbine Duke, providing the safety of two turbine engines in a package small enough to afford. My insurance guy suggests I switch to drinking iced tea. Perhaps a pressurized Baron. But Patty needs a full-size display on her side of the cockpit in case she has to take over after banana poisoning.

Another call to my agent. How much would insurance cost on this airplane? What about this one? He starts to refuse my calls.

How about a nice B58 Baron? Have you noticed how much Barons cost these days? Well, over a million dollars for a well-used edition. You could buy a King Air for that kind of money. I have owned several, but that's a big airplane. Do I really want a big airplane?

We take a Sunday car trip to Austin to look at a beautiful 1993 C90B. Along the road, we see two auto crashes complete with airbag deployments. Driving is way too dangerous. Flying is much safer, or so I rationalize.

We return home feeling unfulfilled. I have a decision to make.

White wine or red?

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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