

GPU Line by
Best Tugs

The Risk-Reward
Analysis

Setting GA
Flying Records

TWIN & TURBINE

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Contents

MARCH 2021 • VOL. 25, NO. 3

Editor's Briefing

2 Introducing 121RW
by Rebecca Groom Jacobs

4 The Risk-Reward Analysis
Just Because You Can, Should You?
by Dianne White



From the Flight Deck
22 Freedom of Flight
General Aviation:
Use It or Lose It
by Kevin Dingman



6 GPUs by Best Tugs
by Rich Pickett

10 Eclipse Jet
The Ins and Outs of Ownership
by Rich Pickett

18 Record-Breaking Flights
by Grant Boyd

Owner's Corner

26 Fit for Purpose
Moving from a Heavy-Piston
Twin to High-Performance Turbine
by Elliot Zeltzer

On Final

32 Maintenance Issues
by David Miller

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Editor's Briefing

by Rebecca Groom Jacobs



Introducing 121RW



No sooner did the February Editor's Briefing hit the ink that we found "The One." I am thrilled to announce my husband Jared and I are the PROUD co-owners of a beautiful 1970 F33A Bonanza!

It has yet to sink in fully, but we could not be more excited to start this journey – and with the type of aircraft we truly wanted and needed for our mission (primarily 500 to 1,000-mile cross country's). Not only was the Bonanza highly recommended to us by many, but the F33 also holds sentimental value to me personally. It is the same model aircraft I grew up in as a child, with countless memories of flying to gatherings and vacations as a family.

Certainly, 121RW is already special to us for a number of reasons, and the story of how it all happened (in what felt like a blink of an eye!) is a true example of the stars aligning.

Jared Jacobs: It was late, and I was about to turn in for the night. But something compelled me to pull up "BeechTalk" for my periodic check of the Peddler Talk Forum. There were mostly familiar posts, but then I noticed one that was only a couple of hours old describing a 1970 F33A Bonanza. I followed the link to Controller and my pulse quickened... it had a nice exterior and interior, upgraded avionics, a mid-time engine, no damage history, full logs, and within the budget. I immediately shared and discussed the listing with Rebecca then tried to go to sleep – emphasis on "tried."

The next morning, I was up early to re-examine the ad and reach out to the seller. I typed up a quick email asking about access to maintenance logs, mentioned I was a Beechcraft Demonstration Pilot and sent it. I tried to go about my morning, but the F33A consumed my thoughts. Fortunately, the owner replied within a couple of hours with scanned copies of the logs and ended his email with a strange question: "Are you in Wichita today?" Shortly after, a Texas phone number popped up on my phone and I was greeted by the name I had seen on the Controller ad.

Excitedly, I listened as my new friend, Justin, described to me his beloved Bonanza.

With only a handful of owners in its lifetime, the owner before Justin had the airplane for 37 years. They kept immaculate logs and completed maintenance above and beyond the minimum required. Justin kept this trend throughout his three years with the aircraft, even recently investing in new spark plugs, magnetos, control rod end bearings, brake disks and pads, LED lights all around, a G5 backup flight display, and D'Shannon 20 Gallon Tip Tanks. He had not planned to sell the airplane but was loading it up for the long haul. The only reason he decided to put the airplane on the market was the realization he required a FIKI-equipped airplane. It was all of the types of things you want to hear from someone selling an airplane. This Bonanza had clearly been loved.

Adding to the excitement and too-good-to-be-true feeling, Justin was literally on his way to the airport to fly the airplane from Texas to Wichita to attend a recurrent training at FlightSafety. In a few short hours, he would be landing at an airport 15 minutes from our house. I was in disbelief but quickly made plans to meet him later that afternoon.

Once we hung up, I made a flurry of other calls. First, to our partner, Peter. He had grown accustomed to receiving calls about aircraft, but I think he could tell by the tone in my voice and how things were lining up, this was a serious opportunity. To end the phone call, he referenced a well-known phrase about a bodily function and a pot... I think you know the one. Next, I called a few friends who had been moonlighting as my used aircraft advisors. The consensus was that this one deserved a serious look.

A couple of hours later, Rebecca and I made our way to KAAO (Jabara Airport) along with our good friend and Bonanza enthusiast, Ryan. We looked out across the ramp as N121RW touched down and taxied in. The blue and gold paint was striking against the late afternoon sky, and I remember the distinct feeling that I just laid eyes on the airplane that would bring our search to a close. Justin and his friend hopped out of the airplane and immediately offered to let us climb all over it.

Ryan dove into some technical conversations while I acquainted myself with the interior and avionics. 1RW had great bones – leather seats and nice carpet, Aspen 1000 Pro PFD linked to a G530 and MX200 MFD, and backed up by a G5 standby display, eliminating the need for a vacuum system. The new paint on the tip tanks blended in beautifully with the 30-year-old paint – a testament to the pristine care the airplane had received. The big-ticket items were easy to see, but it was the subtle cues about the aircraft that were really calling to me (to be more detailed in a future article).

I tried not to let it on, but I was sold. We grabbed a table inside the FBO to have a conversation. It was quickly obvious Justin was going to be a great guy to work with. We were able to have a very upfront, honest conversation in which I made an offer that Peter and I had agreed upon. Justin countered with a number only slightly higher. I told him I would have to clear it with Peter, but I had a feeling we could make a deal. Again, Justin being the ideal seller, suggested we take advantage of the fact that the airplane was in Wichita. If I could find a shop that I trusted to go ahead and do a pre-buy inspection, he would be willing to let that happen. I immediately had a place in mind – Clemens Aviation at 1K1 (Stearman Field) came highly recommended by both the American Bonanza Society as well as my father-in-law and longtime Bonanza owner. The stars continued to align, and they could squeeze us in for a pre-buy the very next day.

Things continued to move fast as I worked full speed, sending emails and making phone calls to ensure all of the paperwork was in place with the partnership, insurance, maintenance, etc. Then came the time to have a little fun. The airplane needed to move from AAO to 1K1 for the pre-buy, so a test flight was in order. Rebecca and I rode along to get a feel for the airplane, and we were both very impressed. It was fast, nimble, stable, and as Rebecca said, “It felt like home.”

The next afternoon, Justin and I met at Clemens Aviation to go over the pre-buy report. The inspection had been a thorough following of the ABS pre-purchase inspection checklist, and the findings were minor adjustments. The

report was so clean that Justin joked, “If you don’t buy it, I think the mechanic might!” We made the final agreement that night to accept the aircraft and proceed with closing the next week. Justin generously offered to leave 1RW in Wichita and rent a car to drive home to Texas. Adding to the convenience (and coincidence), our partner Peter had put his name on a list for a hangar at another local airport a few months prior. Amazingly, a hangar opened up for us the same week of the sale. Today, our airplane is comfortably situated just 10 minutes from our home.

Needless to say, the current state of the fast-paced market rings true by our timeline. From the moment I first saw the listing to the time we had a conditional offer on the airplane was about 18 hours. Add in the time for the pre-buy and flight, we accepted the aircraft in less than three days. If the stars had not so perfectly aligned, I honestly think this aircraft would have been another on our “could have been” list. And while the speed of such a large investment was indeed intimidating for us first-timers, it was thanks to the support of so many friends and family – as well as a top notch seller – that we continued to come back to the same conclusion: This was just too good to pass up!

Stay tuned for regular updates about our journey into aircraft ownership in future issues.



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Position Report

by Dianne White



The Risk-Reward Analysis Just Because You Can, Should You?

It was a dark and humid mid-October night in northwest Arkansas. A low-pressure system was straddling the state, immersing the region in moist, dense air. Numerous rain showers had moved east leaving behind a low raggedy cumulostratus cloud deck that evening.

My husband and I had just finished dinner when we heard the growl of a single Lycoming engine and the sound of a prop set at high-pitch. Living under the approach and departure corridor of the Rogers, Arkansas airport, we are accustomed to hearing aircraft fly over daily. But tonight? A single-engine piston aircraft flying in these conditions after dark? Being weather geeks and pilots, we are both habitually attuned to changing weather conditions. We reached for our phones to look at the current METAR:

KROG 192355Z AUTO 31005KT 10SM OVC004 11/10
A3006 RMK T01100100

Okay, not bad. So why was this aircraft going missed on the ILS Rwy 20? He should have been able to land given the current ceiling. Next, we pulled up FlightAware and saw that the pilot of a Cessna 182 had departed Branson West Municipal Airport (KFWB) in Missouri, an uncontrolled field some 40 nm to the northeast. Upon shooting the missed approach at KROG, it appeared the pilot was headed back to KFWB.

The METAR at KFWB looked worse and was deteriorating:

KFWB 192315Z AUTO 00000KT 1 1/4SM BR OVC002
11/11 A3007 RMK AO2

KFWB 192335Z AUTO 00000KT 3/4SM BR OVC002

11/11 A3007 RMK AO2 LTG DSNT E

KFWB 200035Z AUTO 00000KT 1/4SM FG OVC002

11/11 A3008 RMK AO2

Looking at the TAF's the weather was well-forecasted:

TAF KROG 192320Z 2000/2024 25008KT P6SM OVC006

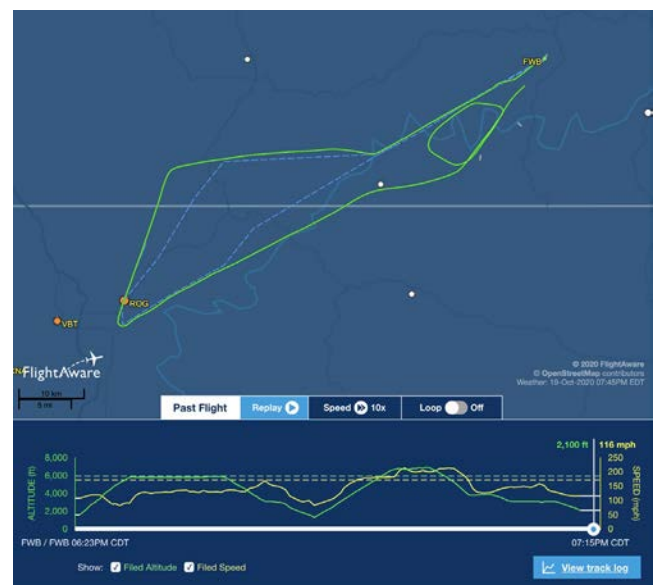
The closest TAF from his departure airport was Branson (KBBG), which was forecasting calm winds and an overcast ceiling of 200 feet:

TAF KBBG 192328Z 2000/2024 00000KT P6SM
BKN004 OVC020

Not only was it dark and the weather not good, the entire route is located in inhospitable terrain amidst the Ozark Mountains and near several lakes.

We continued to track the aircraft as it seemed to be setting up for the RNAV 03 at Branson West. The aircraft made a turn toward the initial approach fix EDJON and then appeared to begin its descent. Then, just outside the final approach fix, the plane started an inexplicable left

turn. It appeared to be circling back toward the initial approach fix. The plane wasn't flying the published hold, as that procedure is depicted outside of the IAF and on the southeast side of the final approach course. This pilot was turning the opposite way INSIDE the IAF.



Activity Log

PAST FLIGHTS				
Date	Departure	Arrival	Aircraft	Duration
Monday 19-Oct-2020	06:23PM CDT Branson West Muni - Emerson Field - FWB	07:15PM CDT Branson West Muni - Emerson Field - FWB	C82R	0h 52m

We continued to watch as the plane once again lined up on the final approach course, crossed the FAF, and eventually disappearing from FlightAware. Considering the weather conditions and the peculiar flight path, we were puzzled and alarmed about the fate of the aircraft. A call to Razorback Approach, which provides ATC services for the area, confirmed the aircraft made it safely on the ground.

After giving a big sigh of relief, we couldn't help but get a little incensed. Why would a pilot undertake an obvious training flight in a single-engine piston, after dark, in conditions near or at approach minimums? And what was up with that non-standard turn at or below the MSA for the approach?

Was it legal? Yes. Was it smart? I contend no.

Performing as PIC of an aircraft is a constant balance of risk evaluation and mitigation. It is impossible to remove all risk – only staying on terra firma will assure that. Thus, no

form of risk management is perfect. But we can apply good judgment to remove the low-hanging fruit that represents risk threats that can be easily mitigated. In my opinion, this pilot stacked up a considerable number of unnecessary and needless risks for a flight with limited training value. From our viewpoint, the risk did not seem commensurate with the reward. Apparently the pilot weighed it differently.

My husband and I have a pact that we won't fly a single-engine piston in IFR at night. Could we? Of course, but we won't. For us, the risk is not proportionate to the reward, no matter how alluring that reward might be. Losing our single source of thrust in the dark and in clouds gives us fewer options to prevent a bad outcome and presents a risk that far outweighs any benefit.

Another unbendable rule is always have an out. It is a conscious effort to ensure there is at least one course of action toward a safe outcome should things go south. For example:

You're in a single-engine turboprop at FL190 and have an engine failure. What's your out?

Departing a mountainous airport, you've been de-iced with Type 1 fluid and you're number 3 for the runway with everyone awaiting ATC clearance. You're now five minutes from your de-ice hold-over time expiring. What's your out?

You are approaching a frontal system with fast-developing convection. What's your out?

You're shooting an approach to an uncontrolled field with the weather at minimums and at night. What's your out?

Flying is all about evaluating and mitigating risks – knowing that eliminating all risks isn't necessarily unattainable. We also each have a different approach to the risk-reward analysis. But we have the responsibility to those who fly with us to do all we can to tip odds in our favor as much as possible.

As for our Cessna 182 pilot flying that fateful October night, we don't know how he or she viewed the risks. If training was the goal, could there have been a less risky opportunity to gain the experience desired that would have lowered the risk meter? Managing risk is a personal exercise where your experience, judgment, and training influence your decisions in the cockpit. But it all starts with naming, evaluating, and planning for the threats to safety – while you are still on the ground and well before the engine start.

Stay hungry for safety. **T&T**

Dianne White is the executive director of MMOPA and editor of MMOPA Magazine. For a total of 14 years, she was editor of *Twin & Turbine* and has worked in the business aviation industry for nearly 30 years. She also serves on the board of directors for Angel Flight Central. An active multi-engine, instrument-rated pilot, Dianne lives in the Kansas City area and can be reached at editor@diannewhite.com.



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GPUs by Best Tugs

by Rich Pickett



PHOTOS BY AUTHOR

Many pilots are aware of Best Tugs and their broad offering of aircraft tugs – product lines we covered in the February 2019 issue of *Twin & Turbine*. Brothers Mark and Mike Patey, along with their wives Suzie and Chandra, are the co-founders of Best Tugs, and their team is building upon their extensive experience in power systems. They started a new entity called “Best Power” to develop a line of Ground Power Units (GPU).

Because most aircraft today have advanced avionics with database update requirements, pilots frequently

need an external power supply to update the systems or simply spend time in the plane reviewing avionics or testing systems. I’ve used various external power supplies over the years, so when Mark Patey told me they were working on a new product, I arranged a visit to the company as I knew it something I wanted to evaluate. I own a Cirrus SR22 and Eclipse 500 and operate several other turbine aircraft, all with various ground power requirements. It would be a good field test.

Many aircraft owners may be storing their aircraft in hangars with

15-amp electrical service. In my case, one of my planes is stored in a hangar that shares one 15-amp circuit among seven other hangars! Not a good situation when you need power.

To accommodate this situation and still meet short-term power needs, such as pump activation or flap deployment, Best Tugs incorporated an innovative capacitor design that provides short pulses of current without the need for larger circuits. Their 28VDC 57-amp model (BP-57/100) can handle a 100-amp surge for several seconds. While a 20-amp circuit is recommended, I found that it can



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deliver the power I needed on a 15-amp circuit. The GPUs are designed for worldwide service and can accommodate 120-240VAC power.

When you use an external power supply, it is useful to see the energy consumption of various systems, and with the Best Power GPU, that is easy to accomplish. The Best Power GPU not only provides a display of volts and amperage but also provides current watts and total watts consumed for those that are really interested in power engineering.

Mark and his team's engineering prowess is visible even in the packaging for the GPU. Many of the Best Aviation team are pilots, and they want full control over the components that power, tow, or go inside the aircraft. To that end, they design and manufacture many of the components in-house. And for parts purchased from others, they frequently modify them as well. For example,



The Best Power GPU display when connected to the Premier with the avionics turned on.

the team modifies the protectives cases to not only fit the power supply but to also include a 12-gage extension cord, 8-foot power cable, and two screwdrivers! I'm always looking for a screwdriver to remove my GPU access panel – something you don't have to worry about with Best Power.

GPU Testing

The best way to evaluate the GPU is to use it on various aircraft. I started with the smallest power requirement, the SR22. It easily handled the database updates, as expected, and draws 12 amps powering the avionics. I also tested the amp draw for a complete flap deflection – 14 amps.

The next test was on my Eclipse jet. It easily handled the higher current loads of avionics and flap extension. I tested the GPU to 10 amps over its limit (67 amps) to see what happened. It simply provided a lower voltage, which was still above the batteries' (the Eclipse has two), however, the new higher load was shared between the GPU and them.

I then tried the unit on the Beechcraft Premier, which has a much higher electric current requirement. The 57-amp GPU accommodated the load of the basic systems, and if I turned off the automatic AC system, it would also handle the avionics, pulling 50 to 55 amps from the GPU. The loads will drop after the initial connection since the GPU is also charging the batteries simultaneously. As they reach full

charge, then the GPU only has to provide power to the aircraft systems. The voltage was rock steady throughout my tests – 28.5VDC, up to the load limit of the GPU, as advertised.

Summary

This GPU is the first in series of ground power units from Best Power. They are currently shipping the 57-amp (\$1,495) and 114-amp (BP-114/200 – \$1,995) power units. Best Power anticipates shipping the 171-amp (BP-171/300 – \$2,395) and their largest, 288-amp continuous/400-amp surge (BP-288-400 – \$2,895) by the end of the first quarter of 2021. All units other than the 57-amp BP-57/100 will require 220VAC power. They are also developing a series of battery-powered power supplies for starting aircraft.

The larger units weren't available for my testing during this evaluation, but I would recommend selecting the appropriate model for the load of your aircraft. In my case, with multiple airplanes, it is best to choose the unit that will meet the need of the aircraft with the highest electrical load requirements.

On top of tugs and GPUs, the company is also adding another product line – Best Scrubbers – a line of floor scrubbers. As with their other products, these incorporate a number of innovations, and they are offering two models. With their expanding line of products, they are organizing Best Tugs, Best Power, and Best Scrubbers companies under a new entity – Best Aviation Products. I'm not sure what their next product line will be, however, it is sure to be innovative. **T&T**

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With 12,000+ hours of piloting more than 100 aircraft models **Rich Pickett** still has a passion for flying. Rich holds an ATP, CFII SME, SES, glider licenses, and type ratings in the L29, L39, Citation 500/510s/525s, Eclipse 500S, Beechcraft Premier and DA10. His company, Personal Wings, provides training, mentoring and aircraft services. He is also a proud owner of an Eclipse and Cirrus SR22. You can contact Rich at rich@personalwings.com.

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ECLIPSE JET

THE INS AND OUTS OF OWNERSHIP

by Rich Pickett



Rewind to 2008, and I had just finished the online Learning Management System (LMS) course – a first in general aviation – for the Eclipse Jet 500 (EA500S) type rating. Eclipse Aerospace was on a roll, and I attended one of the first simulator classes at the Double Eagle Airport in New Mexico. Of course, a lot has changed in the interim but the type rating was, and still is, one of the most comprehensive for a business aircraft.

Written into the FAA regulations and the aircraft certification are specific training requirements including jet basics, emergency situation training (including upset and recovery), and a very specific aircraft training and mentoring program – all of which must be completed under the guidance of an FAA-approved training provider. The resulting check ride isn't more difficult than other jets, but the training requirements are more thorough. With the accident rate one of the lowest in the industry, these standards deserve some credit.

Fast forward to 2018, my wife Jane and I were on the search for an airplane to replace our Piper Meridian, and the Eclipse took front and center in our search. Today, we are proud owners of an Eclipse 500.

Quick History

There are two Eclipse Jet models, the 500 and 550. Both models feature the same airframe and engines, ICAO type (EA50) and performance. The first production Eclipse 500 flew in 2006, with 260 produced by the end of 2008. The company restarted as Eclipse Aerospace in 2009 and completed four more 500s by 2012 before starting production of the 550 in 2013. They produced 32 of the 550 models before the last one was completed in 2017.

The avionics are unique to the Eclipse Jet. Except for a few with Avidyne Avio avionics, all Eclipse Jets have the IS&S version of Avio, featuring two PFDs and a 15-inch MFD. Behind the scenes, the Eclipse avionics architecture includes two Avio Computer Systems (ACS) (the

additional FMS functions have made them very popular with many owners and offers potential buyers a lower-priced Eclipse option.

The Avio 2.x (2.0-2.92) airplanes represent the bulk of the fleet, with the 2.08 being the most popular. These airplanes are considered Integrated Flight Management System (IFMS) aircraft. All fully couple to the autopilot and share most of the same FMS capabilities. The later versions offer upgrades such as anti-lock brakes, autothrottles (the first in light jets), improved displays and two independent FMS's. IS&S offers a synthetic vision option, FMS updates, and autothrottle improvements on the latest version of Avio (2.9.2), but software support for earlier IFMS versions to fix issues is lacking.

component. It is considered stronger than other welding techniques.

All systems, except for the brakes, are operated electrically. It was a very advanced design at the time and is still ahead of many aircraft. There are two nose-mounted batteries (system and start), and each generator produces 200 amps. Flight controls include two side-stick controllers operating the flight control surfaces by means of pushrods and cables.

Eclipse incorporated an innovative data collection capability unique when it was developed. The Data Storage Unit (DSU) continually records 3,400 signals, including detailed data generated by three air-data sensors, air conditioning actuator positioning, activation of every switch, and all communication between the displays. The Eclipse can also



primary controlling computers), a Center Switch Panel (CSP) and other components on this highly integrated and sophisticated aircraft.

The IS&S Avio 1.5 and 1.7 aircraft have one or two aftermarket Garmin GPS (GNS400, GNS625) installed in place of the keyboards as the primary FMS. These navigators can't fully integrate with the autopilot, nor can these Avio versions take direct advantage of some upgrades. However, the ease of use and

About the Airplane

With a few exceptions, the Eclipse is an all-metal aircraft, with many components milled from solid aluminum billets. Most components are fastened with traditional methods, while portions of the plane are friction-stir welded. Friction-stir welding is a solid-state process involving two high-speed, non-consumable devices, one on each side of the joint, literally melting the metal of the pieces into a single

transmit engine trend information over the Iridium satellite network in flight. Eclipse engineers and service centers use the extensive DSU data to pinpoint the exact cause of anomalies, which accelerates diagnosis. Pilots can also upload their DSU data to Aerocor's website, www.flightdata.com, for their own analysis.

Preflight & Start

Once you complete the external pre-flight and turn on the batteries

in the cockpit, the Eclipse performs a full initialization sequence which takes about a minute. Cabin weights are entered on the MFD graphical synoptic after the pilot chooses a seating option for the flight (you can select from several). The fuel weight is automatically sensed, and your CG is graphically and textually displayed. With that information entered, the pilot confirms or enters the OAT and the only V-speed for takeoff, V_r , is computed and posted on the PFD airspeed tapes. The latest IFMS versions (2.5 and above) also have an integrated TOLD computation capability. Eclipse offers its QRA iOS app free to operators and type-rated pilots, which provides all necessary flight performance data, weight and balance, and direct access to all checklists and other information.

The flight plans can be retrieved from a catalog or entered quickly via the FMS. I can typically enter a three-hour flight plan in under three minutes, which can easily be done before the start, with or without a GPU. The pressurization is automatic, setting the profile based upon departure and destination airport elevations.

After a few other steps, it is time to start the PWC610-FA turboprops, each producing 900 pounds of thrust. With the power control lever (PCL) at idle, turn the engine knob to "Start" and the FADEC takes over. The system synoptics are animated, showing relays

opening, valves moving, and pumps running. The pilot then executes various system checks with the Avio-guided test sequence. A few additional steps are needed before the MFD displays "T/O CONFIG OK." (If you try to take off without this confirmation, you receive a loud warble sound in your ear, from what I've been told).

Flying the Eclipse

Flying this plane is simply a blast. It can carry six people (four adults comfortably), rotate in less than 1,200 feet, climb 3,000 FPM at sea level, and burn 340 to 380 pounds per hour while cruising at 340-plus KTAS at FL410.

The cabin offers a variety of loading options. I typically fly with four total seats except when flying to a mountain biking destination. In that case, cabin seats are easily removed in under 5 minutes using a tool my son Tigre and I designed. With our bikes secured in the cabin, my wife Jane and I are ready to embark on another adventure. I've also used the cabin flexibility to maximize cargo when flying volunteer flights, such as support for Hurricane Dorian relief.

The sidestick controls can be considered heavy since you control the plane with your wrist, so proper trimming is essential. The plane is intelligent, preventing engagement of the yaw damper or autopilot until 15 seconds after takeoff. The autopilot has an

Eclipse 500/550 - By the Numbers

Engine: PWC610F-A	900	Lbs. of Thrust
Max Speed (KTAS/ALT)*	369/341	FL350/FL410
Fuel Flow Max Speed (PPH)	467/343	FL350/FL410
Vmo/Mmo	285KIAS/0.64M	
Max Range**	1,125 NM	
Max Ramp Wgt	6,034	
MTOW	6,000	
MZW	4,922	
Useful Load	2,210	
Max Useable Fuel	1,698	
Payload with Max Fuel	512	

*Mid-Weight 5,500 lbs

**4 Occupants, IFR 45 Minute Reserve



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integral climb profile that changes target speed as you gain altitude. With an unrestricted climb, I can rotate at 86 to 91 KIAS, climb from sea level to FL410 in at little as 32 minutes or 6 to 10 minutes longer if temperatures are above ISA. While the highest speed is obtained at FL300 to FL350, I generally need range, flying at FL400 to FL410 on all but the shortest flights. On a recent 970-nm, three-hour flight from San Diego to Puerto Vallarta, our Eclipse consumed 1,240 pounds of fuel.

In cruise, the flexible avionics configurations are very useful, with the capability to split the MFD into multiple windows of information. The XM weather overlays on the MFD are some of the best available in OEM avionics. The plane has the Honeywell RDR2000, which has vertical scanning, however, that feature is not enabled in the Eclipse. AT FL410, the 8.3 PSID pressurization provides an 8,200-foot cabin altitude, with a sound level of 78 to 80 Db.

Descent planning is easy, with the exception that the autopilot has no VNAV capability. I use the simple VNAV planning page to estimate the required vertical speed to a single waypoint. The Vref is calculated by the avionics and posted on the PFD with the push of one button. The airplane has a V_{mo} of 285 KIAS (0.64 MMO), enabling fast descents.

With a gear and approach flap extension speed of 200 KIAS, the Eclipse mingles well with other jet aircraft in high-density terminal areas, transitioning from 200 KIAS 15 to 20 miles from the airport to a typical Vref of 87 to 92 KIAS. The Eclipse is also approved for LP approaches, a feature

not available on all light jets. With the "tall chart" available with Avio 2.5 and above, you can actually see the plane descending on the Jeppesen RNAV approach plates. The autopilot/FMS does have a unique "Arm Intercept" mode that can be confusing to new pilots, but a simplified procedure eliminates that issue.

Landing the plane is simple and smooth with the trailing link gear. ABS is included with Avio 2.5, and I upgraded my Avio 2.08 Eclipse with that option. The ABS works extremely well, and Eclipse factory testing showed the ability to stop the airplane in less than 1,000 feet.

Among the Competition

The Eclipse is a personal jet, frequently compared to various turboprops or light jets. Based upon service ceiling and speed, the Citation Mustang, Phenom 100 and Citation M2 are competitors. But those jets also offer much larger cabins, longer range, higher payloads, and concomitant operating costs. On a 1,000-nm flight, the Eclipse Jet would be a few minutes faster than the Mustang, the same as the Phenom 100, arrive ten minutes after the M2 – and burn up to 1,100 pounds less fuel.

Expand that comparison and you can include the Cirrus Vision Jet, the Piper M-class turboprops (M500 and M600) and TBM 940. All of these aircraft are excellent choices. From an altitude and speed perspective, the Eclipse Jet flies 10,000 to 13,000 feet higher, is quieter, and cruises faster. But, the Eclipse cabin is smaller, which can be significant if you want to fly with more passengers or simply want more room. The full fuel payload of

Company Update

December 1, 2020, was the beginning of a new chapter for Eclipse Aerospace, Inc (EAI). On that date, the assets of EAI were purchased by AML Global Eclipse LLC (AML Global) as part of the One Aviation, Inc. bankruptcy. Other assets of One Aviation were not obtained by AML Global.

When Eclipse re-opened their doors in December, they rehired virtually all EAI employees who were laid off previously by One Aviation. The company is now under new management led by CEO Mike Press, a longtime Eclipse Jet owner and co-founder and executive vice president of EAI before the merger with Kestrel in 2015.

Both Eclipse factory services centers in Albuquerque, NM (KABQ) and Aurora, IL (KARR) also became operational on that date after just a short pause. With more than 50 employees and expanding, EAI is now rebuilding their relationships with component suppliers essential for supporting the fleet. While it is early in the next phase of EAI, it is clear that the leadership and employees of Eclipse are positioned to support the existing Eclipse Jet fleet at a higher level than in the last several years and perhaps offer additional options in the future.

AML Global is a global aviation and jet fueling company owned and led by Christopher Harborne. Harborne has operated an Eclipse in Europe for some time, and in our conversations, it is clear that the continued support of this aircraft is an important aspect of his international corporation.

the Eclipse is slightly greater than the M500 and Vision Jet and less than the TBMs or the M600. On my recent trip to Puerto Vallarta, for example, the Eclipse would take the shortest time and use less fuel than the TBM 940 or the Vision Jet and slightly more than the M600. The M500 doesn't have the range to make that trip nonstop.

Parts & Support

Without a doubt, support for the Eclipse has been a roller coaster from the beginning. However, with recent ownership changes of Eclipse Aerospace, the future looks brighter than it has for years. Over its history, the availability of parts, service and support has been quite variable with a small number of aircraft AOG for relatively simple parts. I won't go into the full details of the company's history since books have been written about it – literally.

Parts availability has been the single most important drawback to owning an Eclipse Jet, with no current source for a few components. The new management of Eclipse Aerospace has stepped up to that challenge and is working with vendors to improve the parts supply chain and find new alternatives for those components in scarce supply. Also, an innovative company called Resurgent Aviation Solutions (RAS) started by Cary Winters, former executive vice president at Eclipse, has also been a lifesaver for aircraft owners. Not only does RAS have PMA approval and numerous useful STCs, but they can also repair many components that previously would have resulted in a plane being AOG for months. They are continually developing new solutions, and I'm not alone in being amazed by Cary and his team's capabilities, which also includes Mike Martin and Jonathan Fox, both well known for their Eclipse support expertise.

Maintenance support in the U.S., where most of the planes reside, has been provided by up to four Eclipse factory service centers over the years, with two presently operational – Albuquerque, New Mexico, (KABQ) and Aurora, Illinois (KARR). In addition, there are two Eclipse gold

service centers in the U.S., Apex Aviation in Henderson, Nevada (KHND) and Boca Aviation Maintenance in Boca Raton, Florida (KBCT). There are also several other qualified facilities that support the planes throughout the U.S. and in other regions.

In summary, the Eclipse is a well-designed jet with some unique characteristics, such as the Avio avionics, that offers both challenges and benefits. The support issues appear to be on the way of being resolved and the future looks promising. **T&T**

With 12,000+ hours of piloting more than 100 aircraft models Rich Pickett still has a passion for flying. Rich holds an ATP, CFII SME, SES, glider licenses, and type ratings in the L29, L39, Citation 500/510s/525s, Eclipse 500S, Beechcraft Premier and DA10. His company, Personal Wings, provides training, mentoring and aircraft services. He is also a proud owner of an Eclipse and Cirrus SR22. You can contact Rich at rich@personalwings.com.

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32	ASTRA 1125SP
57	ASTRA 1125SPX
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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
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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
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4 ROCKWELL 681 HAWK
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135 TURBOCOMMANDER 690B
73 TURBOCOMMANDER 840

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19 TURBOCOMMANDER 980

TWIN PISTON - 6,872

OWNERS

COUNT AIRCRAFT

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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

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COMMANDER
3 ROCKWELL 560
COMMANDER
11 ROCKWELL 560A
COMMANDER
7 ROCKWELL 560E
COMMANDER
6 ROCKWELL 560F
COMMANDER
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These are just a few examples of the thousands of recognized flying-related records out there. In terms of “powered aircraft,” current records date back to the infancy of flight. While some obviously cannot be broken, such as the Wright Brothers’ first flight, there are many other feats to be created and records awaiting a challenger to rewrite history.

Background & Qualifications

The Fédération Aéronautique Internationale (FAI) was founded in 1905 and is the certifying body for the ratification of world and continental records and the organization of international competitions in aviation. Also known as The World Air Sports Federation, the organization consists of associates from more than 100 member

countries. “Athletes” – those in competition and looking to set new records – compete in sports that include aeromodelling, amateur-built and experimental aircraft, ballooning, drones, gliding, microlights and paramotors, paragliding, power and glider aerobatics, rotorcraft, sky-diving, space, as well as general aviation.

The organization’s General Aviation Commission (GAC) is responsible for powered aircraft-related feats. Overall, there are more than 800 records in the turboprop category and almost four times as many in the turbojet category under the GAC’s governance. Examples of such records falling under the merits of “Speed Over a Recognized Course” can be seen in the table on page 20. Speed Over a Recognized Course records represent the fastest certified speed of an aircraft flying between two cities or geographical features. Records may be flown between any cities or geographic features designated for that purpose, and any time spent on the ground counts as flying time.

The minimum distance between the start and finish points for airplane world records must be at least 249 statute miles (400 kilometers) in length and 125 statute

miles (200 kilometers) for U.S. national records. The great circle distance between the start and finish points is used to calculate the certified speed, regardless of the route of flight. For airplanes, the start and finish points must be located within 38 statute miles (60 kilometers) of the town or town centers. However, the distance between the start point and finish point shall be no less than 98 percent of the distance between the city centers. To qualify as a record, the certified speed must be equal to or greater than the minimum steady flight speed (stall speed with flaps up) of the aircraft. Records are organized based upon the aircraft, which are placed into classifications, groups and sub-groups based upon the type of aircraft, its engine, and its weight. For example, a Beechcraft Duchess is classified as a "C-1c" (landplane, internal combustion engine, takeoff weight of 1,000 to 1,750 kilograms).

The National Aeronautic Association (NAA), affiliated with the Fédération Aéronautique Internationale, is the official record keeper for United States aviation. NAA provides observers for many record attempts and compiles the data necessary to certify aviation records through the FAI. Art Greenfield is the organization's director for contest and records and is the primary contact for American pilot records. For those with aspirations of having their names in the chronicles of aviating, Greenfield recommends careful review of the organization's "Speed Over



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a Recognized Course” Record Attempt Kit found within the “Downloads” section of their website (naa.aero). The 10-page resource lists a variety of important information:

- Record Description and Requirements
- Special Rules for Very Light Jets
- Transcontinental Speed Records
- Membership and Sporting License Requirements
- Official Observers
- Documentation Submission Procedures
- And more...

Meet a Record Holder

Travis Holland, a multi-typed ATP-rated pilot and president of Shepherd Aero, holds around 20 certified records in several different aircraft from a JetPROP to a Gulfstream V.

Holland notes that most of his records and record attempts have taken place concurrent with relocation flights he has taken alongside his company's pilots or clients. Many of these records have either have been fully or partially accomplished outside of the United States, which comes with a greater set of challenges. The paperwork portion of the flight(s) typically being the “most challenging part,” which becomes increasingly complex

Sample of Current Certified Records (FAI)

Sub-Class	Group	Performance	Date	Course/ Location	Parties (Claimant and Crew)	Aircraft
C-1c	1: internal combustion engine	264.83 km/h	06/10/2018	Salinas, CA -> San Diego, CA	Josh Fagan	Beechcraft Duchess
C-1e	2: turboprop	224.64 km/h	07/06/2003	Hagerstown, MD -> Borger, TX	Edward B. Sleeper	Cessna 208B
C-1e	2: turboprop	404.25 km/h	11/08/2003	Dayton, OH -> Kitty Hawk, NC & back	J. Jeffrey Brausch	Piper PA-31T2 Cheyenne IIXL
C-1d	3: turbojet	593.6 km/h	11/11/2008	Amsterdam -> Moscow	Kent Ewing	Eclipse 500
C-1f	3: turbojet	546.63 km/h	08/08/2019	Belfast -> St. Petersburg, FL	Travis Holland, Marcus Adolfsson	Embraer Phenom 300

internationally. This is because all times (arrivals, departures, etc.) must be submitted by the control tower, if available. This can be tougher in other countries where tower operators have occasionally been hesitant or unwilling to sign paperwork.

In several instances where the paperwork has been completed efficiently for Holland, there have been some hitches. "We [my crew and I] tried to establish a record between Khabarovsk, Russia and Anchorage, Alaska. The air traffic control operator had noted the departure time before our departure, delivered the form to us, then granted takeoff clearance at exactly the time on the form. This was not accepted by the NAA and FAI. Ultimately, this record flight, although flown, was not granted record status."

While Holland commented that sometimes it feels his failed records are the most memorable, he also has many fond memories of his successes. One particular string of records was related to his December 2019 to January 2020 self-titled "Ferry Pilot Ironman," in which he flew three separate turbine aircraft around the world over a nine-day period.

"The first flight was from Wichita to Dubai in a Cessna Mustang. One portion of this flight was with Jade Hofeldt, a sales director with jetAVIVA, as my copilot (who was recognized on the FAI's record documentation as a crewmember). We had a red-eye flight to Greenland so we could take advantage of their operating hours to keep the record attempt's timeline tight. From there, the Middle East was next, as well as a change in planes. From Dubai to Indonesia, I flew an Embraer Phenom 300, which was traded for another Embraer Phenom 300 for the last portion of my 'Ironman' – Singapore to Seattle."

Thanks to his experience seeking and earning records, pilots consistently seek Holland's counsel on how they too can make an attempt themselves. One piece of advice he gives to those interested aviators is, "Safety is always more important than the record, and I have personally scrubbed many attempts when it has not been safe to do so."

As for possible flight ideas, the NAA maintains a "Ten Most Wanted Records" list. According to Greenfield, "Some of those records have not been challenged in a long time, so we have highlighted them as 'Wanted' to be broken."

There are many long-held records awaiting their newest challenger – maybe it will be you.

For more information, visit fai.org or naa.aero. 

Grant Boyd is a private pilot with seven years of experience in general aviation business from marketing to customer service. He has written more than 85 articles for aviation publications and enjoys learning about aircraft/pilots with unique missions. Grant can be reached at grantboyd2015@gmail.com.



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From the Flight Deck

by Kevin R. Dingman



Freedom of Flight General Aviation: Use It or Lose It



Do you enjoy the smell of fresh-cut grass and the click of a golf ball on your club? Or gently resting the pad of your finger on a four-pound test line – then, one click at a time, trying to convince your favorite fish to bite? Perhaps traversing a wilderness area where the nearest jeep trail is a four-hour horse ride away? Fresh powder on the slopes? How about Champagne and music at the fire-pit? What about gardening, cooking, building things, playing music or writing? Or do you enjoy things more of a nurturing endeavor: showing the kids how to tie a square knot, pull the string on a gyroscope, keep a kite airborne or that the roots of a sassafras sapling smell like root beer? Maybe you enjoy all of the above freedoms and, like me, also appreciate being at the airport – the little airport.

Time you enjoy wasting,
was not wasted.

– John Lennon

Even if only to enjoy the smells, the sounds, the artistry of flying machines, and to hear and speak piloteze, I relish GA airports. Succumbing to a spur-of-the-moment trip, taking control of your machine to become a physical part of life's adventure. Do we fly only to increase the efficiency and thereby the profitability of our business? Is it to save on our most valuable asset – time? Or is your reason the one popularly accepted as the new paradigm – to avoid the inefficient, inconvenient and occasionally embarrassing aggravation of the TSA/oversold/canceled public transportation process – while getting your temperature checked and wearing a now federally-mandated face covering? Or perhaps you simply have a deep

appreciation of the word “freedom” and how it's personified by GA.

Freedom is never more than one generation away from extinction. We didn't pass it to our children in the bloodstream. It must be fought for, protected, and handed on for them to do the same...

– Ronald Reagan

Recently in the U.S. (and the world), it appears that we are transitioning to a more Orwellian, subservient society. And we all feel a bit restless, anxious and agitated. The world events of the last year serve to remind us that our values, freedoms and perhaps some of our favorite things like GA exist in accordance with not only our physical and financial health but judicial and political systems sometimes only marginally influenced by the majority. Just as governors close our businesses and airport screeners seize our scissors, shoes and shampoo, could our general aviation freedoms be modified or taken away as easily? While repeatedly challenged by a few, general aviation continues to give us the freedom to come-and-go as we please, on a course of our liking and to destinations of our choosing. We The People of GA are still in control of our flying. It's a gratifying Declaration of our Independence, but are we neglecting the activism and fortitude that has made our aviation freedoms possible?

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Don't Be Ashamed

Many of us fly because our heart is in aviation and we love airplanes, being physically present and having control of the adventure. And if control is the reason, isn't that enough? Why do we climb into a deep-sea submersible, blast into space, or fly above the earth instead of sending a pilotless vehicle or simply observing from a video screen? Because we enjoy being in the driver's seat at the controls, becoming the architect, facilitator and witness to the voyage. To be responsible for

how it goes. We need not be ashamed, and our motives need not be cryptic or esoteric – maybe only a bit ethereal since we experience sights and emotions unavailable to wingless humans. Even those that fall into the profitability or shoe and shampoo retention categories as a reason to fly GA must concede that control and achievement are indeed the reasons which resonate most honestly and faithfully. We have a connection with our airplanes out of both desire and necessity.

There is a fine line separating a relaxed and easy atmosphere in the cockpit from a lax one where distractions can result in critical failures. Professionalism may be described as knowing the difference between the two.

– Dr. John K. Lauber, NTSB

I flew the Duke to Mackinac Island, Michigan, a while back just for the day. As I was installing the chocks, a very nice King Air pulled into a parking spot near me. A group of six passengers climbed out, followed by a senior pilot (i.e., grey, like me) wearing a uniform with four stripes – the Captain. He was followed by a younger pilot wearing three stripes – the First Officer. Sound carries on a quiet ramp, and I couldn't help but eavesdrop on the conversation between the passengers and crew. At first, I thought it was a chartered flight. Their routine was polished and the

pilots were very respectful and subservient to the passengers. The group was headed to the Grand Hotel for three days and the crew was to pick them up on Friday. The crew unloaded their own bags and secured the plane – they would wait on the island in case of a schedule change. While waiting for our “taxi” (a horse-drawn carriage) in the terminal lounge, I continued to eavesdrop. One of the ladies said to another, “Say again?” Well, you and I know what group of people most often use that terminology instead of “huh,” “what,” or “pardon me.” Holy cow, I thought. She's a pilot, it's her plane, and she hired a professional crew. I can only speculate on the reason. I know that I've wished for a crew a few times when my passengers were allowed to imbibe, stay up late and sleep in while I remained clearheaded, rested and awoke early to plan for the return trip. Piloting uses up a lot of brain cells.

A Subliminal Component of Piloting

Her arrangement made me realize how much of our thought process is absorbed by the task of flying an airplane. If you only have a few days to unwind and enjoy the destination, removing the flying task from your brain can make a difference. Most people don't know that we aviators think about flying constantly. One dimension of OCD (obsessive-compulsive disorder) is perfection, but aviation perfectionists skirt this diagnosis using the explanation of safety and necessity. For example, we have a sense of things in flight supplemental to the physical task of flying – things that are a subliminal component of piloting. Whether pressurized or unpressurized, we can smell our environment, we can hear the air and the airplane, we feel changes in temperature and pressure and perhaps most notable, through our mind's eye, we can see hundreds, even thousands of miles across multiple weather systems and terrain. When a layperson sees a flash of lightning, they think of wind, rain and thunderstorm. A pilot, whether in flight or on the ground, will think the same but with a global, or at least a continental, perspective. And with perhaps a deeper measure of fear, understanding and respect.

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3Q	12A	3AF
4B	12D	5AF
4H	12E	6AG
4J	12H	9AG
4K	12K	4AJ
4X	12T	7AJ
4Z	12X	6AK
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5T	13G	4AL
5X	13H	8AL
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6C	13Q	3AN
6E	13R	4AN
6H	13S	7AN
6N	13V	8AN
6P	13Y	9AN
7G	14D	4AP
7L	14E	6AP
7H	14F	1AQ
7Q	14G	4AQ
7T	14N	7AQ
7V	14Y	2AR
7Y	14Z	8AR
7Z	15G	9AS
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8N	16D	6AU
8P	16H	7AU
8Q	16P	9AU
8S	16T	3AV
6HV	2HW	6HW
4HW	8HW	2HX
6HW	8HW	6HX
1HY	2HY	1HY
4HY	4RZ	2RZ
5HZ	3SA	4RZ
7HZ	4SA	3RY
8HZ	5SA	1RZ
9HZ	6SA	2RZ
5JA	3SB	4RZ
6JA	5SB	3SA
9JA	9SB	4SA
2JB	5SD	5SA
6JB	6SD	6SA
9JB	7SD	8SA
5JD	8SD	9SA
3JE	2SE	3SA
9JE	4SE	4SA
2JF	6SE	5SA
3JG	7SE	6SA
6JG	7SG	7SA
7JG	8SG	8SA
3JH	9SH	9SA
4JH	6SH	6SH
6JH	7SH	7SH
3JL	8SH	8SH
5JH	3SH	3SH
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This wider perspective is a necessity and is due to an understanding of the cause and effect of planetary airflow, the heating and cooling of oceans and landmasses, the circulation around high and low-pressure systems and the relationship of temperature, pressure and dew point on the creation of weather and that lightning flash. We also have a keenly developed appreciation, respect, and rightfully so, a fear, of the components inside of the storm: wind shear, intense rain, ice, hail and tornadoes. Because of our physical and mental perceptions, the level of understanding extends across multiple disciplines and encompasses aspects of flight beyond just the airplane and weather. From topography, fires, earthquakes, floods and social gatherings, to riots and war, we see and perceive a plethora of information and events from our perch above the earth.

The Contemplative Exercise of an Artist

My unauthoritative psychological assessment is that pilots share a common personality trait: We like the interdisciplinary relationship between the science and art of flying. We enjoy merging the distinctly different and sometimes contrasting disciplines and enjoy the multi-faceted gratification of flying an airplane: the preparation, planning, scheduling, decision making, responsibility, coupled with the artful execution and finally, the completion of the mission. Oftentimes, in fact, we enjoy the completion component the most; the "post-flight pause" while closing the hangar door. Sometimes we are covertly grateful, like Gus Grissom, to have not "screwed the pooch," especially if we got away with a mistake that could have been costly. We gaze at the machine in gratitude, knowing that it is the one that performed the real work, as it once again overlooked our minor mistakes in the execution of a sometimes complex and demanding flight. We admire its form and function, engines crackling, imagining that our machine is resting, like a horse after a run, the artistic creation that facilitates our flight. Maybe we say a word or two of admiration to the airplane out loud. Just as we mumble to our golf ball, the fish in a lake and to

ourselves during a checklist. Let non-pilots believe that it's the contemplative exercise of an artist.

To sit back hoping that someday, someday, someone will make things right is to go on feeding the crocodile, hoping he will eat you last – but eat you he will.

– Ronald Reagan

Many in GA have not been flying much lately. Remember, it's okay to fly for enjoyment, to take advantage of the freedom, control and efficiency. We need not be ashamed and our motives need not be cryptic. Failing to exercise and defend our freedom of flight is hoping that regulators, insurers and the tax-man will eat us last – but eat us they will. Shall we demonstrate our

commitment to GA and fly somewhere just because we can, while we still can? A couple-thousand-dollar pancake breakfast or a hamburger for lunch, a fishing excursion, a skiing trip or dinner in another country? For those in my neck of the woods, how about finding somewhere warm to play golf? Hire a crew if you want, but good luck separating your heart from the machine and your head from piloting. But no matter where you sit in the airplane, it's better than being eaten. **T&T**

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



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Fit for Purpose

Moving from a Heavy-Piston Twin to High-Performance Turbine

by **Elliot Zeltzer, Owner-Pilot**



contacted me to join their organization. I spent about two weeks of my life with Skywest to realize that this was an ego trip at my age, and I wanted no part of flying 1,000 hours a year.

I found a better fit at Corporate Eagle Management Services, a Part 91K fractional operator based at KPTK. Today, I am a captain flying King Airs and Hawkers. Training is an integral part of this organization – we train every six months, not unlike the airlines. I believe the high level of training is one of the key elements that will allow me to safely operate my next personal aircraft...

New Aircraft Selection

Planning for the completion of a long aviation experience.

In the meantime, we (the family) put thousands of hours on the 421, and it was the bedrock of our family travels. In the extended time it took me to sell the airplane, I embarked on a detailed examination of the next best aircraft for our family's mission and needs.

In my search, I applied an IT practice for technology acquisition: "Fit for purpose." Since this was most likely going to be my last aircraft, it needed to be the right choice to meet our mission needs and budget. Contrary to the fantasy/reality TV show "Selling Jets," I was not interested in the "shiny ball of glitz."

First, this aircraft had to be a turbine. This was driven by two criteria: 1) Avgas and its availability and price will continue to be a challenge; 2) Our mission profile is based on about an 800-mile radius and very often traversed by the Appalachians in all seasons. The 421C is a great aircraft and

“Lately, it occurs to me, what a long strange trip it's been.” – Jerry Garcia ("Truckin" by Grateful Dead)

In the Beginning

In 1963, my father had a customer who was in the home building business. He offered my father a ride in his airplane and took us to Detroit Metropolitan Wayne County Airport (KDTW) – way before it was a major airline hub. I don't recall most of the trip, but I remember the ride was in either a Piper Apache or Aztec.

Fast forward to 1974, and I started my college experience at Western Michigan University. In the first term, I joined the Sky Broncos flight club and changed my major from business to aviation technology. By graduation, I had accumulated my commercial, instrument, multi-engine, flight instructor and a degree in aviation and business. I then experienced a fork in the road for my career, spending five years in the right seat building time, hoping for an airline job but also perusing a career in modern IT.

After college graduation, I moved back to the metro Detroit area. I continued to flight instruct but job demands made that difficult. I flew many different aircraft: 177RG, T210, P210, Aztec, Seneca, C340A and the C421C (the "King" of piston twins). And in 2008, I bought my first aircraft, a 1976 Cessna 421C! I did a complete avionics overhaul (Aspen 2500c glass panel), new paint, and added two firewall forward engines. The 421C was a good partner for me and my family's travel needs.

Career Part Deux

In 2014, I got my "Ph.D." in aviation – my ATP – and a few years later, retired from the IT industry. I needed to find something to keep me occupied, so one of my colleagues who operates an aircraft management service asked me to be a contract pilot for him. I joined his organization and flew King Airs, Citations and Pilatus's. Skywest then



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served me well, but I need to operate in the higher flight levels. In addition, the 3.5 to 4-hour legs were becoming a drag. This brings us to my calculated conclusion.

My Latest (And Likely Last) Aircraft

A jet...who would have thought!

The very thought of owning a turbine originally was out of reach. What changed? The sustainability and longevity of older general aviation turbine aircraft. Much of the GA turbine fleet has no life limit if properly maintained. The pressure on the aircraft manufacturers to sell new aircraft drove good performing aircraft to the bottom of the economic scale. Fuel efficiency and the newer airplane smell depressed the purchase price of many good turbine aircraft into my acquisition range.

I looked at twin turboprops (no single engine for me) first and concluded while they met the first requirement, they did not meet the performance needs of flight in the

higher flight levels. Secondly, they had better speed than the 421C but did not significantly reduce the leg time. Lastly, the acquisition price for many of the mainstream turboprops remained quite high (i.e., King Air and Conquest I and II). In comparing the cost of operating the turboprop and maintenance, another choice was obvious.

This is where our industry colleague Dick Karl and his wisdom come into play. While we share similar paths of going from a technical career to retiring in a flying job, I chose a significantly different aircraft as my first foray into turbine ownership.

I selected the Cessna 500 series (501, 550, S550, 560) to evaluate my needs. I began with the 501 and quickly moved on due to limited range and performance. I entertained the Citation II (550) because the later Bravo and Ultra/V were late models holding their higher prices. I explored the Citation S550. It was originally developed for the military ergo the TKS wing deice versus boots. It married

the Citation Ultra/V wing on the 550 fuselage and updated the engines to PW JT15D-4B. This created a 400-knot 1,900-mile aircraft with a service ceiling in the low 40s. I have TKS experience flying the Hawkers and can honestly say they are as effective as boots and are a reliable method to remove ice from the airframe. Yes, I would agree that fuel consumption is higher than many turboprops and new jets, but at the lower acquisition cost of this aircraft, I can buy a lot of jet fuel.

This aircraft/airframe/engine combination is one of the most popular and supported around. Service centers and maintenance facilities are widespread over this country. The likelihood of getting stuck somewhere without a repair facility is minimal. The Citation 500 series has a comprehensive maintenance program that consists of five phases that are basically calendar year driven. The fifth phase is a detailed and in-depth inspection that really opens the entire aircraft up inside and out. It is required every 3 years. But wait, have you heard about Richard Bacon and the Bacon Aviation low-utilization inspection program? This FAA-approved program extends the inspections for Phase 1-4 to every three years and the Phase 5 to every six years. The key is that you are limited to 200 hours per year. So, I selected a Cessna S550 with about 800 to 1,000 hours left on the engines and the Bacon maintenance program. Based on my expected 10 to 15 years of flying, the operating costs compare very favorably to a turboprop with jet performance and comfort – quite a deal.

This brings us to the final element of the aircraft acquisition – the “better



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half!" My wife of more than 34 years, a family physician by training (now since retired), has been my flying partner. While we have used our C421C as an integral part of our family travels, she was the hardest part of the sale. She rightly liked the cabin comfort of the C421C and, on first blush, was not a fan of the Citation cabin. However, the journey to convincing her was aided by my mentor Neil Meyer who had flown Citations for 30 years. His conversations about ease of flying, the significant safety enhancements built into a Part 25 aircraft, and the "magic carpet ride" made this aircraft a solid choice.

My wife is now ready to move forward to our next phase of aircraft ownership and travel. The performance and range opens us to locations not available to us before. My oldest son lives on the West Coast, and that trip is well within our new mission profile. From a safety perspective, it appears I will be going to three training events per year (two for my employer and

one for personal). This high level of training has had a positive impact on my insurance cost. My underwriter is insuring me as a single pilot endorsed crew at a very reasonable price. This is quite amazing in this day and age of increasing insurance costs.

Epilogue

As it stands today, I have purchased a Cessna Citation S550 from Central Flying Service in Little Rock, Arkansas. They are a remarkable organization that has treated me in a first-class way. They are currently performing the pre-buy inspections (full Phase 1-5) and my avionics upgrade to dual Garmin 750s. By the time this article is published, I expect to have the aircraft out of the shop and beginning our new journey in jet ownership.

In summary, I think we approached this aircraft with an objective criterion that will meet our flying needs, mission and costs until the end of my flying career. Who would have thought – a jet! **T&T**

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American Aviation	23	Luma Search	31
AOPA Finance	13	Luma Technologies LLC	19
AvFab/Aviation Fabricators	8	Mid-Continent Instruments	Back Cover
CiES	30	National Flight Simulator	28
Coflyt	5	Preferred Airparts, LLC	19
Collins Aerospace Inside Front Cover		Prop Sync Solutions	15
Covington Aircraft	3	Rosen Sunvisor Systems	25
Dan Moore Aero LLC	15	Select Airparts	21
Factory Direct Models	21	Short-N-Numbers.com	24
Genesys Aerosystems		Stevens Aerospace & Defense Systems	7
..... Inside Back Cover			
Hillaero Modification Center	29		

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Airmail

In Response to Stan Dunn's "Dangerous Rudder" (February)

I'm working my way through the Feb issue of Twin & Turbine, and I really enjoyed your article about how most of us are rudder illiterate. I was one of those tail-wheel guys who wouldn't shut up when I first started my flight training in an Aeronca Champ, but I quickly grew out of that when I transitioned into airplanes that keep going where you point them – for the most part.

I thought I had the rudder mostly figured out until I went through type training at FlightSafety DFW for the Falcon 900LX. For that matter, I thought I had THAT rudder figured out until we started doing V1 cuts and two-engine-out approaches. I was less aggressive on the rudder than I needed to be at first, but they quickly broke me of that habit through repetitive engine vibes and fires. I have to say that I'm glad they put me through that wringer because it has served me well on several crosswind takeoffs and landings.

Elliott

In Response to John Brantigan's "CJ2 Avionics Upgrade" (December)

This letter is a direct response and correction to the second paragraph where the author references Boerne Stage Airfield (5C1) in Boerne, Texas, near San Antonio (SAT). The article states, "frequent near misses and emergency maneuvers occur daily," which is patently false. The statement "virtually all KSAT traffic passes directly over 5C1 at 3,500 to 4,100 feet" is also misleading. Even if it were true, our pattern altitude is 2,400 MSL.

Further, sailplanes that operate off this field are all transponder-equipped, and those operators have an open meeting with ATC to discuss how to enhance procedures for improved safety of operation. 5C1 also sponsors meet and greet gatherings with KSAT tower employees to make presentations and encourage all departures, no matter how short the trip, to participate with them.

Robert H. Bruce

DATING OUTSOURCED

Q&A WITH **APRIL DAVIS**, FOUNDER OF **LUMA LUXURY MATCHMAKERS**. APRIL SHARES HER INSIGHTS ON TODAY'S DATING SCENE & HOW TO FIND THAT DIAMOND IN THE ROUGH.

APRIL DAVIS
PILOT &
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► What's the Dating Scene like during these COVID times?

People are looking for **real relationships** and connections now more than ever. The isolation occurring as a result of Covid has made people realize their **priorities** & they're valuing **true connection**. They want to be with that one person they can go through the hard times and the pandemic with.

► How are people meeting and going on dates?

A lot of people have turned to technology and are using **Facetime** and **Zoom** to do that initial date. We help our clients learn to use these apps and leverage **best practices** to ensure they look & sound good in the video. After that initial video date(s), many people then **meet up in person**. Everyone has their own viewpoints so it's important to **communicate** concerns.

► Why do people use LUMA's services?

Did you know that only 5% of relationships start online? (PEW Research) Sometimes it just makes sense to **outsource** certain time-consuming or difficult tasks... Such as finding your match. We introduce **selective** people to matches who share similar **values, interests**, and future **goals** and plan curated dates for each of our couples so you can just relax and have fun. Just think of LUMA as a personal **Wingwoman** who can introduce you to your perfect **match**.

► What are people looking for?

Attraction is always the #1 for people, but they want more than that. They want someone they can have **fun** with, have shared **values**, and can go through this pandemic **together**.

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Maintenance Issues



"November three nine six delta mike, on departure turn left heading zero seven zero, cleared for takeoff runway one three left," came the instruction from Dallas Love tower. I advanced the throttles of my C90A King Air to takeoff power. "Power set, two good engines, airspeed alive both sides," I said to myself on the cloudless early morning. At about 40 knots indicated airspeed, something caught my eye on the master warning panel: HYDRAULIC FLUID LO.

"Love tower, three nine six delta mike is aborting one three left," I said. As I exited the runway, the tower asked the reason for the abort. "No big deal, it's just for the paperwork," said the controller. I wasn't that surprised about the light. The airplane had just come out of maintenance.

One of the most dangerous times in aviation.

The day before, the mechanic and I did engine run-ups and taxied the airplane around the ramp to make sure the brakes worked fine. During the two-week inspection, the gear was adjusted, tires replaced, and new brakes were installed. All checks were normal. But today, as I taxied to the active, the low fluid light flickered for a second or two and went out. I pressed the test button to check the system manually and all worked as I expected. But on the takeoff roll the message light illuminated.

I returned to the maintenance facility next to my hangar. Sure enough, the reservoir was very low. The mechanics had failed to service it.

We had a heart to heart talk.

As pilots, we make mistakes every flight. We are human. And so are mechanics. In my experience, the most

challenging flight is the one right after maintenance. I have had a hydraulic pump circuit breaker pulled in my Mustang, causing the loss of normal brakes and the use of emergency brakes as I taxied to the runway. Emergency exit doors improperly replaced resulting in the cabin not pressurizing after takeoff. Friends have taken off without noticing that the pressurization controller was set to off instead of on, requiring an emergency descent during climb out.

You name the problem and someone has experienced it.

As pilots in command, we are totally responsible for determining that our aircraft is airworthy. Even more so after maintenance. For the last few years, I have gone through the mental "game" of saying to myself, "Someone moved a switch during maintenance to try to kill me. I just need to find the switch and fix it."

Sometimes the offense is small. Like the time my hand mic was replaced under my Mustang's dash with the mic button depressed, disabling my normal radio communications. That took a while to figure out.

I've heard stories of oxygen bottles accidentally safety wired closed resulting in no flow to the masks. Cockpit seats have been improperly installed only to be discovered as they travelled backwards during rotation. Tools have been forgotten and discovered in engine inlets.

I take an extra 20 minutes post-maintenance to look at every item on the panel, especially avionics settings. The worst time to experience a surprise is the first departure. And I will not take an airplane right out of major maintenance into hard IFR or night conditions.

Our safety record is pretty darn good. Perhaps because we are extra vigilant after maintenance. Play my little game next time you pick up your airplane.

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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