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FLIGHT REVIEW

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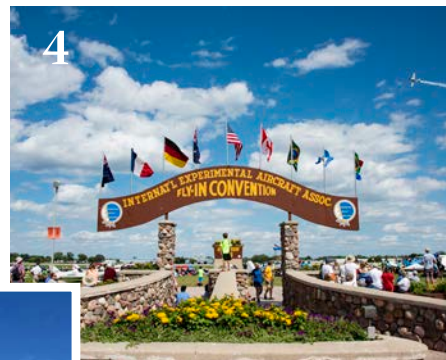
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# Editor's Briefing

by Rebecca Groom Jacobs



## Dare to Dream

One of my greatest pleasures as editor is witnessing the number of humanitarian and charitable organizations rooted in business and general aviation. I am constantly inspired by the generous hearts of pilots and professionals within this industry and strive to share some of that good news with you all reading.

The following is a recent example of a powerful story sent to me by G650 captain and activist Kimberly Perkins, written by Jordan Watson. The article immediately struck me as it combines several inspirational elements into one story – educating youth, inspiring future pilots, spreading awareness of general aviation, and paving the way for more women in aviation. Maybe it will inspire you, too.

*Rebecca Jacobs*

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“

“It was my first time at an airport and the first time I got in a plane...I want to be a pilot.”

– Phemo from the village of Dikgonnye, Botswana



In celebration of this year's UN World Creativity and Innovation Day, Aviation for Humanity and Dare to Dream partnered to bring Phemo and 29 other schoolgirls from rural Botswana to the Sir Seretse Khama International Airport for a day of education and empowerment.

Having never been to an airport or seen an aircraft up close, the girls had a day full of firsts. They were taken on a tour of four models of aircraft – the Beechcraft Baron 58, Beechcraft Hawker 800, Cessna Grand Caravan, and Cessna 172 – and spoke directly to pilots and other aviation professionals. They also engaged with the Airbus Little Engineer program, which allows students to explore STEAME-focused (Science, Technology, Engineering, Arts, Mathematics, and Entrepreneurship) learning, such as aerospace mission planning, robotics and 3D modeling.

The girls are students in the Artesia Junior Secondary School in the Kgatleng district of Botswana. They live in rural settlements surrounding the village of Artesia. The culture in this region is such that many girls are not aware that they are able to pursue any career, let alone a career in a STEAME field. Following the Creativity and Innovation Day event, 15-year-old Kelebogile shared, “I learnt that whilst still at my age, I have to have a dream, work hard, and achieve it. The motivation I had from the captain inspired me and gave me confidence to work on myself.”

It is the mission of Dare to Dream to advance African youth, women and girls by nurturing their curiosity for and opportunities in STEAME fields, specifically aviation and aerospace. The organization was founded by Captain Kgomotso Phatsima, one of the first female military pilots in Botswana. Inspired to create an event that would show Botswanan girls that careers in STEAME are available to them, Captain Phatsima and Captain Trudy





Cassen, international outreach director of Dare to Dream, connected with Aviation for Humanity founder and president Kimberly Perkins.

Perkins is a Gulfstream 650 captain as well as researcher, writer and speaker on gender parity, inclusion and aviation safety culture. She founded Aviation for Humanity to support the education, equality and empowerment of youth around the world through the recruitment of the aviation community and traveling public to deliver school supplies to orphanages, shelters, and underfunded schools across the globe. Working together, these three captains were able to show a group of incredible girls that STEAME career success is achievable. They hope to continue the movement and inspire many more.

It is the goal of the two organizations to repeat this event each quarter in order to create a recurring pathway of empowerment and education for a total of 120 girls per year. To cover the transportation from the girls' rural homes to the airport, food for the day and guest speakers, the cost for each girl to attend is 65 USD. Sponsorships are currently being accepted and can cover the cost of an individual girl's experience or contribute to the event as a whole. Interested sponsors can make donations for next quarter's event on the Aviation for Humanity website ([aviationforhumanity.org](http://aviationforhumanity.org)). One hundred percent of donations go toward this Dare to Dream project for empowering the next generation of aviation professionals in Africa. **T&T**

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# Position Report

by Dianne White



## The Summer of YES

It's 2021, and it's the summer of YES.

YES, we are back in the air and out into the world. YES, we are slowly eliminating the need for those pandemic-related words such as social distancing, masked up, limited capacity and shutdowns. And YES, we're setting our sights on EAA AirVenture in Oshkosh, Wisconsin.

Like the Joni Mitchell song goes, sometimes you don't know what you've got until it's gone. Last summer, there was a gaping hole in my calendar and in my aviation life called Oshkosh. I missed seeing old friends; I missed the sights and sounds of the air show; I yearned to walk among the long rows of classic, antique and warbird aircraft; and I was even nostalgic for the often neurotic weather of northern Wisconsin. Okay, maybe not the steamy, humid part of the Wisconsin July weather experience, but the 75-and-dry days that highlight our AirVenture mental memory book.

It's a great regional event concept we invented pre-pandemic but had to mothball in 2020. But this being the summer of YES, we held our first Uncowled event and it was a huge success. Beyond the educational value, everyone simply enjoyed being together with like-minded owner-pilots who share their passion for aviation. We enjoyed a KC barbecue lunch and were treated to ice cream at the end of the day, giving us time to catch up on family news, flying stories and show each other the latest avionics or improvements that we've made to our planes. (No ice cream was dripped on any carpet.) While 2020 was the year of NO for most, it was the year of YES when it came to avionics upgrades and paint/interior transformations.

One quick story: Midway through the event, a man hesitantly stepped into the hangar and approached one of our hosts. Turns out he was a local member who happened



PHOTO COURTESY OF BRETT SCHAUF

I got a small taste of what it's like to be back to fun aviation events in early June when MMOPA and Mead Aircraft Services hosted a member event in Kansas City. Called MMOPA Uncowled, it was a one-day event where PA46 maintenance guru Kevin Mead took owners through a detailed walk-around of several uncowled aircraft to help them learn how to be better stewards of their aircraft, understand and see how various systems work together, and arm them with information to more effectively troubleshoot problems or an inflight emergency.

**EAA AIRVENTURE**  
**OSHKOSH**  
**2021**

to be driving by and saw a ramp full of PA46s. Curious as to what was going on, he popped in and soon realized this was an event that he somehow missed hearing about. He was downright giddy to join in with the group and spent the rest of the day with us.

EAA is embracing the summer of YES by introducing several improvements to the AirVenture experience. The airshow schedule looks amazing, with all of our old favorites for us to enjoy. Also, the cancellation of the show last year allowed them to work on several improvements that will make accessing the show easier and less stressful.

First, the NOTAM has been revised, which includes a few significant changes: There are new ATC-assignable transition points approaching Oshkosh from the west that will ease holding and congestion. These points are at Endeavor Bridge, Puckaway Lake and Green Lake. They will be announced on the arrival ATIS when ATC puts them into use at times of highest traffic flows. Since it's been a couple of years since we've flown to OSH, it's a good idea to review the NOTAM prior to takeoff and store it on your iPad or in ForeFlight for easy reference.

And while we are on the subject, it's a good idea to sharpen up those spot-landing skills and tight pattern work. Oshkosh is a challenging environment for even the most skilled and proficient. Make sure you have both polished up.

Another improvement: EAA is making our lives easier with its Express Arrival. Those who registered in advance

have already received their wristbands and parking passes in the mail, which will shorten the lines entering the show. Although the deadline is already past to register, it is a great idea I hope they continue beyond 2021.

Admittedly this is weirdly satisfying to the germaphobes among us: EAA is partnering with Jani-King to sanitize and disinfect high traffic areas throughout the show grounds. While we know that COVID is predominately spread through airborne transmission in low-ventilation indoor spaces, who doesn't appreciate cleaner facilities?

Lastly, the daily airshows are chock-full of fantastic performers, including the Aeroshell Aerobatic Team, Kirby Chambliss, Rob Holland, Patty Wagstaff and the Red Bull Air Force. Even the U.S. Air Force F-16 Viper Demo Team said YES to performing daily during AirVenture.

Will you join me in the summer of YES? I have a sneaky feeling that the answer is definitely in the affirmative. See you at AirVenture! **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](mailto:editor@diannewhite.com).



The advertisement is split into two main sections. The left section features the 'airtext' logo, which consists of a blue speech bubble icon with a white face and the word 'airtext' in a bold, blue, sans-serif font. Below the logo, the text 'Email • Talk • Text' is written in a smaller, grey font. Underneath this is a stylized illustration of a grey airplane in flight. At the bottom of the left section, the website 'goairtext.com' is displayed in a large, blue, sans-serif font, with '5¢ a text' written below it in a smaller, grey font. The right section of the advertisement shows a cartoon illustration of a woman with long black hair and bangs, wearing a blue cardigan over an orange top. She is holding a black tablet and is seated in a red airplane seat. The background of the right section is a light green wall with yellow circular lights.



# Undefeatable Fatigue

by Stan Dunn



On July 26, 2002, Federal Express flight 1478 struck trees on short final to Runway 9 at Tallahassee Regional Airport in Florida. The captain, first officer and flight engineer were the only occupants. All three survived but were seriously injured. The aircraft was destroyed by the impact and ensuing fire. The accident occurred in benign weather following a botched approach in nighttime VMC. The captain had over 13,000 flight hours and a reputation as a solid pilot. The first officer had 8,000 hours and was viewed as a reliable copilot. The flight engineer had 2,600 hours and was being considered for a check airman position at FedEx. Combined 24,000 flight hours, good reputations, and yet this crew failed to notice a descent profile that shorted the target runway by 3,000 feet. One final (and conspicuous) note: The accident occurred at 0437 CDT.

The first officer was the pilot flying. The captain had initially suggested Runway 27 since it was equipped with an ILS and offered a shorter taxi to parking. Working against 27 were mild tailwinds. Following a somewhat disjointed conversation, the crew settled

on the headwind to 9 versus the ILS for 27 (Runway 9 had a PAPI but no ILS). During post-accident interviews, none of the crew recalled being low during the approach. NTSB analysis indicated that three white and one red light on the PAPI (slightly high) would have been observed when the Boeing 727 rolled onto final at 1,700 feet AGL. From this point the aircraft

“Neither skill nor experience provides an effective countermeasure to the debilitating effects of tiredness.”

began a steep descent which resulted in four red lights (substantially below glideslope) by 800 feet. The aircraft maintained the steeper than normal approach until 200 feet when it transitioned to a 500 fpm rate of descent. It continued on this profile until it struck

trees a little more than a half-mile from the end of the runway.

Eleven years later, UPS flight 1354 crashed short of Runway 18 in Birmingham, Alabama. The accident occurred at 0447 CDT following a localizer approach to Runway 18. The aircraft (an Airbus A300-600) was capable of calculating a constant rate of descent for non-precision approaches (which allows a non-precision to function like an ILS), yet a mistake in programming resulted in the computer-generated glide path being unavailable.

Once he realized the error, the captain elected to utilize the “dive-and-drive” method for the non-precision approach (where the crew selects a rapid descent prior to leveling off at MDA). The aircraft was slightly high crossing the final approach fix. The captain selected a 1,500 fpm rate of descent, which was maintained until the Enhanced Ground Proximity Warning System (EGPWS) provided an aural “sink rate” alert at 300 feet AGL. Following this, the captain adjusted the vertical speed to 600 fpm. Three and a half seconds later, the captain reported “runway in sight” (the aircraft was around 900 feet MSL at this point – 300 feet below the charted MDA). Neither



pilot commented on the non-standard approach profile. The initial impact with trees occurred 1.25 miles short of the threshold to Runway 18. Neither pilot survived.

That captain reported 8,600 hours of flight time on his most recent first-class medical. The first officer had approximately 4,700 hours of flight time. Though the captain's flying skills were described as "average to above-average" by company pilots who had flown with him, he also had a somewhat checkered training background. The first officer had a clean training record and a reputation as a solid crew-member. With better than 13,000 hours between them, the crew flew a perfectly good aircraft into the ground 8,000 feet short of the touchdown zone.

### Post-Accident Investigation

The captain of FedEx 1478 told investigators that he had not slept well the two nights before the accident trip. The family dog had deteriorating health, which interrupted his sleep both nights. He could only account for 3.5 hours of "pretty good" sleep prior to the accident flight. The first officer had not anticipated operating the accident flight. He had arrived at Memphis (the departure airport) at 2300 following what he believed to be his last flight of the day. Instead of going home, he received a message that he had been reassigned to the accident flight. He contacted crew schedulers questioning whether the assignment was legal. He was told it was and agreed to accept it, though he told NTSB investigators that he planned to object to it via a union grievance.

Since they were unable to interview the captain and first officer of UPS 1354, the NTSB primarily utilized the crew's electronic devices in order to determine their sleeping habits. The captain's "opportunity for sleep" was determined to be generally sufficient for basic rest needs. The first officer's, however, was pronouncedly inadequate. She arrived for duty two nights prior to the accident having been awake 13 hours; her duty day following arrival was scheduled for 9.5 hours. During a 14.5 hour layover following the first night of her trip,

she obtained around 4 hours of sleep. She would get a limited nap before the accident in a UPS sleep room but was clearly carrying a substantial deficit of sleep into the accident flight.

### Insidious Fatigue

In 2004 the FAA conducted a study to determine the relationship between flight test failures and enforcement actions. They found a "very low [correlation]...less than one percent." The general conclusion was that training records can be somewhat meaningless as it relates to predicting the accident record (particularly when a pilot only has a few failures). This is not the case with fatigue. Scientific research has demonstrated that fatigue results in reduced alertness, degraded response time, inaccurate responses to stimuli, the inability to prioritize tasks in a coherent manner, a reduction in leadership skills, and an overall loss of motivation. Fatigue has been shown to contribute to impulsive decisions, fixation on only one aspect of an encountered problem, and slow or non-existent reactions to emerging dangers. In other words, fatigue degrades the skills required to safely operate an aircraft. It is simply not possible to overcome its debilitating effects.

A companion study by the NTSB found that while only 1 percent of professional aircrews schedules exceeded 13 hours of duty, those schedules produced 5 percent of accidents. In nominal parlance, flying after a 13-hour workday increases the risks of an accident by 500 percent. Flying after a long day represents one of the most significant risks that pilots encounter, every bit as ominous as thunderstorms or volcanic ash. Yet, in aviation, the answer is not as simple as drawing a hard line on hours of service. Like it or not, aviation is a 24-hour business. Fatigue is simply another peril that pilots must mitigate.

Countermeasures can take a variety of forms. For short bursts of energy, coffee or naps are effective in countering the loss of alertness that insufficient sleep produces. A nap (even as short as 15 minutes) increases alertness and mental functioning for a couple hours. Coffee has a similar impact.

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Naps and caffeine are to fatigue what aspirin is to a headache – you have not cured the underlying illness; you have only reduced the symptoms. The only cure for fatigue is sleep.

There are three types of fatigue: transient, cumulative and circadian. Transient fatigue is brought on by a night of insufficient sleep (it also occurs after being awake for an excessive period of time). Cumulative fatigue occurs when insufficient sleep occurs multiple nights in a row. Circadian fatigue is also known as jet lag. It occurs when the quality of sleep is disrupted by rapidly changing sleep cycles.

Transient fatigue is easily resolved: get extra sleep. The average person requires around eight hours per night (the exact number is inversely related to age). Six hours of sleep will produce two hours of sleep deficit. If you sleep 10 hours the next night, you will be properly rested. If you get six hours of sleep five nights in a row (cumulative fatigue), your sleep deficit is 10 hours. You obviously cannot catch up on this

in one night. Two (or more) nights of excess sleep may be required to fully eliminate cumulative fatigue.

Circadian fatigue is a bit more complex. The human body is optimized for regular sleep cycles. A normal person (who is awake during the day) experiences maximum sleepiness from 0200-0600 (which is also the most effective time to be asleep). Conversely, the greatest alertness occurs between 0900-1100 (the least effective time to sleep). The body will (to some degree) adapt to different sleep cycles, but in general, it is only capable of adjusting by around an hour per day. If you change your wakeup call from 0900 to 0500, your body requires four days to produce fully restorative sleep on the new schedule.

It is little surprise to find fatigue related accidents are the bane of cargo operators. It is an industry that often operates on the backside of the geographical clock. The NTSB is quick to reference “insufficient management of off-duty sleep” in accident reports. The view of the NTSB is that pilots are responsible for maintaining a sleep pattern that will facilitate their next duty cycle, regardless of how this impacts off-duty time. This can produce difficult dynamics at home as families inevitably live on diurnal schedules (awake during the day, asleep at night). Given the extended period of time required to adapt to new sleep cycles, a pilot at home for a few days has little hope of fully adapting from family activities to the routine of the graveyard shift.

Fatigue is not the isolated province of check haulers. Passenger red-eyes are routine for eastbound flights. Likewise, mid-sequence schedule changes represent a ubiquitous theme in all forms of flying. Aviation is often more about optimizing operational needs than dodging fatigue. A 6 a.m. departure on Tuesday followed by a 10 p.m. touchdown on Thursday will inevitably involve some degree of fatigue.

Many sleeping aides are approved for pilots (primarily when used to adapt to different sleep cycles. If used to treat an underlying sleep disorder, a special issuance medical

is required). Yet most medications require the time between the last dose and flight duty to exceed “five times the half-life” of the drug (the recommended time interval between doses generally equates to the half-life. An antihistamine with instructions to “take every 12 hours,” for example, would require 60 hours between use and flight). Dietary supplements offer more flexibility, though they are not without controversy. Melatonin and tryptophan are two substances found naturally in food that are also produced as sleep aids (both as OTC and as food supplements).

The FAA lists melatonin as “generally safe to fly” (the FAA does not actually approve any drug for use by pilots; it only lists some – such as aspirin – as “generally safe to fly”). Studies have demonstrated that melatonin facilitates a more rapid adjustment to a new sleep cycle when used properly (taken immediately before going to bed). It represents an imperfect solution, but it may be an effective method to counter circadian fatigue for individuals who require a rapid shift from one sleep cycle to another. Note that some countries and certain military branches require flyers to observe a specified interval between the last dose of melatonin and operating a flight.

Fatigue is the indisputable champion. Neither skill nor experience provides an effective countermeasure to the debilitating effects of tiredness. The only way to overcome fatigue is to throw in the towel and find a bed. Resignation is the path to victory in this case. Fatigue diminishes every advantage that an aviator has: mental alertness, experience, training and ingenuity. It is an exam that you can only pass by sleeping through it. **T&T**

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

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## FLIGHT REVIEW

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# *CITATION CJ4 GEN2*

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by **Rich Pickett**

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Ten years since the first Cessna Citation CJ4 rolled off the production line, Textron Aviation has unveiled an upgrade to the venerable jet – the CJ4 Gen2. While the performance specifications of the airplane are unchanged, the company incorporated substantial improvements surrounding the cabin experience. I met up with the Textron Aviation team in Santa Fe, New Mexico (SAF), to fly one of the first CJ4 Gen2 aircraft. With flight time in all of the Citation Jet 525 series models, it was a nice opportunity to fly the largest in the line, especially over a scenic area of our country.

## Citation CJ4

While the CJ4 shares many of the same characteristics as the other 525 models, such as the diameter of the fuselage, there are some distinctive differences. The CJ4 was developed just after the Citation Mustang, and you can see some of the same design tenets in the jet, including the cabin door design and more ergonomic flight deck.

The CJ4 is 20 inches longer than the CJ3, the next largest jet in the 525 series. With a 12.5-degree sweep on the 50-foot 10-inch wings, along with 3,621 pounds of thrust generated by each of the Williams International FJ44-4A engines, the jet obtains a high-speed cruise (HSC) of 451 knots with a maximum speed of 305 KIAS/0.77 Mach. One of the many strong selling points of the CJ4 is the range. With one pilot, four passengers and full fuel, the jet can fly a maximum NBAA IFR range of 1,926 nm. Pull the throttles back slightly and you can fly slightly further. Even trading fuel for passengers will still yield a range of 1,700 nm with eight passengers – quite impressive.

The CJ4 Gen2 rolls off the production line with virtually all avionics equipment as standard. The one I flew was no exception with all of the options including CPLDC and the Collins RTA-4112 multi-scan weather radar. The RTA-4112 offers sophisticated weather and turbulence detection with an optimized view regardless of altitude or range. Coupled with long-range NEXRAD, also standard, it provides a near complete view of weather. Among the included equipment is TCAS II, which is an option on other jets. Even fully equipped, along with an interior with all of the options, this CJ4 has a full fuel payload of 1,122 pounds.

## Gen2 Upgrade

The CJ4 features a much larger cabin door than other 525 jets, and as mentioned, is similar in design to the Citation Mustang entry. It utilizes passive door seals which is just one of the system simplifications that reduces maintenance. The Gen2 also features a much-improved entry stair design. Not only are the stairs lighted, but also

feature a sturdy handrail, an additional step for easier entry, and a projected lower step floodlight that can display a design of your choice. The new entry sets the tone for the interior upgrades.

Textron Aviation offers several unique materials and finishes with the Gen2, which you immediately notice upon entering the jet. The cabinetry is impressive and has an optional AC outlet with enough power to accommodate your own coffee maker or standard coffee warming tank. And the designers didn't forget about the pilots. Pilot storage cabinets have been redesigned for easier access from the seats.

In addition to space for a coffee maker, the new galley also has a slide-out countertop to make preparation easier. The surface can be upgraded to granite from a laminate, with a small weight penalty. Owners can also choose between cabinets or side-facing seat combinations, accommodating up to two passengers, installed opposite the entry door.

When you look aft into the cabin, one of the first features you notice is the improved lighting that literally bathes the interior in light. The seats are also upgraded and very comfortable. This particular CJ4 features an interior soft goods upgrade called the Premier Collection Package, which includes detailed seat stitching and an accented overhead console. This package, at \$175,000, is a cost-effective method of combining a number of cabin upgrades.

As you venture aft, the standard externally-serviced lavatory has been improved in the Gen2, including the implementation of two Lee Aerospace CoolView skylights. While only 4 inches in diameter, they do let in additional ambient light above the externally serviced toilet while blocking 99 percent of the UV. Along with the Premier Collection Package, the optional sink with running water is installed as well.

Textron Aviation implemented a software-based cabin management system (CMS) that can control the window shades, dimmable LED lighting, Sirius/XM audio radio, and even the cabin temperature. For those passengers that





would like to stream content, there is an onboard 180GB media server. With everyone carrying a smart device and technology rapidly changing, the CMS can adapt easily to advancements without hindering operators with cabin display hardware that quickly become obsolete. Each seat also has access to USB power ports, with a single 115VAC/USB-A/USB-C outlet on each cabin sidewall as well.

### Preflight

One of the great features I've enjoyed with the Citations is the flexible baggage loading. The nose baggage, accessible by two doors, provides a flexible loading configuration for the flight crew. I've found it especially helpful when loading walkers, folding wheelchairs, or even extra garment bags. Within the nose compartment are also several sight and pressure gauges, easily accessible during the preflight. The aft baggage in the CJ4 is even larger than the CJ3 with a maximum load of 600 pounds. When you have a maximum capacity of 10 people, you can never have enough luggage space!

Single-point fueling is standard, and while other jets offer digital fuel panels at the port, one advantage of the CJ4 is no battery power is necessary to manage the fueling at a maximum flow rate of 120 gpm.

The CJ4 sports speed brake panels that offer variable deployment rather than binary operation on other 525 models. The variable deployment is very effective and results in a much smoother flight when deployed. On landing, additional spoiler panels further reduce the lift.

An additional difference with the CJ4 from other Citations is the incorporation of a closed-center hydraulic system for gear, speed brakes/lift dump and flaps. Rather than pressure increasing upon activation of a particular system (open-center) the CJ4 hydraulics are constantly held at 3,000 PSI.

The flight deck of the CJ4 is clean and well designed with excellent legroom. All of the controls and systems are within easy reach of either pilot, making single or crew operation seamless. One example is the landing gear control, intelligently located between the pilots on the panel – no more trying to reach from the opposite side. Other control functions and panels are also in easy view of the pilots. The lower tilt panels make it much easier to access controls of the dual Rockwell Collins Pro Line 21 CDU panels. The version of Pro Line 21 in the CJ4 features two MFD panels. On this aircraft it was equipped with dual FMS, installed on most of the CJ4s. An additional feature is extensive embedded electronic checklists that facilitate operation. The only way to make them better would be to manage them through buttons on the control yokes.

### Time to Fly

At 14,866 pounds, with three of us aboard, we were under the maximum takeoff weight of 17,110 pounds. Textron Aviation demonstration pilot David Bodlak guided me through the extensive and pilot-friendly electronic checklists. Starting the two Williams International FJ44-4As is simple, and after a few checks, we were ready to taxi. At Santa Fe's (KSAF) elevation of 6,348 feet and 10-degree Celsius, our takeoff distance was less than 3,400 feet.

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# Citation CJ4 Gen2 By The Numbers

Max Speed (KTAS/ALT)*	450/444/407 FL310/FL350/FL450
Fuel Flow Max Speed (PPH)	1883/1624/970 FL310/FL350/FL450
V <sub>mo</sub> /M <sub>mo</sub>	305/0.77
Range (Pilot, 4 PAX, HSC, NBAA IFR Reserves)	1,926 nm
Max Ramp Wgt	17,230 lbs
MTOW (SL, ISA)	17,110 lbs
Basic Operating Wgt***	10,280 lbs
Useful Load	6,950 lbs
Max Zero Fuel Wgt	12,500 lbs
Fuel Capacity	5,828 lbs
Payload with Max Fuel**	1,122 lbs
Max Fuel with Max Payload (2000)	4,730 lbs
Base Price	\$10,700,000
As Flown	\$11,500,000

\*Weight 16,000 lbs, ISA \*\*Based on Max Ramp Wgt, One Pilot

\*\*\*Typical Configuration, One Pilot

Acceleration was quick. With a  $V_1$  of 89 KIAS and  $V_r$  of 96, I was lifting off of Runway 20 on the ZIASE4 departure.

The handling qualities of the CJ4 are enjoyable as I comfortably hand flew the jet up to FL400, with an initial climb speed of 240 KIAS. We encountered some turbulence on the way up, which was inconsequential to our flight.

Once we reached FL400, the CJ4 accelerated quickly to cruise flight with a cabin altitude of 6,700 feet and a pressure differential of 8.8 PSID. The CJ4 has a  $V_{mo}/M_{mo}$  of 305 KIAS/0.77 Mach at high altitude, and we were flying at 436 KTAS/0.74 Mach burning 600 pounds per hour on each engine (this with an outside temperature seven degrees above ISA!).

As pilots we have the best seat in the house, and a excellent feature of the Citations are the large cockpit windows. The side cockpit windows and windshields on the CJ4 feature electric heat that effectively keep them clear throughout flight and enhance the warmth of the cockpit. Their design also virtually eliminates fogging that can occur when landing at airports with high humidity. The cockpit sound level I measured was low, measuring 78-79 dB in cruise.

After flying around New Mexico, it was time to return to base. The Collins Pro Line 21 FMS is easy to program with two Console Display Units (CDU) to enter data, which offers great flexibility especially in crew environments. After loading the VNAV descent and reducing power, I started a descent at 230 KIAS/420 KTAS (close to max speed at FL400) with a ground speed of 517 knots. With a strong tailwind and altitude to lose, it was a great opportunity to work with the speed brakes. The CJ4's variable speed brakes allow the pilot to progressively extend them with a very smooth operating lever on the center console. The first 10 percent offers a very slight but smooth increase in descent rate. Progressing past 10 percent to 50 percent is still relatively

free of vibration, then extending them to 100 percent really shows off their full potential. At 200 knots both gear and approach flaps can be deployed.

We programmed the FMS for the RNAV 20 approach outside of POAKE intersection. Our landing weight was 13,500 pounds with only 3,700 feet required for landing at a  $V_{ref}$  of 104 and  $V_{app}$  of 111. I wanted to hand fly the approach single-engine with a missed, then vector back for another approach to landing, so I limited my flap extension to just Approach. As turbine pilots know, single-engine approaches are relatively easy. It is the missed ones that require specific attention due to the asymmetric thrust. At the DA of 6,800 MSL, I initiated the single-engine missed. As expected, with an asymmetric thrust of over 3,600 pounds, it took substantial rudder pressure to keep the aircraft on the runway heading with the automatic rudder bias doing most of the work. The quick accel-

eration of the CJ4, even on one engine at high altitude, made the SE climb easy. Quickly at missed approach altitude, it was time to vector back for an approach and landing.

All of the 525 series Citations are easy to land smoothly (making the pilot look good to their passengers). The CJ4 brakes are incredibly smooth and effective, with the same nice feel as the other jets in the 525 series.

When considering a new aircraft, potential jet operators typically consider three options in this class of airplane: Citation CJ4, Embraer Phenom 300E and Pilatus PC-24. The CJ4 and Phenom 300E offer virtually identical top speeds. The PC-24 is slower by about 20 knots. Most people buy jets to go fast, so long-range cruise in the CJ4 at substantially slower speeds is only useful for specific flights. What most people want to know is, "What is the maximum payload with full fuel for the longest possible flight?" In the CJ4 I flew, you could carry slightly over 1,100 pounds. A Phenom 300E would be close to that amount, and the Pilatus PC-24 would be 900 pounds.

With proven performance, an estimated hourly operating cost of \$1,040 (plus fuel), and now upgraded interior, the Cessna Citation CJ4 Gen2 is sure to satisfy the needs of many operators. And thanks to a wide network of maintenance facilities, both Textron Aviation-owned and independent MROs, support is never far away for owners – an important consideration when selecting an aircraft. **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](mailto:rich@personalwings.com).*





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

285	CITATION V
31	CITATION VI
122	CITATION VII
329	CITATION X
38	CITATION X+
253	CITATION XLS
301	CITATION XLS+
1	DIAMOND I
32	DIAMOND IA
16	DORNIER ENVOY 3
304	ECLIPSE EA500
75	EMBRAER LEGACY 500
100	EMBRAER LEGACY 600
53	EMBRAER LEGACY 650
247	EMBRAER PHENOM 100
328	EMBRAER PHENOM 300
80	FALCON 10
22	FALCON 100
16	FALCON 200
242	FALCON 2000
27	FALCON 2000EX
34	FALCON 20C
15	FALCON 20C-5
17	FALCON 20D
1	FALCON 20D-5
10	FALCON 20E
49	FALCON 20F
75	FALCON 20F-5
197	FALCON 50
8	FALCON 50-40
118	FALCON 50EX
178	FALCON 900
24	FALCON 900C
116	FALCON 900EX
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123	GLOBAL EXPRESS
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239	GULFSTREAM G-200
14	GULFSTREAM G-300
24	GULFSTREAM G-400
313	GULFSTREAM G-450
11	GULFSTREAM G-500
602	GULFSTREAM G-550

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

32	LEARJET 40
243	LEARJET 45
225	LEARJET 45XR
92	LEARJET 55
6	LEARJET 55B
8	LEARJET 55C
307	LEARJET 60
623	PILATUS PC-12/45
149	PREMIER I
1	SABRELINER 40
7	SABRELINER 40A
2	SABRELINER 40EL
2	SABRELINER 40R
4	SABRELINER 60
5	SABRELINER 60ELXM
68	SABRELINER 65
7	SABRELINER 80
1	SABRELINER 80SC
67	WESTWIND 1
1	WESTWIND 1123
14	WESTWIND 1124
50	WESTWIND 2

### TURBOPROPS - 12,801

#### CHIEF PILOTS & OWNERS

##### COUNT AIRCRAFT

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



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184 KING AIR A200  
34 KING AIR A90  
197 KING AIR A90-1  
105 KING AIR B100  
1,038 KING AIR B200  
107 KING AIR B200C  
99 KING AIR B200GT  
5 KING AIR B200SE  
8 KING AIR B200T  
47 KING AIR B90  
302 KING AIR C90  
38 KING AIR C90-1  
186 KING AIR C90A  
378 KING AIR C90B  
76 KING AIR C90GT  
88 KING AIR C90GTI  
150 KING AIR C90GTX  
13 KING AIR C90SE  
258 KING AIR E90  
173 KING AIR F90  
28 KING AIR F90-1  
5 MERLIN 300  
13 MERLIN IIB  
8 MERLIN III  
22 MERLIN IIIA

44 MERLIN IIIB  
14 MERLIN IIIC  
3 MERLIN IV  
11 MERLIN IV-A  
101 MITSUBISHI MARQUISE  
18 MITSUBISHI MU-2F  
1 MITSUBISHI MU-2G  
15 MITSUBISHI MU-2J  
37 MITSUBISHI MU-2K  
12 MITSUBISHI MU-2L  
25 MITSUBISHI MU-2M  
24 MITSUBISHI MU-2N  
29 MITSUBISHI MU-2P  
47 MITSUBISHI SOLITAIRE  
796 PILATUS PC-12 NG  
197 PILATUS PC-12/47  
296 PIPER JETPROP  
74 PIPER M500  
92 PIPER M600  
602 PIPER MERIDIAN  
198 QUEST KODIAK 100  
2 ROCKWELL 680T TURBO  
5 ROCKWELL 680V TURBO II  
4 ROCKWELL 680W TURBO II  
4 ROCKWELL 681 HAWK  
85 SOCATA TBM-700A  
90 SOCATA TBM-700B  
381 SOCATA TBM-850  
121 SOCATA TBM-900  
38 SOCATA TBM910  
136 SOCATA TBM930  
6 STARSHIP 2000A  
50 TURBOCOMMANDER 1000  
22 TURBOCOMMANDER 690  
131 TURBOCOMMANDER 690A  
135 TURBOCOMMANDER 690B  
73 TURBOCOMMANDER 840

20 TURBOCOMMANDER 900  
19 TURBOCOMMANDER 980

### TWIN PISTON - 6,872

#### OWNERS

#### COUNT AIRCRAFT

35 BARON 56 TC  
1,566 BARON 58  
446 BARON 58P  
118 BARON 58TC  
3 BARON A56TC  
335 BARON G58  
158 BEECH DUKE B60  
150 CESSNA 340  
480 CESSNA 340A  
49 CESSNA 402B  
BUSINESS LINER  
110 CESSNA 402C  
20 CESSNA 404 TITAN  
312 CESSNA 414  
430 CESSNA 414A  
CHANCELLOR  
36 CESSNA 421  
30 CESSNA 421A  
335 CESSNA 421B  
713 CESSNA 421C  
38 CESSNA T303  
100 DIAMOND D42  
65 PIPER 600 AEROSTAR  
3 PIPER 600A AEROSTAR  
44 PIPER 601 AEROSTAR  
4 PIPER 601B AEROSTAR  
182 PIPER 601P AEROSTAR  
21 PIPER 602P AEROSTAR  
509 PIPER CHIEFTAIN  
20 PIPER MOJAVE  
280 PIPER NAVAJO  
196 PIPER SENECA

13 ROCKWELL 520  
COMMANDER  
3 ROCKWELL 560  
COMMANDER  
11 ROCKWELL 560A  
COMMANDER  
7 ROCKWELL 560E  
COMMANDER  
6 ROCKWELL 560F  
COMMANDER  
12 ROCKWELL 680 SUPER  
3 ROCKWELL 680E  
14 ROCKWELL 680F  
COMMANDER  
11 ROCKWELL 680FL  
GRAND COMMANDER  
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200 BEECH BONANZA  
435 CESSNA 182  
52 CESSNA 206  
373 CESSNA P210N  
21 CESSNA P210R  
54 CESSNA T182  
790 CIRRUS SR20  
2,875 CIRRUS SR22  
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# Aircraft Washing 101

## Tips From the Experts

by Dale Smith



No doubt you've been following our rather casual yet Pulitzer-worthy series on "adding value to your aircraft." So far, we've looked at the positive profit impacts of things like engine maintenance programs, avionics upgrades and cabin refurbishment when it comes time to sell your beloved airplane. But, none of them come cheap.

So, what if I could offer up a virtually guaranteed way to up the selling price and, in many cases, won't cost much more than a bit of elbow grease. Interested? Sure, you are. Well, that one little secret is to wash your airplane. Yep, that's it. This simple act can go a long, long way to saving you money now and making you more money later on. The question is, why don't more owners do it?

"Aircraft owners spend time and money cleaning their cars and boats, but you'd be amazed at the number

of them that don't wash the exterior of their aircraft on any regular basis," said Brian Elmer, regional sales manager at Stevens Aerospace and Defense Systems. "We see airplanes come in all the time with five- or six-year-old paint and it already looks terrible. You can tell from 20 feet away that the owner put no effort into taking care of that airplane."

(Leaving everyone who sees that airplane wondering, "If the exterior looks like that, what other maintenance items are the owner skipping on?" I'm just saying.)

"On the other side are customers we have who clean and care for their paint religiously," he added. "Even seven, eight and more years after the airplane leaves our paint shop, it still looks virtually brand new. There's real value in that level of care."

Just like with the previously mentioned car or boat, or anything that sits outside for that matter, Elmer

said that the two biggest enemies of paint are moisture/pollutants in the air and the sun.

Along with those things, Jon Kennedy, director of operations for Hillaero Modification Center, added, "Aircraft are subject to extremes in hot and cold temperature cycles within minutes. They also have the stresses from flying, turbulence, pressurization cycles, and the removal of various inspection panels," he said. "These will all damage an aircraft's paint. You have to say on top of it because it can degrade quickly."

So, what does washing your airplane have to do with staying ahead of paint damage from ongoing airframe stresses and maintenance? More than you think.

### The Benefits of a Good Scrub

The number one benefit to routinely hand-washing your airplane is the obvious removal of all the dirt,



oil, pollutants, bug guts and other particulates that find their way onto the airframe. Accomplishing that in itself is worth the time and effort.

Another benefit is that hand cleaning gives you the opportunity to do an extremely detailed inspection of the aircraft and all of its various components. Because you're going to be on top, underneath, and all around the airplane, you're going to see things on that airframe that you'll never spot during your typical pre- or post-flight inspection. You do a thorough post-flight, don't you?

"We have customers who clean their aircraft after every flight," stated Billy Brown, paint shop supervisor, Stevens Aerospace. "That doesn't mean they wash it, but they take the time to wipe it down to get all the bugs, dirt, exhaust soot and foreign materials off of the surface of the paint."

"When you do wipe it off, don't just use a dry cloth – the surface needs to be dampened with either an approved hard-surface cleaner or a 50/50 mix of denatured alcohol and water," explained Stevens Aerospace paint manager, Mike Royals. "And you really don't need to wipe down the entire airplane every time. Just doing all the exposed leading surfaces is a great start."

"It's a good way to inspect the airplane and is part of ongoing preventative maintenance," Brown added. "You get to see any new paint damage or wear that you won't usually see during the preflight."

"Flight controls are very susceptible to sudden damage and wear along the edges. The more you look, the more you will find," Elmer said. "But you have to start. And again, it's the first line of defense against the onset of corrosion on exposed surfaces. That can be a real issue in many environments."

"Coastal areas with a lot of heat, moisture and salt are highly corrosive environments to exposed metal. For example, we can tell when an aircraft has spent time in Florida," he continued. "Corrosion happens very fast, and owners in those environments need to be especially vigilant. A good way to do that is to wash or clean the aircraft more frequently. Corrosion damage is preventable if you spot it soon enough."

Okay, so you're sold on the value of cleaning/washing your airplane. Excellent. But, before you grab your mop, bucket and soap, take a minute to consider just what kind of soap and detergent you are using. There's a chance that you may be doing more harm than good.

### Bubble, Bubble, Toil, and Trouble

First off, much like cleaning a motorcycle or classic car, you should never use any kind of power or pressure washer on your airplane. That will just force water and some contaminants deeper inside areas where you really don't want them to be.

In fact, there is a growing number of professional aircraft cleaners who strongly recommend dry-washing

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your airplane. You just spray the cleaner on the paint and wipe it off with a high-quality microfiber towel. Besides eliminating added water into your aircraft's copious nooks and crannies, it's also more environmentally friendly. For any number of reasons, many airports today are eliminating the wash racks we all grew up with.

But let's say you can still wet wash your airplane. The question is, what's the right way to do it?

"The practices we recommend are hand washing routinely with a mild soap and water in the shade or hangar," said Carol Swigart, president of Hillaero Modification Center. "There are a lot of options for aircraft detergents that are safe for a properly maintained paint job."

"Remember, though, most detergents like these are concentrated and have to be properly mixed with water. Twice as much isn't always better," she added. "What you want to be careful with is using any types of off-the-shelf cleaners. Many are much too abrasive

and can actually be corrosive to aircraft metals."

"You need to do your homework and make sure what you are using is safe for your airplane," Kennedy said. "The AMM (aircraft maintenance manual) is the best place to start. They're updated periodically and have the current list of approved cleaning products for your aircraft's interior and exterior."

"If you can't safely use any cleaner on your skin, then don't ever use it on your airplane," Royals said. "Nothing caustic or acidic like the green, purple, or orange cleaners – unless they are citrus oil-based. They're not meant to clean aluminum."

"It will get down in there and cause all kinds of problems that you can't even see," he said. "Then one day you're replacing parts and sheet metal, and that's extremely expensive. If any cleaner is not on the approved AMM list, then the risk is too high. Just don't use it."

No matter what you use, just make sure you rinse all of the detergent residues off and out of any areas where they can accumulate. Even if they don't promote corrosion, their build-up will capture dirt and other materials that won't do the underlying metals any good.

Okay, now that you know what not to do regarding soaps or detergents, what about choosing the cleaning tools themselves? Again, it's mostly a matter of common sense.

As Brown explained, along with the pressure washer, you also never want to use stiff-bristled brushes or abrasive pads on the airframe. They'll cause thousands of tiny micro-scratches in the paint surface, which in the short term will look pretty bad, and in the long-run, promote moisture incursion into and under the paint.

That's an especially important point if your paint is older and is already under sun-induced distress. And another warning (no matter how old the paint) is to be extremely careful when washing around antennas, static ports, hinges, doors, corrugated metal surfaces, brightwork and most of all, the windows (more on how to clean those later on).

In fact, it's just a good idea to cover or tape off things like engine cowl inlets, cowl flaps, static ports, pitot tubes, etc., any time you are doing anything but a cursory wipe-down. AND please don't forget to remove them all when you are finished!

### Keeping that "See Yourself Shine"

Now that your pride and joy is looking its best, you're going to want to keep it that way for as long as possible. The best way to do that is to apply some kind of top coating, which had always been some type of wax – until now.

Waxing an airplane is hard work, and unfortunately, even the best of them only last a couple of months at best. That's a lot of effort for little return in my book. Today, modern chemistry is offering up some new products that look great and last a lot longer than wax.



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"New paint sealers will actually get down into the pores of the paint surface and bond with the paint, and that creates a sort of thin-film clearcoat that will form a much harder surface that will protect the paint longer," Brown said. "It'll last five or six times that of regular wax."

He explained that today you have two choices regarding these new sealants: the professionally applied ceramic coatings and the DIY types like Xzilon exterior paint protectant.

"The pure ceramic sealers cure to produce a 'diamond' hard finish. They're very good but rather expensive to put on an airplane," Brown added. "For a lot of owners, it's a lot more than they want to spend – even though it will do a great job of protecting the paint and adding years to the paint's life."

"An off-the-shelf sealer like Xzilon is relatively inexpensive for an airplane. It has ceramic-like protection properties but is easy enough to apply so an owner (or their kids) can do it,"

he said. "It's also one of those products that you can reapply to leading edges and other surfaces to provide optimum coverage."

### Let's Make This Perfectly Clear

I've saved the care and cleaning of your aircraft's clear parts for last. Any mistakes or damage here will be there for you to see for a long time. So be careful.

First off, our experts couldn't over-emphasize the importance of using only aviation-approved cleaning products. Don't just grab a bottle of whatever window cleaner and start spraying the Plexi. Many glass cleaners use ammonia, which can be harmful to the acrylics in the windows and windscreen. And if you have a heated windshield, best to just follow the manufacturer's directions. Any deviation can be detrimental to its performance and longevity.

Also, never use paper towels or shop rags on clear parts; they can easily

scratch the clear Lexan and Plexiglas. Better to use high-quality, ultra-soft microfiber towels and aviation-grade clear parts cleaners. If you want to make it really easy, DuPont's "Sontara" aircraft wipes are excellent for use on all types of aircraft surfaces. Most aviation parts suppliers carry them.

Lastly, when it comes to removing insect remains off of the windshield, don't use any strong cleaners. The correct way is to use water and a mild cleaner to slowly hydrate the remains until they become unstuck. Then clean the area with a clean microfiber cloth. **T&T**

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

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# From the Flight Deck

by Kevin R. Dingman



## Full Circle

## Returning to AirVenture Oshkosh



**W**as it a Freudian, motherly voice thing? Was there something in her tone, or was it simply the words and their profound significance at this point in the pilot's flying career? It's easy to recognize the admonishment, appreciation or admiration in the tone of someone's voice, the tone when you did something really good, bad or special. The tower controller's voice sounded as if she knew that the Duke pilot had long been absent from the unique challenges of this ATA (Airport Traffic Area) and that he would appreciate the words. And now, clear as a bell on a jam-packed frequency during the landing roll, she took the time to direct her special words at my Duke – at me. What did she say? Let's back up a bit first.

Aviation became a part of my life early on. My dad played trumpet in a dance band and the drummer was a pilot. I know that I was exactly five when I went for my first airplane ride because my mom told my younger brother that dad was taking me to school. And when he took me for a ride on that September day in 1961, school was a brand-new word. I continued on to get a private and commercial license as a civilian, instrument and multi-engine in the military and then an ATP and 737 type just before I left active duty. I flew the F-16 for 10 years and then performed as a USAF Civil Air Patrol Liaison Officer, and most of that



time I was out of GA. After selling my straight-tail C-150 early in my Air Force career and when I started to make some money at the airline, I decided to get another airplane. I looked at a Cherokee Six, 310R and a 414 but ultimately found and fell in love with a Duke in Flagstaff, Arizona. And now, returning to this iconic airport with the world's busiest tower, I was living the dream of that 5-year-old boy. Through the windscreen of the Duke, I see a strangely narrow runway laid out in front of me.

### Land on a Taxiway

After years of landing the F-16 on mostly long, wide runways, I didn't recognize until short final that I was lined up on the parallel taxiway (e.g., Captain Han Solo, KSNA, February 2017). Should I try to slide over and line up with the runway? The winds are light and I'm lined up perfectly. In that split second, I remembered the NOTAM that addressed this procedure and felt embarrassed to have forgotten. I pulled back on the yolk of the 6,500-pound Duke to begin the flare and landed on the parallel taxiway, temporarily designated as 36R for this special occasion. The birds 2,000 feet in front of me become airborne making the landing surface all mine. I lowered the nose and let it roll. This is definitely narrow. It feels like going the wrong way on a one-way street with everyone watching and pointing.

### Blurred Vision

Despite its unique challenges, I've always loved coming here. I have been to this airport many times in the distant past – but had never landed on a taxiway. I'd driven multiple times by car and motorcycle, arrived in a Seneca,



Cherokee Six, an Arrow and now the Duke. This time, with five other airplane aficionados. As we rolled out on the narrow taxiway, tower's words came over the radio and they caused my eyes to involuntarily tear up – my vision was blurred. Because it was so narrow, I kept my hands and feet on the controls and couldn't wipe my eyes. I blinked a few times to squeegee the tears in order to see the taxiway on which I'd landed. With a pubescent crack in my voice, my thank you to tower probably sounded more like a solo student than a fighter pilot. What were those singularly special words from the controller? "Duke One Zero Delta; Welcome to Oshkosh."

### Time for You to Go

Like formation flying, recovering from a spin or learning to maintain composure during an in-flight emergency, I think that it should be a requirement for all aviators to do it at least once (but like Ruffles potato chips, no one can go to Oshkosh just once). Perhaps it should be in the practical test standards or hourly experience requirements for becoming a pilot. When my airline buddies say they have never been, I lay a guilt trip on them with a faint scowl of disbelief, slowly shake my head and say, "seriously?" It works. They lower their chin, stare at the control column and say, "I know, I know. I should go." For years, you also have been meaning to go but you are mortified, petrified and stupefied ("A Beautiful Mind," 2001) by the event. You tell yourself it's a risk vs. reward type thing. It's too far, too much traffic, crowds, effort and money. You're not familiar with how to do it exactly, and besides, who has the time – and oh, BTW, my plane is too heavy to park on the grass. Here is a quick paragraph to address your angst (there is no plural for angst).

### The NOTAM

It's nice to go for three or four days but if time is (a lot of) money, going for one day is better than not going at all. If flying, plan to arrive when the field opens and leave immediately after the airshow. For hard surface parking, call the FBO Basler at (920) 236-7827 and they will email or fax you a reservation form. The big scary thing is the NOTAM. Yes, you absolutely must read the entire NOTAM – it's 32 pages. Download and print it, and keep it in the plane. But fear not. The good news is that you only need to be familiar with a few pages and the NOTAM is detailed enough that even a no-radio arrival is in place. You likely won't need the seaplane, ultralight, helicopter or formation arrival pages. You only need to know the IFR reservation system (pages 25 and 26) and the IFR Arrival/Departure procedures (pages 15 and 27 to 28), and perhaps the Turbine Arrival on page 17. As a backup, you will want to know about the Fisk Arrival (pages 4 to 12) and the VFR departure from Oshkosh. Throw in page one (which talks about planning) and a page of frequencies at the end of the NOTAM and you're finished. Unless you have an emergency, don't ask for favors, clog the frequency or ignore instructions. After reading the NOTAM, perhaps you will feel more confident and no longer mortified, petrified and stupefied.

### The Wait is Over

Oshkosh AirVenture 2021 will feature expanded warbird flying activities as they commemorate the 75th anniversary

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(plus one) since the end of WWII. Aircraft from both the European and Pacific theaters, pioneering technology that changed the course of the war, and evening movies at the Fly-In Theater devoted to WWII aviation will be featured. According to EAA, this year, there will be a large focus on risk mitigation, sanitation and disinfection protocols, as well as restrictions on crowd sizes during normally high attendance venues like exhibit hangars and forums. EAA's CEO Jack Pelton reports: "The airplane piece of it is pretty straightforward. Flying into Wittman Regional Airport under the guidance of the NOTAM is proven and safe, and camping under a wing is an ideal way to experience the event and maintain some social distancing. But there's more to AirVenture than that. There are forums, workshops, and venues like the Theater in the Woods and the Fly-In Theater. We are headed toward AirVenture Oshkosh 2021 at full throttle. Yes, it could look a little different, but it will still be aviation's greatest event and, more importantly, a family reunion – a place to gather with our friends and revel in our love of airplanes as one big EAA family. Come July 26, the wait truly will be over. The EAA family will gather in Oshkosh, and that long-overdue reunion will celebrate the beginning of "back to normal."

### We the Survivors

I missed Oshkosh a bunch of times while in the military and once when the left engine of the Duke developed a crack in the case. Other than those times, the event has

been a yearly tradition – nay, a pilgrimage. I still have an old tent pole (although the actual tent is long gone) with a camping sticker from 1972. And I could name drop famous OSH pilots and airplanes, inventors, innovators, speakers, politicians and memories of airplane smoke that smelled like aftershave from Oshkosh past, but you've all seen or read about them before. Now, we the survivors of last year's trauma, hardship, mask mania, loss and lockdowns, are returning to Oshkosh, and boy, do we need it. By the time you read this, I will be just days away from flying an airliner for the last time. And if you read this after July 24, I'm retired and attending AirVenture. This hippie private pilot turned Air Force fighter pilot, turned airline captain and Duke owner some 60 years after an airplane ride in 1961 has come full circle. Perhaps you have as well. I hope you get to hear those words from Oshkosh tower. If not, I'll say them to you. See you there. **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](mailto:dinger10d@gmail.com).



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# Cajun Crawfish and a JetPROP

by Grant Boyd



**M**ike Frugé is a lifelong opportunity seeker and problem solver. By becoming a pilot and aircraft owner, the native Louisianan further grew his international seafood logistics business that he had run for several decades.

Frugé Seafood Company is headquartered in Branch, Louisiana, with distribution activity based in Grand Prairie, Texas. The 400 or so mile drive between the two locations became a very familiar route to Mike. He drove the five-and-a-half-hour trip at least once a week over a 15-year period. As luck would have it, his company's distribution center is located near the Grand Prairie Municipal Airport (GPM). With general aviation traffic buzzing over his head as he pulled into the parking lot, Mike began to wonder whether flying himself for business would be a viable option.

As the son of an ag pilot who built his own Pitts biplane by hand (without following formal plans), Mike already had some aviation background knowledge. Fascinated by his father's aerial involvement, he initially dreamed of becoming a fighter pilot. Early in the process, though, he learned that a significant hearing loss in his left ear disqualified him from a military fixed-wing cockpit, so he decided to pursue another career path.

Now considering flying again, Mike was excited about the possibilities. As a self-starter, he jumped into training and gained a commercial certificate with an instrument rating in a relatively short time. He trained in a Piper Archer, an aircraft model he ultimately decided to acquire. The airplane cut his routine travel time in half and enabled company growth almost from the start. Family tradition laid the groundwork for





Mike's business portfolio – a mix that currently consists of Frugé Seafood Company, Frugé Aquafarms, [www.cajuncrawfish.com](http://www.cajuncrawfish.com), and J.T. Meleck Distilleries.

The familial entrepreneurial legacy began in 1896 when Mike's great uncle (J.T. Meleck) began a rice growing operation in Acadia Parish, Louisiana, on 20 acres. Using the same parcel of land, the four companies all grew under Mike and his brother Mark's crawfish farming efforts during college. The siblings saw an opportunity to utilize the rice fields (typically sitting dormant during the offseason) as a vestibule for crawfish breeding. While there were other examples of this across the region, "aquafarming" of this sort was in its infancy at the time.

As the market's demand for these commercially produced freshwater crustaceans grew, the opportunity to improve distribution became apparent. As any seafood aficionado will unapologetically say, freshness is of the utmost importance. Moving the highly perishable products is both an art and a science. Once Frugé Seafood Company mastered transporting crawfish efficiently around the country (the company ships them live overnight to customers' doorsteps), they added many different products to their offerings. Today, they market and transport a litany of seafood from alligator to wolffish.

After owning the Archer for about a year and a half, Mike decided to move into a Bonanza A36. The new-to-him aircraft was his workhorse for nearly 15 years. During this period, he averaged roughly 250 to 300 hours of flying a year, the majority of flight time between Lafayette Regional Airport (LFT) and Grand Prairie Municipal Airport (GPM). By flying for business in all types of weather and situations, Mike noted this allowed him to become confident in the Beechcraft and as a pilot in general. But, eventually, "everyone wants to go higher and faster."

His search for his next aircraft began in 2011. First, he considered

installing a turbine engine on his A36 but was told by a friend that this idea wouldn't be practical and should instead consider a Piper JetPROP. Having little knowledge of the aircraft but interested in the possibility, Mike began diligently immersing himself in researching JetPROPs. He spent nearly two years becoming familiar with the nuances of the various airframes and powerplant options. One of the most important considerations for the aircraft is, unsurprisingly, the engine. Each JetPROP has a PT6 installed the front, with the earliest conversions boasting a -21 and the latest having -35's (a -34 is also an available option).

Once satisfactorily educated on the possibilities, he awaited a good buy to come to market – a wait that stretched. "With a little over 350 Piper aircraft or so converted, and only around 10 or so available for sale at any given time – most of which weren't ones I was interested in – it can be difficult to find the perfect JetPROP to call your own," Mike explained.

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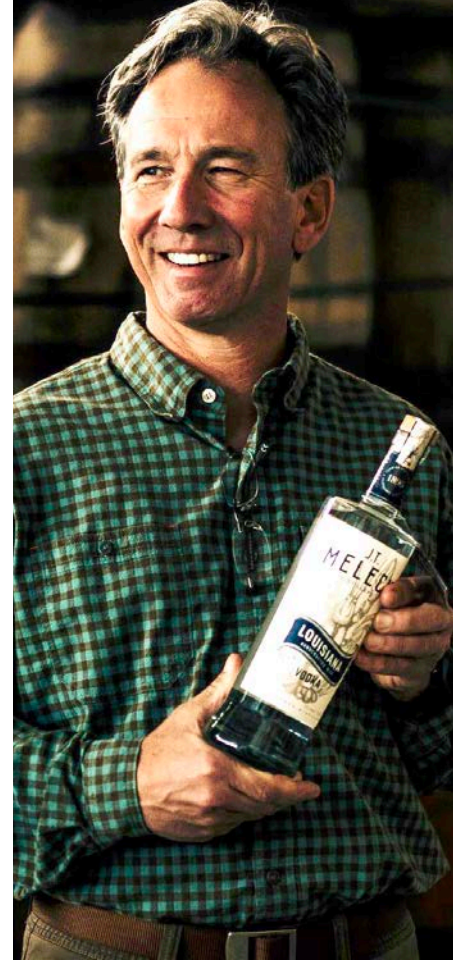
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Finally, one off-market bird came to Mike's attention by a broker in Texas that he had previously contacted. It fit the bill, and he snatched up the airplane before it ever became a public listing. The PA-46 had a 1996 airframe with a 2007 engine (-35) conversion with more than two-thirds of the time remaining until TBO. It checked all the boxes avionics and

maintenance-wise and was offered for a fair price.

Most importantly, it allowed Mike to fly higher and faster, cutting down his routine Louisiana to Texas flight time considerably. The JetPROP is roughly 100 knots faster (260 knots) and typically flown at around 27,000 MSL – a stark contrast to his previous A36's operating ceiling. Mike noted

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he primarily flies his aircraft for business purposes but occasionally uses the airplane for personal use, which has included family vacations to North Carolina, Florida, Maine and Oregon.

Another reason to fly presented itself with the addition of J.T. Meleck Distillers, his portfolio's newest company. J.T. Meleck Distillers uses the same family-grown Louisiana rice that the crawfish feed upon and turns it into vodka. The company is another way that Frugé has been able to vertically integrate their crop into new opportunities and reduce waste. When he first had the idea to distill the farm's leftover grain into spirits, he flew the JetPROP to distilleries and various trade shows across the country to learn the craft of distillation. The need to "be in more than one place at one time" became even more frequent. The company currently only sells its product within the Bayou State, but expansion plans are underway. The

company also recently started aging its first whiskey batch.

When asked about the possibility of transitioning to a new aircraft in the future (especially as his businesses continue to take him further outside of Lafayette), Mike iterated something his recurrent instructor once said to him: "You want to be in a plane that you don't have to think about."

He said this in part due to his comfort level in his JetPROP of eight years, both in terms of flying and operational costs, as well as the possible aircraft that could compete with it.

"JetPROPs truly are one of the best planes that you can get for the money, in my opinion. Sure, there are some that are a little faster and carry a little bit more, but financially are not comparable," he continued. "All-in operations cost averages about \$500 per hour, not considering random upgrades. Wet costs are cheaper per mile than the Bonanza

was and are roughly \$300 per hour (without reserves)."

As such, he does not intend to transition to another aircraft at the present moment. But, if JetPROP's were "outlawed tomorrow," the entrepreneur would consider a TBM 850 if the numbers worked out cost-wise. He feels this aircraft would be a viable turbine-class upgrade from a JetPROP as it cruises roughly 70 knots faster. "But I am comfortable with my current aircraft as it fits at least 80 percent of my missions and serves me quite well." **T&T**

**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](mailto:grantboyd2015@gmail.com).



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*-Henry Maier, President and CEO, FedEx Ground*



## Multiple Choice

Some decisions we make while flying take little thought. Like whether to put the gear down for a normal landing. Others, such as which runway to use, leave us with some options. On a recent flight, I got to ponder the runway question twice.

"Love ground, November three nine six delta mike is at Signature south with Alpha taxi," I transmitted.

"Six delta mike, Love ground, runway three one right is closed for about ten minutes for inspection. We can have you taxi across the airport for three one left or you can hold there if you like."



Dallas Love runways were under significant construction, and moving across the airport would take at least 10 minutes maneuvering around the Southwest Airlines gates and past numerous closed taxiways.

"Six delta mike, will just hold here for a few minutes," I replied. A couple of minutes later, I was cleared for takeoff from three one right. My decision turned out well.

Two hours later, it was not as easy.

"Love field information Echo, time one seven five three zulu, wind three zero zero at one one, sky conditions, few clouds at one zero thousand, temperature one two, dew point zero two, altimeter three zero one one, simultaneous visual approaches runway three one right, three one left in use, advise you have Echo."

I checked in with approach and advised I had Echo. "Three nine six delta mike, expect three one left," came the curt reply from the busy controller. I replied and asked for three one right if traffic permitted. The FBO was a one-minute taxi from the right side versus the previously described ten-minute trek from the left.

"Roger, I will try to work that out," came the welcome reply.

After intercepting the localizer for three one left, the controller advised I could have the right side. Excellent, I thought. I win again.

Handed off to tower, I was following a 737 for the right side. "Southwest 2240, ground ops is looking for a coyote reported on the grass off three one right. Would you like to sidestep to the left?" asked the tower. "Sure, that would work for us," replied the airline crew.

I began to realize that I was going to be asked the same question. I started to rationalize why I didn't want to make that 10-minute taxi through the construction across the busy airport. "Coyotes run away from loud airplanes, don't they? Maybe he ran away. Maybe he's not even there anymore," I tried to persuade myself.

"November three nine six delta mike, I can offer you the same sidestep for the left side or we can have the ops crew vacate the area and you can have three one right," offered the tower.

More multiple choices. Will I have adequate wake turbulence separation from the 737 if I sidestep behind them, I wondered. What would you do in this situation? I bought some time to think.

"Six delta mike would like to continue for three one right," I said. The tower told the ops crew to vacate the runway. Within five seconds they responded, "Tower, Ops one, we lost the coyote and are terminating the search."

I landed on three one right and never saw the coyote. And I'm still not sure I made the safest choice.

Fly safe. 

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



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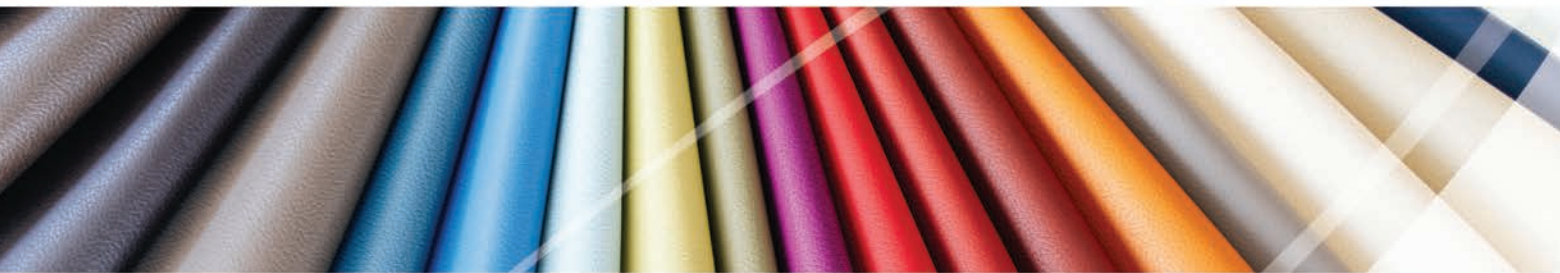
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