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TWIN & TURBINE

EDITOR

Dianne White
(316) 213-9626
editor@diannewhite.com

EDITORIAL OFFICE

2779 Aero Park Drive
Traverse City, MI 49686
Phone: (316) 213-9626

E-mail: editor@diannewhite.com

PUBLISHERS

J. Scott Lizenby
Dave Moore

PRESIDENT

Dave Moore

CFO

J. Scott Lizenby

PRODUCTION MANAGER

Mike Revard

PUBLICATIONS DIRECTOR

Jake Smith

GRAPHIC DESIGN

Marci Moon

TWIN & TURBINE WEBSITE

www.twinandturbine.com

ADVERTISING DIRECTOR

John Shoemaker
Twin & Turbine
2779 Aero Park Drive
Traverse City, MI 49686
Phone: 1-800-773-7798
Fax: (231) 946-9588
johns@villagepress.com

ADVERTISING ADMINISTRATIVE ASSISTANT & REPRINT SALES

Betsy Beaudoin
Phone: 1-800-773-7798
betsybeaudoin@villagepress.com

SUBSCRIBER SERVICES

Rhonda Kelly
Diane Smith
Jamie Wilson
Molly Costilo
Lisa Anderson
Kelly Adamson
P.O. Box 968
Traverse City, MI 49685
1-800-447-7367

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A Reckoning With Risk

Last week, my husband and I took our annual flying getaway to the Out Islands of the Bahamas. The trip one-way is approximately 1,400 nm between our home airport in Kansas City, ending at an island 350 nm southeast from the coast of Florida. It's a route we know pretty well. For the return trip home, we reasoned that we could make the entire journey – including clearing customs in Fort Pierce, FL – in a single day. The weather wasn't entirely cooperating, as a front stretched across our route. But with some route deviations, it looked doable. We had two IFR-current and experienced pilots in the cockpit who fly together often and use good CRM practices. The airplane was well-equipped and functioning perfectly. Plus, we had plenty of weather and situational awareness tools at our fingertips.

What were the risks? We might be delayed at the departure airport in the Bahamas. (They operate on island time.) Getting through U.S. customs and refueling could take longer than anticipated. The weather might not conform to the forecast. We would be landing after dark. Finally, it would be a very long duty day, therefore fatigue could be a factor. An adage we both fly by: Always have an out. Ours was that we could land and call it a day if the forecasted rain showers developed into a line of thunderstorms. Or if we felt fatigue creeping in.

Get-there-itis, or the overpowering desire to complete a mission, is one of the most insidious dangers to safety that pilots of all aircraft and experience levels must reckon with. It can play tricks with your mind, tempt you to bend your own personal minimums, and convince you to downplay or minimize risks. Often, it applies pressure without you even realizing it. You can deny that it has an effect on your decision-making, but often it does, especially when the risks are more gray than black and white.

I, probably like you, strive to fly to a high professional standard. As aviation safety author/speaker/authority Tony Kern has written, airmanship requires discipline, skill, proficiency, and our knowledge of self, aircraft, environment and risk. I really like that first word: discipline. Given a set of circumstances, your approach to a situation should be nearly the same each time. Solid airmanship leads to good judgment. Get-there-itis is not invited to the party.

As we flight-planned the evening before, we put our decision to the test using a Flight Risk Assessment Tool, or FRAT. While there are plenty of FRAT tools out there – the FAA offers one on its website – the Malibu M-Class Owners & Pilots Association (MMOPA) has developed an easy-to-use FRAT for the iOS. It's free to download and use from the App Store. Although it is specifically designed with the PA46 in mind, a pilot of any aircraft can use and apply it.

You may recall that MMOPA was born out of a spate of accidents that occurred in the early 1990s. The initial organization represented PA46 owners and participated in the NTSB and FAA's investigation, testing and review of the PA46, which found that proper training and pilot education were the real issues. Since that time, MMOPA has been a champion of safety, training and education for PA46 owners. The MMOPA FRAT is one of a number of safety tools the organization is building out in 2018.

The FRAT highlights risks and causes us to think about the flight we are about to take. Humans tend to compartmentalize individual hazards, which leads us to not appreciate their cumulative effects. Quantifying the risks gives us an objective perspective of the flight we are contemplating and encourages us to think of ways we can mitigate the risks. The FRAT asks you to answer questions regarding pilot qualifications and experience, the operating environment and the equipment you will be flying. After you complete the FRAT, you get a score that falls within three ranges: 1) Green or go; 2) Yellow or caution; the pilot should carefully consider ways to mitigate some of the risks, and 3) Red or stop; unless you can change some of the risks (delay departure; add a co-pilot), scrub the flight.

Can you "hack" the FRAT? Of course. It won't stop you from fudging a number here and there to get the outcome you desire. But its job is not to be your mother or your CFI. If you are serious about flying to the highest professional standard (and we all are, right?), you will be mercilessly honest with yourself. No fudging. No hacking.

After running our proposed flight through the FRAT, our result was yellow or Caution. After some meaningful discussion, we decided not to not commit to the entire trip initially: We would get underway and re-evaluate once we cleared customs in Florida. Turns out the weather was mostly benign, our quick-turn in Florida was fairly quick, ATC gave us favorable routing and the trip went as planned. The only hiccup was that surface winds in Kansas City were gusting +25 kts., and not aligned with either runway. The post-frontal winds were whipping up harder than forecasted. We had a hint of what was to come by monitoring the METARs west and north of our destination, but it wasn't something we were thrilled to take on after a 14-hour duty day.

The next morning, we spent some time over coffee dissecting our decision-making. Although the flight was completely safe and legal, it turned out to be a long day ending with a challenging landing. Perhaps next year we will stretch the trip home by an extra day...I hear there is some good baseball in Florida that time of year. **T&T**

Dianne

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Airmail

Veterans Airlift Command

I devour *Twin & Turbine* each month and thank you for the fine publication. I'm also an active member of MMOPA and fly a P46T (jetPROP). Reading about your Angle Flight missions reminded me of many of my Veterans Airlift Command missions. In case you are not aware, VAC provides free air transportation to post 9/11 wounded warriors and their families for medical

and other compassionate reasons. The organization was founded by Walt Fricke (himself a wounded veteran of Viet Nam) and is a 95 percent financially efficient 501(C)3.

Take a peek at www.veteransairlift.org. To date we have flown in excess of 20,000 passengers. Walt does not count missions, as numbers are not an organizational goal; warriors are. Your article about Angel Flight made me

think you may want to have the staff research and write about VAC at some future date. It's a great cause, great people and great story!

Chuck Fulton
KPRC (Prescott, AZ)

Editor Dianne White responds:

Thank you, Chuck for a great reminder about the excellent work that VAC and its volunteers perform. T & T is a long-time supporter of VAC, and we regularly provide advertising space for the organization to communicate their cause. I highly recommend that owners of T & T-type aircraft check out VAC. The reward is unmeasurable.

From One Control Freak to Another

I faithfully read Kevin Dingman's column, but I have to admit that "Control Freaks" (February 2018) has to be far and away one of the best. Not only have I scanned it and put it in its proper folder, face up, carefully left aligned with the others, I then sent it to many of my friends who clearly will recognize me.

Really appreciate your writing.
Always informative.

Vince Latona
(Still a pilot carefully pushing a TBM around the sky)

Breaking In New Cylinders

Read with interest Kevin Ware's article about trouble with ECI cylinders on Ram engines. About 15 years ago I was operating a 310 with new Ram engines with ECI cylinders. I also was scrupulous about power changes and avoiding shock cooling. Cracked one clean off (held in place by the exhaust manifold) at 150 hours over mountainous terrain headed to Sedona. Launching from that airport to properly break in the green replacement was attention grabbing.

When my wife asked why I didn't hire "some young pilot" to do the break-in, I said I needed to know the procedure was fully followed. At 200 hours I cracked a different one clean off. About that time a range of ECI cylinders was recalled for improper hardening. Ram covered all new cylinders and the labor

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to install them even though I was just beyond the warranty period.

Always enjoy reading your stuff.

Chris Heikenen

I just finished reading the February issue of *Twin and Turbine*. It made me think about the two degrees of separation in the aviation world.

I've always been a Cessna guy. The 172 carried me on my first flight through my private pilot check ride. The 182 carried me from high performance to complex to my instrument rating. The T210 was the first aircraft that I owned. It was a great work horse for my family, but I decided I needed pressurization so I could spend more time above the weather. My next aircraft, a 340 with RAM VI engines, which carried me through my commercial twin rating as well as a lot of cross-country time. Gary Ehrheart from Corporate Air at KBVS did a masterful job with the maintenance of the 340, but the costs and constant downtime (cylinders)

prompted me to move on to another aircraft. Tim Lewis the owner of Corporate Air helped me find a Cessna 425 with low-time Blackhawk engines. I love this aircraft.

One of the pilots who helped me in the transition from the 340 to the 425 was Kevin Ware. I sent him a note about his RAM woes article; he said that it took guts on your part to print the article. Good for you. But more importantly, I appreciated your

resolution regarding Angel Flight Central. I'm a mission pilot and the Board Chair of Angel Flight West. I believe, besides fundraising, that the biggest challenge to the Angel Flight organizations is centered on awareness of what we do. Hopefully your article will prompt more pilots to join and put their skills and aircraft to this great use.

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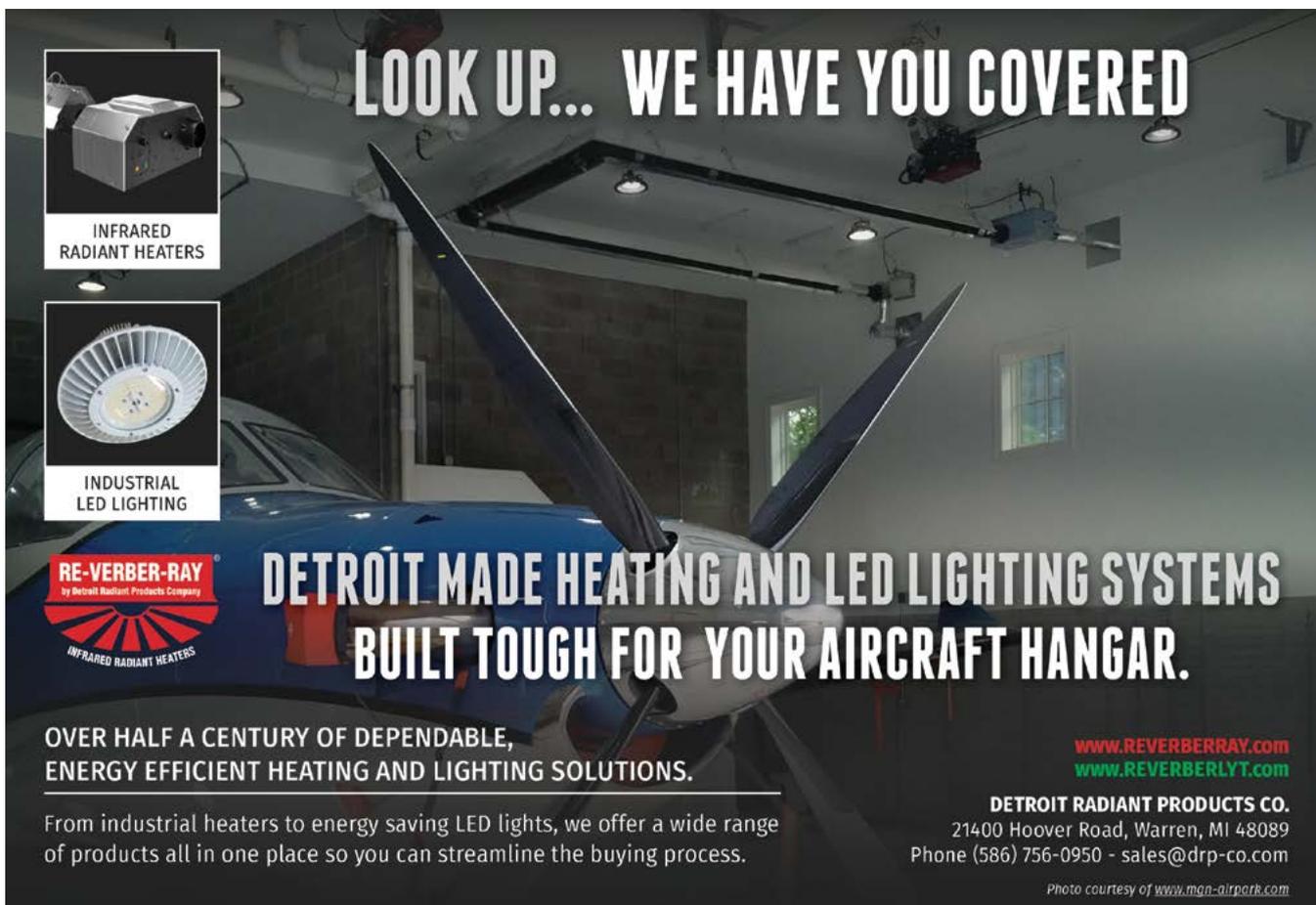
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Garmin G1000 NXi

For King Air owners considering a flight deck upgrade, the G1000 NXi delivers on all accounts.



PHOTOS COURTESY OF GARMIN INTERNATIONAL



by Dianne White

Early last year, Garmin announced the heir to the G1000, which is the long-running king of the integrated flight decks in general aviation. While at first glance the changes may appear subtle, the G1000 NXi boasts powerful performance, new features and several safety enhancements. With its polished, virtually glitch-free user interface, it's easy to imagine Garmin extending its dominant rein well into the next decade.



G1000 NXi SurfaceWatch provides superior situational awareness on or near the airport environment, warning pilots when they are lined up with the wrong runway, as well as providing runway remaining information.

On the approach to Park Rapids, traffic is displayed on the PFD HSI inset map.

NXi In Flight

Recently, Garmin provided a demonstration of its King Air G1000 NXi solution on board their King Air 350. For this flight, we would depart New Century Air Center (KIXD) home of Garmin's flight test facility, for Park Rapids, MN. We would shoot an approach there, land for a meeting, and then head back to New Century.

What is immediately noticeable is how fast the system boots up. Thanks to a faster, dual-core processor that boasts 16 gigabytes of memory, the system initializes in under 10 seconds. The faster processor also means the system responds immediately, renders the maps faster, and provides for smoother panning throughout all the displays. Readability is improved as well, due to new LED backlighting. The increased brightness and crispness of presentations is markedly better than the prior-generation G1000. The 15-inch MFD, which is sandwiched between two 10-inch PFDs, delivers a higher-resolution, super-sharp depiction.

Dave Brown, Garmin's manager of integrated flight deck retrofit programs, flew from the left seat, but gave me free rein to enter the flight plan and configure the right-side PFD to my liking. Having extensive experience behind the G1000 in a number of platforms, the familiar menu system and architectural logic are the same, albeit with some handy shortcuts and intuitive features.

For example, the optional Flight Stream 510 allows you to pop your pre-planned flight plan and routing from your tablet to the NXi, or vice versa. You can also wirelessly transfer aviation databases from the Garmin Pilot app. That alone is a tremendous time-saver.

On the taxi to Runway 18, the Garmin SafeTaxi provided guidance for the ground operations portion of our flight. Using georeferenced charts, it will display runways, taxiways, buildings, hangars and even the names of FBOs. While all of this is useful for situational awareness, SurfaceWatch is the real safety game-changer. Originally found on the G3000 and G5000 avionics suites, the monitoring technology is a great tool for preventing runway incursions, or to warn you that are lined up with a taxiway or the wrong runway.

Since we had added the departure runway to our flight plan, SurfaceWatch ensured we lined up with the correct runway and that we had enough pavement for our particular performance profile. If any of these things didn't check out, the system would have

alerted us with aural and a message on the display. It can also keep tabs on ADS-B traffic. During the takeoff roll, SurfaceWatch reported runway remaining during this critical phase of flight. You can easily imagine how useful this would be in a short-runway scenario or takeoff abort.

Once we were settled into our cruise climb, I began to explore some of the nifty features of the NXi. One the first things Dave showed me was the ability to customize the map presentation inset within the PFD HSI. In addition to map features, I could overlay traffic, FIS-B weather, terrain, Sirius XM weather or radar. Depending on the phase of flight and conditions, the pilot can easily add and subtract features that have the most relevance.

Moving to the MFD, we took a look at the radar overlay on the moving map (although there wasn't anything to see on this severe-clear day). One option is the addition of Garmin's GWX70 radar, which features ground clutter suppression and turbulence detection. We also viewed the system's ability to display the moving map on a VFR or IFR map. The NXi-redesigned joystick made navigating the map features much easier than the old up-down, left-right cursor movement. We then selected the Vertical Situation Display that incorporates a terrain profile view, taking into consideration the active flight plan, altitude constraints and winds aloft. It presents a profile view of your flight, allowing you to plan ahead and make adjustments as necessary.

Fully Automated Approach

As we started our descent to Park Rapids, we loaded in the RNAV 13 approach with the plan to fly the course reversal. We pulled up the approach plate on the MFD and entered in the minimums data. Even without vertical



A new NXi feature, the comm frequency boxes provide identification so that you confirm what navaid or comm frequency you are currently using.

DIANNE WHITE PHOTO

Considering the Upgrade: What the Experts Say

Over the last five years, the general aviation aircraft market has made a slow recovery, with the values of preowned aircraft steadily stabilizing and steady improvement in the deliveries of new aircraft. One very bright spot in the industry is the surge in avionics sales and installations. Spurred by the ADS-B mandate and demand for WAAS, retrofit avionics sales in 2017 grew more than 20 percent over the previous year, according to the Aircraft Electronics Association's recently released 2017 Avionics Market Report.

Of the more than \$2.3 billion in avionics sales, the retrofit market represented nearly 58 percent of all sales, recording an all-time high. By contrast, the forward-fit sales (avionics installed by aircraft manufacturers during original production) marked the lowest dollar amount recorded in the last five years.

A walk through the hangar of Elliott Aviation, one of the largest retrofit avionics installers by volume and sales, provides direct evidence of those trends. In total they have installed more than 300 King Air Garmin G1000 retrofits and are on track to do 50 full installs and as many as 20 G1000-to-NXi upgrades in 2018.

According to Elliott's Vice President of Avionics Programs Mark Wilken, the company is bullish on the demand for full flight deck retrofits, such as the NXi. "The cost of keeping old avionics systems operational is expensive and finding parts is getting harder. We ask our customers, do you plan to keep your aircraft for at least the next five years? If the answer is yes, we recommend they upgrade. While they will spend more in the short term, over the course of five years, they will most likely end up spending the same. It's a 'CFO-friendly' upgrade program."

The question many owners ask, will I get my investment back when I sell my aircraft? While traditionally it is unlikely that you will recoup 100 percent of the money spent on an avionics upgrade, retrofitting older turbine aircraft with the latest technology definitely makes them more desirable in the marketplace.

According to Tim White, president of jetAVIVA, the largest reseller of preowned turbine aircraft, planes that have already been upgraded to WAAS and ADS-B will sell quicker and at a higher price than those that have yet to be upgraded.

"Older Citations, King Airs or any high-end turbine aircraft that have already been upgraded with something like a Garmin retrofit – whether a GTN-series or G-1000 derivative – are the first choice of owner-pilots making the transition into their first jet or turboprop. They have most likely been flying behind Garmin for most of, if not all, of their flying experience. We see this as a significant attraction. For example, we have seen the straight CJ, CJ1, CJ2, markets be relatively brisk for those aircraft who have already undertaken these upgrades," he said. "A year ago, it was a rare occurrence that aircraft were upgraded with any type of advanced flight deck. Now it is the expectation and a value detractor if not upgraded."

Elliott Aviation's Wilken concurred. "People who have experience with the G1000 don't want to deal with learning and maintaining older autopilots and avionics. As the owner of an older turbine aircraft, if you are going to spend the \$75,000 to upgrade to ADS-B and \$75,000 for LPV capability, it makes good sense to go forward with an integrated flight deck upgrade. Yes, you'll spend a little more, but you'll get a whole lot more capability, not to mention the safety factors with better situational awareness and weather tools."

approach guidance, the system will fly the vertical profile to the initial fix, fly the course reversal and descend to the LP altitude without the pilot needing to touch anything but power and configuration.

After Minneapolis Center cleared us for the approach and released us from frequency, we tuned in the CTAF for Park Rapids. Another nice feature is that the nav/comm frequency boxes provide identification so that you confirm what navaid or comm frequency you are currently using.

As we flew the parallel entry and intercepted the final approach course, the TCAS 1 overlay lit up with three targets all inbound at the same time, including a Gulfstream and two small single-engine pistons. For aircraft without TCAS, the system supports ADS-B In (FIS-B) and Garmin's TargetTrend technology that displays a more intuitive method of judging target trajectories and closure rates.

Inbound on the approach, I switched my HSI overlay to display terrain and traffic. The NXi has new three-color terrain shading with improved contouring. Green signifies 2,000 feet, yellow, 1,000 feet and red is 100 feet. On short final, the SurfaceWatch once again confirmed we were line up with the right runway and provided us runway remaining info on the roll-out.

On the return trip to KIXD, Dave promised to demonstrate the NXi's most impressive and particularly useful feature: the visual approach guidance. Once we were cleared for the visual to Runway 18, Dave activated the visual approach mode. The MDF now displayed the magenta visual approach course line and the PFD showed lateral and vertical guidance.

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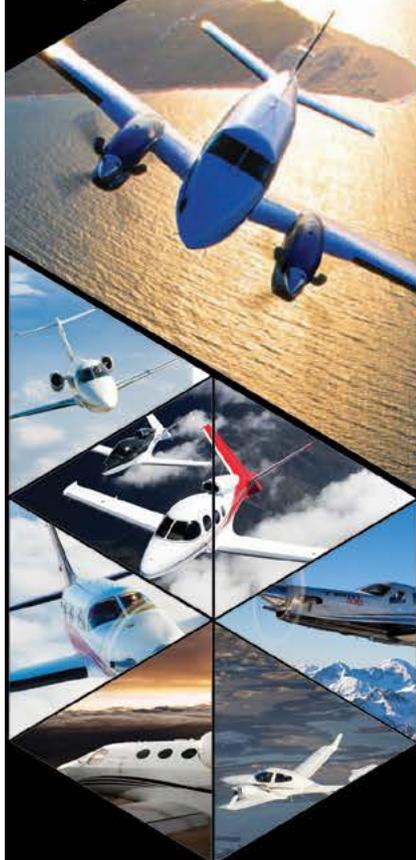
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DIANNE WHITE PHOTO

Geo-referenced sectional and IFR charts can be displayed on the MFD.

With the GFC700 autopilot still engaged, the aircraft intercepted the course line and descended on a three-degree glidepath, which set us up right on the VASI. Just like an instrument approach, the visual approach can be flown via vectors or as a straight-in approach with the initial and final fixes added in automatically. It is easy to see how useful this could be, especially when flying to an unfamiliar field. Once again, SurfaceWatch kept us honest by identifying our runway followed by Taxiway Alpha, which led back to Garmin's hangar.

NXi Pricing

The G1000 NXi, now certified as a retrofit on a number of platforms,

including the King Air 200, 300, 350, as well as a forward-fit on many factory-new aircraft from the Cirrus, Textron Aviation, Piper and others. List price for an upgrade from a legacy G1000 to NXi is \$52,995 plus labor. The kit includes three new displays, the GCU 477 keypad controller, SurfaceWatch and Flight Stream 510. New installations of NXi typically run from \$350,000 to \$450,000 depending on the aircraft type and options chosen.

Just like when upgrading from one smart phone to another, anyone who has spent any time behind the G1000 will instantly be able to navigate the NXi with ease and quickly fall in love with its added capabilities and features. The G1000 NXi is an impressive successor and is proof-positive of Garmin's continuous efforts to improve the safety, utility and capabilities of their products. **T&T**

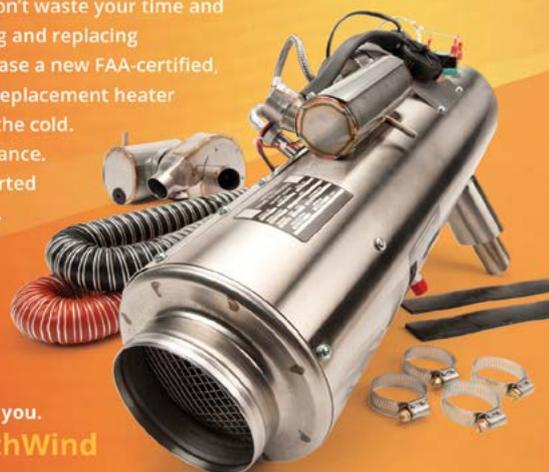
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Retrofit Revolution

Thanks to investment by avionics manufacturers, there are a plethora of new advanced autopilots that bring safety features and capabilities to older generation aircraft.

by Joe Casey

It's all about to change. The future for general aviation, and especially for those that operate twin and turbine airplanes, is super bright. There are many reasons for my optimism: One of the best reasons is the huge advancements that have recently been made in autopilots.

For decades, operators of aircraft that carry six to 10 people have had to choose between buying an expensive new version of a particular airplane to get the latest avionics or accept the lesser avionics and lower price-point that come with an older version. It's not just that the newer is nicer, the newer aircraft will assuredly have some serious upgrades that really do improve safety and functionality. For instance, you can now buy a new (or newer) Piper Meridian with the exceptional G1000 avionics suite and spend \$1.5 million to \$2.3 million. You could buy an earlier Meridian for \$750,000 and accept a lethargic autopilot with virtually no safety features. Both Meridians will have identical performance, but the newer version comes from the Piper factory with a robust avionics suite. The same situation exists with the King Air 200: The avionics in a 2018 King Air 200 will do everything but cook breakfast, and a 1978 King Air 200 will have steam gauges and an autopilot that is questionable in the most serious of IFR conditions. But, things are about to change.

Just over the horizon are a bunch of very intuitive, actually affordable autopilots that pack a LOT of safety features. Plus, they will fly an approach like the airplane is on rails – incredibly exact. For the owner who operates an older airplane, options will soon be available.

The GFC600: A Game-Changer

Heretofore, avionics manufacturers have focused on supplying the OEMs. Want the best new avionics? You will have to buy new. Now, the autopilot manufacturers are investing real money in the upgrade market. And, this is all about to be available. For some aircraft, it is already available.

I was recently contacted by Garmin to test out their newest autopilot, the GFC600. Based on the fabulous GFC700 autopilot that is found in the G1000 installations, the GFC600 is singularly outstanding.



The Garmin GFC600 autopilot is bringing safety features and precision to the autopilot retrofit market at a reasonable install price.



Garmin is currently in certification testing of its G5000 integrated flight deck retrofit for the Citation Excel.

I test-flew the GFC600 in a Beechcraft Bonanza A36 owned by Tom Hass with Park Rapids Avionics. Tom allowed me to put the GFC600 through all sorts of flight regimes. From just after takeoff to just before touchdown, I never had to touch the controls. And, I flew the airplane from one end of the envelope to the other. It provides complete “envelope protection,” has the “straight-and-level button,” and it will fly a go-around (missed approach) with the pilot only having to advance the power and clean up the airplane. I was completely blown away by the features, precision and affordability.

And it's not just Garmin. An owner of a Cessna 300/400 series airplane can look forward to Genesys Aerosystems soon having STC approval for the fully-digital STEC 3100 autopilot. I fly the STEC 1500 autopilot often in the Piper Meridian, and if the STEC 3100 is anything like the STEC 1500, it is going to be an excellent autopilot. The STEC 3100 will have envelope protection, a “straight-and-level button,” a

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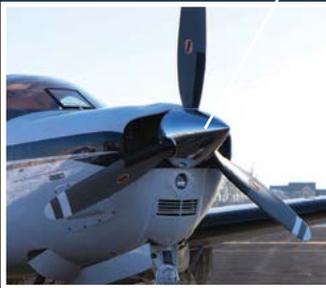
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built-in AHARS, and some versions will be three-axis (meaning, it will keep coordinated flight in a turn; not just a yaw damper).

To make it even sweeter, Genesys Aerosystems is launching a deal that will extend the warranty on existing parts of the system to owners who buy into the package early. Imagine buying a new autopilot and having the existing trim servos (which are still used in the installation, making it much cheaper to install) being included in the warranty.

I am excited for the Cessna 300/400 market; those are great airplanes that have recently languished because Cessna doesn't make them anymore. Someone needed to step in and help that market, and that someone is Genesys Aerosystems.

Remember that older King Air 200 mentioned earlier? The owner of that airplane can install the G1000 NXi and have an unbelievably nice airplane, arguably better than a factory-new. Own an early TBM 700? The GFC600 is on Garmin's list to receive the STC. A

whole bunch of Cessna Caravan drivers are about to be smiling as the GFC600 should have STC approval this year.

Honeywell (Bendix/King) Avionics is also readying themselves to enter the market. They expect to have a drop-in replacement for the KFC150 in the very near future and should have the KI-300 attitude indicator fully STC'd soon. Nearly every KFC150-equipped Malibu (which I think is a fabulous airplane) owner will consider this very cheap option for upgrade.

What does all of this mean? It means that some really great older airplanes are about to have a new lease on life. A wise buyer can soon consider an earlier version of an airplane, install a virtually new avionics panel, and have an airplane that has nearly all of the safety features and amenities that a new airplane would provide.

I suspect visionary investors will purchase a good airframe with low-engine hours, add a new interior and paint, remove the entire panel and install the latest avionics and autopilot, and will then own a very capable and good-performing aircraft. The 1989 Mirage (earliest year for a Mirage) goes just as fast and climbs just as quickly as a 2018 Mirage, but it has suffered on the market because of steam gauges and an autopilot with no safety features (KFC150). Many owners will still want "new," but there are plenty of pilots who will realize the cost savings of buying an older airframe with low hours and upgrading.

I see a sunrise on the horizon of aviation, not a sunset. Avionics providers are spending serious cash investing in retrofit products, and those of us who fly *Twin & Turbine* airplanes are about to benefit. The future is looking bright! **T&T**

Joe Casey is an ATP, CFI, CFII (A/H), MEI, CFG, CFIH, as well as a U.S. Army UH-60 standardization instructor/examiner. He has been a PA46 instructor for 14-plus years and has accumulated 11,800-plus hours of flight time, 5,000 of which has been in the PA46. Contact Joe at: www.flycasey.com, by email at joe@flycasey.com.

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Getting the Most Out of Your PT6A

The turbine engine is the single most expensive component on an airplane. Here's how to best manage and minimize maintenance.

by **Rebecca Groom Jacobs**



The production floor at Dallas Airmotive.

Now found in more than 70 aircraft models, the PT6A engine family is a powerhouse among the turboprop world – and with good reason. With versions varying from 500-1,700 shaft horsepower, the engine has proven to be incredibly versatile and dependable no matter the application across general, commercial and military sectors.

An incredible 47,000 PT6A engines have been produced since the product entered service in the 1960s. On top of performance, operators especially appreciate its predictability and vast service network. One service organization in particular has been involved since the engine's infancy.

Dallas Airmotive

Dallas Airmotive, an operating unit of BBA Aviation, has been servicing the PT6A for more than 50 years. Today, its official designation is as a Pratt & Whitney Canada Distributor and Designated Overhaul Facility (DDOF). The company essentially covers it all: overhauls, full service

repair, hot section inspections, part sales, engine testing and more. Its current employee count sits around 800.

“Our experience runs deep, with many of our employees averaging more than 20 years in tenure,” said Kalyn Ortiz, marketing manager at Dallas Airmotive. “We know engines because it is all we have done for more than 80 years.”

Originally a piston overhaul facility during its founding in the 1930s, Dallas Airmotive quickly grew as it started winning OEM contracts with Pratt & Whitney, General Electric, Rolls Royce and Honeywell over the following decades, relationships which still run strong today.

While they service over 20 different engine types, current specialties include the PW200, PW300, PW500, JT15D, TFE731, M250, RR300, RR Spey, RR Tay and of course the PT6A. Dallas Airmotive sees approximately 300 PT6A engine events every year.

To keep with demand and increase efficiency, the company recently consolidated five locations into one enormous new headquarters and overhaul facility near the DFW airport. It is the largest engine maintenance and testing facility in the world, sharing 240,000 square feet between its MRO

facility and one-of-a-kind "Engine Test Center." The MRO facility operates a production floor for six engine product lines, engine accessories and component repair. It is expected to house at least 10 additional engine lines by 2019.

Next door, the engine test center is comprised of six engine test cells with the capability of testing up to 25,000 pounds of thrust. Each area is strategically designed to achieve quicker turn times and reduced cost. In addition, the company has nine regional turbine centers (RTC's) and 50-plus field service reps from 27 dispatch locations (a map of facility locations can be found on their website, dallasairmotive.com).

"Our success with the PT6A stems from our ability to be close to customers through our RTC's, FIRST Support field service team and valuable partnerships like the Pinnacle Air Network," said Joe Capra, senior commercial director at Dallas Airmotive. "We all have the same goal: keep customers flying and minimize maintenance costs."

Expectedly, Capra notes cost is almost always the top question and concern amongst PT6A owners. The good news, however, is those owners can significantly influence the life and operating cost of their engines through certain operating and maintenance practices. The bulk of those practices fall under two categories: following OEM recommendations and conducting preventative maintenance.

Follow OEM Recommendations

The Pilot Operating Handbook (POH) should be every operator's go-to for engine operation guidelines. Adherence to OEM recommendations will lead to savings in both time and money when it comes to servicing the engine.

"Following the POH is extremely important," said Capra. "When the parameters are continually exceeded, we often see those engines come in for shop visits related to degradation of the engine, usually as a result of exceeding engine temperature limits."

This is because extended operation outside recommended power settings can result in hot section component distress and increase general engine wear and tear. Consequently, the engine may prematurely reach operating limits (adding cost).

Another frequented topic among PT6A owners is TBO extensions. This option potentially allows operators to achieve maximum usage out of their engine. Though appealing to some, there are several factors to consider. One being an aircraft operated beyond the manufacturer's TBO is likely to appear less attractive in the used aircraft market. Additionally, operators should consider the potential toll on the engine's health.

"Whenever this question comes up, we answer depending on the hours they fly," said Capra. "If an operator is racking up lots of hours flying each month, an approved TBO extension may work without issues. However, if there is a greater amount of time between flying, the engine is likely susceptible to corrosion."

Capra explains that in those particular cases, when the engines are serviced, what could otherwise have been a repairable part may now need to be replaced. Typically, Dallas Airmotive embraces a "repair versus replace" mentality. "But whether it's a brand-new or used part, we provide customers with detailed options to fit their unique situation," continued Capra. The basic Time Between Overhaul (TBO) and Hot Section Inspection (HSI) interval is published in the appropriate Service Bulletin for each PT6A engine model.

Preventative Maintenance

There are a number of preventative measures Dallas Airmotive recommends PT6A operators take in order to keep their engine its healthiest:

- *Fuel nozzle maintenance* – The No. 1 most "cost effective insurance" against hot section distress is using conservative fuel nozzle maintenance intervals;
- *Borescope inspections* – In conjunction with fuel nozzle maintenance, monitor hot section condition for early detection of degrading conditions and costly repairs. Early detection may increase component reparability versus replacement;
- *Oil analysis* – Conduct periodic oil filter inspections looking for metallic and non-metallic debris. Look for signs contamination, darkening, unusual smell, carbon particles in the oil. With or without professional oil analysis, the regular monitoring of oil conditions is highly recommended;
- *Compressor/turbine washes* – Must be tailored to the aircraft operating environment (salt laden environment, and industrial pollution). This is frequently found to be one of the more neglected preventive maintenance measures;
- *GPU starts (when possible)* – Spools the engine faster during start for lower peak ITT. Extends hot section and starter life;
- *Introduce fuel at peak Ng (not minimum stated in manuals)* – Allows for maximum cooling airflow during engine start to reduce hot section distortion and thermal distress;
- *Pre-shutdown cool-down* – As recommended by the OEM. Promotes thermal stabilization of hot section components and helps prevent Compressor Turbine blade rub;
- *Run engine(s) at least once every week* – Reference Maintenance

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Manual, Preservation & Storage instructions. Improper preservation or storage may render engines unairworthy requiring costly inspections;

- **ECTM** – Engine Condition Trend Monitoring (sold by PWC) – Early detection of potential engine problems. Allows for preplanning of maintenance actions. Reduces risk for unplanned removals;

All of the above serve to detect early engine degradation and avoid unplanned shop visits. But when it does come time to for a normal overhaul, where might PT6A operators turn? One notable solution is Pratt & Whitney's "Flat Rate Overhaul Program."

Flat Rate Overhaul Program

Due to the engine's popularity, there are a number of service programs available to PT6A owners. It is important each owner conduct the research and find a service program fitting for their unique situation. One program worth considering is a flat rate overhaul option offered by the OEM itself as well as Dallas Airmotive.

"As it relates to what we are seeing on the PT6, we think Pratt & Whitney's Flat Rate Overhaul Programs offered by Pratt & Whitney Canada and Dallas Airmotive is the best-value opportunity," said Capra. "I don't think operators realize yet how good it is."

The program is widely accessible, being offered through all participating Pratt & Whitney Designated Overhaul Facilities. Core benefits include a fixed price upfront, increased new part mix, category 1-6 Service Bulletins and no extra charges for typical corrosion or normal repairable FOD (if FOD did not cause removal). There is also a premium offer for military customers.

Those interested can find more information on this program via the Pratt & Whitney website, Pinnacle Air Network or any PWC Designated Overhaul Facility. 



Jacobs is a private pilot and general aviation enthusiast. In 2012 she earned her business degree in marketing from Oklahoma State University. Since then, she has specialized in aviation-specific marketing, working first for Piper Aircraft, and then as an aviation marketing specialist at Sullivan Higdon & Sink. Jacobs is now serving as the Director of Communications at the consulting firm Groom Aviation. You can contact Rebecca at rebecca@groomaviation.com

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373	CHALLENGER 300
53	CHALLENGER 600
41	CHALLENGER 601-1A
112	CHALLENGER 601-3A
52	CHALLENGER 601-3R
295	CHALLENGER 604
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298	CITATION 525
269	CITATION BRAVO
155	CITATION CJ1
84	CITATION CJ1+
206	CITATION CJ2
169	CITATION CJ2+
360	CITATION CJ3
63	CITATION CJ3+
222	CITATION CJ4
146	CITATION ENCORE
46	CITATION ENCORE+
299	CITATION EXCEL
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249	CITATION I/SP
463	CITATION II
60	CITATION II/SP
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238	CITATION V

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4	LEARJET 28
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167	LEARJET 31A
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3	BARON 58 PA
351	BARON 58P
112	BARON 58TC
3	BARON A56TC
301	BARON G58
197	BEECH DUKE B60
176	CESSNA 340
531	CESSNA 340A
90	CESSNA 402B BUSINESS LINER
140	CESSNA 402C
29	CESSNA 404 TITAN
266	CESSNA 414
363	CESSNA 414A CHANCELLOR
49	CESSNA 421
41	CESSNA 421A
362	CESSNA 421B
610	CESSNA 421C
53	CESSNA T303
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25	PIPER 602P AEROSTAR
488	PIPER CHIEFTAIN
24	PIPER MOJAVE
835	PIPER NAVAJO
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27	ROCKWELL 500A SHRIKE
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Higher Minimums

by **Kevin Ware**

Professional flying is nearly always an extremely relaxed, highly controlled and almost boring affair. When you depart, under what conditions, where you are going, and by what routing is often entirely under the control of a complex set of rules and a team of experts, of which you are only one. You certainly feel professionally responsible for the outcome, but that responsibility is shared by the group, and you rarely have someone who is personally dear to you (other than yourself), who is at risk.



Does flying your family onboard influence the level of conservatism you employ?

Personal flying, particularly with family members on board, is an entirely different ballgame, and unless you have done both, it is maybe difficult to appreciate that difference. A flight I was on last year, and the circumstances that followed, again reminded me of this.

Lori, our pilot-scheduling manager answered a call from Mike, an ex-airline pilot she used to fly with in her cabin attendant days. He told her that he has just bought a Cessna 414 in California and his insurance was requiring a pilot they could approve to help him fly it back to Washington. After some nosing around among the company's pilots she finds I am the only one readily available to do the trip. And so, after making some arrangements with the insurance company, I fly airlines down to Oakland, then take Uber to Concord where I meet up with both Mike and Dave, an airline pilot friend of his, neither of whom have done much personal flying in a long time.

The three of us carefully go over the fairly clean 414, and an hour or so later, we are northbound to our first stop in Medford, Oregon. On the way I determine that both Mike and his friend

Dave are exceedingly competent pilots, who have absolutely no problem flying the 414. And as often happens, we become what my wife likes to call "pilot-type" friends.

It turns out Mike started flying back when he was 18 just like I did, flew floats, then Navajos in the bush of Alaska to build time, and then got hired by the airlines to fly 737s.

Following some airline industry failures and mergers, he wound up at one of the three big U.S. carriers, where he flew DC-10s internationally. After several years however, the routine of airline flying combined with the long absences from home made him decide to quit flying for a living and start his own business. At this he was quite successful, hence the 414, which he planned to use mostly for personal and family trips.

After we returned from that trip, Mike had some further improvements made to the airplane, I got busy doing other things and we lost track of each other for a while. But as time passed I kept seeing his nice shiny airplane, now with new RAM engines and Garmin avionics languishing on the ramp and not being flown much. Finally, we ran into each other and I asked him how the airplane was working out.

His answer struck a nerve with me. He said that even though he had thousands of hours and professional pilot credentials, he found flying the 414 with his family on board in anything but pristine weather to be unpleasantly stressful, and for this reason he had not been using the airplane that much. In fact, the airplane we flew up from California just a year ago, was now for sale.

Now it might seem odd that a pilot with a wallet full of ratings, 10,000+ hours and experience ranging from bush operations in Alaska to heavy iron international airline flying would find flying a personal airplane at all stressful. But truth is, I often feel the same way myself. That is, those of us that fly professionally often find purely personal flying to be much more stressful than the flying we get paid to do. This is particularly true if we are flying single pilot with family members on board. The stress is not only unpleasant, but can alter how we make decisions as pilots, and it shows up in a number of different ways.

For example, if scheduled for a Lear trip I rarely feel compelled to check the weather until the morning of departure. If the weather at that time is at or above published IFR minimums, with no dangerous convective activity in the area, no problem, I am quite relaxed and good to go. On the other hand, if scheduled to fly somewhere in my own Cessna 340 with wife or grandkids on board, I start monitoring (perhaps better described as "worrying" about) the expected weather a week in advance.

For the personal trip I am very hesitant to fly in any weather that I cannot easily top, or if on top I cannot safely descend through into VFR conditions should some mishap occur while in flight. Whereas when flying professionally these are not concerns I would have a week before the trip, if at all.

It is almost embarrassing to admit that as a well-trained and current professional pilot, if the trip is a personal one with family members on board, I simply don't "want" to go (and rarely do) if the weather particularly at the arrival end is anything close to low IFR. Whereas if flying professionally, anything above bare minimums is no problem at all. And as time has passed I found this conservatism has increased rather than decreased. In fact, I am much, much more conservative with personal flying than now I used to be even 10 years ago. My minimums for a personal flight are now pretty much clouds that are easily topped, no or minimal forecast of ice, plus VFR conditions at the arrival end. If all that doesn't exist, I usually find a reason to delay the trip or simply not go.

"Many high-time professional pilots note this attitudinal difference between personal and professional flying. Why is that?"

Many high-time professional pilots note this attitudinal difference between personal and professional flying. Why is that? It may be at least in part due to just the natural conservatism that comes with increasing age, but I think there are quite a few more issues at hand than that.

The phenomena remind me a bit of when I was doing obstetrics as a physician and my own wife was pregnant. Even though exceedingly competent at that activity, would I deliver my own wife even in a very good hospital? Not

a chance. Instead we made sure she was cared for by very competent and well-trained doctors (more than one) who could be very objective in their professional decision-making process, and in a hospital with the very best equipment. Delivering babies is (like flying) a mostly safe and routine activity. But when things go awry, you have to quickly make some difficult professional calls, all of which are much more competently arrived at by an objective mind than one impaired by personal and emotional involvement with the outcome.

Then there is the question of the effect differences in the equipment has on our personal flying minimums. Generally, the airplanes we fly professionally are turbine-powered and capable of staying aloft in the high flight levels even if one engine fails. They are also capable of handling any ice that might be encountered with much greater safety than airplanes we are likely to fly personally. And when you fly professionally, this difference becomes very apparent. There is a huge difference between the capabilities of say a FL450-capable Cessna CJ3, and a FL250 capable Cessna 340. The CJ (or B737) will almost always put you 2 miles above weather you don't want to have anything to do with. Whereas unless you are very careful, the C340 and a lot of turboprops are pretty good at putting you right in the middle of it.

Personal flights are also usually flown as single-pilot, and the lack of a two-pilot crew is also highly influential on stress level. Flying, particularly in adverse conditions, can be a very intense activity. The ability to share some of the work load and decision-making with another properly trained and qualified pilot is immensely relieving.

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But that individual has to be trained and qualified. From time to time, I fly airplanes wherein a low-time private pilot employee of the owner wants to sit up front and “help.” Almost always, this makes the task of piloting more rather than less difficult. Even if you have all the ratings, there is an art to competently flying as a two-pilot crew, and it takes a lot of training and time to learn it well.

Another thing many of us observe is a reluctance (or at least a lack of burning desire) on the part of our spouses to fly with us on personal trips, but not so when flying in the back of the jet we

are flying professionally. We point out that doesn't matter which airplane we are in, we are exactly the same person with precisely the same foibles, but that does not seem to change the dynamic much. This attitude on their part is probably a reflection of what we are feeling ourselves. That is, a very high personal and emotional investment in the outcome, and because of this a desire to distance oneself from involvement with the event.

Sometimes all this can create an awkward situation when in the pilot lounge with small kids and wife hanging about.

Some fellow with 800 hours and an instrument rating is flight-planning a trip that most of us high-time pros would readily fly professionally, particularly as a crew, but would not touch personally, even though it would be perfectly legal and probably reasonably safe if looked at objectively. Hard to know what to say in those circumstances.

So, Mike and I ruminate on all this for several hours while his now-for-sale C414 is being worked on. We wonder if we owned a jet (say a CJ that both of us are rated in) would it entirely resolve the greater level of conservatism we have both noted in our personal flying. In the end we decide that although it may help a bit, we still would be very emotionally involved with the flights' outcome and that would continue to influence our thinking. We are professional pilots after all, and know from experience that if anything goes wrong, the workload in a jet can get very high, very fast. We decide that concern about that possibility with family members sitting behind us single-pilot, would be very distracting. The end result being, we would assign ourselves higher minimums, just like we do in the piston twins.

In medical school they teach you about the need for professional objectivity and point out that because you are emotionally involved, you should not take care of immediate family members for anything except very routine matters (the flying equivalent of very good VFR conditions). And for physicians, realizing those implications and behaving in that fashion is considered a sign of mature professional competence.

Maybe we should happily adopt that attitude and not worry about our “higher minimums” when doing personal flights with family members on board. I suspect we would all be safer. **T&T**

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



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FIVE on the FLY



Brazilian Kodiak dealer Jim Gable pictured with Rob Wells.

by **Rebecca Groom Jacobs**

WHO:
Rob Wells

HOMEBASE:
**Sandpoint, Idaho /
Seattle, WA**

POSITION:
**CEO of
Quest Aircraft**

RATINGS:
**ATP with multiple
turboprop (including
Starship!) and jet
type ratings**

HOURS:
8,000+

1. *You have dedicated more than four decades to business aviation. What aspects about the industry have you hooked?*

In the early years, it was all about flying and like many of my contemporaries, I was hooked on the idea of becoming an airline pilot. But luckily for me, my career took a different path into general aviation, and brought with it opportunities that I could never have imagined. Today, I find it's the people I've come to know and enjoy that have kept me hooked. We all share that common bond of loving aviation, which crosses all cultures and experiences.

2. *Fifteen years of your career were spent in Geneva, Switzerland with TAG Aviation. What are some of the core differences between business aviation in the United States and Europe?*

Certainly, the aircraft management business is different, with United States being corporate centric and the rest of the world being an indistinct combination of high net worth and business. Otherwise, business aviation in Europe (and Asia and the Middle East for that matter) has much in common with the United States. One of the main challenges was just learning the regulatory environments in each country and region. But I greatly enjoyed the fact that my job required me to engage with many cultures, and fortunately my pilot background was often the common ground with colleagues and customers.

3. *What is your current view on the strength of the GA market? What you are feeling as a business and your optimism for the future?*

Business aviation has experienced a significant recovery the last few years. Having been involved with EBAA for many years in Europe and now GAMA in the United States, I am

increasingly aware of the regulatory challenges that our industry faces. But it is fantastic to see the progress being made in terms of industry/FAA cooperation specifically when it comes to aircraft certification (something I never dreamed could happen). My hope now is that this kind of engagement extends even further in flight standards and other regulatory areas.

There is no question that aircraft demand is increasing at a steady pace, enhanced by recent tax law changes. For these and other reasons, I'm quite optimistic that our industry is in a good place with steady growth ahead of us.

4. *Quest recently celebrated the 10th anniversary of its first Kodiak delivery. How has the direction of the company adjusted over the years? What can we expect to see in 2018?*

Quest has a unique history, with the Kodiak initially designed with only one goal in mind – serve the needs of humanitarian organizations in remote areas of the world. Early funding was through donations, and once the initial mission requirements were satisfied, there was a need to expand the appeal of the airplane to other markets. In that effort, Setouchi Holdings of Japan acquired the company in 2015.

I can see that our owners, with their experience as a manufacturer, will be a valuable resource in the years to come. As to 2018 and the near-term, there are many exciting projects in the works here at Quest and all I can say at this point is “keep watching this space!”



Alaska Days

5. *What is one of your all-time favorite flying memories?*

People would probably guess flying business jets would be my ultimate flying experience, but actually it was my six months with a small air taxi company operating in Southeast Alaska that provided the most lasting memories. Nothing compares to the beauty of that part of our country, and the unique flying experiences that I gained during that brief period. Another favorite flying moment: I was alone, flying a Beechcraft Duke in a VFR descent over the North Carolina Smokey Mountains at sunset, and on the newly installed FM receiver “Free Bird” by Lynyrd Skynyrd was playing. Now there's an unforgettable flying experience! **T&T**

Rebecca Groom Jacobs can be contacted at rebecca@groomaviation.com

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From the Flight Deck

by Kevin R. Dingman



Incursion

Runway hold-short lines, surface movement areas & pilot deviations



You are on short final when tower directs a go-around. Maybe it is day VMC and you see the airplane, ground vehicle or creature that tower is worried about. Maybe they see a formation of geese or some deer headed toward your runway. Perhaps there's a taxiing aircraft that is not responding to a hold-short call, maybe somebody pulled onto your runway unannounced or another airplane didn't exit at a certain high-speed and it caught tower by surprise.

What if this happens very late at night when you're 100 feet above DH in IMC and *really* low on fuel? As pilots, we do not know if the go-around call is because of something tower saw visually or a procedural requirement like spacing. If we continue and land, we do not know if we will actually hit something or just be closer than anybody would like. So, we go around. This is not a preferred event, nor oftentimes a procedurally simple one, but a go-around would be better than plowing into the offending plane, fire truck or herd of raccoons.

Look Both Ways

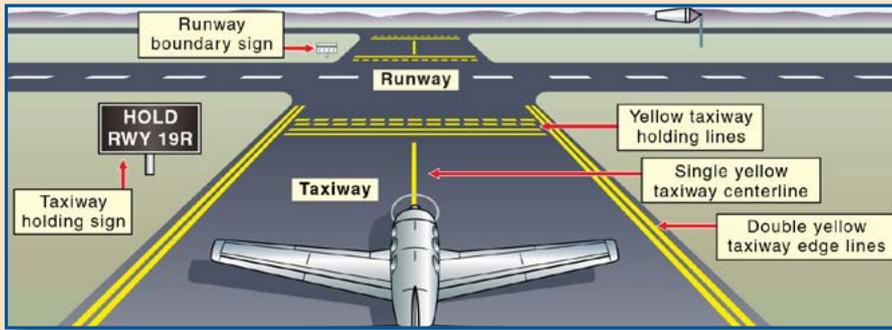
I was taxiing the Duke one day and cleared by ground to cross a runway at the approach end. An excellent technique is to always look left and right before entering or crossing any runway or taxiway; even if it is closed or not the active runway. We should do this when the tower is open, when tower is closed or when there's no tower at all. Check to see if it is safe to continue just as you would when you step off the curb to cross the street as a pedestrian or railroad tracks in your car, lest we be squished like a grape. That day in the Duke, a Cessna 172 was on about a half-mile final. I did the check left-and-right thing and held short of the runway. I told ground that I'd be holding short for a bit, and after a hesitation they said thank you.

The FAA defines a runway incursion as any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and takeoff of aircraft. Approximately three runway incursions occur every day at towered airports in the United States and ATC is fighting some of the same causal factors, as are pilots: expectation bias, complacency and distractions.

According to FAA data, approximately 65 percent of all runway incursions are caused by pilots; just over half. Of the mistakes made by pilots, 75 percent of them are caused by GA pilots. And it is not only the runways that are an issue when we are driving around on the ground, it is taxiways, ramps, holding areas and deice pads as well.

Yellow Skid Marks

Non-movement areas are ramps and aprons and are typically not controlled by ATC. The movement area is all of the taxiways and runways and is under the control of ground and tower. The



boundary between the ramp and the taxiway is defined by two yellow lines, one solid and one dashed. The solid line is on the non-movement side and the single dashed line is on the movement side. At the runway, the dashed line is double and on the runway side of the solid line. The way I remember which side is which, is that the dashed lines are like yellow tire skid marks and are always on whichever side of the solid line the airplanes are moving faster. Out on the airfield that is on the runway side of the solid line. Back at the ramp, the dashed yellow skid marks are on the airfield side of the solid line, away from the ramp.

I'm based in Chicago with my Part 121 carrier and ground traffic there is continuous and oftentimes intense. I feel sorry for pilots that are less familiar with ORD because I know how they feel. When we go to CLT, MIA or IAH, I feel like a student pilot on a solo cross-country. My situational awareness becomes strained, especially during low visibility,

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when it is dark or when the painted markings are wet and shiny. Thank goodness for an FO and the ability to see a real-time display of our aircraft on the airport diagram page. But occasionally that is not enough

Standby to Copy a Phone Number

My one-and-only pilot deviation (not at ORD and long since expunged) involved unauthorized crossing of a movement area boundary. Due to a poorly worded ATIS that conflicted with published procedures, our polished MD-80 was pushed back from the gate across a non-movement boundary and partially onto a taxiway, without us contacting ground first.

They didn't like it much and gave us one of those "standby to copy a phone number" radio calls. Me and my FO both filed an ASAP (NASA report) but our explanation was not accepted into the program and we received a "this will be in your official record with no further action necessary" admonishment. Crossing a ramp non-movement boundary like we did may disturb ground control's plan for entropy in the universe (see "Control Freaks," *Twin & Turbine* Feb. 2018), but an unplanned excursion onto a runway can cause an actual catastrophe.

What's the Worst That Could Happen?

A terrorist incident at Gran Canaria Airport began a chain of events that led to the deadliest ground accident in aviation history. The terrorist incident caused flights to be diverted from Gran Canaria to Los Rodeos, including the two accident aircraft. The airport is 2,077 feet above sea level and drifting clouds were causing extremely low visibility.

I've encountered this phenomenon on Mackinac Island, Michigan. Ceilings and visibilities on the mainland could be 1,000/3 while on the island, which juts up 740 feet above Lake Huron, it could be obscured and half-mile. Forty-one years ago, two Boeing 747's, KLM Flight 4805 and Pan Am Flight 1736 collided on the runway at Los Rodeos Airport (now Tenerife North Airport), in the Canary Islands. The Pan Am flight missed a planned turn-off while back-taxiing. Then, confusion on the radio, non-standard phraseology and perhaps a rushed decision, led the KLM captain to take off without clearance and was the primary cause of the accident. Watch a re-enactment here:

<https://youtu.be/O7z69ikk4Lg>

Runway confusion is a subset of runway incursions and can result in us unintentionally taking off or landing on a taxiway or the wrong runway. In August 2006, the crew of a regional jet was cleared for takeoff on Runway 22, but mistakenly departed from runway 26, a much shorter runway. They crashed off the end of the runway. And lining up to land on the wrong surface is what happened at SFO last year and almost resulted in an accident with even more casualties than at Tenerife (see "Those That Will," *Twin & Turbine* Sept. 2017).

Thorough planning is essential for safe taxi operations. We should give as much attention to planning our taxi as given to other phases of flight, including confirming we are on the



A go-around is not a preferred event, nor oftentimes a procedurally simple one, but a go-around would be better than plowing into the offending plane, fire truck or wildlife.

correct departure runway by using the compass and checking the runway number painted on the surface. And when landing, whether in VMC or IMC, we should use all available nav aids and visual cues to verify we are lined up on the correct runway.

Expectation Bias

Expectation bias is a double-edged sword. It is what allows us to understand a busy radio frequency when a non-pilot can't, it allows us to copy a complex clearance when a newbie would be lost, and it is what gives us our Spidey-Pilot-Sense (SPS—like ESP only better) when the poo hits the fan.

We have learned what should come next, what to expect in a sequence of events and the logical and likely events that follow certain things. It is also what makes us taxi the wrong way, stop at the wrong spot and makes tower tell us to “standby to copy a phone number.”

When the taxi route that we have used many times before, or the route we were expecting to hear as the most logical route, is not the one that they actually give us, our expectation bias (SPS) bites us in the behind and we mistakenly think that we heard what we were expecting to hear.

Chocks to Chocks

Like a tailwheel airplane, we need to fly our airplanes from chocks to chocks. Consult the airport diagram before and during taxi, write down and read back all instructions and look for hot spots on airport diagrams. Maintain a sterile cockpit: conversations should be restricted to taxi operations. Heads-down activities like copying a clearance, programming the avionics or talking to the back-seat passengers should be avoided.

Over half of all incursions may be caused by us pilots and we certainly don't want to hear “standby to copy a phone number.” However, 35 percent of the time it's ATC. So even when we write it down and follow the clearance, there may be an incursion. It could be due to tower, ground, a critter or another pilot following their clearance. If the hair is standing up on your neck or you're not sure, stop the airplane and get clarification.

Then look both ways before stepping off the curb, lest you and your Spidey-Pilot-Sense get squished like a grape. **T&T**

Kevin Dingman has been flying for more than 40 years. He's an ATP typed in the B737 and DC9 with 23,000 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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GA Community Rallies to Strike Down ATC Privatization

by Ed Bolen NBAA President and CEO

Following years of vigorous debate, NBAA was pleased to see ATC privatization language recently stricken from congressional legislation for a long-term Federal Aviation Administration (FAA) funding and programs.

On Feb. 27, House Transportation and Infrastructure Committee Chairman Bill Shuster (R-PA) announced he would set aside the proposal in his bill (H.R. 2997) for removing oversight of air traffic control (ATC) from the FAA and Congress.

Many members of Congress carefully considered this issue, listened to concerns from their constituents, and ultimately stood with the general aviation (GA) community against handing control over our national airspace system to airline-dominated interests.

On behalf of the more than 11,000 members of NBAA, I'd also like to thank the readers of *Twin & Turbine* who made their voices heard on this issue. Indeed, the entire GA community came together like never before, and clearly told Congress that handing over our nation's ATC system to an airline-dominated board was a risk we simply could not take.

As we all know, long-term reauthorization of the FAA and the continuing modernization of the nation's aviation system are national priorities we all share. Everyone involved in fighting this proposal - including a strong chorus of opposition from the GA community and diverse, informed and united coalition of hundreds of local leaders and decision makers - should be proud of this significant effort.

We are profoundly grateful that Chairman Shuster responded to the concerns that were raised over his proposal, and we are equally grateful for everyone who made their voice heard on this critical issue. Now, it is time to focus our full attention on a long-term FAA bill that ensures the U.S. has the world's best air transportation system for decades to come.

We look forward to working with the chairman and other congressional transportation leaders on both sides of Capitol Hill, on a bipartisan basis, to advance a long-term FAA reauthorization package that serves all Americans, and ensures the U.S. has the world's best air transportation system for decades to come. 

NBAA Identifies Top Safety Focus Areas for 2018

NBAA recently released its annual list of Top Safety Focus Areas, topics identified by the NBAA Safety Committee as primary risk-mitigation targets for all business aircraft operators.

The 2018 NBAA Top Safety Focus Areas are:

- Loss of Control Inflight (LOC-I)
- Runway Excursions
- Single-Pilot Operation Safety
- Procedural Compliance
- Ground Handling and Taxi Incidents
- Distraction Management
- Scenario-and Risk-Based Training and Checking
- Positive Safety Culture Promotion
- Inflight Aircraft Collision Risk
- Workforce Competency and Staffing
- Safety Data Sharing and Utilization

NBAA Safety Committee Chairman David Ryan explained these identified focus areas represent the most critical safety-related risks facing business aircraft operators in 2018.

“This list is the result of spirited collaboration between the dedicated men and women on the Safety Committee, who are committed to not only identifying potential hazards,” he continued, “but also through working with regulators, member companies and other industry stakeholders, to provide the business aviation community with the most effective mitigation tools and strategies.”

The Safety Committee promotes safety-focused discussion and advocacy throughout business aviation, as well as to help NBAA prioritize how it should focus its safety-enhancement efforts. Each year during its annual risk-assessment meeting, the committee reviews safety survey results; risk-based

safety data; and qualitative input from industry and regulatory partners, other NBAA committees and association members. Following this data-driven review, committee members deliberate and develop a list of safety focus areas for the year.

“NBAA relies on the expertise of its Safety Committee to guide our safety-related programming and resources throughout the year,” said NBAA President and CEO Ed Bolen. “Business aviation safety is a cooperative, ongoing effort that demands a daily commitment to the highest levels of professionalism, and the committee’s vital work has continually proven to be an asset in this pursuit.”

In addition to the 2018 list, the Safety Committee continues to promote and focus on its five “foundations of safety,” considered the heart of the committee’s messaging. They are Professionalism; Safety Leadership; Technical Excellence; Risk Management; and Fitness for Duty.

“These core values – the foundational elements of an effective safety operation – form the basis of our committee’s work,” concluded Ryan. “We encourage all business aircraft operators to adopt these tenets as part of their organizational culture.” 



Operators Urged to Take Closer Look at Teterboro, Henderson Executive SID Procedures



It's been nearly four years since the FAA first implemented "climb via" phraseology intended to simplify assignment of SID and RNAV SID procedures with speed and altitude restrictions. Persistent issues with those clearances at two busy airports utilized by business aircraft operators recently spurred actions to remind pilots of the correct procedures.

At New Jersey's Teterboro Airport (TEB), pilots flying the RUUDY 6 RNAV departure from Runway 24 must cross the WENTZ waypoint at 1,500 feet MSL to avoid conflicting with overhead traffic into Newark Liberty International Airport (EWR) before initiating a climb to the procedure's top altitude of 2,000 feet. However, pilots have occasionally exceeded that altitude restriction.

"We encourage pilots [using Teterboro] to conduct a thorough preflight briefing on departure procedures," said David Belastock, president of the Teterboro Users Group, whose organization worked closely with the FAA to issue a recent letter to airmen (LTA) clarifying the procedure. "We are also coordinating with Jeppesen to expedite the publication of charting enhancements that more vividly denote altitude and speed constraints."

Across the country at Henderson Executive Airport (HND) near Las Vegas, NV, ongoing altitude busts on SIDs from Runway 35L not only prompted a similar LTA, but also resulted in the issuance of a temporary procedure in which tower controllers will ask pilots to verify their awareness of the

mandatory 6,000-foot MSL crossing restriction at the KITTE waypoint.

"Pilots are interpreting their clearance to mean the higher assigned altitude or are simply not setting up their autopilots and flight directors to capture published altitude restrictions," explained NBAA Access Committee member Keith Gordon, who participated on the team that led to climb via implementation. "RNAV restrictions can be a matter of life or death. Blowing through the KITTE altitude restriction puts you in the path of traffic landing at McCarran International Airport, and that makes controllers understandably nervous."

Similar issues at other airports have led to controller instructions that deviate from standard procedures, a practice Gordon noted could lead to pilot confusion and pose safety and liability concerns.

"We can't have different facilities issuing ad hoc instructions," said Gordon. "Verification of the altitude restriction seems the purest way to maintain the sanctity of climb via phraseology while keeping the responsibility for flying it correctly in the cockpit."

Heidi Williams, NBAA director for air traffic services and infrastructure, emphasized the need for business aircraft flight crews to apply proper due diligence to all departures. "We're seeing far too many deviations on these procedures, which points to a lack of full understanding of climb via terminology," she said. 

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FXE Is First GA Airport to Introduce Automated Passport Control Kiosks



Fort Lauderdale Executive Airport (FXE) recently became the first general aviation (GA) airport in the United States to introduce automated passport control (APC) self-service kiosks at the airport's U.S. Customs and Border Protection (CBP) facility to help expedite travel for international travelers.

With the use of the kiosks, travelers will no longer be required to submit a handwritten customs declaration form. They will use the self-service kiosk to declare their citizenship, present their documents and complete the administrative portion of the process.

"Passengers will still speak to a CBP officer, keeping in mind that utilizing the kiosk does not exempt passengers and any articles accompanying them from foreign countries from being inspected or examined by a CBP officer," the CBP noted in a statement.

The kiosks are available to U.S. citizens, Canadians and travelers who live in one of the Visa Waiver Program countries.

Travelers using the APC kiosks enter the same information they would provide on a Customs

Declaration form. They will scan their fingerprints and passports, take a photo and confirm their flight. Travelers will receive a receipt from the kiosk, and then present that receipt to a CBP officer at check-out. The use of the kiosks is free, and no pre-registration or membership is required, although travelers in the Visa Waiver Program must have Electronic System for Travel Authorizations approval and have visited the U.S. after 2008.

"This is good for general aviation," said Sarah Wolf, NBAA's senior manager of security and facilitation. "NBAA is committed to working with the U.S. Customs and Border Protection to ensure that business aircraft entry and exit in the U.S. is facilitated, and we hope to see further improvements in service in the future."

Fort Lauderdale Executive Airport officials noted that in addition to being the first general aviation airport to offer the APC kiosks, it also was the first GA airport to introduce a Global Entry kiosk, which allows pre-approved, low-risk travelers to expedite entrance into the U.S. upon arrival. 



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JSSI Founder Launches Engine Program for Piston Aircraft

In the jet aircraft world, owners typically rely on engine service programs to manage the risk of costly unplanned expenses. Yet owners of piston aircraft had no similar protection available. A new company has launched an engine maintenance program focused specifically on the piston market. Called PistonPower, the new program covers both scheduled and unscheduled maintenance events.

"There's been a real need for this type of program among piston aircraft owners," said Ron Zilberbrand, the company's president and founder. Zilberbrand, who founded Jet Support Services, Inc., the independent provider of service programs for turbine engines. "Now with the PistonPower hourly cost maintenance program, these owners can benefit from cost predictability and substantial peace

of mind. Owners can choose between three program levels and the program is available for just about every engine make and model.

PistonPower Unscheduled covers 100 percent of parts and labor for all unscheduled maintenance of covered engine components. PistonPower Unscheduled Plus adds 100 percent parts and labor for all unscheduled maintenance of covered aircraft accessories.

"And PistonPower Scheduled adds 100 percent parts and labor coverage for scheduled service such as annual inspections and overhauls, so owners don't have to worry about costly unplanned expenses and can instead focus on enjoying their aircraft," Zilberbrand concluded.

For a free quote call (888) 449-7775 for more information or visit www.pistonpower.com. 

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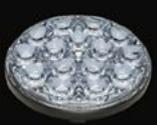


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That's What Friends Are For

Lee Goggin never met a stranger. At well over 6 feet tall, with piercing eyes and absolutely no hair, Lee greeted each member at my local gym with a smile and often an amusing comment about their conditioning. Lee was a fitness trainer at Sweat Dallas where I struggle to keep fit. But Lee's struggles far exceed mine. Born with a rare genetic disorder, ectodermal dysplasia, Lee could not sweat or grow hair. The hot Dallas summers often forced him to douse himself with water or even duck into a large refrigerator to cool his body. As a child, he was often laughed at because of his condition.

But Lee took it all in stride. He knew what it was like to be imperfect. He was inquisitive, adventurous, and his ambition was to help others, including my son-in-law Adam, who is developmentally challenged.

In 2014, at the age of 31, Lee developed kidney disease. In failing health, his brother Aaron donated a kidney and saved Lee's life. His challenges became the subject of several newspaper and television reports.

But Lee's struggles were not over.

In February, Lee drove his wife Courtney and their three children, eight months, two and a half and four, to Florida. They stopped along a beach on their way to Disney World. Always an explorer, Lee began digging a huge tunnel deep into a sand dune. As the family prepared to load up the van for their drive, Lee needed just a few more seconds to perfect the tunnel.

Suddenly, the weight of 3 feet of sand collapsed on top of Lee. Frantically, the family tried digging him out. The more sand they removed, the more sand collapsed. It took EMS responders 30 minutes to remove him.

He could not overcome this struggle. At the age of 35, Lee Goggin passed away.

When I got the phone call I was in shock. I didn't know what to do. But I owned an airplane and that's where I started. I offered to fly to Orlando and pick up the family. Arrangements were made. Melissa at Million Air Dallas found out about the trip. Without me even asking, she discounted my fuel. I Ride Dallas, a transportation company offered to provide limousine service free. But first, the trip was delayed a day. The folks at Disney found out about the tragedy and hosted the grieving family for a stay.

At FL 390, on the way to KMCO in my Mustang, I realized that what I was doing was nothing extraordinary. Each day, owner-pilots fly wounded warriors, cancer victims, even adopted animals to new homes.

That's what friends are for.

Fly safe. 

With 6,000-plus hours in his logbook, David Miller has been flying for business and pleasure for more than 40 years. Having owned and flown a variety of aircraft types, from turboprops to midsize jets, Patty and David currently own and fly a Citation Mustang. You can contact David at davidmiller1@sbcglobal.net.



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