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VOLUME 26 NUMBER 8

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Memory Lane

Recently, I flew with one of the most influential people in my life: my dad.

Rarely do we have the opportunity to fly together since I moved from Florida to Kansas eight years ago. And we didn't just circle the patch but logged 1,500 miles in his Bonanza A36 over the course of six days flying from Kansas to Arizona, Texas, Oklahoma, then back. I could write my next five briefings on this trip alone as it became memorable for many reasons, including first-time occurrences in his 50-year flying career, learning features of his upgraded panel, and visiting various family and friends we have not seen since "pre-COVID."

But I have to say the sentimental aspect stood out the most. There is no quicker way to make me feel like a kid again than climbing into the Bonanza with my dad. Memories flood back of flying in the far back seat of our Bonanza F33 as the youngest and smallest in our family of five. Even as a young child, I recall feelings of contentment situated back there – often napping on the accompanying stacked luggage. Flash forward to my teenage years, and I would stare out the window for hours, sorting through adolescent thoughts. Never a nervous flyer, I always felt a sense of peace each flight being back in the familiar sky. Besides, what did I have to worry about with my dad rock-solid at the controls?

Now in my thirties, not much has changed except that it's an A36 and I'm in the right seat! Up there, the panel is barely recognizable following a still relatively new upgrade (Garmin G500TXi, GTN750Xi and Smart Glide system). There is no way I could have pictured these "tv screens" in the front of the airplane as a child. But I imagine it would have been less intimidating to me than all of the instruments, knobs and switches found before. At one point on the trip, after he demonstrated the latest feature incorporated into the system (Smart Glide), I asked my dad whether he ever imagined the technology found in cockpits today. Without hesitation, he replied, "No way."

The icing on the cake of this walk down memory lane was a surprise appearance by a Bonanza F33 on the ramp in Amarillo, Texas. The bright blue and red plane parked next to our A36 shortly before departure and displayed the exact paint scheme as our former family plane – which is a unique one. Of course, we had to investigate, take photos and peek in the windows. The coincidence was just too cool on top of an already special trip. I cannot wait until the next one.

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Spectrum Wars

by **Stan Dunn**

Several years ago, I decided to put my economics degree to use and began writing market analyses for a financial publication. One of the sectors that I focused on was telecommunications. A new era had dawned in an industry that had predominantly considered physical property its primary asset. Phone and cable lines were tangible goods that historically defined the reach of the phone companies. The new normal (established by the proliferation of cellular devices) produced a mad scramble to own the airwaves. Wavelength spectrum was suddenly a trillion-dollar business. Two auctions last year drew over $100 billion of bidding for radio frequencies. It was just the latest of many such spectacular sales.

In the history of humanity, no other good or service is as uniformly in demand as cellular is today.

> Technology has intruded into nearly every aspect of our lives. It has changed the way we shop, communicate, travel, research and work. It has streamlined preflight planning and integrated many flight tasks resulting in greater efficiency and fewer errors. It has improved the safety record of aviation but has also introduced new challenges for pilots.

Regardless of income level, profession, nationality or ideology, nearly everyone has a mobile device and a plan to go with it. Every single one of us taps the capacity of cellular wavelength in order to consume content. As data demands have morphed from the light touch of Blackberry email into the heavy load of video streaming, the industry has been forced to expand its allocation of spectrum in order to satisfy hungry customers.

The benign history of the cellular spectrum has suddenly become an important subject matter around airports. More than ever a pilot needs to understand the physical properties of these (now) billion-dollar wavelengths. Every time you tune a VOR (or a radio), you are changing the length of the radio wave that the unit receives (measured from peak to peak). Long wavelengths transmit less information per second than

shorter wavelengths (this has become an important consideration for cellular providers). The most practical demonstration of wavelength capability is the scratchy and hollow audio you receive from AM radio compared to the crisper sound produced by FM. The upshot of low-fidelity long-wave is range. Cruising at FL280 at night, you can use an ADF to tune an AM radio station from Albuquerque while over Montana. Over the middle of the Pacific, the quality of the audio is going to be lousy (HF utilizes a longer, scratchier wavelength), but it is nonetheless available.

In the early era of cellular services, relatively long wavelengths reigned supreme. Pricey cellular towers could cover a large area of customers who were hardly consuming any data. Early cell phones were essentially walkie-talkies connected to traditional phone services via cellular towers. Flash forward a couple of decades and the device in your pocket is a mini computer more capable than the million-dollar mainframes which got us to the moon. The breathtaking advance in electronic capability has rapidly increased the thirst for faster download speeds. Millimeter wavelengths suddenly became worth billions. Before all of this happened, there was quite a bit of elbow room around the short wavelength. Radio altimeters had a nice little monopoly.

With cellular customers in the billions worldwide, there are two limitations to data speeds. The first is that only so much total data can be transmitted over the range of spectrum available to cellular providers. The second is that interference between cellular towers determines how many customers will have to share a spectrum in a certain location. Here is where short wavelength technology produces a neat trick. Not only can more data be transmitted per second, but the limited range of the millimeter spectrum also means that fewer consumers are fighting for data per cell tower. And this is how aviation and telecommunications finally managed to butt heads.

5G spectrum is now the shortest wavelength being offered to cellular customers. It represented $81 billion worth of purchases by cellular providers in the auction last year. Corporations do not drop that sort of mint to sit on an asset. As such, 5G is being rapidly deployed by cellular providers worldwide. The spectrum closely abuts the wavelength that radio altimeters use. The separation is tight enough that the FAA became concerned (somewhat at the last minute) that 5G cellular towers would induce false radio altimeter readings in aircraft. If you have flown much over the past few months, you have undoubtedly come across NOTAMs limiting the use of certain ILS procedures as a result of the still uncertain potential for 5G to corrupt aircraft systems.

This has mostly created a headache for approaches that determine minimums via the radio altimeter (such as CAT II and III). But on many aircraft the radio altimeter is utilized by other systems as well. Enhanced Ground Proximity Warning Systems (EGPWS) routinely utilize the radio altimeter to trigger terrain and wind-shear alerts. In some aircraft, gear and flap warnings also require a functioning radio altimeter. Traffic Collision Avoidance Systems (TCAS) can be impacted as well. Many of the devices aboard technologically advanced aircraft are now compromised to an unknown degree by frequency sharing with 5G. In bygone eras, aviation safety would have taken precedence around airports. Yet when it comes to cellular services, the pure force of hundreds of billions in spectrum auctions has placed the supremacy of aviation behind that of 5G deployment.

Procedural Dilemma

Threat and error management (TEM) combined with a forward-looking briefing is a good technique for pilots to utilize during a flight. An airport with a 5G NOTAM indicates a location where radio altimeters may be compromised (if your aircraft does not have a radar altimeter, the presence of 5G interference is largely inconsequential). In an aircraft equipped with radio altimeters, spurious terrain alerts may be encountered. Windshear detection may not be

available either. If there is any question regarding terrain clearance (or windshear), apply the appropriate recovery procedure (in most cases this involves disconnecting the autopilot, applying maximum power and pitching for an appropriate airspeed). Traffic alerts may be inhibited by a malfunctioning radio altimeter as well. See and avoid has become nearly an afterthought in the modern world of aviation. It may be a good time to brush up on some old skills.

The 5G dilemma is a microcosm of technological complacency. The rapid advance of technology has undoubtedly increased efficiency and safety, yet it has also produced hidden dangers. For better than a decade, the NTSB and FAA have been concerned about trends indicating technological dependency among pilots. One example of this is the fact that visual approaches in sophisticated aircraft have suddenly caused logjams in flight training. I have seen more than one applicant become captivated by a desire to "drive the autopilot" towards the runway. It can be easy to forget how much more responsive an aircraft is when managed through the old school of stick-and-rudder. If you ever want to butch up a visual approach, try guiding the servos to the touchdown zone through heading and vertical speed. It is an imprecise technique at best.

Humans are not very good at spontaneously adapting to an unexpected threat. Training helps to improve responses, but it can take a great deal of time for a pilot to react when startled by an unforeseen event. Technology improves safety margins when it is forward-looking, but response times vary significantly depending upon whether the pilot is aware of a threat or surprised by it. Studies have shown that alerts given within 5 seconds of encountering a risk are essentially worthless. It almost always takes a pilot longer to respond to a sudden event. Indeed, it took Sullenberger 30 seconds to fully react to his dual engine failure in 2009. I've done the "Miracle on the Hudson" scenario in a simulator. When you have an idea that it is coming, it is easy to make the turn back to LaGuardia for a safe landing. With a heavy dose of surprise, it is nearly impossible. It is difficult to overemphasize the advantage of anticipating a threat versus reacting to one. Forethought is central to a safe flight. If anyone hits a flock of geese over the East River again, you can bet that they will be much quicker to make a turn towards an airport. A whole generation of multi-engine pilots has been exposed to the possibility of a dual-engine failure. Forethought is the supreme weapon against surprise. Technology can either assist or hinder that effort. The difference depends on the relationship that a pilot has with their gizmos.

EGPWS, for one, has done yeoman's work at separating metal from

mountain predominantly due to the fact that it is a forward-looking device. Alerts are programmed to annunciate as much as a full minute before a potential collision will occur. EGPWS has produced a terrific track record at reducing (indeed nearly eliminating) controlled flight into terrain. Still, it is a technology that is most effective when utilized as a backup to the more traditional method of "read the chart and visualize the flight path." EGPWS alerts are terrific safety elements for those moments when a pilot becomes disoriented in IMC or at night. Yet the safety record is filled with examples of pilots responding inappropriately (or not at all) to EGPWS alerts. As helpful as EGPWS is, it was never intended to replace airmanship. Every approach to a new runway should be preceded by a briefing. Every approach briefing should include any specific threats associated with the airport or runway. Terrain and obstacles, where they exist, always represent a threat (this information is included on approach plates for a reason). The advent of moving maps makes conceptualizing terrain a much easier task, but pilots were getting the job done well before the proliferation of the iPad. Spatial awareness and reading the charts are tried and true. When you are aware of terrain around an airport, you will be much more likely to respond appropriately in the event you receive an alert. If you form a mental image of the anticipated flight path over the terrain you will be encountering, you will all but eliminate the possibility of an adverse event. If you form the habit of pretending you do not have the device, it will mean nothing if it gets jammed by 5G interference (or merely breaks).

Technology has intruded into nearly every aspect of our lives. It has changed the way we shop, communicate, travel, research and work. It has streamlined preflight planning and integrated many flight tasks resulting in greater efficiency and fewer errors. It has improved the safety record of aviation but has also introduced new challenges for pilots. An interesting dichotomy with modern

aircraft is the ability for automation to not only reduce workload, but potentially damage situational awareness. In the multi-crew environment (some years ago), a decision was made to stop referring to the second pilot as "non-flying" and instead as "pilot monitoring." It is better to emphasize what a pilot is doing opposed to what they are not doing. Underlying this was an accident record where non-flying pilots failed to either notice or verbalize an emerging threat. With automation and technology, we can fall into a familiar trap. The electronics are controlling the aircraft and keeping us safe; we are simply along for the ride. Not only is it rewarding to occasionally ignore the electronics and go old-school, it also increases our situational awareness and facilitates safe operating practices. Trepidation at removing layers of automation is normal, but on a calm VFR day it provides an opportunity to refresh skills. If you fly long enough, you will eventually stumble onto an occasion where you will be glad to be fresh on some old-school techniques. T&T

Stan Dunn *has 8,000-plus hours in turbine-powered aircraft, with three years of experience as an instructor and evaluator for airline pilots. Stan publishes detailed coverage of aviation accidents at bellmanmultimedia.com/flying. You can contact Stan at* **Stan@bellmanmultimedia.com**.


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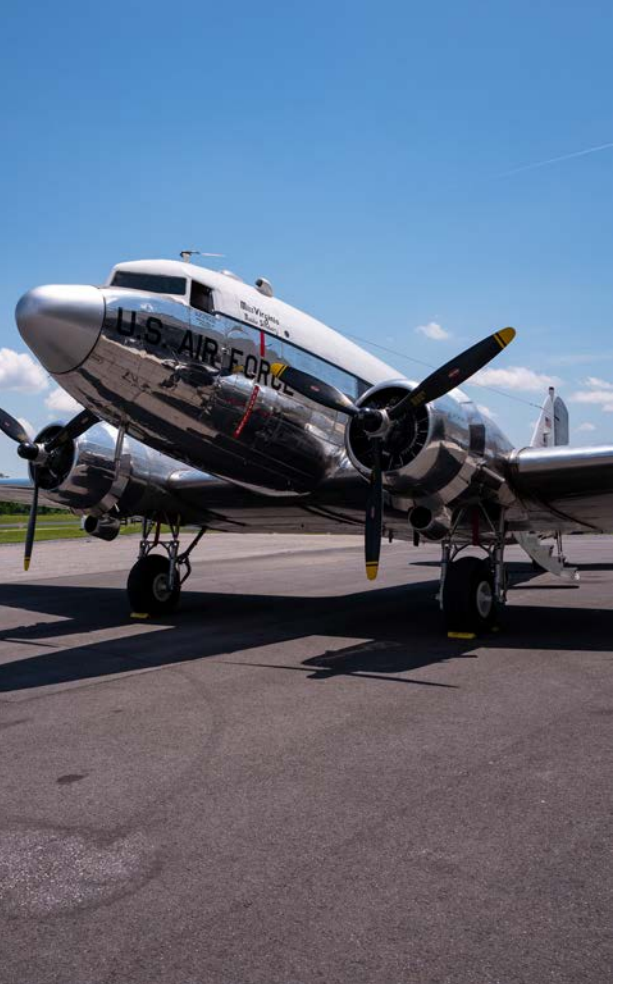

PHOTOS BY AUTHOR

NEXTGEN AVIATORS

by **Lance Phillips**

AN IMMERSIVE PROGRAM SEEKING TO SPARK FUTURE AVIATION WORKERS

As an industry in the 21st century, aviation is facing vast challenges, some without much, if any, precedent. Both general and commercial aviation are seeing demand rise, but almost across the board, the companies supporting all this new demand are experiencing workforce shortages – shortages affecting not only the pilot population but also the technicians and other service professionals who keep our aircraft flying properly. Consulting firm Oliver Wyman shows that since the COVID-19 pandemic, 33,000 fewer people working in the U.S. aviation maintenance sector. And in 2020, the FAA issued 30 percent fewer airframe and powerplant certificates than in 2019. Geoff Murray of Oliver Wyman also predicts that by 2025, "There will be a global gap [shortage] of 34,000 pilots. And this could be as high as 50,000 in the most extreme scenarios."

This author grew up in the 1970s in an aviation family. My grandfather was a military pilot who flew in the European theater during World War II. My dad learned to fly on his own, often taking the family on sightseeing trips or vacations in whatever various Cessnas and Pipers were available to rent in Dallas. Back then, a mystique surrounding air travel still existed. A kid could look up into the sky and see a Braniff or Southwest 737 in brilliant livery departing Love Field and then actually go to the airport and watch people getting on and off the planes – indeed, right at the gate. TSA didn't exist, and I don't remember any fences around airports. Pilots were generally revered, as were the technical professionals working on aircraft.

Staff member Kala Dougan instructs students at the electrical station as they work together to assemble a circuit board.

Of course, things changed. There was a sort of commoditization of the airlines. Rather than differentiation by service level, airlines started merging and acquiring and particular routes became the differentiation. Deregulation led to higher competition and lower prices – which, I get it, is good. But seemingly the continual drive for higher profits led to smaller and smaller seats and service suffered. Tie this together with the less-than-spectacular experience at most commercial airports – the cattle call at the gate and the invasive nature of TSA personnel examining you and your carry-on. It's harder and harder to get a kid enthused about the potential aviation offers. The negative perceptions of air travel combined with pilot and technician shortages can potentially cripple the industry. There are rays of hope, though. A few in the industry are taking things into their own hands, providing the next generation of aviation professionals a preview of how cool it is. Young people just haven't been able to see it.

Last month in the Twin & Turbine "Company Chronicles" column, we learned about the Stolzfus family from Pennsylvania and their patriarch, Chris Stolzfus. Not long after the Wright brothers flew in Kitty Hawk, "Airplane Chris" as he was known in his small farming community, saw an opportunity and founded an agricultural aviation and parts business. Recruiting for new positions back then often required roping in your offspring to do things around the family business. People were so spread out in rural areas that the only kids you'd see regularly were your own. That was no problem for the Stolzfus clan. They had their twins, Karl and Ken, who went on to found their own aviation company after working for their dad – K & K in Bridgewater, Virginia. K & K eventually transitioned to its current name Dynamic Aviation. And under the leadership of Karl's son, Michael, its current CEO, the company has grown and flourished and is seeing unprecedented

Participants are afforded the opportunity to fly in a dedicated King Air.

demand (just like everyone else). Dynamic, too, feels the pressure to hire well-qualified and enthusiastic professionals to meet its customers' ever-increasing requirements.

Michael Stoltzfus grew up around every kind of plane under the sun. But one flight in particular cemented his desire to pursue a career in aviation. He was in the right seat of a DC-3 cockpit while Ken, his uncle, was flying a spraying mission to combat Gypsy moths for a customer. Michael had been in lots of aircraft during his young life, but that flight made it all click for him.

Michael knows that not many kids get to have experiences like he had, and now he runs a business that relies on a skilled and enthusiastic workforce to support that business. Staffing becomes a matter of profitability and ensuring the ability to meet customer needs. Since most kids don't get to experience aviation like he did, Michael has developed a mobile aviation experience to enlighten, enthuse and harness the next generation of aviation professionals. The program is called NEXTGEN Aviators, and through Dynamic Aviation's various aviation resources, Michael is taking this experience on the road. He's not waiting for kids to figure out on their own they're interested in aviation; he's working to spark that interest.

The NEXTGEN Aviators experience comprises two large mobile units. One houses flight simulators while the other contains various stations introducing kids to the skills needed to keep aircraft in the air. These mobile units are well branded, each pulled by an 18-wheeler-type tractor. They're intended to go anywhere in the country to support any aviation business, not just Dynamic Aviation.

Once kids complete the initial introductory learning stations, they're given the opportunity to actualize the experience by flying in NEXTGEN's dedicated Beechcraft King Air. Keep in mind that some of these kids may have never been on an aircraft and almost certainly never as a passenger in a high-performance King Air. This is a big deal. The entire experience takes about four hours, but it doesn't stop there. If a kid shows an interest and wants to learn more, a NEXTGEN staff member will follow up and provide them with avenues to higher education and careers.

Students immersed in a station featuring computer-aided design.

The staff that makes all this complex aviation learning stuff run smoothly needs appropriate leadership. Michael chose an industry veteran with U.S. Air Force and extensive corporate experience to lead the NEXTGEN initiative. NEXTGEN's director Shane Combs is from Coal River, West Virginia. He stated, "I started as a USAF C-130 crew chief in 1993. After several years of military life, I transitioned to the corporate aviation world and managed various completions and customization centers for long-range aircraft like Gulfstream, Falcon and Bombardier."

Shane has been with Dynamic Aviation for a little over a year. His near and long-term goals are highly focused on the success of NEXTGEN. "I want to find those in the industry with similar goals of inspiring youth into careers in aviation and providing those pathways as well. My long-term goal is to take NEXTGEN Aviators across the nation to 30,000 students, and eventually more, along with two full-time daily NEXTGEN experiences at various fixed base operators."

As awareness increases, the demands on Shane's time increase proportionally. "Travel has increased considerably as we see results and continue to provide students with this experience and the industry learns more about NEXTGEN and our mission. We are getting invited to lots of airports now and that requires a lot of relationship building."

At this point, it's best for local schools and organizations to plan about one semester in advance to have a NEXTGEN experience in Bridgewater. For off-site locations and those in other states, it's best to plan six months or so ahead. And just as it takes a village to raise a child, it takes partners and sponsors to bring a kid into aviation. "We rely on our incredible industry relationships to provide the continuing education aspects, like EAA's AeroEducate program. Others have direct-to-workforce opportunities. They're all invaluable."

Obviously, Shane can't do this all by himself. He is bringing others who love the NEXTGEN concept and can

Dynamic Aviation's legacy flight hangar where Adam Brumbaugh (seen on the cover) works.

influence young people to embrace our unique aviation industry. He found a young woman who encapsulates this perfectly. Kala Dougan was born in Lynchburg, Virginia and grew up in Roanoke. When she was in 8th grade, an experience changed her life.

"My mom heard about a Women In Aviation event at a university. We decided to attend the event with the idea that it would just be something fun to do together but not necessarily something that would inspire my future career. When we arrived at the event, I had the opportunity to tour the aeronautics department facilities, speak with professors and flight students, and fly their flight simulators. After trying my hand at the simulator, I was given the opportunity to go on a flight with a female flight instructor. For me, that experience was life-changing. I still remember putting on that headset for the first time, feeling myself sink into the seat on takeoff, and being absolutely amazed as the world shrunk beneath us. The instructor allowed me to take the controls for a little while with her help. She was kind and encouraging and made me feel like I was contributing to the flight. Once we landed, I remember running to my mom and telling her I wanted to fly for the rest of my life. Since that

Kids preparing for the flight simulator experience.

At the metal working station, students learn riveting.

moment, I haven't looked back. That instructor may never know the impact she had on my life, but she inspired me to receive a degree in aeronautics and sparked a passion in me for helping other students learn about aviation career opportunities."

After Kala's education was complete, her husband Garrett was hired at Dynamic Aviation, which led to her involvement with NEXTGEN. "My husband was hired at Dynamic Aviation as an Air Data Acquisition Pilot. When Dynamic began beta testing the concept of NEXTGEN, he volunteered his time to fly the aircraft. I remember him coming home from these events excited about the potential of the program and the impact that it was already having on a small portion of our local community. I attended one of the events for employee family members and was shocked at all of the interactive stations that were set up for kids to explore. It reminded me so much of my experience at the Women In Aviation day but on a much larger scale. I immediately fell in love with the vision of the program and asked if I could volunteer. After volunteering for about two months, I was offered the operations supervisor position within the program and accepted!"

As you can see, Kala is perfect for this role. When asked what it is about NEXTGEN that influences kids the most, she said, "The beauty of NEXTGEN Aviators is the variety of aviation career paths that we highlight, giving students with all different talents and interests something that they can each be excited about. Our staff is composed of highly trained industry professionals who are all passionate about encouraging the next generation and giving students the confidence boost they need to feel empowered to start their aviation journey. I think that when you pair the staff and the multitude of activities together it creates an environment that kids can't help but gravitate towards. However, the King Air 90 flight and the desktop simulators seem to be a fan favorite."

One of Kala's colleagues also seems tailor-made for this type of advocacy. Samantha Anderson, originally from Arizona and now living in Virginia, has been hooked since an early age. She is intent on helping NEXTGEN Aviators bring her enthusiasm to a new generation. "Both my parents were international pilots and flight instructors," she said. "I took my first flight at two weeks old and had my first passport by three months. I think I was about eight years old when I most vividly remember flying with my parents. My dad was flying in the left seat, me in the right, and mom was in the back. Dad was teaching me how to do stalls and steep turns when he said, 'you have the controls.' I responded, 'I have the controls,' and I was hooked."

Aviation is not Sam's entire life, though. She is the current Miss United States, which brings all sorts of demands on her time. "I devote a significant amount of time to being Miss United States. NEXTGEN has been incredibly flexible with my schedule knowing that this is a once-in-a-lifetime opportunity and my hectic schedule is temporary." Discussing her future and the NEXTGEN program, Samantha predicted the next three years will see significant growth. "And hopefully by then I'll have completed my CFI rating and may even become a pilot for our program. My long-term plan is ever-changing. I have some guidelines that I hope will keep me heading towards a successful future, but I'm along for the ride."

Michael and Shane are certainly lucky to have Kala and Sam as advocates and staff. But the story wouldn't be complete if we didn't hear from someone who had been through the NEXTGEN Aviators experience. Adam Brumbaugh felt the impact of his experience in the NEXTGEN Aviators program and is now an intern

Samantha Anderson flight training after earning the Miss United States title.

for Dynamic Aviation. He works in the legacy hangar, which houses no less than the very first aircraft with the Air Force One callsign, president Eisenhower's Lockheed Constellation, among other historical aircraft. Adam was just one of a bus full of students from Wilson Memorial High School in Fishersville, Virginia. They were able to take part in one of Dynamic Aviation's NEXTGEN Aviators experiences, right in Bridgewater, which is about a 30-minute drive from Fishersville. Adam starts his senior year in September and graduates in 2023.

The NEXTGEN experience sparked an interest in aviation as a career for him. "I did not expect to receive so much from the NEXTGEN event," he said. "It was such a detailed introduction to aviation careers." He participated in the technical familiarization stations consisting of introductions to aerodynamics, metal work, electrical systems and computer-aided design. But it was the flight simulators and the actual flight in the King Air that really sealed the deal for Adam. "I was amazed that we could actually learn so much in such a short amount of time and get such an amazing overview of piloting aircraft." During the introductory flight, the NEXTGEN pilots took the kids to view their school from the air. "It was incredible that the 30-minute drive turned into a 5-minute flight. I was able to get a clear idea of the value of aviation. Plus, seeing our town and school from the air was really cool." As a result of NEXTGEN, Adam is hooked. With his new experiences as an intern at Dynamic Aviation, he is planning to pursue a career as a pilot.

The impact NEXTGEN Aviators is making is real. A serious (seriously impactful, seriously compelling and seriously fun) program to bring aviation to kids across the country. NEXTGEN is a non-profit, 501(c)(3) organization, and they're actively looking for partners and sponsors to help them accomplish their goals of building an enthusiastic and skilled generation of aviation professionals to help all of us meet our (and our customers') needs. NEXTGEN partnered with EAA, hosting GirlVenture at AirVenture at Oshkosh, Wisconsin, in July. And they are actively participating in NBAA's Business Aviation Convention & Exposition in Orlando, Florida, in October 2022. NEXTGEN also has many sponsorship and marketing opportunities available.

More information can be found at *www.nextgenaviators.aero.* 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@phillipsaeroservices.com.**

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COUNT	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	CITATION MUSTANG
130	CITATION S/II
323	CITATION SOVEREIGN
105	CITATION SOVEREIGN+
310	CITATION ULTRA
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 60ELXM
68	SABRELINER 65
7	SABRELINER 80
1	SABRELINER 80SC
67	WESTWIND 1
1	WESTWIND 1123
14	WESTWIND 1124
50	WESTWIND 2

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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16	KING AIR 200T
229	KING AIR 250
182	KING AIR 300
14	KING AIR 300LW
617	KING AIR 350
62	KING AIR 350C
8	KING AIR 350ER
387	KING AIR 350I
4	KING AIR 350IER
8	KING AIR 90
6	KING AIR A/B90
76	KING AIR A100
184	KING AIR A200
34	KING AIR A90
197	KING AIR A90-1
105	KING AIR B100
1,038	KING AIR B200
107	KING AIR B200C
99	KING AIR B200GT
5	KING AIR B200SE
8	KING AIR B200T
47	KING AIR B90
302	KING AIR C90
38	KING AIR C90-1
186	KING AIR C90A
378	KING AIR C90B
76	KING AIR C90GT
88	KING AIR C90GTI
150	KING AIR C90GTX
13	KING AIR C90SE
258	KING AIR E90
173	KING AIR F90
28	KING AIR F90-1
5	MERLIN 300
13	MERLIN IIB
8	MERLIN III
22	MERLIN IIIA
44	MERLIN IIIB
14	MERLIN IIIC
3	MERLIN IV
11	MERLIN IV-A
101	MITSUBISHI MARQUISE
18	MITSUBISHI MU-2F
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
74	PIPER M500
92	PIPER M600
602	PIPER MERIDIAN
198	QUEST KODIAK 100
2	ROCKWELL 680T TURBO
5	ROCKWELL 680V TURBO II
4	ROCKWELL 680W TURBO II
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	TURBO COMMANDER 1000
22	TURBO COMMANDER 690
131	TURBO COMMANDER 690A
135	TURBO COMMANDER 690B
73	TURBO COMMANDER 840
20	TURBO COMMANDER 900
19	TURBO COMMANDER 980

TWIN PISTON - 6,872 OWNERS

COUNT	AIRCRAFT
35	BARON 56 TC
1,566	BARON 58
446	BARON 58P
118	BARON 58TC
3	BARON A56TC
335	BARON G58
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
100	DIAMOND D42
65	PIPER 600 AEROSTAR
3	PIPER 600A AEROSTAR
44	PIPER 601 AEROSTAR
4	PIPER 601B AEROSTAR
182	PIPER 601P AEROSTAR
21	PIPER 602P AEROSTAR
509	PIPER CHIEFTAIN
20	PIPER MOJAVE
280	PIPER NAVAJO
196	PIPER SENECA
13	ROCKWELL 520 COMMANDER
3	ROCKWELL 560 COMMANDER
11	ROCKWELL 560A COMMANDER
7	ROCKWELL 560E COMMANDER
6	ROCKWELL 560F COMMANDER
12	ROCKWELL 680 SUPER
3	ROCKWELL 680E
14	ROCKWELL 680F COMMANDER
11	ROCKWELL 680FL GRAND COMMANDER
4	ROCKWELL 680FLP GRAND LINER

HIGH PERFORMANCE MOVE-UP SINGLES - 5,726 OWNERS

COUNT	AIRCRAFT
200	BEECH BONANZA
435	CESSNA 182
52	CESSNA 206
373	CESSNA P210N
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
525	PIPER MIRAGE

TWIN & TURBINE

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Shop Class
Maintenance 101

by **Elliott Cox**

Once the relief of passing that last checkride has set in and the world of GA flying has officially opened for business, some pilots elect to buy their own airplane. Flight training is often a poor teacher of the complicated subject of aviation maintenance, forcing some to dive into ownership blindly. If you're a first (or third or fourth) time aircraft owner and don't know what to look for when choosing a maintenance shop, you risk learning some tough, expensive and possibly dangerous lessons.

As you start searching for your dream airplane, or at least your next one, you should also be researching reputable maintenance shops. Typically, the best place to start is to determine the distance you're willing to fly and drive to a shop because you'll likely be doing both during your maintenance visits. With your geographical boundary set, pound away on your favorite search engine or map application to create a long list of shops within your radius. Read the online reviews, look through the websites, and most importantly, ask your flying friends if they've had experiences with any of the shops on your list. Firsthand knowledge from current and past airplane owners should carry more weight, by far, than whatever you might find online.

Once you have your list of shops, call each one and ask for their hourly labor rate, a list of references, and the availability of a personal tour. If any of them decline to give references or tours, scratch those shops off your list. If you find that it's difficult to get someone to call you back or even speak to a person, that's also a bad sign. Granted, the shop may be busy, but if you can't contact them as a potential customer, how will the communication go when they have your airplane in pieces on the shop floor? Don't scratch them off the list if they don't pick up the phone on the first ring, but it's a different story if you've made a half-dozen attempts and they've squawked 7600.

The highest shop rate doesn't necessarily mean the highest quality work, and vice-versa for the lowest rate. As the adage goes, "If you think a good mechanic is expensive, wait until you see how much a bad one costs!"

Now that you've shortened your list and have references, use them. You don't have to get into specific dollars and cents type conversations, but I think most owners will be

glad to openly chat about what they like and dislike about their favorite shop. If you're not sure what to ask, just talk to folks who have owned an airplane for any length of time and you'll come away with plenty of talking points. As another old saying goes, with a little editorial license, "Hell hath no fury like an airplane owner scorned." You could also ask a mechanic who is a friend of a friend to sit down over lunch to talk about some things to look for. You may be surprised how much information we mechanics are willing to share when you feed us.

After you've talked to references and asked your flying friends for their opinions, you should be able to whittle your options down to a shortlist. The number of shops on that list depends upon how many shops you're willing to tour because it's time to hit the road. Call each of the shops and take them up on their generous offer to give you a tour. Pilots are always looking for an excuse to fly somewhere new, and I think researching maintenance shops should rank high on the mission list.

Walking around the shop, try to take in the big picture. How does it look? What's the general mood? Does that maintenance tech look like they would rather be doing anything in the world other than their current task? I don't expect even Disney's flight department to be whistling while they work, but you can spot a poor work environment from a mile away. If you can't fathom spending time there, you may want to reconsider having your airplane spend time there.

Take a close look at some of the airplanes being worked on. Are the parts strewn out or are they labeled, protected and neatly stored? Are there tools or greasy hardware laying on painted surfaces, or are delicate surfaces being protected? Basically, are they treating that airplane like you want your airplane to be treated? While on the tour, ask about a time or two where they made a mistake and how they fixed it. If your guide laughs and says, "Well, this one time…," that's a good sign. If they stammer a bit and don't have a lot to offer on this subject, I'd be a little wary.

Even the best shops mess up occasionally because they're owned and operated by humans who sometimes have bad days. Whether someone forgot to order some critical parts which caused the airplane to be five days late or a technician who replaced an antenna on top of the airplane didn't realize he was scratching the fuselage with his "Rodeo Champ" belt buckle, bad things happen to the best of us. How we react to and remedy those screw-ups should be what defines us.

Don't be afraid to ask for the contact information of the owners or operators of the airplanes currently in maintenance. The list of references that the shop initially provided is likely a list of customers who the shop knows will give them glowing reviews, but it's best to balance that out with some folks who have had less than stellar maintenance visits to get the full picture.

The last suggestion I have on picking shops is a very simple one, but I think it's probably overlooked much of the time: Take a mechanic with you when you go look around these shops. Word of mouth is a powerful thing in aviation. If you put the word out that you're going to be

touring shops and would love to bring someone with you who knows the business, chances are good that you can find a trustworthy friend of a friend to help you out. The cost for this service ranges anywhere between lunch and a day rate, but having a non-biased opinion is well worth whatever the fee. No matter how well you do your research, a professional maintainer will spot things, good and bad, that you may not notice.

Let's fast forward a little and say that you've found a maintenance shop that does a fantastic job and you're completely satisfied with how they treat you. Should you use them exclusively from now on? The answer is simple: yes. And no. Maybe? It depends. If you have a shop that you trust completely, there's nothing wrong with using them for all your work if that's what makes you comfortable. That said, there are a few advantages to using more than one shop.

The Falcon 900 that I maintain is on an inspection schedule similar to annual inspections. There are three companies that are authorized by the manufacturer to perform maintenance on the airframe and engines, and I use all three of them. I don't have a set rotation schedule and sometimes I'll use the same shop two or three years in a row. I get maintenance proposals from all three, compare them, then weigh all the various factors at play to decide which shop I'm going to use that year.

The main reason I rotate shops is that if a shop misses an item – an AD, corrosion, wire bundle chafing – on one inspection, they'll likely miss it on subsequent inspections. Not because the shop employs substandard technicians

Shop Tip: Pre-Buy Inspection

When you find your plane and negotiate the contract with the seller, you will have to agree on where to have the pre-buy inspection completed. This is where all that research and footwork will pay off. The seller may offer to use their favorite shop that they've "been using for years." Politely decline that option even if their shop is on your shortlist. The seller's shop has a vested interest in finding nothing but a pristine airplane. There's nothing wrong with the seller offering up their trusted shop, but if they refuse to have the pre-buy done anywhere else, this is not the airplane for you. A seller afraid to have their airplane inspected by anyone other than "their guy" sends up red flags. A seller who has confidence in the pedigree of their airplane will have no qualms about having any reputable, mutually agreed upon shop inspect the airplane.

but because we're creatures of habit. We tend to do a task the same way every time, and if we run our hand along a control cable one way with a rag, that's probably the way we're going to rag that cable every time. I add tasks that I routinely do in-house to work orders that I farm out because I'm aware of my own biases, and I sleep better knowing that another technician/inspector has performed the same task and came up with the same conclusion.

Each shop brings something different to the table. Shop A may focus on corrosion detection and prevention more than Shop B, but Shop B is looking at bigger picture stuff to keep you ahead of the curve for heavier maintenance items that will be coming due. Shop C may be hyper-focused on preventative maintenance that costs you a little more now to save a lot later. The benefit of the rotation is that I get the best aspects of each shop.

The bigger point that I'll leave you with is there's a lot to learn about the maintenance world – a whole lot. I've been a maintainer for 27 years and no two days have been the same. There's always something new to learn, and there will always be something that you didn't know that will bite you right in the tail beacon. All we can do is learn from our mistakes and educate ourselves to the highest degree possible. Read as much as you can and talk to as many experienced people as possible. Better yet, find a mechanic you can trust and buy them lunch. T&T

Elliott Cox *is a pilot and the Director of Maintenance for a Part 91 Corporate Flight Department in the Southeast. You can reach him at his website TheWritingFlyer.com or by email at* **elliott@thewritingflyer.com**.

by **Kevin R. Dingman**

Piloty Pearls of Wisdom

Axioms of Aviation Abound

There are a plethora of maxims that illustrate the importance of risk assessment in aviation. Most have come at the expense of our fellow aviators, bringing forth a few grey hairs – or worse. Here are some broadly recognized aviation proverbs:

- Even more so than the sea, aviation is unforgiving of any carelessness, incapacity or neglect.
- Maintain thine airspeed lest the ground arise and smite thee.
- Never let an airplane take you somewhere that your mind hasn't already been.
- There are old pilots, and there are bold pilots, but no old, bold pilots.
- These things have no value to a pilot: altitude above you, runway behind you and fuel in the truck.
- There are those that have, and there are those that will.
- Much better to be on the ground wishing you were in the air than in the air wishing you were on the ground.

Don't Push Your Luck

When at home or on the road in a hotel room, I often recall that last proverb while watching the light show and listening to pounding thunderclaps from an overhead category five thunderstorm, particularly as I watch the sky turn greenish yellow. Aggressiveness and risk-taking are sometimes an integral and necessary part of managing a business, but in aviation, there is this truism: Don't push your luck (see the above proverb about "those that will"). Having just experienced my fifth engine failure this past June (three in jets, two in pistons. This one due to the left engine number 5 cylinder swallowing an intake valve), from the perspective of this old, but not too often bold, pilot, things can and will conspire against us aviators. And pushing your luck will eventually bite you in the rear end. Folks generally try to do their best, but most would agree that pilots do their best more often than most by necessity, having been conditioned by life, our career and flying airplanes to do it right the first time…or else.

Our assessment of risk becomes just as important as weight and balance or our fuel reserve. Danger, peril, threat, hazard, jeopardy and menace – all synonyms of the word "risk." Even though we subconsciously realize these words apply to human flight, they seem a bit extreme. After all, they could apply to other things we do that are more perilous. Besides, flying is fun. And didn't someone say it was safer than driving? It's only when we are unlucky or slip up that those malicious words apply, right?

Margin Call

There are typically safety margins added to the safety margins. First, the designer adds a safety margin, engineers add a margin; the manufacturer adds a margin; and then the attorneys add a factor. After that, the FAA and NTSB add their safety margins until finally, we add our own margin – frequently called "one for the wife and kids." Before you know it, we're wearing life jackets and carrying a full load of fuel just to taxi to the wash rack. An exaggeration, but our experience and that of others show us that sometimes even these additions prove to be too little.

Knowing there are margins (built upon margins) can also work to our disadvantage. Just because you got away with it last time or the last couple of times doesn't mean the margins will protect you the next time. Chuck Yeager said, "Never believe anything anyone tells you about an airplane." His point was that you, the pilot, will be the first one to the scene of the accident every single time. Learn the truth about your machine and why it does what it does. Verify everything there is about your airplane and about flying your airplane. Don't rely on the word of anyone regarding its ability to be flown a certain way or in a certain environmental condition.

Jiminy Cricket

There can be precursors to an impending "risky" event. One is the hair-standing-up-on-the-back-of-your-neck sensation. This is the awareness you get when you think: "I knew something was wrong. I just couldn't put my finger on it."

That sense can also be your subconscious telling you that you just added what may be the last straw to your load of troubles. The sinking feeling then comes when you admit to yourself that even though you got away with it before, this time it looks pretty bad. When you find yourself thinking that you shouldn't have done something, recollect the "rather be on the ground than in the air" proverb. Another possibility is the "not having a precursor at all" scenario. It's the type of incident where the proficient pilot never saw it coming – they had no clue. This type should scare the Jiminy Cricket out of you because it's out there waiting for all of us. It can happen for lack of knowledge, experience or simple inattention. It could also be a piece of equipment breaking that is never supposed to break. This prospect is the one that should convince you to always keep your ducks in a row so that when it does happen, you aren't burdened by unnecessary, previously accumulated risk. A third possibility is that you did, in fact, recognize an impending incident but allowed it to progress from benign to dangerous because corrective action was too late or incorrect.

Get-Er-Done-Itis

As Pilot in Command, we are accustomed to the never-give-up mentality. We have to be. After all, when you hit a gust of wind on short final you don't release the controls, throw your hand into the air and exclaim, "I quit, I can't do this anymore." Or, if the landing gear will not extend, you don't accept a gear-up landing without first accomplishing as much investigation, analysis and checklists as fuel-remaining will allow. We need to be mindful, however, that our get-er-done, get-there-itis persona can put us in a corner. The most difficult decision often comes not when assessing outside factors but when wrestling with ourselves.

After writing a column in which I prodded readers to attend Oshkosh AirVenture, I found myself unable to attend due to a maintenance issue. I tried to justify continuing my planned flight even though I knew I shouldn't. For a bit, I had convinced myself that it may be safe. After all, the airplane had been flying just fine before the issue was uncovered. The coordination and planning for the trip had taken all year, and everyone was expecting me to be there. It's often tempting to assume more risk than you should when the desire to get there is high. An emotional or financial need to continue can be blinding.

Beyond Our Ability

Icing, wind, low visibility and poor runway conditions are better tolerated once you have experienced their effects. Even so, be cautious to avoid the lure of a get-there-now or go-away choice. Once we have become proficient pilots, the mission is to evaluate the risk of beginning or continuing a flight based on our experience and the capability of the airplane. A student pilot would not fly at night around thunderstorms to a CAT III instrument landing, for example. But for a 15- or 20,000-hour airline pilot, those conditions are almost routine – just as a night flight to CAT I minimums would be common for a steely-eyed 5,000-hour Citation pilot. For each level of aircraft and pilot capability, there are limits. All adverse factors are cumulative and should be evaluated together. The most experienced pilots will eventually see conditions beyond their ability or that of their equipment. Our task is to recognize those conditions when they occur and act accordingly.

> Training is like fighting a gorilla. You don't stop fighting when you are tired; you stop when the gorilla is tired.

Engine failure training consists of two parts: Managing the failure and managing the rest of the flight. I strongly recommend that you not practice engine failures during takeoff in the airplane. Save it for the simulator because any realistic takeoff-failure scenario in the airplane is dangerous. However, using a zero-thrust power setting once above three or four thousand feet and with an instructor is valuable training. And this is critical: Make sure the surprise factor is there. Practice failures during a turn on the SID, at some point halfway to altitude during a distraction and one while at cruise. These maneuvers should not be considered complete until the engine is (simulated) secured, the airport of intended landing has been selected, and the route to that airport and the approach to be flown have been loaded. Practice flying the airplane at zero-thrust while talking to ATC (your instructor) and loading/programming your GPS/FMS/FMC. Then in the sim, practice the approach, landing and, if possible in your plane, the single-engine go-around.

> A man who carries a cat by the tail learns something he can learn in no other way.
>
> – Mark Twain

Evaluate risk factors before each flight. Once airborne, any new risks must also be appraised. Like carrying a cat by the tail, sometimes we can only learn by doing. But stay away from the blurry edge of the envelope created by the safety margins everyone adds; this is the operational area where you accumulate risk. The original envelope is for a factory-new machine, flown in good weather by a test pilot. The true edge of the envelope may be inside the lines and not outside. If you end up near the lines, take action to ensure you limit future risk. When you find yourself beaten down by a malfunction or a mistake, take a breath and consider your options. And if your airplane, physical and mental abilities, or luck seem to be used up, when do you submit to defeat? Never. You are not only a pilot; you are a Captain. Keep your hands on the controls and work the problem. When told by Captain "Mal" Reynolds to "just get the ship on the ground," serenity pilot "Wash" Washburne replied, "That part'll happen pretty definitely." Since our airplanes will also get on the ground "pretty definitely," our job is to get them there in as few pieces as possible. And when in the process of getting the ship on the ground, you need to deviate from rules, regulations or procedures – just do it.

Bob Hoover summed it up nicely: "If you're faced with a forced landing, fly the thing as far into the crash as possible." And Ernest Gann said, "If an airplane is still in one piece, don't cheat on it. Ride the bastard down." Sooner or later (see "Statistically Speaking," T&T January 2020), we will all experience a critical event in an airplane. Be prepared but don't fret. Most of our events will not be as challenging as landing a crippled Firefly-class spaceship or carrying a cat by the tail. T&T

Author's Note: The Duke Flyers Association annual fly-in will be in Dayton, Ohio September 8 to 11. All DFA members are encouraged to attend this type-specific gathering of friends.

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**.

Plotting a Flight Path Forward

Jeff Plotka alongside a Walker Mower and his 1997 Piper JetProp.

"My father was an ATP-rated pilot and offered a job by Pan Am back in the late 60s, early 70s, but didn't want to do it because he liked being an attorney more," explained Jeff Plotka, a JetProp owner from Long Island. "I grew up getting into small airplanes to go on vacations. My first flight was when I was two weeks old."

With this early foray into flight and a strong skyward interest, Plotka began flying as soon as he could. "When I was 16, I decided that I wanted to get my private pilot license and started moving that direction." But a grim malignant melanoma diagnosis sidelined him from the cockpit (of both aircraft and boats) as a teenager.

He explained, "When I was 19, I was getting my captain's license and my pilot's license at the same time. I was taking flying lessons, had my medical, but then got sick and lost it. So, I stopped flying because of the medical, but more importantly, I started dating a woman and she hated small planes. But she liked the boats, so I kept the boating thing going for a while. I ended up marrying her and we are still married today."

In the years since beating the diagnosis and starting a life with his wife Anita, Plotka took up flying again. But it wouldn't be until years later that he returned to the cockpit on a consistent basis.

"Probably six or seven years ago, I was driving 90,000 miles a year in a truck and pulling a trailer. I sell lawnmowers for a living, so I was running around, running around, then

Raised around general aviation from an early age.

had to have back surgery. After that, I decided I can't do this anymore."

Intent on making business travel more efficient, Plotka's thoughts once again turned to the sky. He continued, "I already had salespeople on the road, but this is how I was doing business. So, I looked at my wife and said, 'I love you, but I'm not doing this anymore. I'm going to start flying again.'"

And with her still somewhat reluctant support at the time, Plotka traded the pickup truck and trailer for a 2014 Cirrus SR22. This aircraft was replaced with a 2017 SR22 G6 just under two years later after Plotka flew it for several hundred hours.

"I really enjoyed training in the Cirrus. I wanted to make sure I returned to training in a current, technology-advanced aircraft. I also wanted to make sure I was able to take advantage of all the safety features as well. If you are going to learn how to fly, Cirrus does an amazing job. Unfortunately for me, my mission outgrew the plane's capabilities." And as any pilot who talks to Plotka will quickly learn, continued quality training is very important to him.

"Cirrus and their commitment to good training really set me up for success in moving up. It has put me on the path to continue to explore, learn and train. Cabin-class, pressurized, and turbine operations are all things that require training and proficiency, so I set out to find a similar standard of training in a different aircraft."

Panel transformation: G500 TXi's, GTN 750Xi's, and a GFC 600.

In addition to being a pilot and PA-46 owner, Plotka enjoys spending time with friends and family, including his 21-year-old son, Robert and 24-year-old son, Jeffrey. Additionally, his hobbies include "anything with an engine," such as cars, motorcycles and boats. While Anita initially hesitated for many years to join him in flight, he is happy to report that she is more comfortable flying now. They are currently planning a two-week cross-country flight to celebrate their 30th anniversary in 2023.

Plotka's outward zeal for life also includes everything related to his longtime business, Precision Work Inc (PWI). The company was started by his in-laws in 1965 and is a power equipment distributor based in Port Washington, New York. In addition to providing service for several other brands' product lines within the lawn maintenance vertical, PWI is Walker Mowers' (featured in the August 2021 Owner's Corner) oldest and largest distributor.

At present, PWI has a presence in 12 states from Maine to Indiana. General aviation is integral to the business' future territory expansion and ongoing customer support efforts. As the company's footprint has grown, and even prior to the distributor's most recent addition of three states in its network, the benefit of flying in support of the business was apparent.

Plotka currently flies a 1997 Piper JetProp fronted by a 560 shp Pratt & Whitney Canada PT6A-35. He transitioned to the turbine aircraft last May. The step into the retractable turboprop has been a rewarding one, allowing his team to travel more efficiently and be home more often when tending to sales calls.

"I have always believed that I am in the relationship business. I happen to sell lawnmowers, but we treat our customers and vendors as part of our extended family. Every employee touches our customers every day, whether it be via phone, email, in-person visit or even just the boxes that arrive via UPS. How our customers feel by our interactions is what sets us apart. I use general aviation to make sure I can continue to personally visit all of our customers as often as possible."

Recently completed tailwheel training.

"Being in the lawnmower business means that we are by nature not in the big cities very often. We are generally in the suburbs or more rural areas further away from a large commercially accessible airport. This is where general aviation really comes into play. I can be anywhere in my territory in about three hours, and there are a lot of general aviation airports that put me close to my customers."

Overall, he has many positive things to say about being a PA-46 owner and how it has enabled growth in both new and 35-plus-year relationships. "I have enjoyed every last bit of it. I have put 320 hours on the plane in a year, even with giving it up for two months. During that time, I put in a brand-new interior and panel. It was one of the best experiences I've ever had. The panel came on time and on budget, exactly as it was expected. We installed twin G500 TXi's, two GTN 750Xi's, and a GFC 600. It's just beautiful."

And it's not the upgrades alone that Plotka has enjoyed about the ownership experience, either. "I love the efficiency of the JetProp and the price per mile. I'm burning about 32 gallons an hour and typically see 258 to 260 [knots] true, but I'm always at 26,000 or 27,000 feet. I know some that prefer to fly it at 22 to 24, and they're burning 30 gallons an hour and pulling the power back, but that's not me. If I'm not hurting anything, I will go as fast as I can go. I like to get there as quick as I can because it's for business."

Recent territory expansion and increasing demands require PWI carry more salespeople and other personnel further, stretching the airplane's capabilities.

"The pain points in the JetProp are strictly useful load and fuel. That's my struggle. It's basically me and full fuel if you are going by book numbers. So, once I take anybody, I'm starting to shed fuel. That's okay in certain examples, but now it's reached a point where I need to put in four 200-pounders and go three and a half hours. I also don't like landing without a lot of fuel."

More range, without sacrificing passengers, initially sounded like the perfect role for a King Air Plotka thought. But after careful consideration, it was determined the King Air no longer fit the budget and the TBM 850 would be the right fit. While it sports one less engine and two less seats, the TBM 850 suits the mission profile nearly perfectly, in addition to having a physical footprint that allows him to keep the plane in his current hangar.

Just like in his JetProp and earlier aircraft, the 53-year-old entrepreneur plans on continuing to have an intentional focus on recurrent training.

"I fly a lot and also train a lot. I don't want to be the guy that flies himself and creates bad habits because he can get away with it, thinks that okay, and now that is just standard. Last year, I bought my JetProp and went through my initial training. I had a 30-hour solo requirement and a 50-hour requirement to be able to take passengers and I did that in eight days. After getting my airplane back from the shop, I completed a whole other recurrent training with Casey Aviation plus went through a MMOPA mid-year training event with Joe Casey. I then went back for my annual recurrent and commercial training with Deanna Wallace and Joe in the plane. So, I went through three recurrents and a new license in one year, as well as flying for work."

The cost of proper and continued training is negligible compared to the costs of an aircraft and its operating expenses, contends Plotka. Similarly, the reward of proficiency certainly outweighs the pitfalls of related expenses and the costs of inadequate preparation.

"I think that just because the insurance company says you are safe doesn't make it so. Flying 300 hours a year is good, but more training and going after more ratings is even better. I am currently getting my tailwheel endorsement and plan to also complete upset recovery training and get my seaplane rating. I want to build up enough time to go for my ATP. A multi-engine rating won't help me unless I buy a twin."

He concluded, "Continuing to train and push myself is crucial. To learn and grow is an important part of staying proficient. And it's fun too!" T&T

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A Very Special Olympics

When you have ended your flying career, what will you remember most? Perhaps breaking out at 200 feet on a foggy night with runway lights in sight. Or crossing the Colorado Rockies at dawn on a summer morning.

For Patty and me, it will be the smiles on the faces of hundreds of Special Olympics athletes.

On June 4, after two years of planning, the Textron Aviation Special Olympics Airlift welcomed over 800 athletes to Orlando Executive airport in the largest peacetime airlift. Hundreds of volunteers gathered on the ramp at sunrise on a rainy, low overcast morning to greet 128 airplanes. The athletes were flown free of charge by volunteer pilots from almost every state in the country in Citations, King Airs, Premiers, Beechjets and Hawkers. The athletes ranged in age from 11 to 84, but for many, it was their first airplane ride.

And what a ride it was.

Each airplane was issued a unique "Dove" callsign by the FAA. And each got very special handling from their departure points across America to touchdown.

"Dove One," a Citation from Coca-Cola Consolidated, Inc., was the lead airplane with first landing rights. In the elaborate Textron Aviation welcoming tent, a big screen monitor showed a problem. "Dove 7," a King Air, was ahead of "Dove One" and would land first. With expected military precision, the planning was slightly off.

A quick call with the FAA and "Dove 7" got a short vector until all was right. And all day long, the event was perfectly choreographed.

On the ramp, the Textron Aviation volunteers wore matching red shirts, as did industry leaders like Trent Corcia of CJP, Ed Bolen of NBAA, Pete and Patty Bunce of GAMA, and the event's biggest cheerleader, Textron Aviation CEO, Ron Draper.

Every two minutes, an airplane landed and taxied into one of seven rows. As the cabin door opened, the baggage keys were tossed to a lineman while the tug operator connected the airplane. An "all clear" signal from a ramp agent gave us the go-ahead to sprint to the airplane to welcome the participants with exciting cheering and music.

The rock star athletes, grinning from ear to ear, loved every moment. They "high-fived" every one of the greeters as they gingerly stepped off their magic carpets.

"Do you like football?" I asked one. "Yes!" came the answer. "Do you know who Peyton Manning is?" I continued. "Of course," he said. "Well, he is standing right next to you. Want a picture with him?"

Peyton stood with us for six hours in the rain to welcome the star-struck athletes. I think it was the highlight of his day too.

Hats off to everyone: the Citation Jet Pilots organization (that provided almost half of the aircraft), corporate flight departments and fractional operators that loaned their airplanes, the FAA, and FBOs across the country that donated fuel, provided water cannon salutes to the departing airplanes and more.

This is what I will remember.

Fly safe. T&T

David Miller *has owned and flown a variety of aircraft from light twins to midsize jets for more than 50 years. With 6,000 plus hours in his logbook, David is the Director of Programs and Safety Education for the Citation Jet Pilot's Safety Foundation. You can contact David at* **davidmiller1@sbcglobal.net**.

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*Climb and cruise performance increases will vary depending upon aircraft condition, operating procedures, altitude and atmospheric conditions.

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