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Owner's Corner:
TBM 700B

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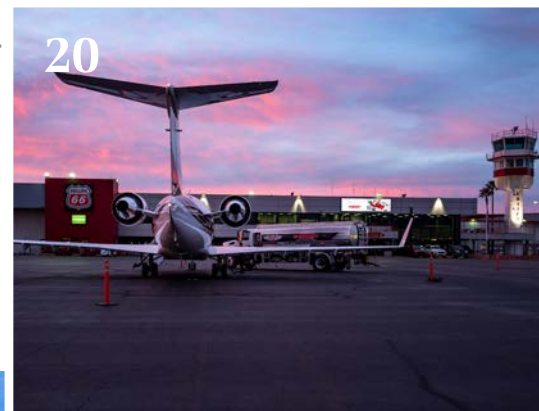
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Editor's Briefing

by Rebecca Groom



Time Flies When You Own a Bonanza

The following editorial is guest written by Jared Jacobs.

Hard to believe, but February marks one year since we purchased a 1970 F33A Bonanza. Naturally, it seems fitting to take a moment to reflect on the first full year of aircraft ownership!

The Start

The beginning of my ownership journey was abrupt thanks to a hot aircraft market. The need to move quickly was emphasized after a couple of near misses with other potential aircraft. So, when I came across the listing for 121RW linked to a post on the BeechTalk Forum, I fired off an email to the seller right away. Incredibly, through a series of coincidences, I inspected the aircraft and submitted a conditional offer the very next day. Within the week, the pre-purchase inspection was complete and the final paperwork in review. I went from sitting on the sidelines to aircraft owner in a matter of days. At the time, my head was spinning trying to ensure all was in order while also trying not to miss another great opportunity. Thankfully, with the help of many seasoned contacts and a lot of research, my preparation paid off.

The first few months of ownership are documented in past T & T articles and more closely detail the purchase process and an early maintenance issue (which was chalked up to new ownership teething). I felt those stories could best advise prospective buyers plus provide an avenue for reflection for seasoned owners. But here are some of the major highlights not documented:

- The joy of the first flight in MY airplane, including practice landings and approaches to get to know the F33A.
- The hours spent reading the Pilots Operating Handbook to develop my own checklist, helping me learn the systems and emergency procedures of the aircraft.
- Re-teaching myself proper piston engine management after a five-year hiatus. I scoured owner forums on BeechTalk and watched countless YouTube videos.
- The first cross-country trip flying to visit family in Arkansas. Plus, the joy of taking my parents on a flight over their hometown and family farm.
- Weekend getaways to small towns I would have never considered driving to.

The Surprises

Following a handful of fun, smooth months was a mysterious maintenance event discovered right as I took off for another flight to Arkansas last summer. Fortunately, it turned out to be nothing more than a vibration caused by fully filling the aircraft's tip tanks (something I had not yet done).

While I was thankful there was no actual underlying issue, it was still a costly trip to the shop both in price and time. The event also occurred not long before 1RW went down for its annual inspection, which, unfortunately, also came with a few costly "surprises." (Both stories documented in T & T).

On the other hand, 1RW has provided numerous positive surprises and experiences – ones that just would not have been possible without an airplane:

- A lake trip where I was able to knit two vacations, separated by hundreds of miles, together into one thanks to the magic of private aircraft travel.
- A long weekend to visit friends in Dallas who I hadn't seen in years. I was able to meet their children for the first time.
- Flying to Lake Texhoma to go Striper fishing with my dad after talking about it for years.
- Surprising a friend's little sister for an 18th birthday trip to Kansas City.

These are stories I was personally able to create thanks to 1RW – and do not even include other flights and memories made by my two partners. (One of my favorites being when my partner Ryan facilitated a marriage proposal. He flew a friend and his girlfriend on a local scenic flight before landing at an airfield for dinner where friends and family were out on the tarmac holding signs spelling out "MARRY ME?" (she said yes)).

The Simple

Even when not flying, my airplane provides enjoyable experiences in the form of "hangar therapy." As someone who loves to work with my hands, I have spent countless hours removing bugs, giving belly washes, updating databases, troubleshooting issues, or performing minor maintenance upkeep tasks. I would classify any hour spent at the airport as better than any hour spent just about anywhere else.

It's interesting to me now as I reflect how I thought the stories most helpful to T & T readers would be lessons learned and bumps in the road. While there is validity to that line of thinking (as they are part of the reality of aircraft ownership, and this is a magazine dedicated to educational sharing), those aren't the stories that I remember the most vividly – or the ones that I truly want to share with my friends and family. My first year of ownership in my mind is a story of living my passion for aviation and making memories that could not be made otherwise. Here's to many more!

Feel free to send questions, comments or topic ideas to Jared at jaredjacobs2@gmail.com.

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A Look at Breitling

Navigation, Time and Flight

by Grant Boyd



More than 100 years before new-age glass cockpits and portable telephones, a legacy watch company was founded. In 1884, a Swiss-watchmaking firm was started by its namesake founder, Léon Breitling. From the outset, Breitling has focused on stylish, reliable and durable mechanical timepieces, which at the time were increasingly in demand for industrial, military, and scientific applications as well as for athletic organizations. But it wouldn't be until more than half a century later that one of its most well-known, targeted product lines first took flight.

Since the 1950s, the brand's aviation-inspired lineup of wristwatches has been headlined by a flagship timepiece, the Breitling Navitimer. Its name is a combination of the words "navigation" and "timer." Equipped with the flight-specific slide rule that was introduced with the Chronomat, countless pilots, airlines and aircraft manufacturers have opted for this timepiece ever since. Breitling's CEO, Georges Kern, further explained the watchmakers' lasting legacy and continued commitment to aviation.

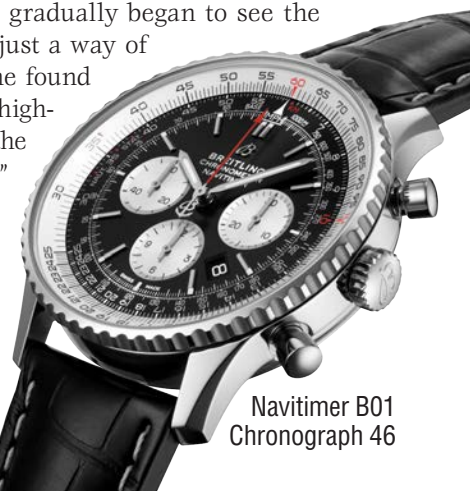
"Our legacy dates back to the 1930s when our Huit Aviation department established a global reputation for cockpit clocks. In the 1950s, we made this technology wearable with the Ref. 765 AVI, a pioneering pilot's watch that inspired many more. Of course, the Navitimer was the ultimate pilot's watch in the 1950s and 1960s and is still a key part of our collection.

There have been numerous other highlights, including our onboard clocks on international airlines in the '60s and '70s and even space travel. Today, with the launch of the Super AVI, which was inspired by the Ref. 765 AVI and pays homage to four legendary planes, we come full circle, making it clear that aviation remains a defining part of our DNA."

Christiaan van Deur, a controller at Charlotte ATCT and a private pilot, never flies without a Breitling watch on his wrist. A lifelong aviation enthusiast, his interest in luxury timepieces originated during his youth. His most beloved model he happened across by accident

as a child when searching in the junk drawer of his mom's dresser. He stumbled upon a small antique box with a winged B logo on the outside. Curiosity took over and Christiaan opened the box and saw a watch that immediately caught his eye and brought the piece to his mom's attention. Come to find out, the Breitling Navitimer 806 (circa 1967) inside actually belonged to him. It was a gift that his grandfather, a World War II veteran and flight school owner, asked to be given to him when he was older. The watch was one of many personal adornments in the family's possession as Christiaan's mom was an avid jewelry collector, leading Christiaan to do the same with watches.

There are few times Christiaan's wrist hasn't had a timepiece on it since he first started wearing this watch in middle school. He gradually began to see the pieces as more than just a way of keeping time. What he found most intriguing about high-quality watches were "the art and intricacies" that come-together to complete each unique product. Initially, he scouted and acquired any time-tested designs from heritage



Navitimer B01
Chronograph 46

brands, but he began searching for more and more Breitling pieces as he continued collecting.

He and his wife, Heather, a first officer for American Airlines, now own 12 Breitling watches. Their collection spans vintage and newer pieces and includes both aviation and non-aviation models. Christiaan explained that many facets make Breitling watches different from that of competing pilot watches.

"The Navitimer, for example, has a circular slide rule bezel that makes it possible to perform all the calculations required for flight planning and navigation: average speed, distance covered, fuel consumption, ascent and descent rates, and more," said Christiaan. "It also has a chronograph function and a practical beaded bezel that allows for easier manipulation in the often-challenging circumstances a pilot may encounter in-flight."

The watch's functionality has been thoroughly tested in military cockpits during combat, orbiting space shuttle modules, and of course, behind the yokes of an array of general aviation aircraft. Regardless of the time and place, the Swiss-made watches have been a popular choice with pilots in part due to their evergreen involvement with flight. This is one thing that Christiaan aims to help showcase through his efforts. In addition to moderating "Breitling Owners 1884," an enthusiast forum on Facebook and Instagram, he has been an aviation liaison for the brand since 2019. In this position, he helps guide the company in continuing to create events and partnerships that fellow aviators will enjoy.

Historically, Breitling has sponsored a number of different jet demonstration teams that perform at airshows across the United States and Europe. This long-standing aerial marketing tradition has helped bolster the company's identity with pilots and aviation enthusiasts alike. Today, they still sponsor several teams, although they have incorporated new elements into their continually evolving strategy. Another key partnership is Breitling's sponsorship of the High-Sierra Fly-In, which took place in October.

The event, which celebrated its eleventh year in 2021, hosts thousands of people for a weekend of backcountry flying in the picturesque northern Nevada desert. These and other efforts' successes tell of the brand's lasting dedication to pilots and aviation enthusiasts. That said, events and partnerships are not the only evolution that the team is focusing on. As has been the case since 1884, the timepieces themselves have been Breitling's primary focus. Whether it is the design or operation, the watchmaker is entirely focused on bringing highly competitive products to market. Under Georges Kern's stewardship that began in 2017, the 138-year-old brand has increasingly focused on designing watches with a modern/retro twist in mind.

Following this framework, the Super AVI collection has been wildly popular since its release in November. This set incorporates elements from four fighters that helped to swing the needle in the Allies' favor during the Second World War. The five chronometers honor "four powerful and memorable aircraft, whose filigree silhouettes adorn the watches' sapphire case backs." The featured models are

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Exospace B55

the North American P-51 Mustang, the Vought F4U Corsair, the P-40 Curtiss Warhawk, and the de Havilland Mosquito.

As exemplified by this new collection, the company aims to utilize materials, color schemes and other elements that help to tell an unmistakable story. An example from the Super AVI collection is the Mosquito Chronograph. This particular watch has "a combination polished and satin-brushed black ceramic bezel and a black dial with white contrasting chronograph counters. Its red and orange elements recall the roundels and markings found on the versatile plane, dubbed the 'Wooden Wonder.'"

Of course, the classics still get their fair share of deserved attention and the Navitimer has been considered by many the quintessential pilot's watch for seven decades. But no matter one's interests and type of watch that they are

looking for, it all comes down to the experience of buying and owning one. Christiaan recommends that anyone interested in the brand's watches begin their journey at a Breitling Boutique.

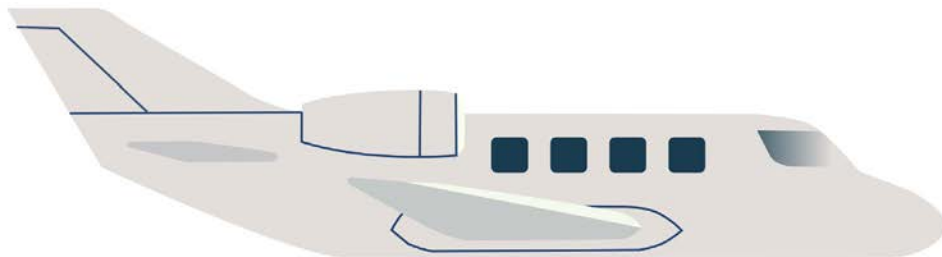
Here, one can receive the in-person, dedicated attention that they deserve when considering investing in a luxury timepiece. The associates are there to help walk anyone through available options and explain elements that vary amongst the different Breitling watches, as well as other manufacturers' timepieces.

And for those looking to bring one home, the purchase experience is well worth the "white glove service and champagne celebration." In the same vein, Christiaan emphasized Breitling watches are meant to be enjoyed: "Life is too short. Tomorrow is definitely not guaranteed, so use the fine china today. A watch at the end of the day, regardless of its price, is meant to be worn. So, strap it on your wrist and get in the cockpit!" **T&T**

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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The Evolution of Training

by Stan Dunn



The first time I ever touched the controls of an aircraft was in a glider over Durango, Colorado, when I was 16. The next time was in a DC-10 when I was 19 (I had won a free hour in a United Airlines simulator). I was bit by the flying bug, but it would take several years for it to develop into a passion that would lead to a career. The first powered aircraft I flew was a vintage Cessna 172 with a six-pack, a DG that required regular adjustment due to mechanical precession, and a whisky compass that could get you reliably within 20 degrees of your intended course.

Training was a different animal then too. The most difficult thing on an instrument rating was figuring out an NDB hold on a fixed card ADF. That NDB stuff actually came in handy when I found myself flying Beech 1900s around Montana in 2010. Navigation in the trusty BE-1900 was purely a ground-based affair, utilizing VOR/DME, cross-radials and bearing pointers. RNAV overlays were gradually picking off the worst of the non-precision offenders, but our 1900s weren't equipped for them. The year that I spent in Montana produced 80 percent of the missed approaches I've had to do "in the heat-of-the-moment." You almost never go missed from an ILS.

Prior to my time in Montana, I found myself flying around the West Coast after the Colgan crash in February of 2009. Initially, all we knew was that the tragedy had occurred in icing conditions while on approach to

Buffalo Niagara Airport in New York. I remember watching the coverage of it before catching the hotel shuttle to the airport. On my third leg of the day, we were bumping around in the clouds at 20,000 feet when I selected prop heat on. I soon noticed the prop amps cycling between the normal range and zero. On the multi-engine Beech 1900, this meant that one set of propellers was not de-icing. I requested a climb to FL250 (the max altitude for the 1900) in the hopes of getting on top. I briefly considered a diversion to San Diego where clear skies prevailed but managed to get a pilot report below that indicated that lower altitudes were clear of icing. I ultimately decided to continue to our destination.

That Colgan crash (stretching across better than a decade) would result in Congressional hearings, hand wringing, finger-pointing, and a deeply expansive set of new rules that governed everything from duty time to extended envelope training (EET). At the same time as this was happening, Part 121 training was in the midst of a dramatic shift in theory. The airlines were gradually rotating away from the 121 training rules towards advanced qualification programs (AQP). In the old 121 world, the pilot monitoring was not so gently instructed to keep their mouth shut while the pilot flying completed their check-ride sans any assistance. Crew resource management (CRM) was inexplicitly frowned upon in the training environment. Orals were hours long and could cover



literally any sentence inside of 3,000 pages worth of operational manuals.

My first three type ratings (along with a dozen other training events) were under the old system. One particular genius that came along with AQP was recognizing the pointlessness of forcing pilots to memorize the manuals. You can do it, but two weeks after the oral, you'll have forgotten 95 percent of it. More important is the ability to find the guidance you need when you encounter the one-in-a-hundred events that require it. Likewise, what is the point of emphasizing CRM in theory if you don't allow it during a checkride? A big part of safe flight is communicating effectively. This is not limited to multi-crew environments.

ATC is obviously a resource on any given flight, and proper communication with maintenance personnel on the ground can be the difference between a successful flight and a crisis. Even communication with non-pilot passengers is crucial. Not only will passengers sometimes perceive a threat before a pilot will, but it is also important that they feel comfortable speaking up in the event that they start feeling ill. Good communication skills through initial and refresher training allow instructors to focus on areas that the pilot is not fully comfortable in, as well as hone in on the specific skills that are relevant for the type of flying that the pilot engages in. Good communication skills allow outside perspectives to rescue you from the inevitable bout with myopia that we all occasionally have.

Know Enough, Not Too Much

I am currently at the tail end of training for an Airbus 320 type rating. On the first day of ground, my instructor conceptualized the new standard represented by airline AQP training. He stated that aircraft systems could be categorized into five different levels based upon the depth of system knowledge an individual possessed. Level five is

where the designing engineers live. Level four is where system specialist techs need to be. Aircraft-specific mechanics reside at level three, while general mechanics get by at level two. Pilots only need to be at a level one.

Level one still represents an awful lot of knowledge, but it recognizes that additional knowledge is not necessary and may create its own set of problems. The deeper the knowledge that you have, the more likely you will be tempted to troubleshoot an issue in the air. The better response is to follow any abnormal guidance published by the aircraft manufacturer, get the aircraft safely on the ground and hand it over to a higher-level source (i.e., maintenance



"The intent of training is to produce a safe skillset that pilots can comply with on a regular basis. Even a great pilot on a bad day can get themselves into a great deal of trouble when attempting to comply with an overly complex process."

personnel). The level one requirement is to possess the knowledge needed to safely operate the aircraft. This includes operating limitations, any aircraft-specific memory items, and the level of systems knowledge required to manage abnormal procedures.

This doesn't mean that more detailed systems knowledge should be avoided. Every aircraft is different, and so is the depth of knowledge required to competently operate a specific airframe. While smaller aircraft can be basic and easy to learn comprehensively, higher performance aircraft can have a hundred thousand parts designed by a thousand different engineers. No single person has a truly comprehensive understanding of a big turbojet. In order to obtain in-depth insight into something like an A320, you'd have to cram a dozen different specialists into the same room. The degree of operational safety that can be obtained while flying such a complex piece of equipment is remarkable. You just have to focus on your part and communicate effectively with other subject matter experts.

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Accidents, Training, More Accidents

On March 3, 1991, United Airlines Flight 585 entered a right roll which eventually resulted in a steep nose-down attitude while on approach to Colorado Springs airport in Colorado. All the occupants of the aircraft perished. The NTSB struggled to discover the root cause, with the initial report stating: "...after an exhaustive investigation effort, [we cannot] identify conclusive evidence to explain the loss of the aircraft." Eventually, the Board would amend the findings following a similar accident on USAir flight 427 (which resulted in the longest investigation in NTSB history at four and a half years).

The USAir accident was ultimately solved due to an incident that occurred on Eastwind Airlines flight 517. The pilots of flight 517 provided testimony to investigators regarding uncommanded rudder inputs that they had encountered aloft (flight data recorders of the era did not capture details relating to rudder pedal position, so this information was not available to investigators for United 585 or USAir 427). All three events involved Boeing 737 aircraft, which had experienced a sudden yawing moment at relatively low airspeed. Flight telemetry from United 585 and USAir 427 suggested a full application of rudder had precipitated the loss of aircraft control. Investigators had been unable to exclude the pilots as the source of the offending input prior to the testimony provided by Eastwind 517. In the end, the culprit was determined to be a bad rudder control valve. Most aircraft have a crossover speed where full rudder deflection will generate rolling inertia equal to maximum aileron authority. The rudder malfunctions of United 585 and USAir 427 occurred below the aileron crossover speed resulting in a wing-over descent and crash, while the malfunction experienced by Eastwind 517 occurred above crossover speed allowing the pilots to maintain control via copious amounts of aileron.

Anytime a series of high-profile accidents occur, a massive response is sure to follow. While Boeing ultimately solved the problem by fixing the servo valve in the 737 rudder system, airline and cargo operators attempted to analyze how crews could more successfully respond to similar flight control issues in the future. Advanced maneuvering programs were developed with the noble intention of equipping pilots with the tools to respond to even the direst of flight control malfunctions. Some of these well-intended programs ultimately contributed to other accidents and incidents, as complex maneuvering theory was misappropriated by the occasional line pilot.

Even long-standing training techniques have proven capable of producing unintended consequences. The NTSB concluded that stall training was a factor in the Cogan Air 3407 accident. At the time, stall demonstrations required pilots to maintain altitude throughout the maneuver. The idea was that powerful aircraft have the performance to recover from a stall while maintaining level flight. Under the old system you could fail a checkride if you lost altitude during the recovery. This produced a strong desire to keep the nose up following a stall, which in hindsight

is a poor impulse to imprint on a pilot. New stall training emphasizes reducing the angle of attack in order to break the stall. Loss of altitude is no longer graded.

For all of this, the problem has not yet been solved. In 2019, Atlas Air flight 3591 crashed into Trinity Bay just outside of Houston after the first officer mistakenly commanded a go-around (investigators believe that his watch bumped a TOGA button located on the power levers). He mistook the resultant pitch up for a stall and pushed the nose into an unrecoverable dive. Like the captain in the Colgan crash, the Atlas first officer had a spotty background with checkrides. These sorts of events can point to a dark secret: training programs have to account for (at most) an average pilot exhibiting average skills. Though the application of advanced skills occasionally results in an outstanding save (see United Airlines flight 232, US Airways flight 1549 and Delta Air Lines flight 1080, among others), there can be danger in attempting to train overly complex theory into nominal pilots. Even relatively simple skills can sometimes be too much. An emphasis on maintaining a safe boundary from the "edge of the envelope" is generally sufficient for the sake of safe flight.

The intent of training is not to lower the standards but to produce a safe skillset that pilots can comply with on a regular basis. Even a great pilot on a bad day (early show, insufficient rest, emotional distractions, poor

nutrition/exercise/illness, et al.) can get themselves into a great deal of trouble when attempting to comply with an overly complex process. It is best to simplify maneuvers and profiles to the point where an exhausted pilot has a fair shot at success. Aerobatic training emphasizes proficiency at the edge of the envelope, and there is nothing wrong with that. Yet, in aircraft designed for transportation, it is important to focus on skills that produce a sufficient margin for error. This requires the development of proficiency while making allowance for distractions and bad days. A high-performance aircraft is exceedingly complex, requiring a great deal of attention to master. There is no such thing as a perfect process. It is far better to accept the merely satisfactory than to treat trivial details as though they are of prime importance. You are going to make mistakes. Reserve them for the things that won't kill you. **T&T**

Stan Dunn is an airline captain and check airman. He has 7000 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 stan@bellman-multimedia.com.

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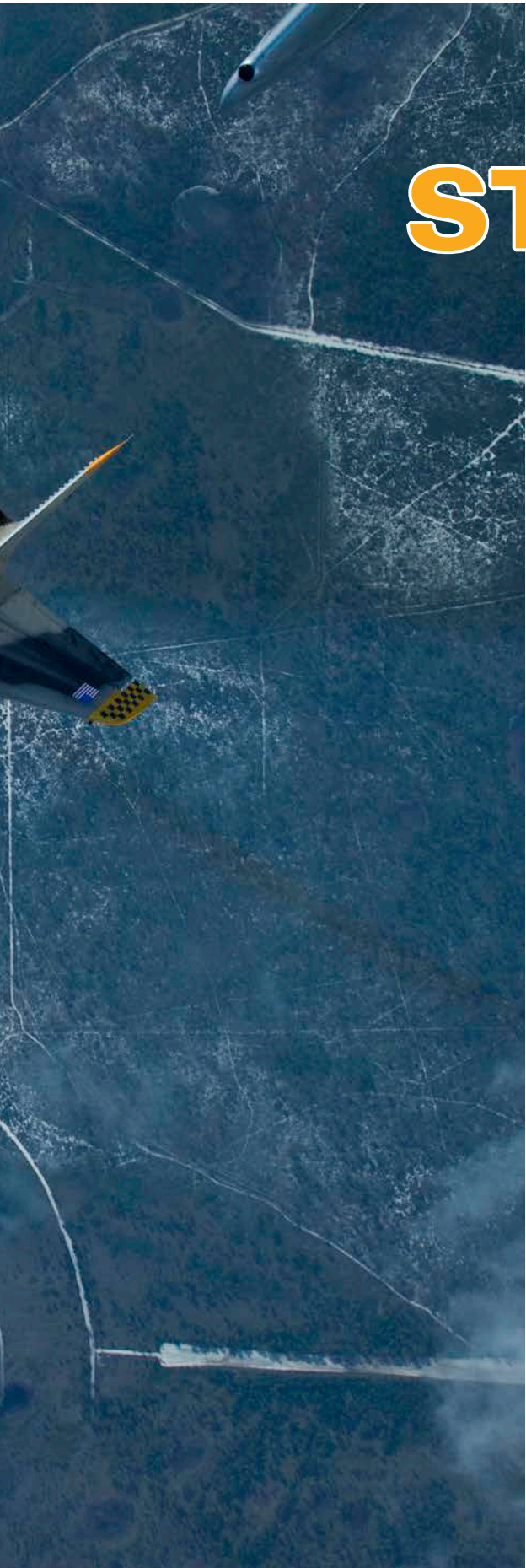


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**“When confronted with a crisis,
you will not rise to the occasion;
you will descend to the level of
your training.”**

– Lee Lauderback, Chief Pilot, UAT/Stallion 51

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STALLION 51 TRAINING

GETTING COMFORTABLE
WITH UNUSUAL ATTITUDES

by Dale Smith

According to FAA statistics, on average, there is one fatal loss of control (LOC) accident every four days. And they're not confined to inexperienced pilots yanking and banking close to the ground. Loss of control happens to very experienced pilots flying very sophisticated aircraft. And therein could lie part of the problem.



"As aircraft are becoming more automated, there seems to be less of an emphasis on stick and rudder skills for pilots," stated Lee Lauderback, Chief Pilot for UAT, LLC. "If you look at the pilots coming through our program, a large number of them – and these are very experienced pilots – have never flown past a 60-degree bank angle. They have a very limited maneuvering envelope that they are comfortable with and proficient."

"In training, pilots normally don't actually stall turbine aircraft; they are basically taught as the stick shaker activates to recover. It's said that a stall warning shaker 'prevents' a stall, but not necessarily so," Lauderback continued. "It's only an artificial pre-stall warning. What if the system is out of calibration or the deceleration rate is so high the pilot reaction is not adequate to prevent the stall or the on-set of G is rapid enough that they pull through the shaker warning to the actual stall?" Two recent accidents have proven this to be true."

"In my experience, in the personal and corporate aviation worlds, a pilot is closer to an actual stall in a circling approach than they might realize," he said. "As an example, if they put any kind of Gs on the aircraft to increase



the turn rate, their V-ref might not be adequate to prevent a stall."

And when Lauderback talks "experience," he's not spreading hangar hyperbole. He spent 18 years as Arnold Palmer's chief pilot, flying a variety of Learjets, Citations and helicopters. Today, he has well over 22,000 hours, with a great percentage dedicated to instructing in the TF-51 Mustang, Aero Vodochody L-39

Turbojet, and, of course, flying airshow demonstrations."

"Being around the corporate community and attending a variety of sophisticated training programs, I was struck by the lack of training in unusual attitude and upset recoveries. Yes, it was normally touched on but not covered in any detail," he said.

"We started our Upset, Prevention & Recovery Training (UPRT) program in 2012," Lauderback added. "Our goal was to help every type of pilot, but especially corporate pilots, expand their envelope of skills and comfort zones."

He explained that while flying the P-51 Mustang was a thrill for UAT's students, it really was not the best platform for honing the skills of a turbine pilot between the big propeller, Merlin engine, and analog instruments. The question became how to match the aircraft to the program's goal?

Train Like You Fly

"We'd love to do this training in actual corporate aircraft, but due to margins of safety, it's just not possible. They're normally not structurally strong enough to withstand a student's possible incorrect recovery," he said. "That's why we use a highly-modified L-39 Turbojet. It's very strong structurally and has been modified with instrumentation very similar to what they might be flying."

"Additionally, its handling qualities are similar to a typical corporate jet," he continued. "We've tried to match the aircraft as close as we possibly can yet keep the safety margins."

But you may be thinking, "What about the upset recovery schools that use popular piston aerobatic aircraft for training?" Lauderback said that while he is a strong proponent of this kind of training and feels it is a good baseline, it isn't really optimal for training pilots who fly turbine-powered aircraft.

"We look at preventing upsets as our number one goal. If you find yourself in an unusual attitude, what is the optimum form of recovery?" he explained. "Aircraft can be maneuvered safely well outside of their normal envelope if one understands and knows how to properly recover from such attitudes."

Broadening one's personal abilities and comfort zone is why he refers to the majority of UAT's training as being aimed at "Envelope Expansion."

Ready Pilot One

"Identifying each student's background is one of the first things we do. Each pilot is different, and our two-day program is tailored to each student's personal comfort level and maneuvering envelope," Lauderback said. "As an example, if you are a former military pilot, your training is obviously different than a pilot who has never flown beyond a 60-degree bank angle. Envelope expansion is based on foundations and does not have to be intimidating."

He said that UAT's team of instructors run the gamut from corporate pilots (Lauderback's focus) to airline, military, airshow, and bush pilots. No matter what you fly, one of their instructors has a similar background and can relate to your kind of flying.

After the first day's welcome session, students receive an aeromedical briefing presented by UAT/ Stallion 51's resident Naval aviator/ Flight Surgeon, Captain William "Doc" Busch, Ret. Doc's presentation explores what causes pilots to become spatially disoriented, how to identify the conditions, and the best ways to get through them.

"Next comes the aerodynamics of unusual attitudes, like V-G diagrams, stalls and stall speed manipulation, maneuvering speed, unloading, rolling and pulling as well as the many other aspects of advanced maneuvering," Lauderback continued. "Digging deep into the aerodynamics is critical to getting a good picture of what is happening when your cockpit goes all topsy turvy."

Following aerodynamics, the next brief is on the dynamics of recovery. Options are reviewed, and optimum recovery techniques are discussed.

Now for the Fun Stuff

Lauderback stressed that safety is UAT's number one priority. Students receive a detailed pre-flight briefing prior to every sortie. Each flight's procedures, goals and objectives are clearly defined. Then students climb

into the rear seat of the L-39 for a detailed cockpit briefing, including egress procedures before flight.

"Our students do roughly 95 percent of the flying. That's the best way for them to stay comfortable and build confidence while expanding their maneuvering envelope," he said. "After arriving in the working area, the student will take a few minutes to settle into the L-39, its control feel, roll rate and general handling qualities."

"During clearing turns, we start to work on G awareness and calibration, then look in-depth at stalls, both clean and configured, normal and accelerated," Lauderback explained. "Then on to envelope expansion. The instructor will normally talk them into an attitude and talk them through the recovery. The next training segment, they will get talked into the attitude, and without coaching, they fly the recovery."

"In the third segment, with their eyes closed and chin on their chest, the instructor will place the aircraft in



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15	FALCON 20C-5
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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
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an unusual attitude, and after transfer of the controls, the student will have to orient themselves and recover," he added. "It's a building block approach, and their skill level and confidence level goes up quickly."

While one is all about VFR (visual reference) recoveries, day two's sortie covers the same basic envelope expansion maneuvers. But this time the canopy is covered by the retractable curtain to simulate IFR conditions, and recoveries are made on instruments.

"Depending on the student, we can also pull some sneaky stuff if we want – fail instruments and the like," Lauderback said. "We can allow pilots to make errors, see the results, and still recover the aircraft safely."

"With the L-39 Turbojet, it's a close to one-on-one correlation with the typical corporate turbojet – similar sights, sounds, and feels. The rate of roll and pitch are comparable along with power management and the use of speed brakes/spoilers," he added. "Pilots are surprised about how familiar the L-39 feels after just a short time. It's not exact, but it's close."

Along with the aforementioned unusual attitude and upset recovery training, Lauderback said that their program also spends significant time on angle-of-attack (AoA) familiarization and training. It is a very useful tool for unusual attitude recoveries.

"Virtually every corporate aircraft today has an AoA indicator, but unless you are a naval aviator, it's rarely used. Why? Because no one does a good job of training AoA," he said. "It's a great takeaway for our students. They have a better understanding of its use and

the beneficial tool that it is, not only for unusual attitude recoveries but many other areas as well."

The Benefits of a Thorough Debriefing

Lauderback stressed that one of the biggest benefits of their UPRT program is the in-depth debriefing each student gets after every sortie.

"We take great pride in our sophisticated debriefing system. Everything you do in the cockpit is recorded by our proprietary video system. It allows us to record everything from your actions to the individual instruments and indicators – even your instrument scan," he explained. "We can go back and look at anything, from any moment in time and see exactly what you are doing, right or wrong. Those things are normally lost if you can't go back and review them. Debriefing is a big part of our program's effectiveness."

For example, the instructor and student review the video after the first sortie to see how much G force the student utilizes during a nose-low recovery. The goal is to help 'calibrate' the pilot's pull to the type of aircraft they are flying and stay within its structural limitations.

One demonstration that Lauderback loves is to have the student put the L-39 in an approximate 30-degree nose-up attitude and have them close their eyes.

"I have them push forward on the elevator until they think they are at zero g's, then terminate the maneuver and re-open their eyes," he said. "The average pilot will stop at about one-half positive G, but it feels like zero G to them. Going back to the video,


we can show them the difference between what they felt and where they actually were."

Putting the Usual in Unusual

As you might well expect, developing and honing the skills to truly master unusual attitudes normally takes a lot more than you can accomplish in two days, even under the tutelage of Lauderback and his team. Recurrent UPRT is the logical follow-on. They take where each student finished with initial training and build on this foundation to advance their understanding and skills to the next level. Each recurrent training session starts with the IP (instructor pilot) reviewing your last video to have a better understanding of your maneuvering envelope, your strengths, and possible weaknesses. This allows the re-curent training syllabus to be unique to the student and not just a "one size fits all" approach.

"Our goal is to expand a pilot's envelope so that they can recognize and avoid upset situations before they fly into them," he said. "We work hard to make our training enjoyable, not frightening. Yes, we may take you out of your comfort level, but it will help eliminate the fear of the unknown and give you a skill set that might just one day save lives."

With well over 1,000 pilots from all kinds of backgrounds coming through Stallion 51's UAT program, Lauderback said it's difficult to categorize what they each individually gain from the experience.

"One thing I can say, though, is that the biggest advocates of this type of training are the pilots who have been through it," he said proudly. "They become better pilots and strong believers in the benefits of UPRT." 

Dale Smith has been a commercial, private and business aviation marketing and media communications specialist for nearly 40 years. He is an award-winning 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.

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Cutter Aviation

by Lance Phillips



Cutter Aviation, Phoenix, Arizona.

In 1926, the 69th U.S. Congress realized the potential of aviation in our country. They understood how expanded commercial endeavors and a framework for safety, along with an explicit promotional imperative, were critical to the United States' competitiveness in the world. The Air Commerce Act of 1926 defined who was to do what, when, where, why and how much it would take.

A burgeoning industry was taking shape in the 23 years following the Wright brothers' first flight. Many of the early aviation stakeholders were airmail carriers and barnstorming entertainers who had returned from World War I flying military surplus equipment. The airmail routes and operators who flew them went on to form the fledgling airline industry. But it was the group of barnstormers, sometimes moonlighting as charter operators offering point-to-point flying services (mostly without any real support), who had the vision to develop the business and general aviation environments.

It's interesting that our 69th group of senators and representatives decided not to overwhelm the young aviation industry with rigid rules or excessive penalties for breaking them. Instead, they wisely instructed the Department of Commerce to oversee what they knew was the next era of commercial interstate and later international flying

activities, driven by air traffic and the ground facilities supporting it.

In 1928, just two years after the Air Commerce Act was signed into law, one of those barnstormers opened up shop in Albuquerque, New Mexico. There was an old, dusty hangar at Oxnard Airfield from which William P. Cutter worked using a newly coined term – fixed-base operator. Cutter served the community by providing charter flights throughout the Southwest, enabling ranchers and businesspeople to make deals in the 1930s. During that timeframe, the Cutter family brought two sons into the world, William R. (Bill) and Sidney, born in 1932 and 1934, respectively. And as the threat of a world war became a reality, Cutter Flying Service began training U.S. Navy pilots at Albuquerque's West Mesa Airport.

The Allies celebrated victory in Europe in May 1945. A couple of years after that, in 1947, Cutter provided an example of the calculated growth that his business would become known for, now into the 21st century. He wagered that a move to Albuquerque's Kirtland Field, now Albuquerque International Sunport, would spur and sustain his company's expansion well into the future. A special relationship was built at the same time. Cutter would become a Beechcraft dealer and authorized service facility.

The two young Cutter brothers would follow their father's ambitions, learning to fly early and later serving in the military during the 1950s. Once back in civilian life, Bill made another calculated growth move, this time out of state. Cutter opened its doors in Phoenix, Arizona, at Sky Harbor Airport in 1959. A little later, the family navigated a severe blow as William P. Cutter passed away in 1963. Sidney took the reins, remaining in Albuquerque until 1974. The mid-70s would find Sidney pursuing other personal ambitions while his brother Bill took control and continued Cutter's own manifest destiny. He saw that further developing the company's maintenance services, aircraft sales teams and charter footprint would be the way forward. The 1990s saw more of the same with the Deer Valley, Phoenix location opened in 1997, followed by San Antonio, Texas in 1998.

In September 2002, Bill's son, William W. Cutter, became the president of Cutter Aviation. Known to all simply as Will Cutter, he has continued expansion in Texas, Colorado and Arizona. Will is proud of his upbringing in the family business, telling of his early years cleaning hangars and airplanes, learning all he could about selling and keeping customers happy. By 2014, the company had 250 employees and reached nearly \$100 million in sales tracking to exceed \$130 million from sales of the new HondaJet in 2015.

Sadly, on December 11th, 2018, Bill Cutter passed away. He was honored as a lifelong advocate for general and business aviation. "We acknowledge his devotion to professionalism and customer service, which equaled his passion for the industry, his good humor, grace and charm will not soon be forgotten" (AIN). Bill was prominent in the industry and at his family's businesses up until the day he left us, even attending Cutter's 90th anniversary celebrations at NBAA in Las Vegas in 2017. A life-long aviation enthusiast, Bill learned to fly sitting on his father's lap and became an ATP-rated pilot in fixed-wing, helicopter and lighter than air aircraft, along with achieving several jet and turboprop type ratings. As an aviator, he accumulated thousands of hours during his life, with his most recent flying being in his treasured 1944 Beech Model 17 Staggerwing.

At the end of 2021, I had a chance to travel to Phoenix and sit down with Will and get to know his staff at the Sky Harbor location. I wanted to get an idea of some of the challenges facing the business today and what they're doing to overcome them. Just as so many businesses are finding it difficult to find and retain good employees, Cutter is in the same position. Aviation is unique, too, because of the high level of skill needed for in-demand pilots and maintenance technicians.

The first thing out of Will's mouth as I sat down in his office overlooking Sky Harbor's runway and mountains behind the airport was, "Our employees are the most important aspect of this business. And we don't just say it, we



From the very beginning until the current day, Cutter has provided flight services to businesses and individuals across the Southwest. Here on display is Cutter's early lineup of Beechcraft air taxi equipment.



William Cutter and Walter Beech.

invest in them. We invest in training, we invest monetarily through bonuses, benefits and industry-high pay rates. And we're always growing, so personal growth opportunities are high." Cutter's CARE (Cash and Recognition for Everyone) program is a profit-sharing plan whereby a percentage of the company's profits are divided equally among all employees each month. "Some months, that doesn't add up to a whole lot, but I like to be there to hand out the checks. That's part of the fun side of the business." The company's AERO program also offers bonuses based on employee seniority in addition to matching their 401k contributions.

Regarding suppliers, Cutter Aviation shows how much it values long-term relationships, maintaining long and healthy partnerships with Dallas Airmotive, now StandardAero, and Aviall, now Boeing Distribution, and Phillips 66. Fuel is a large part of Cutter's business. "Phillips 66 is a favored fuel brand for pilots, and we have an 80-year history with them, so it's a good fit."

Aircraft sales are the bread and butter of Cutter's revenue pie. And just like their valuable relationships with other vendors and suppliers, the OEMs who manufacture the aircraft they sell are extremely important to them. Will



also spoke about each of his inner circle of leaders at the company headquarters: Marketing, HR, Charter, Sales, Finance, Service & Support – all of them of equal importance.

I had a chance to talk to Will's daughter, Anna Cutter, too. She's an Alabama Crimson Tide grad with a degree in interior design. Anna's done some work in her degree field, but I could sense real enthusiasm while discussing her increasing leadership in the family business. She and her brother Will D. Cutter, who is now leading Cutter's acquisition and startup of its newest facility in Georgetown, Texas, just north of Austin, are poised to continue the family tradition of growth and strategic industry leadership. When I asked about sibling rivalries and competitiveness between the two, she simply smiled and said that she and Will D. have the same business goals in mind and that they are great friends and colleagues. You can usually find Anna at Cutter's Addison Airport facility in Dallas providing sales support for the robust charter business.

Cutter recently brought on a new CFO, Peter Hokanson, to help guide the financial side of Cutter's goals. Peter is a veteran of Honeywell and other aviation companies, and when asked about any challenges to Cutter reaching its goals, he said that they're working hard to keep up with demand, which has only grown in the last two years. Peter acknowledged, "We've had some of our best

quarters financially recently, and we don't see it slowing down soon. So, we're focused on serving our customers and taking care of our employees and hiring the best new people where needed."

Heather Wahl, PHR, is a relatively new addition to the leadership team. She's a professional who takes her mission seriously managing Cutter's personnel needs, but her approach is unique and sometimes considered outside the box. Her focus is on taking care of their customers by ensuring employees' needs are met.

Genaro Sanchez is a marketing professional charged with directing Cutter's vast marketing efforts. Marketing tells a brand's story, provides awareness for new promotions and products, and helps to fine-tune the company's messages. But marketing facilitates the building of relationships with customers, and sometimes it provides the first touch-point. And it's evident how important the role is to Will Cutter – Genaro's office is right next door to the president's.

As they approach 90 years servicing their business aviation customers, Cutter Aviation's current location lineup looks like this:

Charter

- ADS – Dallas Addison Airport
- PHX – Phoenix Sky Harbor

FBO Services

- ABQ – Albuquerque
- COS – Colorado Springs
- DVT – Deer Valley, Phoenix
- GTU – Georgetown, Texas
- PHX – Phoenix Sky Harbor
- PRC – Prescott, Arizona

Maintenance

- ADS – Dallas Addison Airport
- APA – Denver, Colorado
- PHX – Phoenix Sky Harbor
- SAT – San Antonio, Texas

Aircraft Sales

- ADS – Dallas Addison Airport
- APA – Denver, Colorado
- CRQ – Carlsbad, California
- PHX – Phoenix Sky Harbor
- SAT – San Antonio, Texas
- SNA – Orange County, California

What started as a barnstormer's way to help support a burgeoning industry defined by a new set of commercial laws in 1928 has become a household name in general aviation. Cutter now employs over 275 aviation professionals, with more than 30 on the way at their sixth FBO in Prescott, Arizona. Revenues in 2021 topped \$250 million. Cutter Aviation's tagline is "leading the business of aviation," and from what I can see, the southwestern United States has fully acknowledged the Cutter family's leadership for many years and will continue to do so for the foreseeable future. **T&T**

Lance Phillips is an aviation professional, writer, pilot and photographer. He is executive director for the Pinnacle Air Network and owns Phillips Aero Services, an aviation marketing services provider. You can contact Lance at lance@phillips-aeroservices.com.

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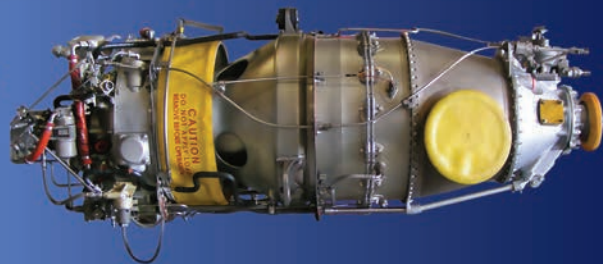
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PT6A-112	\$ 169,000	\$ 225,000

Engine must be a normal time expired core with no missing parts. Basic price includes accessory overhaul. Basic price does not include CT Blades or 1st Stage Reduction Gears. Replacement parts may be new PWC, overhauled PWC or PMA. Pricing does not include life limited parts, freight, insurance or taxes.



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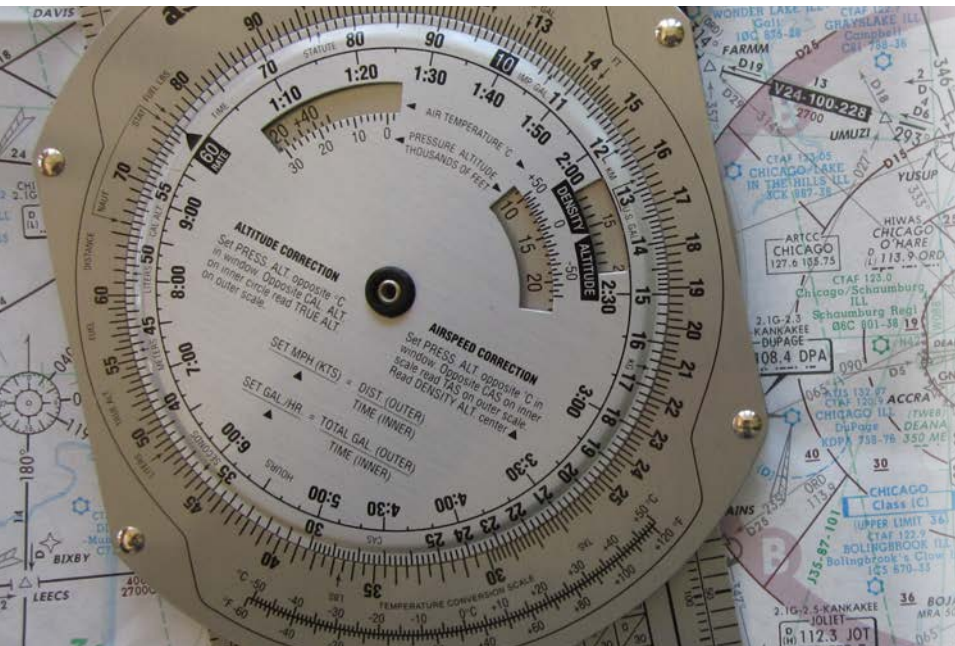
From the Flight Deck

by Kevin R. Dingman



Ancestor Worship

Pilot Math: WAG's and TLAR



an-ces-tor - wor-ship

Noun phrase

Colloquial slang used to describe the reason for continued use of, or belief in, irrational, unnecessary or inefficient procedures, policies, practices or devices.

A fellow client attending my recent CE-650 (Citation III, VI & VII) initial course arrived without having completed the ATP written – COVID cancellations being one of several valid reasons for the postponements. The rest of the class was more than willing to offer advice and assistance for the upcoming exam, scheduled between our ground school test and his first simulator session – no pressure. We all found ourselves shaking our heads, however, over the requirement that he bring an E6-B to the ATP testing facility – you know, the flight planning “Whiz-Wheel” thingy for making those pilot-y,

time-distance TAS/GS and wind-triangle calculations.

When was the last time you saw, let alone used, an E6-B? Probably around the time you whipped out your slide rule at Home Depot or used a typewriter to compose and mail a letter via USPS. The E6-B is fun to play with (like Silly Putty and Etch A Sketch), but inflight use would be sort of student-like and distracting. While ancestor worship may be used as derogatory slang for continued use of outdated reasoning, some old-school pilot-math is nice to keep in our hip pocket – ancestrally derived or not.

Drats: That awkward moment when you finish a math problem and your answer isn't even close to one of the choices.

Except for geometry and the calculations used in chemistry, college mathematics scared the derivatives out of me. When I talk to prospective youngling pilots, I'm often asked, “How much math is there?” or “What kind of math do pilots use?” While some are curious about health requirements and the plethora of government rules and regulations, many worry that we

work complex math calculations before and throughout the flight – and they'd be right. Well, not that complex. Add to that, most have never spoken on a radio where we appear to broadcast confidently, seemingly unrehearsed and impromptu information and requests, speaking and hearing at the speed of light using indecipherable pilot jargon. They think our radio and math skills, perception, and our intuition must be so sharply honed that we view the entire environment with Jedi-like clarity. These factors (math pun intended) all contribute to pilot training apprehension. And the math apprehension can be blamed on east and west-bound trains, pizzas and watermelons.

Math: The only place where people buy 60 watermelons and no one wonders why.

When asked, "Do pilots work story problems?" I ask if they can compute the area of a trapezoid and factor a binomial? And then I quickly add, "Just kidding." I tell prospective pilots that yes, we do story problems but not like the ones in school. Remember the notorious math question that goes something like this: If a train leaves Chicago at 10:00 a.m. traveling West at 50 mph transporting 300 deep-dish pizzas, and a second train carrying 600 watermelons leaves Phoenix (1,753 miles away) at 11:00 a.m. headed East at a speed of 40 mph, what time will the two trains pass? And if they both are burning 75 gph diesel fuel, how many watermelons and pizzas will each have on board as they pass? Think back to the first time you learned the steps needed to solve the problem.

For me, it was and is paralyzing. You and I have been doing time-distance-fuel calculations for years now, so we can do this problem not only in our heads but in our sleep, right? (NOT – see the admission above). Thankfully, in practice, we need only calculate for one vehicle and we seldom carry 300 pizzas or 600 watermelons (perhaps a dozen cases of Coors in a Cherokee 140,

however). That said, piloting does indeed employ several, sometimes complex, math disciplines.

When it comes to inflight math, there are three types of pilots: those who can count and those who can't.

Why do we still need math, and what types of math do we use? Basic arithmetic, geometry, trigonometry, interpolation, and mental math are

all part of being a pilot. We use math to understand principles of flight, computing weight and balance, determining fuel requirements, and in navigation, flight planning, descent planning and calculating crosswind components. We don't normally stop to think about the various math disciplines involved because they have become intuitive and are nowhere near as daunting and intimidating as this litany would have you believe.

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Plus, like most aspects of our lives, computers, tablets, smartphones and, for pilots, avionics have relieved us from tedious (often less than perfect) manual math calculations. And this is a good thing not only because of the three types of pilots above but also because four out of three pilots are dyslectic.

WAG's and TLAR

I tell student aviators that if they can add, subtract, multiply and divide, then that will do just fine. A lot of our math is the "cut it with an ax, measure it with a micrometer" type calculations anyway – meaning that it's mostly used for estimation and our situational awareness. It's a WAG (Wild *ss Guess) with a quick "reasonable/reality" check to verify TLAR (That Looks About Right). If the calculations are so critical that we need an answer down to the single mile, to one minute, one gallon, one pound or to several significant digits, then we are probably cutting it way too close – or taking an FAA exam.

Most of our math calculations are used for a time, distance and fuel consumption analysis. The distance we travel in one minute times 60 gives us our GS. We can then divide the distance to our fix/destination by that one-minute calculation to get time remaining to the fix. We multiply the time to the fix by the gph or pph we are burning (with a minor conversion of minutes to hours), and we have fuel used to the fix. We subtract the fuel to the fix from the fuel remaining, and we get fuel remaining at the fix.

All this, plus-or-minus the headwind/tailwind, and we arrive at a TLAR WAG – all accomplished in our head without an Etch A Sketch or E6-B. And speaking of wind, one thing that I find that even experienced pilots often don't wrap their head around is that once airborne – except for abrupt and significant changes in velocity, direction, density or temperature – the airplane doesn't know about, or care about, wind. From the airplane's anthropomorphic perspective, it's only us math-challenged pilots that need such esoteric information as wind

speed and direction relative to the ground. We do all of this (sans E6-B) in order to learn ETA's, fuel requirements and then crosswind and landing distances when physical contact with the earth is imminent.

If you were to display an E6-B to the passengers or crew when making math calculations, you might get worried stares regarding your competence – kind of like the Chair of the Federal Reserve counting on his fingers during a press conference. Modern avionics, flight planning and weight and balance apps/programs have made preflight and inflight math unnecessary. Airframe and powerplant limitations, V-speed and navigation figures can now be presented on multifunction displays or the engine and flight instruments themselves. Computer-based flight planning programs are common and can be accessed enroute via the internet, Airtex or SATCOM. Enroute climb and descent points, RNAV climb-via and descend-via arrivals and departures, ETA's, holding patterns and speeds are all calculated by the CADC, GPS, AHARS and FMS. Are there applications of old-school math for pilots that we should remember? You bet – because you never know when some or all of our electronic magic will disappear. Even when our electronics work, most of us still use mental math as backup confirmation for one particular calculation.

Pilot Arithmetic: A Practical Application

The TOD (Top of Descent) calculation is an example of usable old-school math. The easiest way to compute TOD is to use the VSI and a GPS that shows time and distance to the fix. If you want to be over fix ABC at 10,000 and you are at 30,000 now, you have 20,000 to lose. If you begin your descent at 20 minutes to go, that's 1,000 fpm. If you wait until 10 minutes to go, that's 2,000 fpm. Often, ATC likes to give us a clearance that may be something like, "Cross 65 miles Southeast of ABC at FL190 and 280 knots, expect to cross ABC at 10,000." Of course, the easiest way is to enter this in your FMS.

Excluding that, and in order to exercise our math brain cells, subtract the altitude at which you want to be (19,000) from the altitude at which you are (30,000). That's 11,000. Multiply by 3 and drop the zeros ($11,000 \times 3 = 33$ miles) and add that to the fix distance ($65 + 33 = 98$ miles) and start down at 98 miles. Recalculate every couple thousand feet and adjust your vertical speed to compensate for changing wind. Do these calculations before you enter it into the FMS so that you may begin the descent immediately if the clearance was given late i.e., a slam dunk. Then, the next descent from 19,000 to 10,000 would be: $(19-10) \times 3 = 18$. Start the descent at 18 miles from the fix. Ah, mathematics – how refreshing when we find a practical application.

Use Your Fingers

Don't let old-school math scare the derivatives out of you. When working those pilot-y story problems, don't get distracted by irrelevant components like pizza, watermelons or significant digits. Someday the Whiz-Wheel and memorized math will go the way of the FSS teletype, LORAN and slide rule, replaced by systems and devices that are more accurate and user-friendly. In the meantime, we should keep some of our ancestral pilot-math skills polished, just in case we lose the newfangled electronic gadgetry and need to do some hand flyin' and mental cipherin.' I'm sure that our ancestors won't mind if we use our fingers when calculating a WAG – as long as it's not in front of the Feds, passengers or during a news conference. **T&T**

Kevin Dingman has been flying for more than 40 years. He's an ATP typed in the B737, DC9 and CE-650 with 25,000 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 organization Wings of Mercy, is retired from a major airline, flies the Cessna Citation for RAI Jets, and owns and operates a Beechcraft Duke. Contact Kevin at dinger10d@gmail.com.

From Fear to Epic Heights



Several elements combined for Shawn Lynch to make a concerted effort to overcome his longtime fear of flying. The first was he realized he would be traveling places for the rest of his life, so it'd be best to make getting there more convenient. Second, the two locations for the granite sales and installation company he ran were based near airports. The third and final push was a pilot friend in the construction industry who persuaded him to take a flight lesson.

That introductory flight in 2014 laid the groundwork, and flying has since afforded Shawn numerous noteworthy opportunities personally and professionally. "I knew that I was going to be addicted after the first flight," he said. While training in the school's Cessna 172 to finish his PPL, Shawn earnestly went ahead and prepared for the next step: aircraft ownership. Having quickly overcome his fears and fallen in love with flying, he expected it would become a big part of his life. So, he purchased a 2006 Cirrus SR22T to support business and leisure trips.

Regardless of the flight mission, aircraft ownership greatly supports Shawn's personal mantra: "Be kind and



Shawn and Margaret Lynch

do epic." And as this motto applies to him and his life, he defines "epic" as, "Taking something to the next level... going out of your comfort zone makes you work a little harder to get something, which in turn makes it that much more rewarding."

Today, Shawn owns a TBM 700B. For the past three years, his 2001 TBM has allowed him to expand his comfort zone and piloting skills in several ways. The



In addition to business, adventure reigns high on Shawn's mission use which includes backcountry flying and international trips.

biggest being the nearly two dozen countries he has personally flown to as pilot in command. The list includes The Bahamas, France, Spain, Iceland, Czech Republic, Greenland, Sweden, Belize, Colombia, Ecuador, as well others in the Caribbean, Central America and Europe. Perhaps the most special on the growing list is Northern Ireland, where he and his wife, Margaret, got married last year after flying there in the TBM.

Trips such as these were at the forefront of Shawn's mind as he considered moving up from his prior airplane: a 2006 Piper Meridian (PA-46-500TP). He said, "The Meridian was a great plane for me. It was economical and easy to fly. But it was range limited, and I knew that I wanted to fly longer legs and reliably across the pond with more comfortable fuel margins. The TBM allows me to save a fuel stop going coast to coast from the Meridian."

So, with the primary goal of increasing his mission's range, including adding frequent trips across the Atlantic, he weighed several different models. The two leading forerunners were the Cessna Citation Mustang and the TBM 850. But as luck would have it, another model became a viable possibility. With a new paint job, updated interior and recently installed Garmin G600 avionics (with Dual 750s), TBM serial number 202 was an attractive third option for Linch. These key features, coupled with a lower acquisition cost, made purchasing the 700B an easy decision.

Shawn has a lot of good things to say about the airplane that he has flown for three years. But he said the best way to explain his overall sentiment is through the words of a fellow TBMOPA (TBM Owners and Pilots Association) member in a forum post: "[Compared to new TBMs], the TBM 700 series is 80 percent of the plane at 25 percent of the price."

Shawn flies around 350 hours per year, with roughly 50 percent of his trips for business. He sold the granite company

in 2016 and currently focuses on real estate investing. Existing and potential investments are spread across the country, from Biloxi to Seattle to Atlanta, with his home base being Reno/Tahoe International Airport (KRNO). During the longer trips, he will typically fly at FL280 and cruise at approximately 280 to 290 knots, seeing a 55 gallon per hour fuel flow. "It checks all of the boxes for me – range, speed and payload," Linch said.

Typically, on personal flights, it will just be Shawn, his wife, their Pomeranian mix (Lucy), and occasionally some



Outside of the TBM, Shawn enjoys scenic flying in his Carbon Cub FX3 and Robinson R44 II.

friends. They fly to a variety of destinations within the United States and abroad. With the 700B's competitive landing distance, Shawn has been able to fly to multiple destinations his previous airplanes wouldn't be able to reach easily. He explained, "The TBM is an amazing airplane for hot, high and short fields. In addition, it can carry a good payload for trips 800 nm and below."

Now commanding a 700 shp PT6A-64, Shawn is afforded several benefits compared to his previous bird, including 30 additional knots (max cruise), 250 lbs additional payload (on an 800 nm trip), and 418 nm more of range. Characteristics like these allow the adventure-seeking pilot to continue striving for "epicness."

With that in mind, he encourages fellow aviators to challenge themselves within the cockpit just as he aims to do whenever possible. "Flying to foreign countries, and especially crossing the Atlantic, can seem pretty overwhelming at first. It definitely did for me. But in reality, all it takes is a little more preparation and

planning, and you can make it happen. And once you arrive at your destination, it makes the experience so much more fulfilling."

After receiving his PPL, Shawn added his instrument rating and commercial certificate, as well as single-engine sea and rotorcraft-helicopter privileges. One of his favorite ways to enjoy aviation outside of the TBM cockpit is in his experimental 2018 CubCrafters Carbon Cub FX3. He purchased the aircraft from CubCrafters in Anchorage, Alaska. And what better way to get an in-depth indoctrination with a new plane and how it flies than to take it on a long cross-country. So, in 2019, Shawn packed up and set off on a nearly 2,000 nautical mile, 30-flight hour journey down the Western Coast of the country to his home in Lake Tahoe, California. He has been known to make similarly long trips with the aircraft in search of new backcountry flying opportunities such as Canada, Montana, and Idaho.

"There is nothing in this world like flying low and slow in a Cub. We have a home in Lake Tahoe, and in the summer, the Cub is on amphibious and parked at our dock so I can hop in and fly around in some of the most beautiful scenery that this world has to offer, especially on floats!" He also owns a Robinson R44 II helicopter, allowing him to further see and enjoy the world-class scenery of his home region from another vantage point.

In addition to routine flying for real estate ventures and personal pleasure, another way Shawn keeps sharp in the cockpit is offering his time and TBM in support of several volunteer organizations like Pilots N Paws and Angel Flight West. Flying for these groups helps fulfill his mantra's "be kind" portion. He hopes to one day combine his thirst for adventure and giving back by an around-the-world flight and fundraiser for Angel Flight West. But this is on hold until the pandemic calms and more countries begin accepting visitors. In the meantime, Shawn will continue to travel to international countries welcoming private aviation during the unique times.

Overall, the TBM 700B has treated the adventure-seeking pilot very well thus far. Shawn has no present intention of moving into another aircraft. But if he decides to go for something else, he plans on staying within the family and trading for a 900-series TBM. This would be a step up of around 40 knots (on top of other factors), plus help solve the continued work of maintaining an out-of-warranty aircraft. In owning and operating a 20-year-old plane, maintenance can occasionally be a thorn in the side. But Shawn noted that he has never had an AOG event. He added, "Stellar Avion, the maintenance facility I use in Camarillo, California, is top-notch and provides a personal level of service unlike any other I've found in aviation." **T&T**

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Written By Pilots For Pilots



Smoking Flight

Perhaps nothing gets our attention faster than smoke in an airplane. It's so serious because there are very few places to run and hide. I've had a couple of experiences that I reflected upon recently after I smelled something burning in my Mustang. Nothing drastic, just a wisp of something not quite right after shutting down the airplane. It was a smell similar to a burning candle. After the first shutdown, I dismissed it as an "airport smell." The kind of thing you experience on the ramp near any kerosene guzzling aircraft.

I remembered flying a Falcon 10 years ago and smelling burning electrical fumes right after takeoff. We turned around to look in the cabin and noticed smoke coming from the coffee pot heater. A quick push of the on/off switch resolved the issue. Several years later, in a Falcon 50, it was more serious.

Right after takeoff with a load of passengers, smoke began entering the cabin. I was on the jump seat for this flight. A carbon seal on one of the three engines had

broken, allowing combustion air to slowly fill the space. The passengers were notably upset. They hunkered down to get below the layer of smoke. The crew declared an emergency and reduced power on one engine. The fumes subsided and we made an unscheduled quick landing. It was only years later that one of my employees on the flight told me that he went immediately into the men's room after the incident and heaved his lunch.

So, as I looked for the source of the Mustang fumes after the second flight, I was informed from my previous experiences. This smell never appeared in the cockpit, only near the cabin door after shutdown. An electrical issue seemed unlikely. Perhaps an engine bleed air leak. Maybe it would just go away, I thought.

I really wanted it to go away because I had an important flight the next day attending our Citation Jet Pilot's Safety Committee meeting in Scottsdale, Arizona. My pilot buddies would all be in attendance with their jets. I absolutely had to be there in mine.

Yet, I couldn't get my head around that smell. What if it was something more serious? What if I took off in low IMC and had a real emergency? The forecast departure weather was 300 and 1. I paced the floor trying to rationalize the risk.

In the end, I couldn't do it. It wasn't safe. I grounded the airplane, called maintenance, and spent most of the next day waiting in packed airline terminals for departures.

I was depressed. I bought an airplane to take me where I want to go on my exact schedule. But I concluded that the risk of making that flight with an unknown problem exceeded the reward.

The mechanics found a few small strands of carpeting from my new interior in the heating ducts that produced the burning smell and quickly resolved the issue. I made the right decision.

And I will live to "flight" another day.

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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Every day we gain more appreciation for the cowl."

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