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Editor's Briefing by Rebecca Groom Jacobs



Annual Anxiety

The following editorial is guest written by Jared Jacobs.

am all too familiar with the plethora of aviation's timebased inspections, having experienced my fair share of instrument proficiency checks, biannual flight reviews, proficiency checks, etc. But none have brought the level of apprehension I feel for the next deadline on my schedule – the annual airworthiness inspection of our beloved F33A Bonanza.

For those of you keeping tabs, this will be the first annual inspection that 1RW will undergo as a part of our co-ownership. So, the real reason for the anxiety is fear of the unknown. As part of my aircraft search preparation, I spent a lot of time questioning my aircraft-owning friends. While I collected a great deal of data about fixed and hourly costs, the major outlier has always been the aircraft's annual inspection and how to plan for the expense. Of course, when you buy an airplane, part of what you are buying is the maintenance and upkeep of the previous owners. Items that were overlooked, cheaply or partially repaired, or worse, neglected, would ultimately become the burden of the new owner to sort out. So, buy well or pay the price.

Considering a complex aircraft like our Bonanza, and its more than 50 years of maintenance, the prospect of finding an aircraft properly maintained seemed to be a near impossibility. But, after a glowing review from the mechanic that conducted the pre-buy inspection, I felt I had found that airplane in 1RW (see "Buyers Rejoice," Twin & Turbine, April 2021). However, after about a month of ownership, I admit that the aircraft surprised us with a few early visits to the maintenance hangar. First was a blowout of the left brake master cylinder, which led us to replace both. Next



was the mysterious airframe vibration which I chronicled in the August Editor's Briefing. Although the vibration turned out to be a non-event, it did reveal a cylinder with compressions that had slipped about 10 PSI since the prebuy, as well as a potential fuel pump issue. These events showed me that despite a stellar history of maintenance and care, there were still chinks in the armor.

One piece of early purchasing advice I had received (but skipped) was to conduct the pre-buy inspection as an annual. By doing so, there is a more thorough inspection of every system – giving you the most accurate idea of the status of the aircraft upfront. Not to mention, if all goes well, you clear the mental hurdle of the first annual. But this can sometimes be tricky to work out with the seller and likely expensive for both parties. A straightforward annual conducted as a pre-buy can put the buyer at ease, but if any costly repairs are required, the waters can become muddied quickly, and negotiations soured. We decided to forgo this extra step due to the rushed nature of our purchase in this hot used aircraft market, plus nearly eight months remained until the next annual inspection was due.

Now, with the annual upon us, the last thing that I or my co-owners want is a half-hearted effort at the annual inspection. We want the aircraft to be as safe and mechanically sound as it can possibly be. With that in mind, the aircraft was just delivered to the meticulous mechanics at Midwest Corporate Aviation at KAAO to begin its inspection. Knowing they will give our aircraft the most thorough inspection since the purchase, some doubt creeps in that skipping the annual as part of the purchase may have been a misstep. Soon having a clean bill of health from the IA will put my mind at ease, and I hope our wallets will feel the same way.

In reality, this anxiety is probably an overreaction. I am confident in the homework I completed before the purchase. And in hearing from many of my owner friends, there is almost always a bit of a teething period with a new aircraft. At least one unexpected repair will pop up as the owner and aircraft both adjust to the new pairing.

Here's to hoping future annuals become just another item on the list of yearly inspections that hardly register a reaction when popping up on the schedule.

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All-Electric eFlyer 800



nveiled earlier this year, Bye Aerospace's eFlyer 800 is set to bring a new dimension to the twinturboprop market, leaning upon years of visionfocused engineering. Boasting two wing-mounted, all-electric Safran power plants (in-development) rated from 50kW to 500kW/1MW, the eight-seat, single-pilot twin aircraft will introduce a new era of cabin-class aviation. One of the key-value aspects of the aircraft is its projected operating costs, calculated to be one-fifth of traditional gas-dependent options.

Whenever a new aircraft, especially one that relies heavily upon newer technologies, is introduced, skeptics can be quick to discount its viability within a competition-heavy, highly regulated industry. Many have criticized the potential for aircraft powered in part or full by electricity. But it seems that the winds have recently shifted in favor of the possibility as there are increasingly more entrants in the hybrid or full-electric future of aviation (see "An Electric Future" Twin & Turbine, February 2021).

Bye Aerospace is based in Englewood, Colorado, led by its namesake founder George Bye. Bye has been referred to as "The Father of Today's Electric Aviation Industry." He has long been an active proponent of the aviation industry, with two decades of experience as an engineer, entrepreneur and executive who conceives, designs and develops all-electric manned and drone aircraft. Bye strives to innovate and pioneer new approaches and technologies that create extraordinary performance and value to the market.

Much of his efforts have been under the Bye Aerospace name, and since its founding, the company has been entirely focused on the electric future of aviation. One of its first undertakings was converting a Cessna 172 to electric propulsion. This and other projects led the team to focus



on designing aircraft that rely entirely upon this source of energy, which has been an extremely promising journey thus far.

Over the years, the Bye Aerospace team has crafted a portfolio that includes the eFlyer 2 – a two-seat aircraft designed specifically for the primary flight training market, and the eFlyer 4 – an attractive alternative for legacy piston options in the space. Collectively, Bye Aerospace's eFlyer models have received nearly 800 deposits from interested customers with demand continuing to remain strong as production begins to ramp up. The eFlyer 2 is currently set to enter service by the end of 2022, followed by the eFlyer 4 one year later. After that, the company's third aircraft, a six-seater designated the eFlyer X, is also expected to be certified by the FAA and shift from customer dreams to hangar realities. Like the eFlyer 4, this lightly pressurized aircraft will be powered by a single 200 kW (270 HP) allelectric powerplant.

While these three aircraft span the range in terms of size and performance of existing single-engine piston options, the next logical progression was integrating the company's propulsion know-how into an aircraft purpose-built with increased endurance, speed and passenger capacity. So, with successes from previous designs, prototype production, and subsequent flight testing, the company designed its highly anticipated eight-place option.

According to Bye Aerospace, the performance estimates for the eFlyer 800 include a 320-knot cruise speed, 35,000foot ceiling, and 500 nm range with 45-minute IFR reserves at normal cruise speed of 280 knots. Safety features include two wing-mounted electric motors, each with dual redundant motor windings, quad-redundant battery packs and a full airplane parachute. Additional potential features include an emergency auto-landing system, intelligent algorithm ensuring envelope protection, terrain avoidance and routing for emergency auto-land, and an option for supplemental power solar cells and in-wheel electric taxi. The airplane's configuration can seat up to seven passengers and one or two pilots.

Demand for the eFlyer 800 spans air taxi, air cargo, and regional and charter aircraft markets. Bye noted that there is significant interest in the aircraft thus far, which has already positively translated to customers competing in the charter space like Jet It and JetClub, which "have a commitment to electric, clean aircraft, and this foresight vision is a testament to their management team and their future as a company."

In the second quarter of 2021, the companies jointly announced a signed purchase agreement with Bye Aerospace for a fleet of eFlyer 800's. While specificities related to the order (including quantities and anticipated delivery dates) have not been disclosed, George Bye notes that these sister companies' large quantity order is only a highlight of being an ideal launch customer for the aircraft.

Other companies have also recently announced their formal interest in and commitment to the eFlyer 800. Among these are Skye Aviation, an aircraft leasing company





headquartered in Denver, Colorado, and Rheinland Air Service GmbH, a leading European provider of aircraft maintenance, repair and overhaul (MRO).

Skye Aviation is the first all-electric aircraft leasing company in the world and has completed purchase deposits for 15 eFlyer 800 aircraft. According to the company, "Skye fully supports sustainable, safe aviation leasing solutions for our customers while at the same time slashing eCTOL (electric conventional takeoff and landing) operating costs, aircraft noise, maintenance and supply requirements efforts. We embrace innovation that offers our customers far less capital-intensive solutions for training, passenger, air cargo, private, business, and military operations. In this sense, we all win."

Rheinland Air Service is another firm looking to win by embracing the potential of all-electric aviation. Based near Düsseldorf, Germany, the company announced a threepronged partnership with Bye Aerospace. One part being the future acquisition of five eFlyer 800's, and another being the MRO representative for the aircraft in Central Europe with its service and support facilities in western Germany. Additionally, the company will be a designated reseller of eFlyer 800 aircraft in Germany, Austria and Switzerland.

In addition, Bye Aerospace sees ample opportunity in the owner-operator vertical. Bye noted, "There is a great opportunity for owner-pilots with the eFlyer 800's impressive performance, range, and speed." Overall, the modern aircraft will be both technologically advanced and comfortable with a designed 65-inch wide cabin width.

Entry into service is expected in 2025, with more details to come later, most notably the avionics (the company recently announced Garmin 500 TXi avionics for the eFlyer 2), the propellers, interior layout and in-flight connectivity options. By assured the company's commitment towards incorporating only solutions and products that a majority of aviators are comfortable with and trust.

For more information, visit byeaerospace.com.







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Faces of Aviation

by Stan Dunn





From a couple of bicycle builders to a motorcycle speed record holder to Presidents and world leaders, aviation has had an outsized impact on the history of the world.

he trajectory of aviation was shaped on a hockey field in the winter of 1886 when a high school senior playing in a pickup game was fouled by an opponent's high stick. While the young man's grin would eventually be redeemed by a set of false teeth, the viciousness of the attack destroyed both his confidence and his aspirations for Yale. The trajectory of an Ivy Leaguer does not terminate on a godforsaken patch of sand just off the coast of North Carolina. But the most seminal moment in aviation did.

The young man who smashed Wilbur Wright's face was named Oliver Crook Haugh. The middle name was clearly contrived in a fit of precognition. Oliver Haugh would be executed by the state of Ohio in 1907 for murdering his family. Wilbur Wright's father saved the newspaper clipping of the crime with a note to the side: "The boy who hit Wilbur." In spectacular fashion, Oliver Haugh would be accused in the press of nearly 20 other murders.

Wilbur would eventually fall into several side businesses with his younger brother, from the printing press to newspapermen, and finally bicycle shop owner. They would not be the only bicycle shop owners in the burgeoning world of aviation. Nemesis Glen Curtiss raced bicycles and owned his own shop before matriculating into motorcycles and eventually aviation. For their part, the Wright brothers quietly upended the established hierarchy in 1903 when Orville successfully completed the first powered flight in history. The event went almost completely unreported at the time. Tipped off by a telegraph operator who had forwarded a message from the Wright brothers to their father regarding the accomplishment, the Norfolk-Virginian Pilot published an account that included substantial exaggerations and outright fabrications. It got picked up by the Associated Press and dominated the more subdued attempts by Wilbur and Orville to set the record straight.

One of the most famous pictures in history was captured by John Daniels, a member of the life-saving station at Kill Devil Hills. Having wandered over to the dunes where Wilbur and Orville were attempting their seminal flight, he was enlisted to operate the camera that the brothers had bought for the occasion (predominantly for the sake of patent claims). A replication of Daniels' picture graces the front of FAA-issued pilot certificates. On the far right is Wilbur watching Orville making history in 12 seconds and 120 feet (the distance of the first flight covered two-thirds the wingspan of a Boeing 747). The average groundspeed was 7 mph (aided by 20 mph worth of wind). Within 25 years the airspeed record would be nearly 320 mph. Another 40 years and airspeed records were mostly moot – we had landed on the moon.

The first two faces of aviation are literally stamped on the back of an FAA Pilot's License: Orville to the left, Wilbur to the right. Although Orville was the first person to complete a pow-

ered flight, historical documents point to Wilbur as the driving force behind the accomplishment. The bald brother with bad teeth (who never made it to Yale) penned the first verse in the modern era of aviation. It would not take long for the potential of the Wright brothers to be spoiled by a series of patent disputes, most notably with Glenn Curtiss. United States aviation

would fall far behind Europe by the First World War as a result. Eventually, Curtiss and Wright would merge into the largest aircraft manufacturer in the United States, yet neither Glenn Curtiss nor the Wright family would have any ownership in the corporation (Wilbur died before the company was formed; Curtiss died soon after).

Not far behind the Wright brothers in the pantheon of aviation greats is Charles Lindbergh. His nonstop flight from New York to Paris took an eerily symmetric 33 hours, 30 minutes, and 30 seconds to complete. Lindbergh was too wired to sleep the night prior to the flight and had been awake for over 50 hours by the time he landed in Paris. At times he buzzed the chilly surface of the Northern Atlantic in the hopes that the sea spray would keep him awake. He was eventually forced above 10,000 feet for 10 hours in order to avoid a run of rain, sleet and fog. Utilizing dead reckoning and an earth induction compass Lindbergh, hit the Irish coast within three miles of his target. The Spirit of St. Louis burned 12 gallons per hour on the journey. The purpose-built aircraft carried 451 gallons. Fifty remained in Paris. Lindbergh could have continued to Frankfurt with an hour to spare.

The Wright Flyer cost less than \$1,000 to construct (this was only for parts; the labor was provided gratis by the Wright brothers). The Spirit of Saint Louis cost \$10,580 to construct. In 2021 dollars that is \$30,000 and \$160,000 respectively. The cost to make aviation history has rapidly

> escalated to the current era's billionaires club. In the beginning, guile and ingenuity were enough.

> A myriad of other names populates the history of aviation. Amelia Earhart would follow in Lindbergh's footsteps across the Atlantic a year later as something of a publicity stunt. "[Wilmer] Stultz did all the flying...I was just baggage, like a sack of potatoes," Earhart

would confess. A few years later (in 1932), she would "hop the pond" all by herself. In 1935, Earhart flew solo from Hawaii to the U.S. mainland. The flight was 900 miles longer than Lindbergh's famous run across the Atlantic. Ten people had already died attempting the feat. Earhart was not simply the first woman to complete the flight. She was the first pilot to do so.

Less famous was Florence Lowe. Raised in the shadow of a 24,000 square foot mansion in Pasadena's Millionaire's Row, she would marry respectably in 1919 to the Reverend C. Rankin Barnes (whose parish received a Bell Tower as a dowry). It was perhaps the last respectable thing Florence would do. She adopted the name "Pancho" during a stint south of the border (a better name for a woman running from arms dealers disguised as a man). Pancho Barnes would

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inherit the family fortune and learn to fly in 1928. She organized an ad-hoc barnstorming show, crashed in the 1929 Women's Air Derby, and broke Earhart's speed record in 1930. She moved to Hollywood and worked as a stunt pilot before losing the majority of her family fortune through lavish spending, poor investments and the Great Depression.

In 1935, she bought 80 acres in the Mojave Desert near the Rogers dry lake bed. She built a runway and christened it "Rancho Oro Verde Fly-Inn Dude Ranch." The patrons eventually truncated the name to "Happy Bottom Riding Club." The property abutted March Army Air Base. By December of 1949, the airfield was renamed Edwards Air Force Base, and Pancho's ranch had expanded to 360 acres. Happy Bottom Riding Club would become the haunt of aviators, the likes of Chuck Yeager, Bob Hoover, Jimmy Doolittle and Buzz Aldrin. The club was famous for its foul-mouthed owner and its slew of highly personable waitresses. Chuck Yeager broke the sound barrier with a broken rib after falling off a horse on the Dude Ranch. He got a free steak out of Pancho for it.

Visionaries, Leaders, and Some Villains

There are a handful of names that are recognized around the world. George Washington. Abraham Lincoln. Winston Churchill. Joseph Stalin. Aviation competes step-for-step in name recognition. The Wright Brothers. Charles Lindbergh. Chuck Yeager. Amelia Earhart. Neil Armstrong. From the era of muslin fabric and spruce wood to the Saturn V rocket with seven-and-a-half million pounds of thrust, aviation has transformed the world. The coming decade is shaping up for another transformation with privatized space travel and perhaps a trip to Mars. It all began with a \$1,000 investment made by a couple of industrious bike builders.

Aviation is a very large industry that can simultaneously function like

a very small community. Pilots come from a wide variety of backgrounds. From movie stars and moguls to second-generation careerists and military cast-offs, aviation is one of the true melting pots of the modern world. The pilots that you meet day-to-day can be every bit as eclectic and interesting as those who made their mark on the history books.

By far, the most common background in professional aviation is exmilitary. While the path from fighter pilot to the airlines is well-tread, helicopter pilots are increasingly making the transition from rotorcraft to fixed-wing. Pilot shortages were a burgeoning problem for civil air operators before the pandemic, and the shortage is rapidly approaching a crisis in the aftermath. The Army has proved fertile ground for the next generation of passenger pilots.

I have trained dozens of former Army pilots. War zone flying has its own set of rules, and the stories are always fascinating. I flew with



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"Bob" on a flight between DFW airport and Grand Junction, Colorado. He explained to me what it was like to be in a vehicle blown up by an IED. He had pretty good insight – it had happened to him twice. He sustained concussions (among other injuries) during both events. He added another concussion from a helicopter crash afterwards. He received a medical discharge as a result, though he was eventually able to obtain his First Class Medical in order to be employed as an airline pilot.

I also flew with "Steve," who had flown N200WQ (a Bombardier Dash 8-Q400) into Newark, New Jersey, just prior to its final, fatal flight as Colgan Air 3407. Colgan was not a particularly large airline. It was the sort of place where everybody knew everybody. Steve wound up getting dozens of phone calls and text messages following the crash. Friends, fellow pilots, and family were concerned that he may have been operating the flight. Steve personally knew both pilots who were killed. He had exchanged greetings with them just before the flight.

I recently was a guest on a podcast hosted by Rob, a world-renowned air show announcer. If you attended Oshkosh this year, you most likely heard his voice over the speakers. Amid the pandemic, Rob announced the July Fourth airshow celebration in front of the President of the United States in Washington DC - a President who at one point had owned his own airline. Trump was not the only President with an aviation background. Dwight D. Eisenhower earned his pilot's license after soloing a Stearman in the Philippines in 1937. Eisenhower was occasionally known to take the controls on trips even as President. George H.W. Bush was a WWII aviator who ditched one aircraft in combat and bailed out of another. He ultimately received the Distinguished Flying Cross for his actions in the Philippine theatre, where half of his squad died in the line of duty. His son George W. Bush flew F-102s for the Texas Air National Guard. On his application for the position, Bush stated that he wanted to pursue aviation as a career.

From a couple of bicycle builders to a motorcycle speed record holder to Presidents and world leaders, aviation has had an outsized impact on the history of the world. Pilots today sit at the tip of a very long spear. Outsized personalities continue to cast influence over the culture of aviation. From Branson to Bezos to Musk, there is something about slipping the surely bonds of earth and taking to the heavens that captivates the core of humanity. Aviation is built on the shoulders of giants. Remember that the next time you flip the master switch ON. TET

Stan Dunn is an airline captain and check airman. He has 7,000 hours in turbine powered aircraft, with type ratings in the BE-1900, EMB-120, EMB-145, ERJ-170, and ERJ-190. Stan has been a professional pilot for 14 years, and has been flying for two decades. You can contact Stan at **tdunns@ hotmail.com.**



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B-25 PH.OT TRAINIG SO, YOU WANT TO BE A BOMBER PILOT?

by Dale Smith

ooking for a challenge? Larry Kelley and his experienced team at the Delaware Aviation Museum Foundation can train you to be a fully qualified B-25 pilot. And, yes, it's as cool as it sounds.

Okay, who amongst us has not had their "Walter Mitty" moment and dreamed of captaining a B-25 (or warbird of your choice) somewhere in the European or Pacific theaters? You know you have. But, you say, it's a far cry from the left seat of a modern piston twin to the cramped, noisy, and downright intimidating cockpit of a WWII bomber. Or is it?

Thanks to the efforts and dedication of Larry Kelley and the team of maintainers and instructors at the Delaware Aviation Museum Foundation, mere mortal pilots like you and me can actually earn either a second-in-command (SIC) or pilot-in-command (PIC) rating in a North American B-25J bomber.





"I've owned my B-25J, 'Panchito' for 23 years, and over that time, we've had a tremendous amount of interest and interaction with the B-25 community," Kelley explained. "I'm also an A&P I/A and have been deeply involved with its maintenance. I know how important it is for pilots to completely understand how everything works, so if they have an issue or failure, they are better equipped to deal with it right away. All that has led to the development of our B-25 flight training program."

But, before we go too far, I must make it clear that the training that Kelley and this team offer in like other "learn to fly (insert warbird name)" programs you've come across. This is not a weekend warrior-type program. In Kelley's well-earned opinion, sitting in the right seat and getting a few hours or so "stick time" does not make a qualified pilot. The B-25 Flight Training Program offered by the Delaware Aviation Museum Foundation is the opposite of that. This is an FAAapproved flight train-

Panchito is nothing

ing curriculum that just happens to be wrapped around a "bucket list" type airplane.

"In the B-25 community, you have a lot of retired airline pilots, and the only 'training' they receive is OTJ in the airplane," he said. "There is no formal aircraft or systems training. I know of pilots who have never even done a stall in the airplane or other maneuvers found in the B-25 training syllabus. So, we decided that a program like ours would be a very good thing for the community – real, formal, airline-style training in a B-25. We train to approved standards, and our curriculum is carefully outlined and detailed as to what is done when. Everyone trains to the same standards."

The Delaware Aviation Museum Foundation's B-25 flight training program was developed by its Director of Flight Training, Sabrina Kipp (a 20-year Captain with Southwest), Calvin Peacock (a retired US Air Captain) and a team of experienced airline pilots and training professionals.

"We submitted our course to the FAA, and they commented that this is how training is supposed to be done," he said. "We received an exemption to be able to provide flight training

for hire in a limited category aircraft – our B-25. We have that course, and we stick to it. Everyone trains the same."

Kelley stated that while the course's professionalism stands out to students, the real differentiator is the strict adherence to airline-style Cockpit Resource Management (CRM) processes and procedures.

"We use CRM in everything we do. The responsibilities go with the seat you are in. You need to understand what your seat is going to do in the event of a problem," he explained. "If you go through our program and don't use CRM during your check ride, you'll get busted. We believe in the benefits wholeheartedly."

Know Before You Go

If you've ever gone through a Flight-Safety-style training program, you'll be familiar with the level of detail and professionalism the team has put into the B-25 program. And the teaching starts before you even head to Delaware. You can earn either a second-in-command (SIC) or pilot-incommand (PIC) rating and both start with the in-depth ground school.

Once your deposit for the tuition is paid, they send you a copy of the B-25J's POH along with other information and documents to begin your pre-program study. There is a lot of information you need to know, or at least know where to find, to be ready for ground school. And, yes, there's a test.

Hola Panchito

Larry Kelly's North American B-25J is one of about 36 "Mitchell" bombers currently flying. It was delivered to the United States Army Air Force (USAAF) in late 1944 and served in various roles until it went into storage in 1958. It was sold to its first civilian owner in 1959 and was used as a fire bomber in Arizona and a citrus grove sprayer in Florida.

In 1986, it was christened "Panchito" after it went through a meticulous restoration at Tom Reilly Vintage Aircraft's "Bombertown" in Kissimmee, Florida.

Regarding the aircraft's name, Panchito Pistoles was one of the "Three Caballeros," an animated movie from Walt Disney that came out in 1944. The three owners of the rebuilt B-25 chose the name to honor Bob Miller, the pastor at their church in Texas. He had been the tail gunner on the original Panchito B-25 in WWII.



"Well, it's not really a test, but there are 60 questions that students need to answer to prepare for the course," Kipp explained. "Many are not familiar with this type of training, and we want them to be familiar with the various aircraft systems. The questions just show them all that is contained in the manual."

Kipp said that while there is no "grading" for the quiz, it does give her an idea about where the student stands as they begin the one-day ground school at 7:30, and it goes until 5:30 or so," she said. "We take time to go into the hangar to see the systems on the aircraft and their operations."

"The history of the B-25 is very important. We go through all of the various systems in detail – fuel and hydraulics, engines, landing gear – we cram a lot in," Kelley added. "We have a big table full of cutaway parts to demonstrate how many of them work and what happens when they don't. Knowing that can make a big difference in how you handle an emergency."

Kelley illustrated the importance of understanding the various systems' workings by sharing a recent experience with a new to the B-25 co-pilot on a night, IFR, flight from Florida to Delaware.

"We were cruising at 9,500 feet, and suddenly the oil pressure reading on

the right engine showed a low pressure indication. The right seat asked if we needed to cage the engine – that was his immediate response," he said. "I asked if the oil temperature was okay. He said yes. But he still wanted to shut the engine down. If it's not necessary, not a good idea at night in IFR conditions."

Anyway, the cause of the issue turned out to be a faulty oil pressure transmitter and not a problem with the engine itself. Kelly's knowledge of the aircraft's systems helped keep a simple nuisance from becoming a lifethreatening situation. That experience is why system knowledge is stressed so strongly throughout the program. Oh, and if you think you don't have to pay attention and soak it all in, you're mistaken. There's a written test at the completion of the ground school. And if you fail, you don't fly.

Success Starts With Your Feet

Kipp said that the majority of pilots taking the B-25 training come for the two-day SIC program, so we'll follow that curriculum for the in-flight portion of our story.

On day two, students get their hands on Panchito – or perhaps it's the other way around. While flying a B-25 may seem daunting to most of us, Kipp and Kelley both stress that it's taxiing the beast that culls out the skilled from the not-so-very-much.

"Taxiing is the hardest part of handling the B-25. It has a free-castering nosewheel and can get away from you pretty quickly," Kipp said. "You have to use your feet, throttles, and plan each movement well in advance to stay ahead of the airplane on the ground."

Oh, and if you're just figuring to use differential braking in tight spots, forget it. Kelley stressed that relying only on the brakes is a no-no. It's really easy to overheat the old-style units. In fact, recently, another B-25 was nearly lost due to a brake fire.

Once you successfully make it to the end of the runway, the B-25's run-up, although lengthy, is pretty typical. So, with everything where it is supposed to be, it's time to fly.

The Worldwide General Aviatio owner/operators and chief pilots of these air



TOTAL MARKET COVERAGE

JETS - 17,806

CHI	EF PILOTS & OWNERS
OUNT	AIRCRAFT
36	AIRBUS ACJ319
30	ASTRA 1125
32	ASTRA 1125SP
57	ASTRA 1125SPX
29	BEECHJET 400
266	BEECHJET 400A
195	BOEING BBJ
503	CHALLENGER 300
40	CHALLENGER 600
26	CHALLENGER 601-1A
121	CHALLENGER 601-3A
54	CHALLENGER 601-3R
325	CHALLENGER 604
7	CHALLENGER 800
148	CITATION 500
340	CITATION 525
318	CITATION BRAVO
187	CITATION CJ1
96	CITATION CJ1+
240	CITATION CJ2
225	CITATION CJ2+
476	CITATION CJ3
174	CITATION CJ3+
368	CITATION CJ4
189	CITATION ENCORE
74	CITATION ENCORE+
392	CITATION EXCEL
14	CITATION I
280	CITATION I/SP
445	CITATION II
54	CITATION II/SP
155	CITATION III
124	CITATION LATITUDE
247	CITATION M2
467	
130	CITATION S/II
323	CITATION SOVEREIGN
105	CITATION SOVEREIGN+
310	CITATION ULIRA

285	CITATION V		
31	CITATION VI		
122	CITATION VII		
329	CITATION X		
38	CITATION X+		
253	CITATION XLS		
301	CITATION XLS+		
1	DIAMOND I		
32	DIAMOND IA		
16	DORNIER ENVOY 3		
304	ECLIPSE EA500		
75	EMBRAER LEGACY 500		
100	EMBRAER LEGACY 600		
53	EMBRAER LEGACY 650		
247	EMBRAER PHENOM 100		
328	EMBRAER PHENOM 300		
80	FALCON 10		
22	FALCON 100		
16	FALCON 200		
242	FALCON 2000		
27	FALCON 2000EX		
34	FALCON 20C		
15	FALCON 20C-5		
17	FALCON 20D		
1	FALCON 20D-5		
10	FALCON 20E		
49	FALCON 20F		
75	FALCON 20F-5		
197	FALCON 50		
8	FALCON 50-40		
118	FALCON 50EX		
178	FALCON 900		
24	FALCON 900C		
116	FALCON 900EX		
156	GLOBAL 5000		
123	GLOBAL EXPRESS		
25	GULFSTREAM G-100		
239	GULFSTREAM G-200		
14	GULFSTREAM G-300		
24	GULFSTREAM G-400		
313	GULFSTREAM G-450		
11	GULFSTREAM G-500		

602 GULFSTREAM G-550

27	GULFSTREAM G-II
12	GULFSTREAM G-IIB
111	GULFSTREAM G-III
175	GULFSTREAM G-IV
338	GULFSTREAM G-IVSP
204	GULFSTREAM G-V
38	HAWKER 1000A
2	HAWKER 125-1A
2	HAWKER 125-1AS
12	HAWKER 125-400AS
2	HAWKER 125-600A
1	HAWKER 125-600AS
61	HAWKER 125-700A
72	HAWKER 4000
223	HAWKER 400XP
44	HAWKER 750
153	HAWKER 800A
14	HAWKER 800B
398	HAWKER 800XP
42	HAWKER 800XPI
88	HAWKER 850XP
187	HAWKER 900XP
2	JET COMMANDER 1121
2	JET COMMANDER 1121B
2	JETSTAR 731
4	LEARJET 23
12	LEARJET 24
2	LEARJET 24A
7	LEARJET 24B
20	LEARJET 24D
8	LEARJET 24E
6	LEARJET 24F
4	LEARJET 25
19	LEARJET 25B
4	LEARJET 25C
45	LEARJET 25D
4	LEARJET 28
32	LEARJET 31
182	LEARJET 31A
26	LEARJET 35
398	LEARJET 35A
21	LEARJET 36
33	LEARJET 36A

32	LEARJET 40
243	LEARJET 45
225	LEARJET 45XR
92	LEARJET 55
6	LEARJET 55B
8	LEARJET 55C
307	LEARJET 60
623	PILATUS PC-12/45
149	PREMIER I
1	SABRELINER 40
7	SABRELINER 40A
2	SABRELINER 40EL
2	SABRELINER 40R
4	SABRELINER 60
5	SABRELINER 60ELXI
68	SABRELINER 65
7	SABRELINER 80
1	SABRELINER 80SC

- 67 WESTWIND 1
- WESTWIND 1123
- 14 WESTWIND 1124
- WESTWIND 2 50

TURBOPROPS - 12,801 CHIEF PILOTS & OWNERS

COUNT AIRCRAFT

403	CARAVAN 208
1,523	CARAVAN 208B
155	CHEYENNE I
16	CHEYENNE IA
206	CHEYENNE II
56	CHEYENNE III
38	CHEYENNE IIIA
57	CHEYENNE IIXL
35	CHEYENNE IV
235	CONQUEST I
291	CONQUEST II
38	JETSTREAM 31
63	JETSTREAM 32
52	JETSTREAM 41
37	KING AIR 100
450	KING AIR 200
17	KING AIR 200C

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44	MERLIN	IIIB

- 14 MERLIN IIIC 3 MERLIN IV
- 11 MERLIN IV-A
- 101 MITSUBISHI MARQUISE
- MITSUBISHI MU-2F 18
- 1 MITSUBISHI MU-2G
- 15 MITSUBISHI MU-2J
- 37 MITSUBISHI MU-2K 12
- MITSUBISHI MU-2L 25 MITSUBISHI MU-2M
- 24 MITSUBISHI MU-2N
- 29 MITSUBISHI MU-2P
- 47 MITSUBISHI SOLITAIRE
- 796 PILATUS PC-12 NG
- 197 PILATUS PC-12/47
- 296 PIPER JETPROP
- PIPER M500 74
- PIPER M600 92
- 602 PIPER MERIDIAN
- 198 QUEST KODIAK 100
 - 2 ROCKWELL 680T TURBO 5
 - ROCKWELL 680V TURBO II 4 ROCKWELL680WTURBOII
 - 4 **ROCKWELL 681 HAWK**
- 85 SOCATA TBM-700A
- 90 SOCATA TBM-700B
- 381 SOCATA TBM-850
- 121 SOCATA TBM-900
- 38 SOCATA TBM910
- 136 SOCATA TBM930 6 STARSHIP 2000A
- 50 TURBOCOMMANDER1000
- 22 **TURBO COMMANDER 690**
- TURBOCOMMANDER690A 131
- TURBOCOMMANDER690B 135 TURBO COMMANDER 840 73

TURBO COMMANDER 900 20 19 TURBO COMMANDER 980

TWIN PISTON - 6,872

OWNERS

AIRCRAFT COUNT

- BARON 56 TC 35
- 1,566 BARON 58
- 446 BARON 58P
- 118 BARON 58TC 3
- BARON A56TC BARON G58 335
- 158 **BEECH DUKE B60**
- 150 CESSNA 340
- 480 CESSNA 340A
- 49 CESSNA 402B **BUSINESS LINER**
- 110 CESSNA 402C
- 20 CESSNA 404 TITAN
- 312 CESSNA 414
- 430 CESSNA 414A
- CHANCELLOR
- 36 CESSNA 421
- 30 CESSNA 421A 335 CESSNA 421B
- 713 CESSNA 421C
- 38 CESSNA T303

- PIPER 601 AFROSTAR
- 4 PIPER 601B AFROSTAR
- PIPER 601P AEROSTAR 182
- PIPER 602P AEROSTAR 21
- PIPER CHIEFTAIN 509
- PIPER MOJAVE 20
- PIPER NAVAJO 280
- PIPER SENECA 196

- 13 ROCKWELL 520 COMMANDER
- **ROCKWELL 560** 3 COMMANDER
- **ROCKWELL 560A** 11 COMMANDER
- **ROCKWELL 560E** 7 COMMANDER
- ROCKWELL 560F 6 COMMANDER
- 12 ROCKWELL 680 SUPER
- 3 ROCKWELL 680E
- ROCKWELL 680F 14 COMMANDER
- ROCKWELL 680FL GRAND COMMANDER
- ROCKWELL 680FLP 4 GRAND LINER

HIGH PERFORMANCE **MOVE-UP SINGLES -**5,726

OWNERS

- COUNT AIRCRAFT 200 BEECH BONANZA 435 CESSNA 182 52 CESSNA 206 CESSNA P210N 373 21 CESSNA P210R 54 CESSNA T182 790 CIRRUS SR20 2,875 CIRRUS SR22 26 MOONEY ACCLAIM ULTRA 11 MOONEY OVATION ULTRA 271 PIPER MALIBU 93 PIPER MATRIX
- PIPER MIRAGE 525

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30 Seconds Over Delaware

This may come as a bit of a surprise, but students handle all of the takeoffs and landings under the close scrutiny of Kipp or one of the other experienced flight instructors.

"Once we're airborne, it's off to the practice area to give the students a chance to get a feel for the airplane," she said. "Gentle turns followed by increasing degrees of bank and ending with steep turns. You have to feel the differences in control forces and the effect of torque."

Speaking of control forces, Kipp said that one thing that catches students is how unbalanced the bomber's controls are. The ailerons are very heavy, so it takes two hands to make turns. On the other side, the elevators and rudders are light.

"On top of that, you have the torque of those two big radial engines pulling you one way or another," she continued. "The stick and rudder part is very challenging for anyone who has never flown radial engines, but it's a lot of fun."

After a few turns, students get the whole stall sequence, culminating with a simulated single-engine go-around. A word on stalls is appropriate here.

"It's dramatically different from anything you've ever flown before," Kelley said. "Its stall characteristics are dramatic – not much fun – and certainly not like any Cessna. Put it into a full stall, and you're upside down in a heartbeat. This is serious stuff."

The requisite need to sharpen or re-learn your stick-and-rudder skills is one benefit that every pilot takes away from the B-25 program.

"They are benefits no matter what you fly," he added. "The more you fly an airplane like this the better you will fly any other airplane. That's why all kinds of pilots come here. They all leave as better pilots."

Back in the cockpit, along with other air work, students also practice flying steeper than normal approaches. Because of the need for precise energy management, the B-25's approaches are flown higher and steeper than the standard three-degree slope we are all used to.

"You have to master energy management during the approach," Kipp explained. "You can't drag a B-25 in low and slow. It takes too much power to get flying again."

"Once we demonstrate what the airplane can and cannot do, we fly to another airport that has wider, longer runways for students to do their takeoffs and landings," she added. "I can tell you that the students and instructors are worn out at the end of the day. But, still, everyone comes away saying it is one of the best experiences of their flying career."

"All the flight training through the recommendation ride and the check ride is done in-house," Kelley said. "Along with our three highly-qualified CFIs, we also have Paul Nuwer, an FAA examiner on staff. It's important that we have a turn-key operation."



Ready to Enlist?

So, what kinds of pilots go through the B-25 Flight Training Program? Well, people like us. From pilots who fly B-25s and other warbirds for museums and private owners to corporate and airline pilots who just want to check B-25 training off their bucket list.

The Delaware Aviation Museum Foundation currently offers three types of B-25 Flight Training experiences: an Orientation Flight, the second-in-command (SIC) type rating, and the pilot-in-command (PIC) type rating. The minimum requirement for any of the three is a private certificate with a multi-engine rating. The student must hold at least a third-class FAA medical. The FAA does not allow Basic Med medicals for this training. The PIC program also adds the requirement for an instrument rating.

No matter why they come, Kipp said that pilots leave with the same renewed appreciation for what accomplishments and sacrifices the young men and women of the "Greatest Generation" made when they climbed aboard their aircraft during World War II.

"Those young people flew these aircraft into battle with very little training but an immeasurable amount of courage," she said. "No one leaves our program without a stronger and greater appreciation for the magnitude of what they did and the capabilities of airplanes they flew."

For more information, visit delawareaviationmuseum.org. T&D

Dale Smith has been a commercial, private and business aviation marketing and media communications specialist for nearly 40 years. He is an award-wining aviation journalist and aviation artist. Dale has been a licensed pilot since 1974 and has flown more than 40 different types of aircraft. Contact Dale at dalesmith206@ comcast.net.





Is It Ready Yet? A Cessna 340's Panel Overhaul

by John W. Tucker & Brian Ford



very now and then, the stars align between opportunity, a capable roster of participants, more than a sprinkling of creativity, and an unshakable perseverance to make a project truly unique and wonderful. This is one of those alignments, and while not the typical aircraft one might see in ACI Jet's business jet repair station, it rests high on the list of memorable projects nonetheless.

The aircraft subject is a 1977 Cessna 340A, a pressurized twin-piston aircraft first introduced in 1971. A true "cabinclass" aircraft capable of what remains impressive speed and range. The Cessna 340 quickly secured its spot as one of the most sought after GA aircraft of the 20th Century. Now, in 2021, not much has changed, although an investment in modernized avionics, some aftermarket modifications and a fresh interior might be in store for many of them.

Once featured in Twin Cessna Flyer Magazine (April 2013), this Cessna 340A (N222RD, serial number 366) spent much of its life as a commuter aircraft for a doctor in the U.S. Virgin Islands. Ear, Nose and Throat doctor, Adam Shapiro, used the aircraft to shuttle between offices and to fly his family around the Caribbean Islands. In 2015, the aircraft would serve a very familiar role, shuttling its new owner between office locations and acting as a family "station wagon" when acquired by William "Bill" Borgsmiller, founder and Chief Executive Officer of California-based business

jet maintenance, FBO and charter provider ACI Jet. Bill, an avid aviator with more than 6,000 hours of flight time with 2,000 hours in piston aircraft, flies his Cessna 340A regularly and is a vocal supporter of investing in light general aviation. The aircraft was an upgrade from his 1970 Cessna 310.

As ACI Jet has operations and business interests in locations including Southern California and along the Central Coast of California in San Luis Obispo County, seamless and timely connections between them are critical. Bill's C340 hits the airways weekly, sometimes multiple times per week, and takes him and others where they need to be quickly and safely. Bill jokes that with as many trips as he's done between the company's headquarters and home in San Luis Obispo and its largest FBO at John Wayne Airport, Orange County, California, "the aircraft can almost fly itself down to Orange County now."

Above all, the aircraft faithfully carries Bill and his family to his hometown in Northern California and beyond – often just to get out and go flying.

The reality is that with proper care and maintenance, airframes can essentially last forever. Bill realized that with a substantially upgraded panel, he would gain the added safety, navigational resources, and engine performance information a newer airframe could offer but with an aircraft that has already been serving him well. He'd also be modernizing the aircraft to remove fuel and oil lines that fed directly to the aircraft's instrument panel – a safety upgrade that Bill sought to accomplish with newer, electronic instruments. A few functional upgrades to bring the jet aesthetic to the flight deck would make it fly like the newest aircraft off the lot.

Beginning in January of 2019 and culminating 13 months later in February of 2020 (when owning and operating a private aircraft reminded us of its importance with the dawn of the COVID-era), the ACI Jet maintenance and avionics teams would remove more than 80 pounds of wiring from the C340. The team redesigned and reengineered the entire flight deck, and tested the shop's customization capabilities, including carbon fiber molding, 3D printing and advanced sheet metal fabrication, plus installed an entirely new Garmin touchscreen (TXi) flight deck.

The primary objectives were to consolidate engine indications into an electronic display, modernize the panel to include electroluminescent indicators and push-button LED annunciators, and to maximize efficiency for Bill or any of ACI Jet's pilot-employees flying the aircraft. However, with an aircraft that has systems packed together in a small package, as components were removed or replaced, opportunities for further improvements or cleanup abounded – the "unraveling of the sweater," as Glenn Mauk, ACI Jet's lead avionics technician put it.

All-in, at the completion of the project a year later, there would be 11 Aircraft Flight Manual (AFM) supplements and a number of deviations from the Supplemental Type Certificates (STCs) requiring extensive engineering, designs, installation mounting templates, miles and miles of wiring marked with the repair station's Laselec MRO 200 wire marker and digital wiring diagrams – all to aid not only the maintenance at hand but for all future maintenance.

With panels removed, corresponding inspections and other maintenance opportunities scheduled, further opportunities for improvement arose. It became a "choose your own adventure story" according to Brian Ford, ACI Jet's avionics manager and technical sales director. "Nearly every day there was an 'if not now, when?' moment. Something that would be difficult to do now, both from the standpoint of shop time and with a hangar full of business jets, would be impossible later once we buttoned up the aircraft," he continued. "The other thing to remember is that even small improvements, whether it be a change in a plug type or different kind of fastener for an application, require engineering documentation, diagrams, AFM supplements at times and mechanical or electrical DERs. Sometimes even from a switch that went up and down to one that goes in and out."

Other unplanned but opportune upgrades included 3D printed scupper drains for nacelle baggage access doors, a brand new, carbon fiber overhead panel designed and fabricated by one of ACI Jet's maintenance technicians, Tyler Kirk, and panel labeling for the Envision Avionics Panel designed by ACI Jet's marketing and communications department to ensure character spacing and style was optimized for ease of reading in all operational



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conditions. It was truly a team effort, and the end product shows just how big and capable that team was.

The project also proved that refurbishment isn't just for business jets. Bill's Cessna 340A features a feel of flying nearly identical to any new piston aircraft, yet on an airframe born when he was. With the new interior scheduled for next year, which will be modeled after business jet interiors designed by his company, it'll feel like a brand new aircraft in the back, too.

This model applies to all kinds of aircraft, and in an era defined by the pursuit of sustainability and good stewardship, it's worth it for every owner to explore incremental upgrades before airframe replacements. Garmin Aviation has a new suite of avionics that integrates well into many

piston aircraft, and their entry into the Citation business jet scene has been disruptive, to say the least. A lean investment by bizjet standards can yield big dividends in-flight data, efficiency, safety and resale value.

Light aircraft like Bill's 340A proved over the last year that business and general aviation serve

Components Installed

- Garmin TXi PFD
- Garmin GFC 600 Autopilot
- Garmin EIS TXi Engine Monitor
- Garmin GWX 75 Weather Radar
- Artex ELT 345

Other Key Add-Ons

- Internally Lit or Augmented Ring Illumination
- Custom LED Annunciator Switches & Panel
- (2) USB Power Outlets
- LED Lighting on Bottom of Pedestal
- Carbon Fiber Relief Tube Enclosure
- CiES Fuel Qty Sensors
- Envision Avionics Panel

a critical role in our world. When the aviation infrastructure softens, private flying can keep the economy on track. It's not just the large-cabin business jets either, though their contribution to flying during the COVID-era can't be understated. From single-engine Cessnas and helicopters to twins and turbines, GA picked up the slack when the commercial airlines began to falter.

When we finished the installation of Bill's new Garmin panel and the host of other upgrades, fixes, tweaks and even a few surprises, we felt it deserved to be commemorated. We have a tradition in the ACI Jet MRO: mission patches. When we finish a major project like our installation of the first JetWave internet system on a Challenger 604 or there's a

major company milestone like our selection as a Bombardier Authorized Service Facility (ASF), we create a patch for the whole maintenance team.

> This patch was special and features our mantra by the time we completed the project: "We might as well have sent the aircraft to outer space." It features Bill's Cessna 340A atop a liquid fuel tank, complete with solid rocket boosters, on its way to space. The stars in the sky represent the 12 technicians of our more than 40 who worked directly

on the project for more than 100 hours each. Audible from the flight deck: "Is it ready yet?" While always respectful in his delivery, it's a phrase we heard quite a bit from Bill throughout the process as he was eager to get his prized aircraft back where it belonged.

John W. Tucker is an aerospace marketing and communications professional with nearly 15 years in the business aviation industry. John calls San Luis Obispo, California, his home and ACI Jet his home away from home.

Brian Ford is ACI Jet's Avionics Manager and Technical Sales Director. Brian has more than 15 years of aviation maintenance experience and has held positions as a technician, instructor and department manager.

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From the Flight Deck



Pilot Changeling A professional flying career often follows a circuitous and uncertain course.



High School hippies Kevin Dingman and Kevin Davis.

alking with a Wyatt Earp saunter, one hand hovering over his holstered pistol, the police officer would soon be within voice (and pistol) range. No challenge had been issued earlier that evening, so our nonchalant bravery toward the gunslinger seemed appropriate. But our emotions would soon change from arrogance to anxiousness as the confrontation unfolded.

The encounter happened shortly after a high school friend and I pushed open an unlocked gate and walked across the terminal apron towards the airplane. Our bellbottom pants, shoulder-length hair, platform shoes and 17-year-old demeanor had likely convinced him that we were trouble-causing hippies. We did provoke him a bit I suppose, witnessed by the hurried walk that we had agreed to present, just to see what would happen. One hand hovering over his pistol, that's what would happen. It's after dark; why are they hurrying like that? They probably have a load of pot and are headed to a stoner party; with girls the same age as my daughter – damn hippies. I'm going to shoot one of them right here.

Doobie Brothers

It was the early 70s, and I didn't fully appreciate the dynamics or tension between hippies and The Man. If I had, better judgment might have prevailed that night. The airplane to which we were walking toward briskly was a 90 hp Mooney Cadet. With the two of us on board, we may have been able to carry a load of pot if we lightened the 24-gallon fuel load and left behind our love beads and 10-pound platform shoes. But we were geeks – well, geeks hadn't been invented yet. We were nerds, maybe not even nerds. Chronologically speaking, we were somewhere between dorks and nerds. And we wouldn't have recognized a "doobie" if Cheech and Chong had stuck it in our eye. I was a brandnew private pilot, and it was the first and the last time my friend ever flew with me. Perhaps the evening's invigorating reenactment of the O.K. Corral was an influence.

Hippie Bloodstains

We had flown from Kalamazoo to Grand Rapids for dinner in the terminal – the airline terminal. We enjoyed a celebratory \$50 hamburger (inflation now makes it \$100 to \$1,000) for my new license, and it was a different time back then. We walked to and from our airplane not far from a North Central Convair 580, unhindered and unchallenged. Until now. "What are you two doing out here?" belched the cop. I arrogantly raised my peach-fuzz speckled chin ever so slightly. "I'm a pilot, and we're going out to that airplane." I pointed to the Mooney Cadet.

"Have some ID and a pilot's license." His words were not spoken with the inflection of a question; they were a statement. Used in place of: "Show me some ID you hippie before I shoot some of that hair right off your head." I guess the brisk walk and raised chin had worked, and now we knew what would happen: the G-Man would shoot us. However, following the example of Ike Clanton and Billy Claiborne(survivors of the O.K. Corral), my courageous friend and I acquiesced and became meek little kids. I think the lawman was disappointed that we left the ramp free of shot-off hair and hippie bloodstains.

Back To The Future

Fifteen vears later, déjà vu was inevitable as three uniformed Air Force enlisted men approached me headon. One was an MP (military police) and carried a fully automatic M-16 rifle. Once again, I had stepped onto a patrolled ramp just yards away from an airplane. But this time, the G-Man saw no hurried pace, no Woodstock attire and no hippie-length hair. Instead, an Air Force officer in a flight suit with an armful of flight gear. "Good afternoon, sir," one of the men affirmed, rendering a salute. "How was the van ride?" The Friday afternoon trip from Luke Air Force Base, Arizona, to the Gila Bend Air Force Auxiliary Field (pronounced He-La-Bend) was a tedious, two-hour, 105-degree, non-air-conditioned pain in the butt. The airman's rhetorically sarcastic question about the van ride drew shaking heads and chuckles from all of us as I returned the salute.

Even though they poked fun about the drive, we all knew that my ride back to Luke would be a different story. "Sir, how long will it take you to fly back?" "I'm shooting for a point-three, Chief." They looked at each other with huge grins. "Will you be doing an afterburner takeoff?" I gave them the grin right back with a yep. I hung my g-suit and parachute harness on the launcher rail at station nine (right wing tip) and set my helmet bag on the ramp. One of the men handed me the maintenance log. My Friday afternoon sortie was to retrieve a repaired F-16 from Gila Bend and fly it back to Luke.

Make This One Quick

Air Force squadrons are budgeted flying time for all non-combat missions. The time is divided into monthly allotments, and once the allotment is used up, flying stops whether the calendar time is finished or not. A flight like today's is a cost-of-doing-business thing; it gets us nowhere in the training cycle but still uses up the allotment. The squadron commander, LTC "Rhino" Gross, a friend from my days at Nellis AFB, Nevada, had asked me to go get the jet. "Dinger, make this one quick." "Yes, sir. See you at the O'Club."

It wasn't favoritism. There were simply no other F-16 instructors besides me willing to suffer through two or three



hours of crap on a Friday afternoon just to fly a hopefully repaired jet for less than 15 minutes. Who would? No airto-air, no dropping bombs and no shooting the gun. Rhino knew someone who would fly. The same guy that, when the squadron had excess flying time to use up before the end of the month (use it or lose it), volunteered to fly lead in a two-ship of F-16s from Phoenix to Battle Creek, Michigan for a weekend of bowhunting. And a few months later, on another weekend to meet up with high school buds to drink beer and play ping-pong – anything for the USAF, don't you know. And the same guy that would hop into the pit (the backseat of a two-seat F-16) just to get into the air and out of the office. All that guy needs is the okay and some gas.

Today, the jet has a full load of gas – enough to run the engine in afterburner (AB) all the way home if I want, and boy did I want. I have the okay of the squadron commander, maintenance and ATC to fly just below Mach until I enter the pattern at Luke. This would be my reward for enduring that crappy van ride. And the deafening AB takeoff a reward for the ground crew. Plus, it would help get me away from the ground quickly if the jet wasn't totally fixed after all. And equally as important, my buds will already be at the Luke O'Club and a cold beer waits for no man.

Hair on Fire

You don't get to light your hair on fire without planning and permission. Terms like maintenance test flight and tactical arrival are used in filing and on the radio. This lets ATC know that you intend to go like hell, you may blow up, and it's Friday night at the O'Club. Not necessarily in that order. The jet is pointed down the runway with the brakes held as I slide the throttle all the way forward to military power, brakes released, then throttle around the horn and into full AB. A few seconds later, the gear is up and the jet is passing through 300 kts in a window shaking, 45-degree climb over the heads of my ground team. "Luke Approach, Sonic One is off Gila Bend, tactical to Luke." "Roger Sonic One, Luke Approach, radar contact, no traffic observed. You're cleared direct Luke, speed and altitude your discretion." Damn right it is. I purposely take my hand off the throttle and watch as the groundspeed passes through 400, 500 and 600 kts. My air-to-air radar sweeps for targets and at .96 Mach I pull it out of burner. It may have been .99 Mach, but I'm not admitting to any broken windows. If there was a sonic boom, it must have been from some other hippie.







Yo, Dinger!

Nine minutes after brake release, I enter the empty Luke pattern at 480 kts and at mid-field, I'm into the break. It's a 7G left turn to downwind where I go to idle, put out the boards with my left thumb, slow to 400, 300 then 200 geardown, and come off the perch into one continuous turn, base to final. The F-16 is pretty easy to land. Flaps and slats are automatic, and I've taught 14-year-old Civil Air Patrol Cadets how to land after just one try in the sim. My crew chief marshals me to a parking spot in a row of six other F-16s and I shut down the motor. I can't help but give my F-16 a little anthropomorphic stroke on the nose as I pass by.

After dropping off my equipment, I'm on my way to the O'Club. Half the squadron is over in one corner and they know I volunteered for the Gila Bend sortie. A shout comes from across the crowded bar: "Yo, Dinger. How was that VAN RIDE?!" You've never been ribbed properly until you've been ribbed by a bar full of fighter pilots. Little did they know, for this hippie turned fighter pilot, it was so worth it.

Ugly Duckling

A professional flying career often follows a circuitous and uncertain path. But there are those who have fallen in love with airplanes and will not be intimidated or dissuaded by a winding path, career uncertainties or by ribbing.

Over lunch, a friend from another magazine described his desire to become a full-time pilot once he retired as a Cheyenne-flying Chairman of Surgery at the University of South Florida. But we all have our van rides to endure and flight departments weren't taking him seriously. It took determination before one of them recognized the pilot beneath the scrubs. Like finding a fighter pilot beneath long hair and bell-bottoms, Dr. Karl persevered and was hired by JetSuite as a First Officer and later became a PIC. He went on to own a Beech Premier 1 that was totaled by a large bird strike and then a Citation CJ1. Sometimes Hans Christian Andersen's ugly duckling in bell-bottoms or scrubs doesn't stop when they see a white swan; they persevere to become an eagle.

Kevin Dingman has been flying for more than 40 years. He's an ATP typed in the B737 and DC9 with 28,000 hours in his logbook. A retired Air Force major, he flew the F-16 and later performed as an USAF Civil Air Patrol Liaison Officer. He flies volunteer missions for the Christian organiz tion Wings of Mercy, is employed by a major airline, and owns and operates a Beechcraft Duke.Contact Kevin at dinger10d@ gmail.com.

Diamond by the Sea

by Grant Boyd



parachute gives some sense of safety, but if the engine fails and you are over the ocean with no reasonable landing options at a gliding distance, you will inevitably have to swim," noted Mario Pereira, MD, when recounting why he chose to purchase his 2018 Diamond DA62 over competing single engine options.

Dr. Mario Pereira (or "Doc" as his flying buddies call him) is originally from El Salvador and has lived in the United States for most of his life. He practices medicine in South Florida, operating three offices and rendering service at eight different hospitals across the state.

From his home base of Fort Lauderdale Executive Airport (KFXE), Dr. Pereira flies around 250 hours per year, with roughly 90 percent for business and the remaining 10 percent for pleasure. Destinations include the Florida Panhandle, Central Florida, the Bahamas, Mexico and El Salvador. Consequently, the board-certified internal medicine specialist is no stranger to overflying long stretches of ocean. During these flights, he often spends at least an hour over the water without a landing field in sight or gliding distance.

One of Dr. Pereira's most notable routine water crossings is the trek from Southern Florida to Ilopango International Airport (MSSS) in San Salvador, El Salvador. Upon departing Fort Lauderdale, he will usually fly nonstop, occasionally stopping at Key West International Airport (KEYW) to top off fuel midroute. From The Keys, the roughly 885-nautical mile journey takes a little over four hours and approximately 70 gallons of JET-A from the aircraft's 86-gallon capacity. Over the course of a decade or so, he has flown several routes between Florida and El Salvador to visit family and check on investment properties. Previously, when he flew a Cirrus SR22T, he would fly slightly longer distances in an attempt to stay at a reasonable glide distance from Cuba and Mexico's Yucatan Peninsula en route to Central America. This would allow him additional minutes over land and help to mitigate engineout concerns. Now flying with two engines, the routing options are more flexible.

Dr. Pereira's most frequently selected flight plan cuts a path between Key West and Cancun, Mexico, hugging the northwest corner of Cuba's outermost airspace (near Havana), then onwards to Puerto Barrios, Guatemala. From there, he works further south into Honduran airspace and ultimately on



to the capital of El Salvador. All said, the entire journey, which begins near the Atlantic Ocean and ends miles from the Pacific Ocean, takes the better half of a day.

Engine redundancy was just one of the main reasons why Dr. Pereira purchased the seven-seater DA62. Other options he initially considered were a new Cirrus SR22T or a Beechcraft A36 Bonanza.

Of course, any aircraft acquisition should be treated as an investment. At the time, he had more than 600 hours of experience with Cirrus products, including renting a shared 2014 SR22 G5 and owning a 2010 SR22T. While the manufacturer offers a "tremendous package and value," he felt purchasing a brand-new Cirrus was too costly for a single-engine piston aircraft, and an investment of \$1 million would go further elsewhere.

After additional deliberation, he determined a multi-engine aircraft would be best, as it was a happy medium between single-engine piston and turboprop or turbine choices. He compared several different twins during his search. Aircraft among the possibilities were a Beechcraft Baron G58 ("high operating costs"), a Beechcraft Baron B55 ("high operating cost and dated technology") and a Cessna C310 ("labor-intensive, expensive to run, older avionics"). Upon further examination, he decided a newer, more economical option would be a Diamond DA62.

One of the most distinctive attributes of the aircraft is its impressive fuel efficiency. It has roughly a 13 gallon per hour consumption rate (total) when cruising 160 to 175 knots (at 65



percent) depending on the Flight Level. The aircraft has a published 1,283 nautical mile range. Other noteworthy characteristics are its 1,565-pound useful load, max takeoff weight of 5,071 pounds and 20,000-foot certified service ceiling. Dr. Pereira also had previous experience with the brand flying a Diamond DA40 with G1000 during his instrument training. An additional reason he gravitated toward the twin was the potential to transition to other aircraft (i.e., light jets) in the future.

Once he determined the DA62 was his personal best bet, he found a oneyear-old aircraft with less than 100 hours. He purchased the 2018 model from a Part 135 operator in Florida who was moving up to a light jet. The acquired Diamond came in at \$1.1 million with an estimated hourly operation cost of approximately \$285. After flying the aircraft for 350 hours, Dr. Pereira affirms he has found all performance numbers to be accurate "to the decimal," with the cost of operation the lowest of any twin he has flown.

Regarding flying this aircraft and aviation in general, Dr. Pereira stated he has always "thrived on hobbies that require a structured learning process, organized environment, and develops a distinctive skill." Becoming a pilot and continually working to become more proficient has been a natural process for him. Currently, he has around 1,400 hours of total flight time.

That number would likely be higher had his father supported his early desire to become a pilot (or aeronautical engineer) as a career. Interested in aviation from a very young age, he instead was told to "get a real profession that will pay for your hobbies." Consequently, he entered medical school at age 17 in El Salvador and graduated eight years later. After moving to the United States in 2001, he continued his education, validated his credentials, and passed the United States Medical Licensure board exams. He then entered Residency in New Brunswick, New Jersey, in 2005, where he became Chief Resident three years later. Since then, he has put his medical training to use in the Sunshine State and routinely combines it with his passion for aviation.

Dr. Pereira's business flights take him all across Florida to treat patients. For the past 12 years, he has primarily practiced in the southern portion of the state in Broward County (Plantation, Coral Springs, and greater Fort Lauderdale area). In addition, he practices in the Lake Okeechobee area, Osceola County (Kissimmee, Orlando, and Ocala), and up into the Panhandle area in Bay County (Panama City, Fort Walton, etc.).

To serve populations within critical access areas, he relies upon his aircraft to reach areas of the state that would be much more time-consuming to travel to by car or airline. When

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AVIATION

flying to this region, Dr. Pereira will typically land at general aviation airports located within 20 minutes from his place of practice. On average, this saves him half to full day of travel.

Depending on where he is flying and for what purpose, he typically travels alone or with two to three passengers. That said, the aircraft has flown with up to six grown adults with "no issues." Carried baggage is often minimal. If a need to haul more was a factor, then other options would have been explored. "It's definitely not a cargo mule. Even though it has the space and payload, loading heavy objects is not as easy as you may think. The DA62 is more of a people mover, although there is a five-seat option that has additional cargo space."

Dr. Pereira advised aviators not to discount the manufacturer when considering their next (or first) aircraft purchase. "After I chose to seriously consider this aircraft, lots of people tried talking me out of it. Recently, the prevailing thought seems to be that light twins are obsolete and dangerous. But I have found that the DA62 has amazing critical engine performance, and flying it with a lone engine is docile and maneuverable. For example, with one engine the aircraft can still climb 300 to 400 feet per minute with two or three people aboard and full main fuel tanks."

And as Dr. Pereira ultimately sums it up: "It's all about the mission, the price, and the pilot. When choosing an aircraft, there is no one-size-fits-all model. A well-studied purchase can be extremely rewarding if determined based upon those three factors."

Grant Boyd is a recent MBA graduate of Wichita State University. A private pilot, Boyd is currently working toward his instrument rating, with the ultimate goal of combining his love of business and aviation with a career at a general aviation manufacturer. You can contact Grant at grantboyd2015@gmail.com

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On Final by David Miller



Makeover

Garmin has done a fantastic job revitalizing the Citation Mustang. Several years ago, they introduced the NXi upgrade to add functionality to the original G1000 avionics. Faster processors, vibrant colors and autopilot coupled visual approaches are just a few of the improvements that added life expectancy to the popular out-ofproduction jet. It's one of the reasons I recently bought my third one.

But November three nine six delta mike is still a 10-yearold airframe. And it looks it. Although the paint is still shiny, some of it is beginning to depart the wings. And the interior looks like it has been lovingly lived in – for 10 years.

When we took delivery of 510-284 in early summer, Patty and I had a plan to remake the airplane. But in 50



years of flying, this is the first time we attempted a tipto-tail project.

By chance, the folks at Textron Aviation figured out that most of the 470 Mustangs built were at least 10 years old and many were in need of a facelift. Like Garmin did with the avionics, Textron Aviation created a complete interior and paint program to add life to the airplanes. We were the first owners to jump at the chance to see what they could do.

Patty had a ball. There is nothing quite like sitting in a large conference room with hundreds of fabrics and swatches of colors covering a huge table. It's kind of like visiting a chocolate factory. "Just make it all black leather," I said. Patty frowned, sent me downstairs to look at new airplanes, and continued her work.

Senior Interior Sales Manager Kaye Miller and Designer Darcy McDougle spent hours with Patty comparing this and that. They prepared color renderings. They passed around supple fabrics. They sipped champagne. Soon, they decided that the old paint also had to go and designed a classy scheme with a little "pop" to Patty's liking. "Just solid black will be fine," I said.

"Honey, did you hear that Garmin is introducing new avionics 'thingies' for the cockpit?" Patty said.

"No. Where?" I asked like a dog chasing a squirrel. They sent me downstairs again, and I found Joey Ferreyra of Garmin. He said that since my old interior was coming out, it would be the perfect time to install their new GR56 global Iridium datalink, a new GTX 345DR diversity transponder, and most importantly, a GWX75 Doppler-capable weather radar. Now I had something to drool over. We left the airplane with Kaye and Darcy and headed home on American.

About six weeks later, we returned to see the results of Textron Aviation's work. She looks like a brand-new airplane. What did it cost? Too much and worth every dollar. Stop us on the ramp some time for a tour.

Fly safe.

David Miller has owned and flown a variety of aircraft from light twins to midsize jets for more than 50 years. With 6,000 plus hours in his logbook, 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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