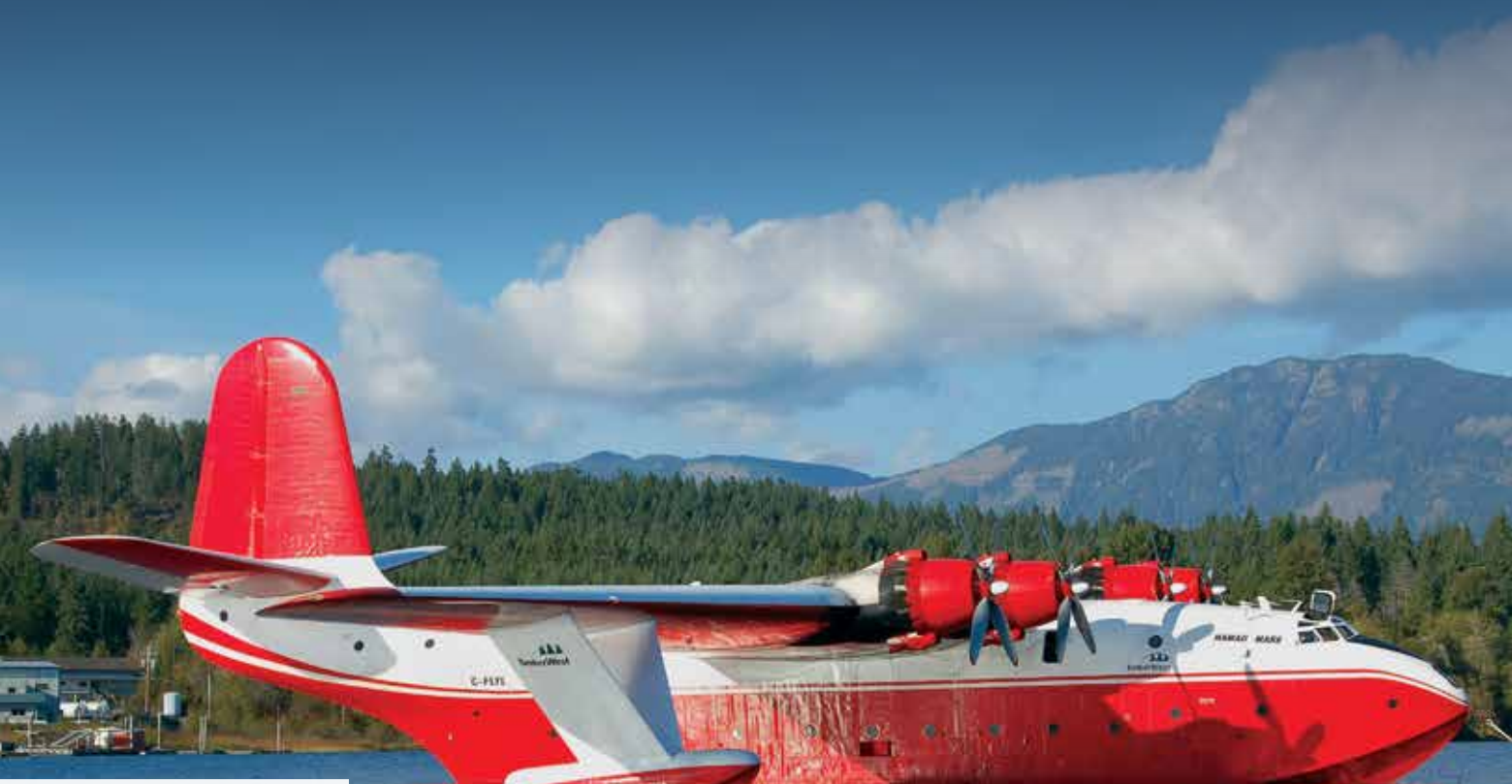
TWIN & TURBINE®

FOR THE PILOTS OF OWNER-FLOWN, CABIN-CLASS AIRCRAFT

JULY 2016 $3.95 US

VOLUME 20 NUMBER 7



Aviation's Honor System

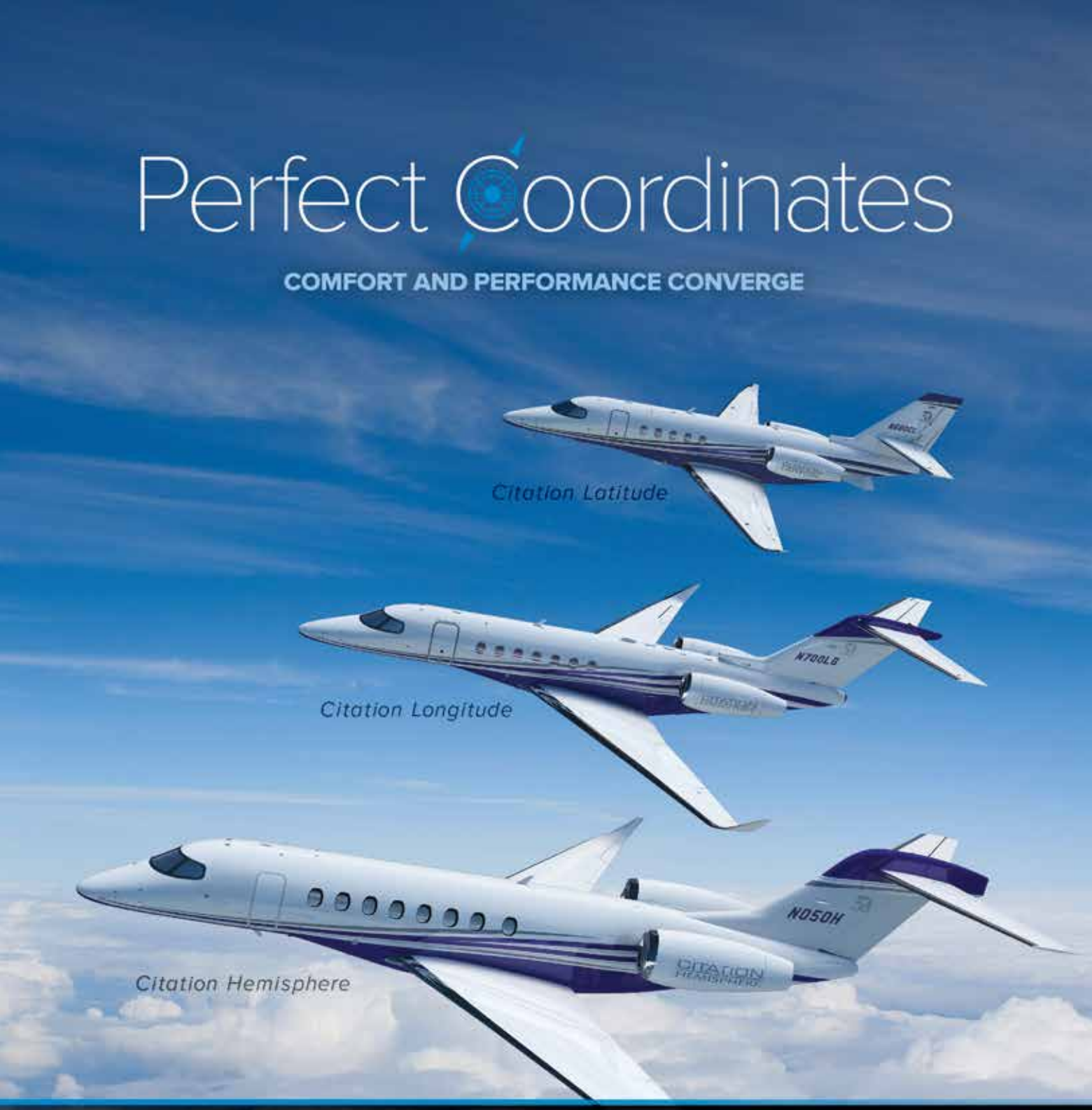
Micro-Jet Marvels

EAA AirVenture Preview

NBAA Focus

Perfect Coordinates

COMFORT AND PERFORMANCE CONVERGE



COMFORT AND PRODUCTIVITY WITH EVERY MISSION

The Citation Latitude* is recently certified and already the most accepted in its class. The Citation Longitude* is scheduled for its first flight in 2016 while the Citation Hemisphere* will follow in 2019. This new Citation* family is ready to take your business to the top. **We position your business for success.**

Range

Citation Latitude	Citation Longitude	Citation Hemisphere
2,700 nm*	3,400 nm**	4,500 nm**

*2,700 nm 4 Passengers High-Speed Cruise, 2,850 nm Long-Range Cruise
**Preliminary, subject to change

Cessna
TEXTRON AVIATION

Cessna.com | U.S. +1.844.44.TXTAV | INTERNATIONAL +1.316.517.8270

TWIN & TURBINE

EDITOR
LeRoy Cook

EDITORIAL OFFICE
2779 Aero Park Drive
Traverse City, MI 49686
Phone: (660) 679-5650
E-mail: cookleroy@juno.com

PUBLISHERS
J. Scott Lizenby
Dave Moore

PRESIDENT
Dave Moore

CFO
J. Scott Lizenby

PRODUCTION MANAGER
Mike Revard

PUBLICATIONS DIRECTOR
Jake Smith

GRAPHIC DESIGN
Michael McCatty

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

REPRINT SALES DIRECTOR
MEDIA COORDINATOR
ADVERTISING ADMINISTRATIVE ASSISTANT
Betsy Beaudoin
Phone: 1-800-773-7798
betsybeaudoin@villagepress.com

SUBSCRIBER SERVICES
Rhonda Kelly
Diane Chauvin
Jamie Wilson
Molly Costilo
P.O. Box 968
Traverse City, MI 49685
1-800-447-7367

COVER PHOTO
Photo Courtesy
AirTeam Images, Limited

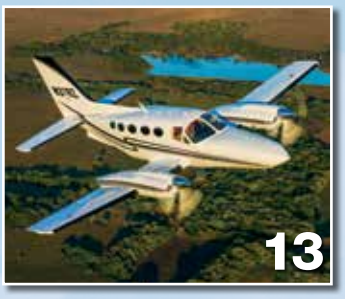
TWIN & TURBINE WEBSITE
www.twinandturbine.com

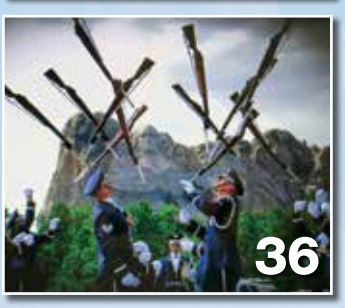
Issues of
Twin & Turbine
are available for free
www.twinandturbine.com

Contents

JULY 2016 • VOL. 20, NO. 7

FEATURES





Twin & Turbine (ISSN 1945-6514), USPS 24432 is published monthly by Village Press, Inc. with advertising offices located at 2779 Aero Park Drive, Traverse City, Michigan 49686. Telephone (231) 946-3712. Printed in the United States of America. Periodical Postage Paid at Traverse City, MI.

SUBSCRIPTIONS: *Twin & Turbine* is distributed at no charge to all registered owners of cabin-class aircraft. The mailing list is updated monthly. All others may subscribe by writing to: *Twin & Turbine,* P.O. Box 968, Traverse City, MI 49685, or by calling 1-800-447-7367. Rates for the United States and its possessions follow: one year $29.95; two years $52.50. Canadian subscriptions are $15 per year additional, including GST tax. Overseas subscriptions are $30 per year additional, U.S. funds. Single copies $3.95.

ADVERTISING: Advertising in *Twin & Turbine* does not necessarily imply endorsement. Queries, questions, and requests for media kits should be directed to the Advertising Director, *Twin & Turbine,* P.O. Box 968, Traverse City, Michigan 49685. Telephone 1-800-773-7798. Website: *www.twinandturbine.com*.

MANUSCRIPTS: *Twin & Turbine* assumes no responsibility for unsolicited manuscripts, photographs, or art work. While unsolicited submissions are welcome, it is best to query first and ask for our Writer's Guidelines. All unassigned submissions must be accompanied by return postage. Address queries and requests for Writer's Guidelines to the editor.

POSTMASTER: Send address changes and inquiries to Twin & Turbine, Village Press, Inc., P.O. Box 968, Traverse City, MI 49685.

To Keep A Fire Going

One of the tasks integral to being an outdoors person is fire-building. In my youth, I learned to carry matches, and even tinder material, if I was going to spend extended periods in the great out of doors. And yet, getting a fire started was often easy; I found that keeping it going could be the greater task.

Feeding a fire is an art; out on the trail, the lady I married is better at it than I, presumably because she has superior nurturing skills. Fires are living things, needing some support and care while young, and sound direction to keep them under control as they mature. That's a bit like encouraging dalliances with passing interests

Introducing people to aviation, like striking a match, is the easy part. Keeping the flame going requires fuel for the fire, and maybe a little luck. Flying lessons aren't fuel. A rigid, canned curriculum can even put a damper on the enthusiasm needed to sustain growth. Every so often, young pilots need a shot of encouragement, aside from the drudgery of academics. My old instructor knew this; now and then, he would load up three students in a four-seat plane and haul us 40 miles to a new-to-us airport, stretching our wings beyond the practice area. The memories made kept us going, when the flame tended to flicker.

Airshows, as gatherings of aviation enthusiasts, are fuel for the fire of sustained aviation. When we go to AirVenture, or an AOPA fly-in, or a type club get-together, we rub up against the incendiary chemistry of infatuation. We are reminded of why we bother with all the off-putting expense, effort and bureaucratic stupidity. Flight is unique in the gifts it brings, and every so often we look out at the vista from our cockpit and think, "this is worth it all." Earthbound mortals don't understand. Associating with like-minded folk is key to sustaining the fire.

Bringing excitement to other persons is a responsibility of those of us who've been flying for a while. We may be jaded, but down under the covering ashes smolders an ember that needs to be passed along. We can be the fire-giver, by allowing someone to ride in an empty seat, or handle the controls of our high-performance machine, or just walk up and look inside. As I'm wont to say – given my senior status – these beginning pilots are the ones who will pick us up at the retirement home someday and take us flying. If we want that experience, we need to bring along a new generation of pilots.

At Oshkosh this year, an expanded Job Fair is part of the event. I would imagine only a tiny percentage of AirVenture attendees are looking for work, but we are nearing a critical stage in sustaining the infrastructure of aviation. We badly need new pilots, mechanics and FBO managers to keep our industry going. Without a draft of oxygen to fire them up, the flames might die down.

LeRoy Cook

KING AIR 200 & 250

14,000 POUNDS

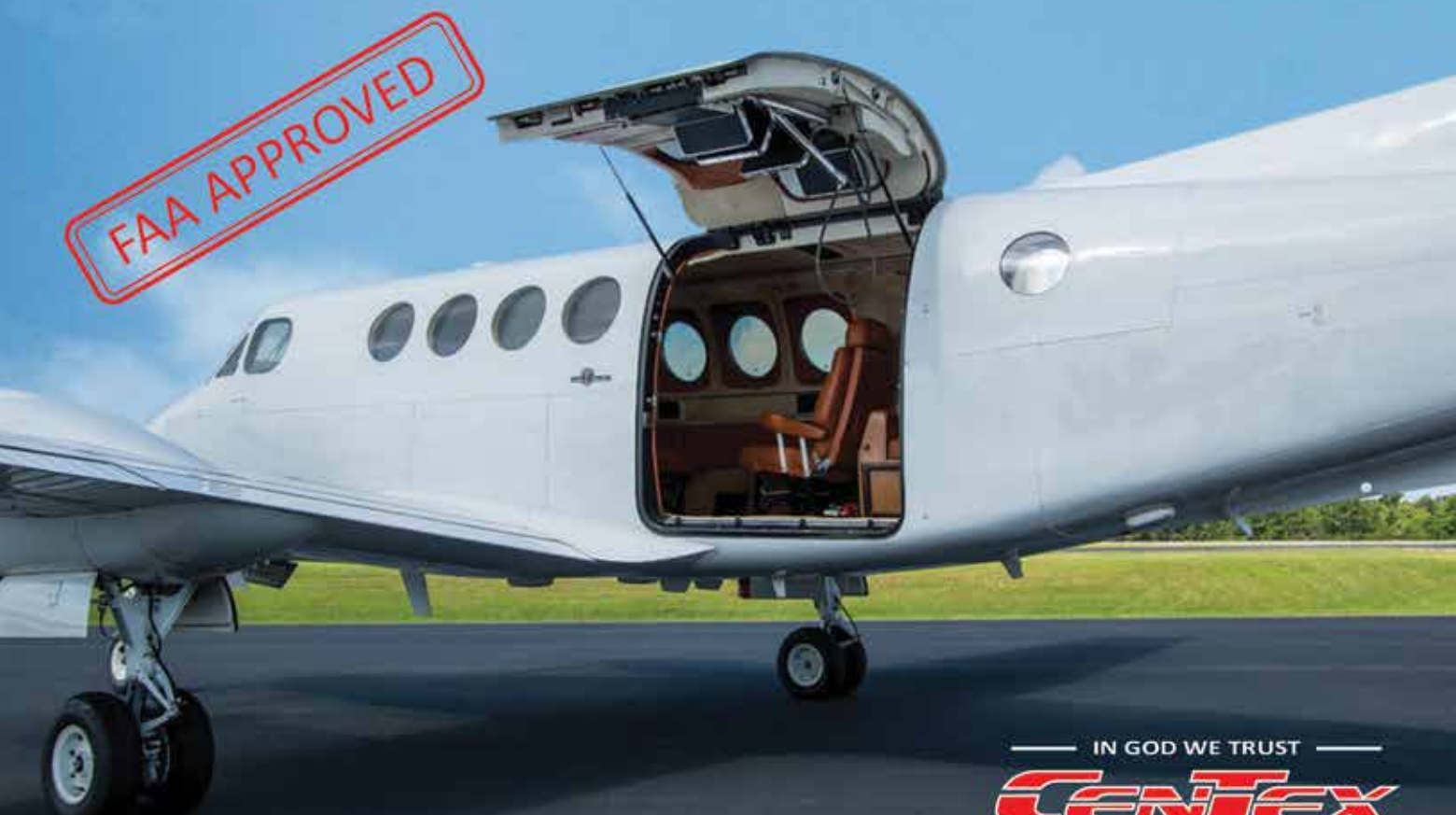
MAX TAKEOFF WEIGHT

HALO 275

CENTEX AEROSPACE GWI STC SERIES

HIGH FLOTATION LANDING GEAR REQUIRED
13,500 LB MAX LANDING WEIGHT
11,500 LB MAX ZERO FUEL WEIGHT

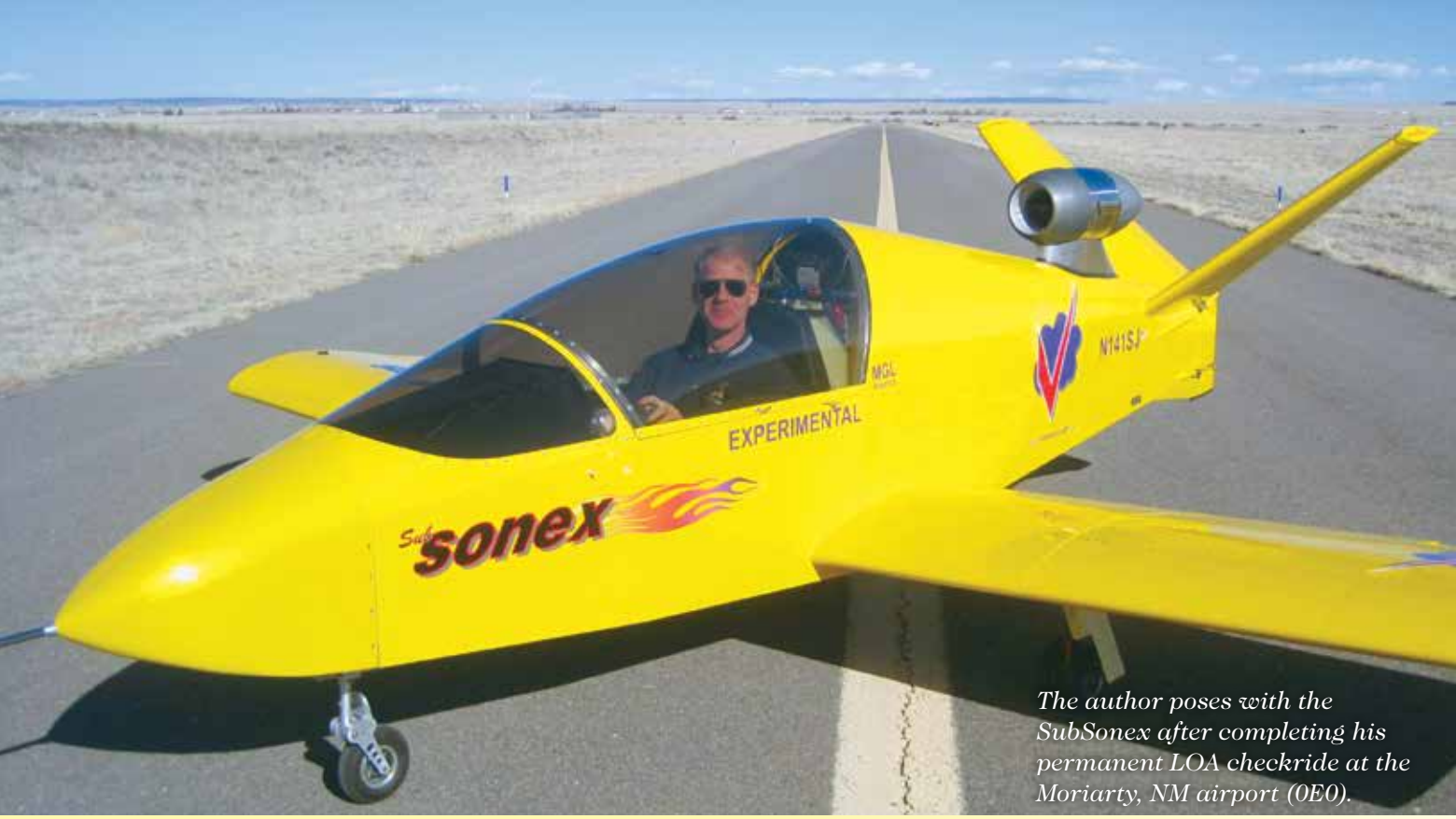
(INCREASED MZFW YEAR MODEL 1993 & AFTER)



IN GOD WE TRUST

CENTEX AEROSPACE INCORPORATED

7925 Karl May Drive, Waco,TX 76708 ● 254-752-4290 ● www.centex.aero

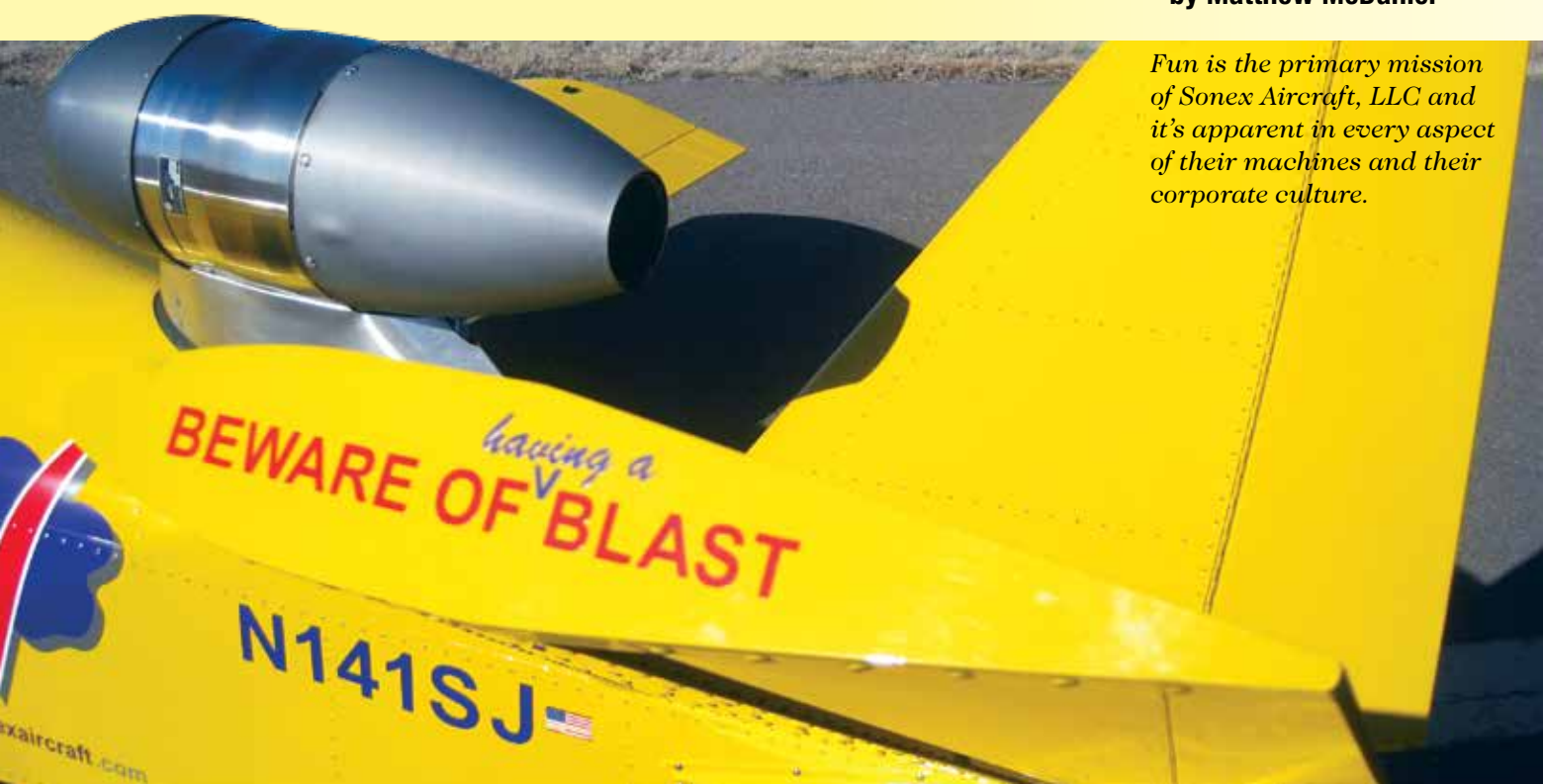


The author poses with the SubSonex after completing his permanent LOA checkride at the Moriarty, NM airport (0E0).

Microjet Fu

Flying the SubSone

by Matthew McDaniel



Fun is the primary mission of Sonex Aircraft, LLC and it's apparent in every aspect of their machines and their corporate culture.

The altimeter reads 9,500 MSL, but I'm only 3,000 feet or so above New Mexico's high-desert terrain. If I crane my head over my shoulders, I can see the tips of my aircraft's ruddervators. Yet, I'm still required to do clearing turns before beginning my maneuvers, so I do. I'm about halfway through my Permanent Letter of Authorization (LOA) checkride in the SubSonex microjet, and while I'm alone in the solitary cockpit, I'm still being monitored. One video camera records my view inside and outside the cockpit, including the instrument panel and controls, while another uses a wide-angle lens to capture the entire profile of the diminutive JSX-2, as seen from the right wingtip. On the ground, the DPE monitors my radio calls and waits abeam the runway's touchdown zone to assess my ability to land the aircraft precisely.

un

x, With a Bonus!

Microsteps To Microjets

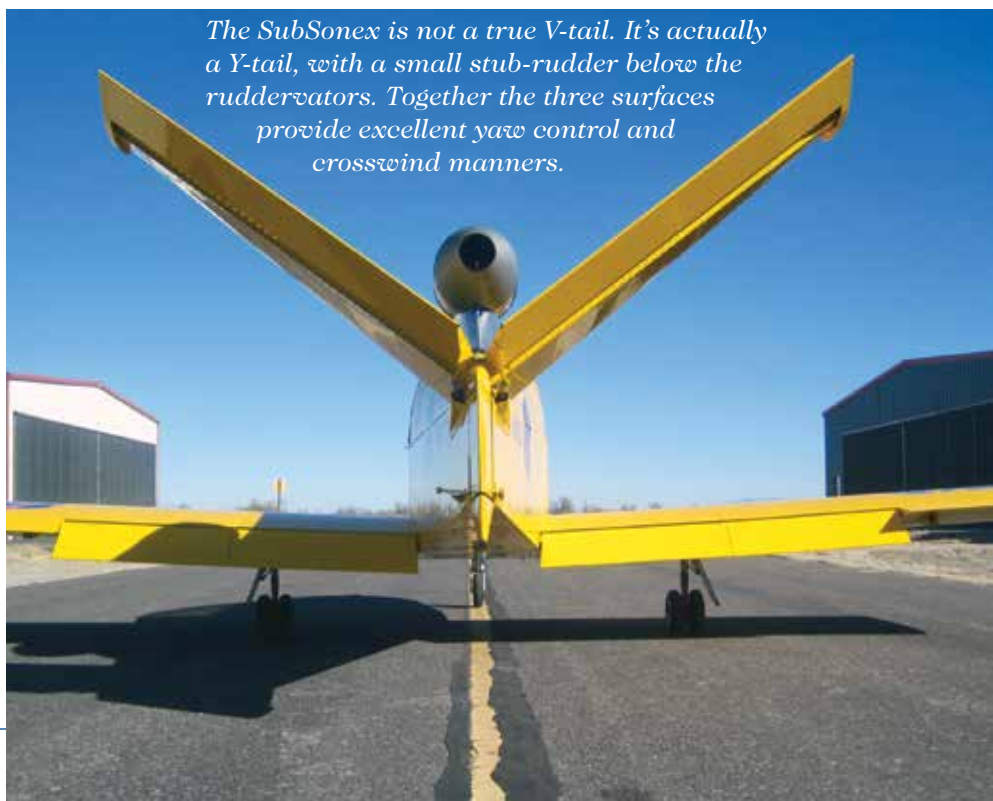
Tiny jets have been around for decades. Until recently, however, flying examples have been essentially limited to novelty airshow acts and one-off aircraft that were originally designed for piston-power. Their jet engines were mostly converted Auxiliary Power Units (APU's) or up-scaled RC-model engines. While the former suffered from poor power-to-weight ratio and high fuel consumption, the latter lacked reliability and operational convenience.

Then, in 2008, a Czech company with decades of experience building military-grade APU's introduced something different, something game-changing. The PBS TJ-100 turbojet engine was a modern, clean-sheet design, with exceptional thrust-to-weight ratio and fuel economy. Unlike earlier microjet engines, it incorporated computerized digital control, an integrated starter/generator, recirculating lubrication, and spark ignition. People noticed. Soon, the TJ-100 became very desirable for small manned aircraft and drones. Previously-built microjets, struggling with engine reliability for years, began to convert to PBS engines. Other applications that had been waiting for just such an engine began to move from imagination into reality.

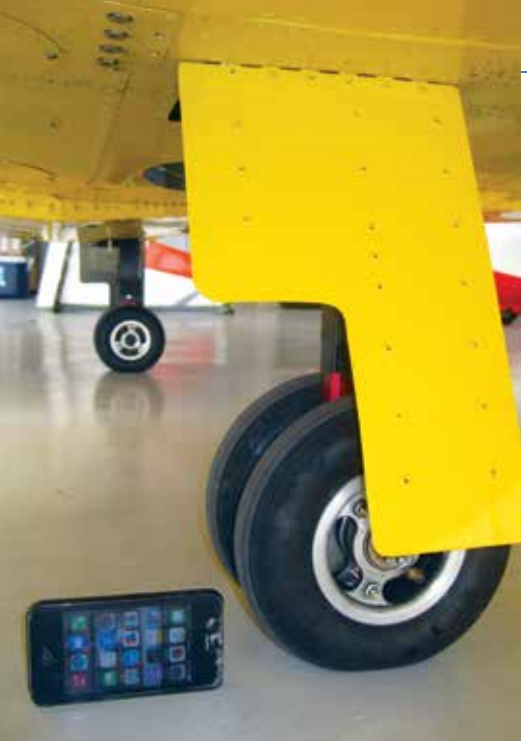
Jet Gliders: An Oxymoron Or Soul Mates

An early adopter, Bob Carlton of Desert Aerospace, engineered the installation of a TJ-100 onto the top of his Salto aerobatic glider. He'd been performing airshows in sailplanes for many years and had previously installed retractable RC-jet engines, attempting to eliminate towplanes. That proved only marginally successful. But, when he burst onto the airshow scene in May, 2008 with his self-launching Super Salto Jet-Sailplane act, he knew he'd finally found the right engine. What he didn't know is that it would be so successful he'd go on to convert a two-seat motorglider (a Comp-Test TST-14 Bonus) from piston power to a retractable TJ-100 engine. The conversion created a self-launching training glider that didn't suffer from the anemic climb performance plaguing nearly all self-launching gliders (especially at the high density altitudes common at many popular gliderports). With the cooperation of both PBS and Comp-Test, the engine installation included computer components and software developed to make it as pilot-error resistant as possible. For example, safeguards ensure the engine cannot be retracted/stowed until the full shut-down sequence is complete, including a two-minute cool-down, even if the pylon switch is selected to DOWN with the engine running.

The newly-christened TST-14J BonusJet motor glider has become



The SubSonex is not a true V-tail. It's actually a Y-tail, with a small stub-rudder below the ruddervators. Together the three surfaces provide excellent yaw control and crosswind manners.



For size perspective, the author placed his iPhone4® next to the SubSonex's main gear. Each tire is inflated to 75-psi and is about the size of a breakfast waffle. Though short-stroked, the struts provide sufficient shock adsorption for landing.

DATA CHART – All Speeds in IAS		
	Comp-Test TST-14J BonusJet	**Sonex JSX-2 SubSonex**
Engine	PBS TJ-100 Turbojet, 247 lbs. Takeoff Thrust, Standard Exhaust Engine Weight: 44 lbs. including operating fluids Engine Thrust-to-Weight Ratio: 5.61:1	PBS TJ-100 Turbojet, 247 lbs. Takeoff Thrust, Bifurcated Exhaust Engine Weight: 44 lbs. including operating fluids Engine Thrust-to-Weight Ratio: 5.61:1
Wingspan	55.8 feet	18 feet
Length	27.1 feet	16 feet, 6 inches
Height	3.9 feet	5 feet, 1 inches
Wing Area	130.2 ft.²	60 ft.²
Max Gross Weight	1,234 lbs.	1,000 lbs. (Utility) 900 lbs. (Aerobatic)
Useful Load	453 lbs.	~500 lbs.
Wing Loading (1g)	9.48 lbs./ft.²	16.67 lbs./ft.² (Utility) 15 lbs./ft.² (Aerobatic)
Aircraft Thrust-to-Weight Ratio (Takeoff Thrust @ MGW)	1:4.99	1:4.05 (Utility) 1:3.64 (Aerobatic)
Fuel Capacity (usable)	24.0 gal.	39.5 gal.
Fuel Burn	30-32 gph @ Max Takeoff Thrust 15-16 gph @ Max Cruise Thrust	30-32 gph @ Max Takeoff Thrust 15-16 gph @ Max Cruise Thrust
Brakes	Berringer disc brake on single main wheel gear	Dual-disc brakes on each main gear
Landing Gear	Single main wheel, nose wheel for normal loaded configuration, tail wheel for resting condition (unloaded).	Retractable Tricycle: Dual-tire mains, single-tire nose
Cockpit Flight Controls	Dual center control sticks, left hand thrust & spoiler levers	Right hand side-stick, left hand thrust & flap levers
Minimum Controllable Airspeed	45-50 kts.	~60-70 mph (depending on configuration)
Stall Speeds	38 kts.	~56 (Vso), ~65 (Vs) mph
Maneuvering Speed (Va)	81 kts. @MGW	157 mph @MGW
Max Gear Speeds (Vlo & Vle)	N/A	125 mph
Max Flaps Speed (Vfe)	No Flaps. Spoilers may be deployed up to Vne (111 kts.)	125 mph
Cruise Climb Speed	60-65 kts.	150 mph
Cruise Speed	50-60 kts. (thermalling) 57 kts. (best glide speed) 46 kts. (minimum sink speed)	200-250 mph based on altitude (Typically 225 mph at 14,000')
Never Exceed Speed (Vne)	111 kts.	287 mph (250 Kts) Mach 0.386 (@ 10,000')
Final Approach (Vref)-Full Flaps	60-65 kts. (w/ spoilers extended)	85-90 mph
Takeoff Distance (@ MGW)	~500' @ S.L.	~1,000' @ S.L.
Landing Distance (@ MGW)	~1,000' @ S.L.	~1,500' @S.L.

the go-to aircraft for TJ-100 dual instruction. In the process, it has helped create a whole new kind of jet pilot; the jet-glider pilot. Having a glider rating (or any glider experience at all) before flying the BonusJet is not necessary. Takeoffs are relatively conventional and are quick enough to prevent sloppy piloting from developing into real control issues. You're airborne by 50 KIAS and climbing at a very conventional-feeling pitch attitude and vertical speed. Like all gliders, the TST-14 is a rudder-loving aircraft. Pilots quickly learn the meaning of adverse-yaw, if they insist on leading turns with aileron rather than rudder. The yaw-string on each canopy can resemble a windshield wiper as pilots comically wallow around the yaw axis, getting the feel for when to use rudder and how much. Yet, the BonusJet has overall docile handling, in both jet-powered and powerless soaring modes.

Intentionally shutting down your only jet engine in flight feels strange, but the fun is seeing it retract into the fuselage via the rearview mirror, followed by the serene silence of soaring flight (minus the fear of "landing out", should lift prove elusive). The TJ-100 can be extended, started, and warmed-up in less than two minutes. At best-glide speed, the TST-14 loses less than 300-feet of altitude in two minutes!

The TST-14 BonusJet glider is currently the go-to aircraft for transition training into the SubSonex. Along with their engine commonality, the landing picture on both aircraft is nearly identical.

Back at the airport, the TST-14J does things foreign to traditional glider pilots, such as go-arounds and touch-and-goes! It is necessary to practice landing with power, as the TJ-100's 36 lbs. of residual idle thrust discourage landing in a 1,200-lb. aircraft with 56 feet of wingspan, although spoilers address that issue adequately. If desired, power-off landings are an option (with engine stowed or extended). Either way, flying the TST-14 will make you a better pilot, forcing you to use good crosswind technique and manage your energy state, improving your traditional twin-and-turbine flying.

Those that come into the BonusJet course with an existing Glider Rating can opt for a checkride to receive a permanent Letter of Authorization (LOA) for the BonusJet. The LOA is essentially the same as a jet-aircraft Type Rating, in that it appears on your pilot Certificate by aircraft type. It's unlikely you'll ever earn a "Type Rating/LOA" any cheaper or quicker than in the BonusJet. In fact, if you already operate a small jet, a checkride in the BonusJet can satisfy your annual FAR 61.58 requirement, at a fraction of the cost of doing it in your Citation or Phenom!

When A Dual Checkout Isn't An Option

With the PBS TJ-100's 247 lbs. of thrust propelling the project, Sonex Aircraft moved its SubSonex single-seat microjet design from the prototype stage (as the JSX-1) into a production configuration (the JSX-2), then onto the airshow circuit (flown by Bob Carlton) and into the hands of customers. As of this writing, Sonex had two factory-demonstrator JSX-2's flying; Carlton's airshow steed (Serial #001) based in Moriarty, NM, and Serial #002, based at the Sonex factory in Oshkosh, WI. The first customer-assembled JSX-2 SubSonex (#003) has been completed and has begun its flight test program, while at least a half-dozen more are in various stages of construction.

So, how does one go about learning to pilot a jet that requires FAA authorization to fly, but doesn't have an instructor's seat or simulator? It's not as tough or scary as one might imagine. While many builders will elect to hire

The author (center) poses with retired ATC Specialist and Regional Airline Captain and current BonusJet instructor, Billy Hill (right), and retired FAA Inspector and current BonusJet/SubSonex DPE, Bob O'Haver (left), after his TST-14 BonusJet permanent LOA checkride.

an appropriately-rated pilot to flight test their SubSonex, simply to protect their investment, transitioning into the SubSonex is enjoyable, educational, and relatively stress-free, especially for pilots accustomed to operating complex/high-performance aircraft.

First, complete Sonex's T-Flight Training Program in the two-seat Sonex Sport Trainer, to get the feel for the flight controls and sample the airfoil characteristics. Second, log some dual instruction in a two-seat TJ-100 powered aircraft, to experience the engine operating principles and techniques. Currently, the best option is Bob Carlton's TST-14 BonusJet glider course in NM, although other options may become available in time.

After a flight with a DPE in the engine training aircraft (a full-blown LOA checkride is an option, but is not required), you can receive a temporary (30-day) LOA to fly your SubSonex and practice for your permanent LOA checkride. Thereafter, you'll be off on a quasi fighter-pilot experience that will have you grinning from ear to ear.

Pilot-in-Command: Logging Microjet Time

As sole occupant and, by default, sole manipulator of the controls, you'll be logging microjet PIC time even before becoming officially rated in the SubSonex. While I had thousands of turbine hours going in, the BonusJet and JSX-2 were the first single-engine jets I'd ever flown. Even so, no real surprises were encountered. In fact, the whole process was low-key, relatively stress-free, and great fun.

The JSX-2 cockpit is laid out in a logical, ergonomic fashion that meshes well with its relatively simple operation. All controls fall readily to hand and the large combination Primary Flight Display (PFD) and Multifunction Display (MFD) will please pilots accustomed to advanced avionics and instrumentation. The controls are light and responsive, which may take a few minutes of adjustment if all your recent experience is in cabin-class twin/turbine aircraft. Fortunately, the side stick is controlled with just the wrist, which helps limit any over-controlling tendency. While ailerons become heavier as airspeed increases, in all fairness that only becomes noticeable within the SubSonex's top-end speed range (200-250 KIAS) and even then the forces remain lighter than any cabin-class aircraft I've flown.

Standard maneuvers, such as steep turns, slow flight, and various types of stalls, offer no significant surprises. Even though the JSX-2 is well-mannered in slow flight, the pilot must be proactive when behind the power curve, recalling that a jet engine's available thrust doesn't change in proportion to its operating speed. For example, reducing RPM just 6%, from max climb (98%) to max cruise (92%), results in a 25% drop in available thrust.

MAKE YOUR AIRPLANE FASTER FOR LESS THAN YOU'D IMAGINE.

READY. SET. GOGO.

Email Text Voice Internet Cockpit apps

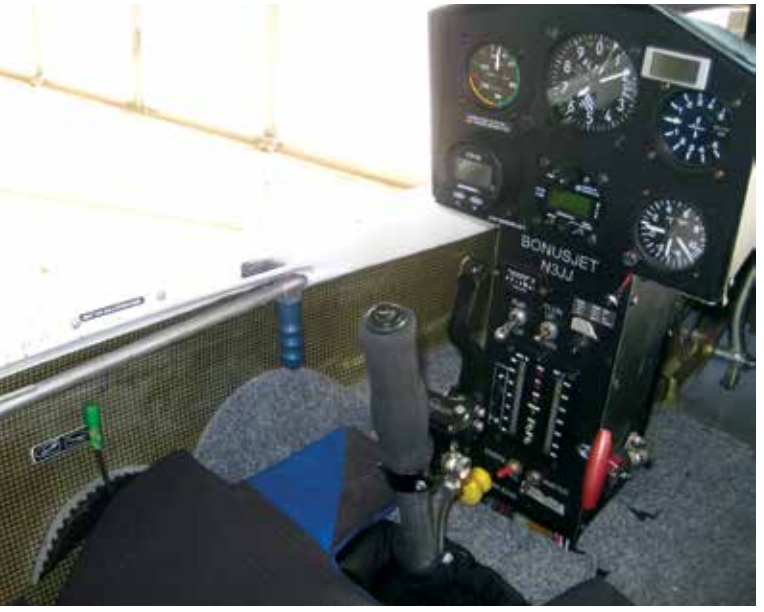
Adding in-flight connectivity to your turboprop or light jet lets both you and your passengers fire up your devices and apps—including cockpit apps—and get things done in flight. That makes you faster. And with systems starting at just $35,000*, plus Pay As You Go data plans, and even financing, it's all a lot more affordable than you'd imagine.

Find out more: business.gogoair.com/connectedskies

baconnect@gogoair.com | +1 303.301.3271

*Does not include installation or certification.

gogo BUSINESS AVIATION



The TST-14J BonusJet panel. The lower console is dedicated to the PBS engine gauges and extension/retraction control. On the upper panel, the fuel gauge and voltmeter were exchanged for units appropriate to the jet engine. The left sidewall houses the thrust lever (black), trim lever (green), and spoiler lever (blue). The hand brake lever on the control stick activates the powerful Berringer disc brake on the main landing gear.

Stalls offer plenty of aerodynamic warning, with no pronounced tendency to drop a wing (even in turning stalls), and yaw control remains excellent.

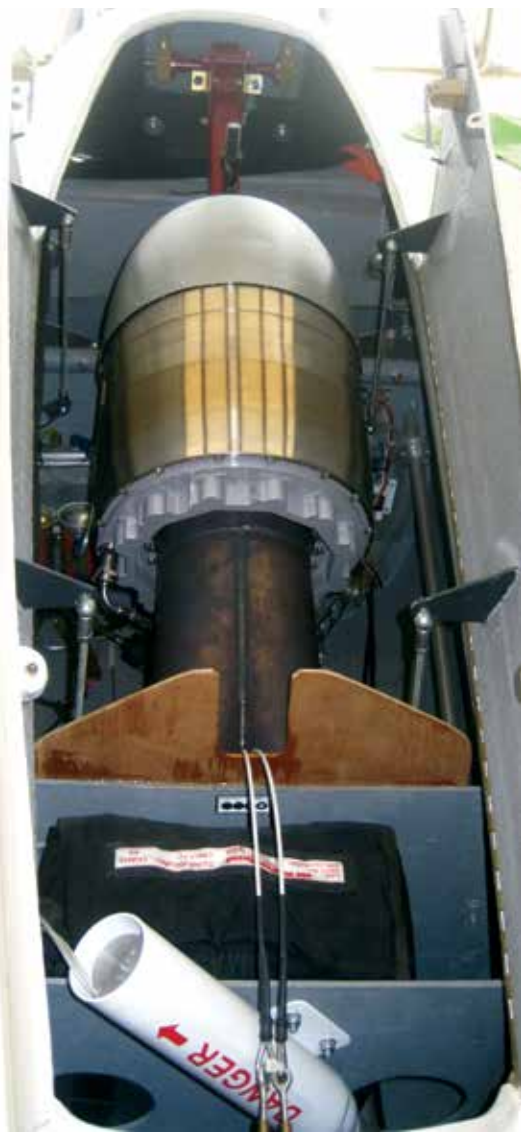
One must account for the turbojet's delayed response time in its lower power range, and the pitch-change induced by the high thrust line during large power changes. Both characteristics are common to the BonusJet trainer as well, and are easily managed with normal anticipation. Otherwise, the SubSonex flies like most any other aircraft in its weight category, with a similar wing loading.

The landing is where the SubSonex differs most for the cabin-class pilot. The TJ-100's residual idle thrust must be considered. With an aerodynamically clean airframe and no windmilling propeller drag, it's necessary to slow the JSX-2 to near final approach speed before leaving pattern altitude (lowering the gear early in the downwind leg helps). Otherwise, the slick little bird accelerates during descent to landing, with little way to mitigate that. The plain flaps effectively lower stall speed, but without significant drag increase (especially at their intermediate settings). While slipping is permitted and effective, it's not an ideal technique due to the indicated airspeed error it can induce (and, I suspect prolonged slips could induce engine airflow problems due to the small intake size). Better to slow early and maintain speed while descending, via flap and power management. Cabin-class pilots will inevitably flare high, as they aren't used to sitting a foot above the runway. The BonusJet training correlates directly to the SubSonex, as both aircraft offer nearly identical landing pictures. With proper flare height and speed stable at 85-90 mph on final approach, landings quickly become predictable and consistent in the SubSonex.

The checkride for the permanent SubSonex LOA is about as straight-forward as any checkride. Because the JSX-2 is intended to be a VFR fun machine, no instrument maneuvers are required. An aborted takeoff must be initiated around 50% of takeoff speed (about 50 mph). A balked landing (go-around) is required below 100-feet AGL, after crossing the threshold, to ensure you understand the delay associated with jet engine spool up and the pitching moments involved with large power changes. Climbing at 150 mph, you'll reach maneuvering altitude in a couple of minutes and be ready for clearing turns, steep turns, slow flight, and a stall series. All too soon, it's back to the airport for the balked landing, a no-flap landing (probably a touch-and-go), and a full-stop landing within a prearranged portion of the touchdown zone. The no-flap approach is the most difficult. Without flaps to help prevent acceleration, it's critical to plan to remain on-speed. If you do, the longer landing float is manageable and you'll be rewarded with a roll-it-on landing.

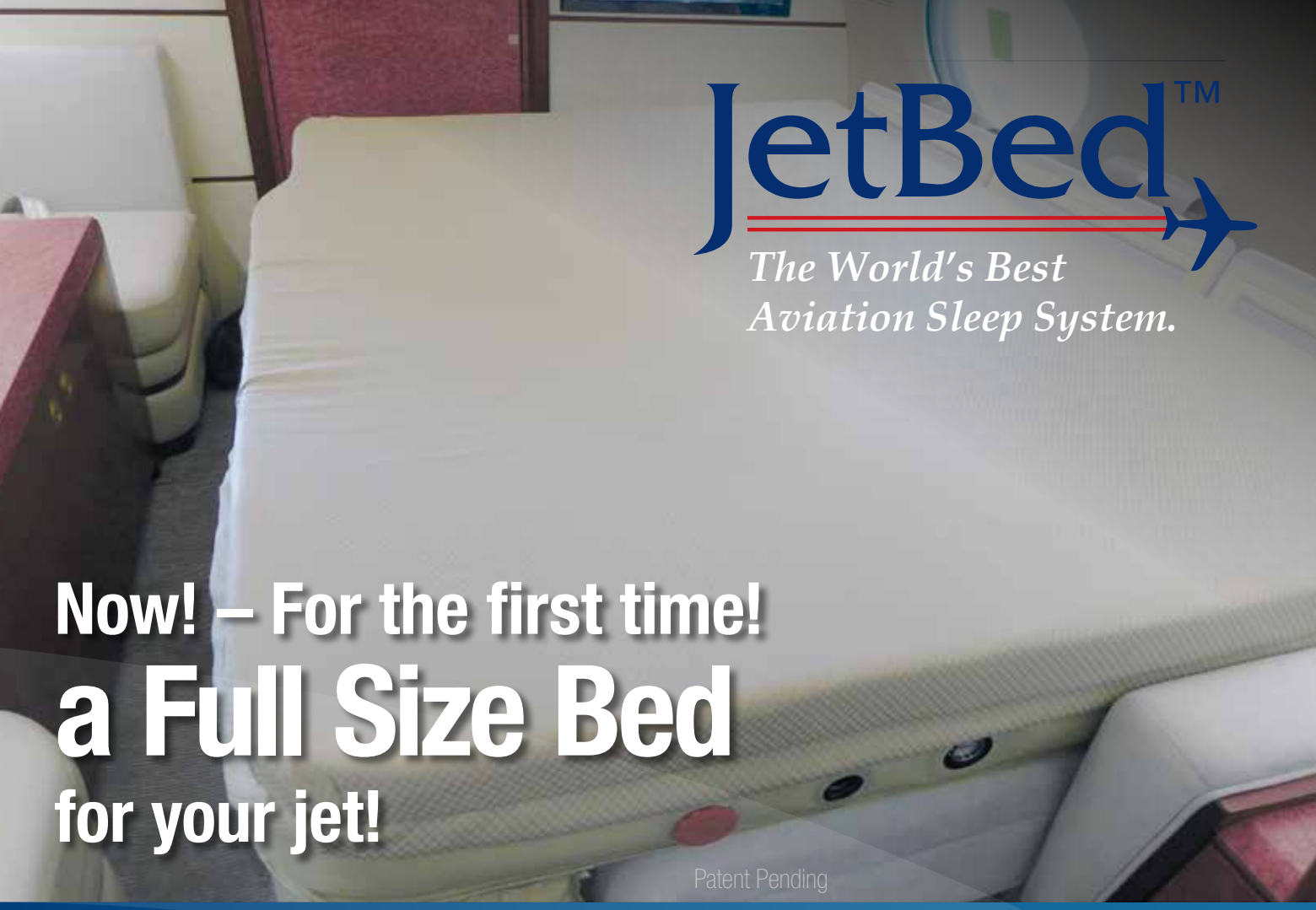
As of this writing, eight pilots have added a permanent LOA of "SubSonx" to their certificate (the maximum of seven-characters for an aircraft identifier required the elimination of the 'e' as the official FAA designation). Earning the "SubSonx" LOA allows pilots to act as PIC in any subsequent models deemed a "common type" by the FAA, should evolutionary changes ever lead to a JSX-3 or JSX-4 being introduced.

Want the thrill of flying your own jet, the unadulterated fun of streaking to altitude in a nearly vibrationless airframe, the achievement of earning a jet rating for your pilot certificate, and the pseudo fighter-pilot experience, all while avoiding cabin-class prices? The SubSonex can provide all that, and then some! Plus, with its +6/-3 G airframe strength and crisp control response, the SubSonex offers another piloting option that you won't have in your cabin-class machine: Aerobatics! Regardless of your flight profile, you'll be hard-pressed to wipe the smile off your face at the end of each SubSonex flight. T&T



The fully encloseable engine bay of the BonusJet motor glider houses both the retracted PBS TJ-100 engine (forward) and the BRS ballistic parachute recovery system (aft).

Matthew McDaniel is a Master & Gold Seal CFII, ATP, MEI, AGI, & IGI and Platinum CSIP. In 25 years of flying, he has logged nearly 16,000 hours total, over 5,500 hours of instruction-given, and over 5,000 hours in all models of the Cirrus. As owner of Progressive Aviation Services, LLC (www.progaviation.com), he has specialized in Technically Advanced Aircraft and Glass Cockpit instruction since 2001. Currently, he also flies the Airbus A-320 series for an international airline, holds 8 turbine aircraft type ratings, and has flown over 80 aircraft types. Matt is one of only 25 instructors in the world to have earned the Master CFI designation for 7 consecutive two-year terms. He can be reached at: matt@progaviation.com or 414-339-4990.



JetBed™

The World's Best Aviation Sleep System.

Now! – For the first time!

a Full Size Bed

for your jet!

Patent Pending

Current JetBed Availability

Bombardier
C300, C350, C600 Series, Conference Group, Learjet 40 Series, Learjet 60, Global Express (5000, 6000, 7000, 8000)

Cessna
CJ, CJ1, CJ1+, CJ2, CJ2+, CJ3, CJ4, XL, XLS & XLS+, Ultra, Encore, Encore+, Citation X, Citation Sovereign, Citation Mustang

Dassault
F2000, F900, F7X, Falcon 50, Conference Group

Gulfstream
G200, Galexy, GIV, G450, GV, G550, G650, G650 Conference Group, GV Crew Rest, G550 Crew Rest, Conference Group

Hawker
XP Series

Embraer
Phenom 100 & 300
Legacy 600 Series
Legacy 600/650 Conference Group

Pilatus
PC-12

Member of NBAA

US Patent No. 7,845,718B1

- Custom divan JetBeds for most applications available on request.
- Custom JetBeds for VVIP aircraft such as Boeing, Airbus and Lineage 100 available on request.
- Meets or exceeds FAR-25-853a standards for flammability and ISO 9000 standards of quality.
- Single models weigh less than 20lbs and setup for use in 1 minute

Order Now!: www.Jet-Bed.com Office 858-530-0032
858-395-6888 sales@jet-bed.com

NBAA
NATIONAL BUSINESS AVIATION ASSOCIATION
focus

Continuing Vigilance Required on FAA Reauthorization

by Ed Bolen NBAA President and CEO

The recent passage of U.S. Senate legislation to reauthorize funding and programs for the Federal Aviation Administration (FAA), without language to privatize the nation's air traffic control (ATC) system and fund it with new user fees, is a positive development for the business aviation community.

However, we must remain vigilant on the ongoing debate over FAA reauthorization, given that the discussion continues to include the promotion of controversial ATC-privatization measures.

The Senate version of the reauthorization bill, H.R.636, passed with overwhelming bipartisan support following two years of hearings and debate. It includes language the general aviation community supports, including calls for streamlined certification processes for aviation technology, accelerated implementation of the NextGen air traffic management system and third-class medical reform for pilots of small general aviation aircraft.

Those welcome advances are also included in the Senate bill's House counterpart, H.R.4441, which was introduced in early February. However, that bill also includes a risky provision for the creation of a privatized ATC system, funded through new user fees, and overseen by an airline-dominated board of directors.

Advocates for ATC privatization continue to support the concept. For example, in recent weeks, NBAA has represented the business aviation community in aviation-policy forums, held both in and outside Washington, DC, in which some participants have pressed their case for privatization.

At those events and elsewhere, I have restated NBAA's position that the notion of turning ATC over to a private organization has raised a host of legitimate concerns about whether the public's airspace should be turned over to special interests. As just one illustrative concern, a fundamental question continues to be raised with regard to who's going to make sure the public airspace is run for the benefit of the entire public, including citizens and businesses in communities across America

Clearly, it remains critically important that industry stakeholders continue to make their views known in opposition to ATC privatization funded by user fees. NBAA's online Contact Congress resource allows concerned pilots and other industry representatives, including readers of *Twin & Turbine*, to reach out to elected officials, and ask them to support the continued advancement of the Senate FAA reauthorization bill.

To utilize Contact Congress from a smartphone, tablet, laptop or desktop computer, simply visit nbaa.org/action, or go to nbaa.org/twitter to Contact Congress through social media, to advise lawmakers on Capitol Hill about the potentially disastrous effects that user fees and a privatized air traffic system could have on our nation's GA community.

Without question, the U.S. must remain the world leader in aviation five, 10 and 25 years from now. Making your voice heard in this process is one way to ensure that our community continues to benefit from a safe and efficient national ATC network, without going down the risky path of turning over the air traffic system to a combination of self-interested parties, at a very high cost.

NBAA Continues Fighting Back Against Efforts to Close SMO

City officials in Santa Monica, CA remain determined in their efforts to shutter Santa Monica Municipal Airport (SMO), with that battle recently claiming a large flight school at the historic airfield.

Although SMO is owned and operated by the city and has federal obligations to allow aeronautical activities at the airport on reasonable terms, officials have repeatedly worked to implement measures to inhibit access by general aviation, with the ultimate goal of shuttering the local airport.

NBAA recently joined with other SMO stakeholders in responding to a Motion to Dismiss filed by city officials against a portion of a Part 16 Complaint filed by NBAA, the Aircraft Owners and Pilots Association (AOPA), airport businesses, and other proponents earlier this year at the Federal Aviation Administration (FAA) alleging numerous violations of the city's federal obligations to SMO.

In their April 11 filing, Santa Monica officials argued that a new leasing policy adopted by the city council in March voids proponents' claims that the city has failed to make long-term leases available to aviation tenants at the airport, by setting forth standards under which those businesses will be allowed to stay at SMO.

Alex Gertsen, NBAA director of airports and ground infrastructure, countered that the "new" leasing policy, adopted March 22, does nothing to change the city's failure to comply with its federal obligations to offer such businesses and individuals long-term leases at the airport.

"Month-to-month leases create challenges for both aeronautical and non-aeronautical businesses on the field, such as restaurants, putting numerous local jobs in jeopardy," he said. In that argument, airport supporters may have something of an improbable ally in the Santa Monica Airport Commission, a body typically opposed to furthering aviation-related interests at SMO.

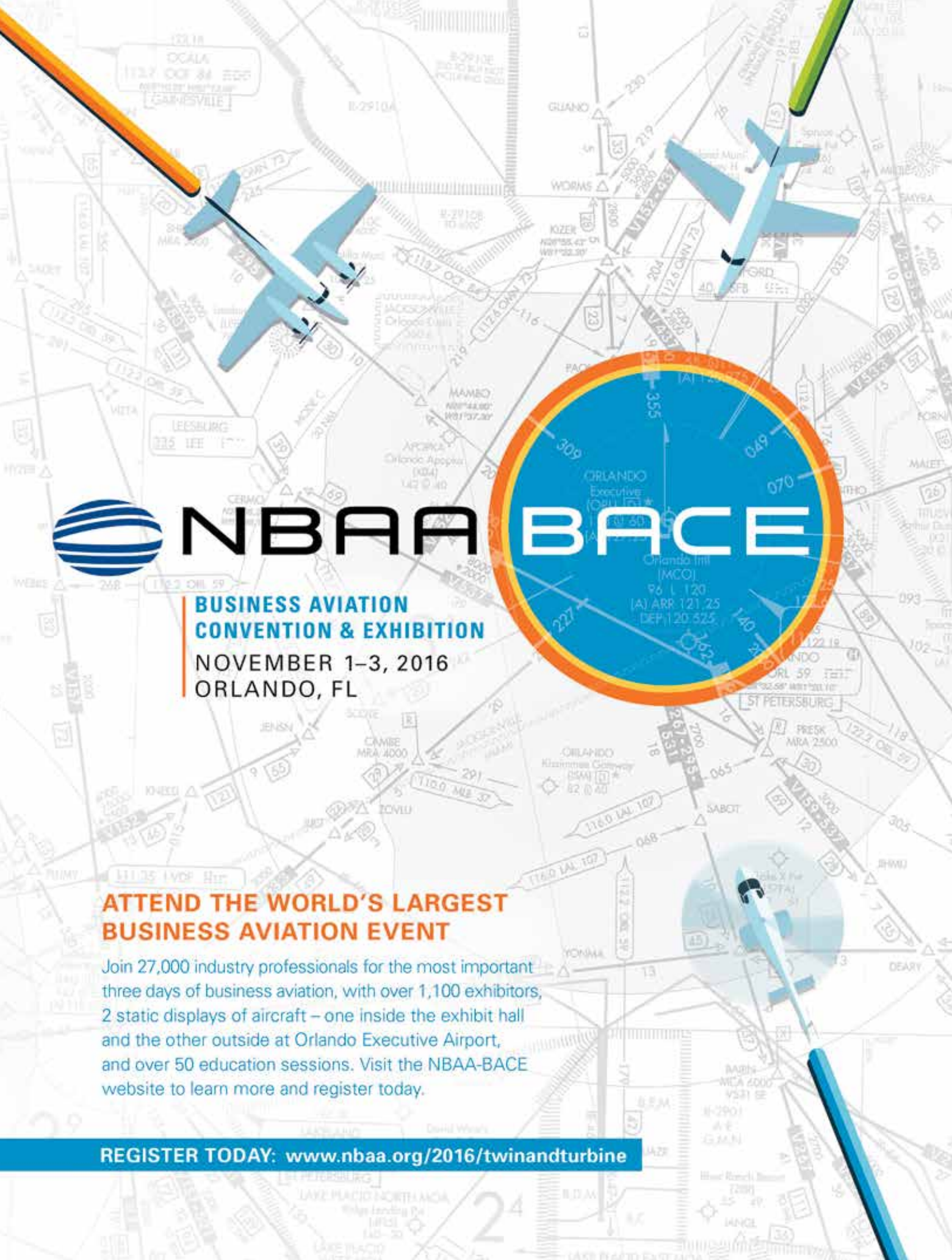
During a March 15 hearing regarding the new leasing policy, commissioner Lael Rubin was among members who grew noticeably agitated when Nelson Hernandez, the senior advisor to the city manager on airport affairs, could not confirm if Santa Monica officials would grant stable leases to aviation tenants at SMO, or had an appropriate method in place to determine who will be given an opportunity to remain.

"They have a right to apply, just like anybody else," said Hernandez of aviation tenants. "[It] seems to me that this basically says, 'apply, but you know what, you're not going to get a lease,'" Rubin replied. "There is nothing in here that says the city will lease to some aviation tenants."

In the Part 16 complaint filed in February, airport supporters also accused city officials of creating an untenable operating environment at SMO through "excessive fees and rents," while concurrently offering preferential terms to a non-aeronautical local college with facilities at SMO. Interestingly, the city's motion referred to those other key points only in passing, and did not specifically seek to dismiss them.

"Those are rather serious charges that the city has misappropriated millions of dollars, affecting not only aviation interests but the entire Santa Monica community," Gertsen added. "Statements in the Motion to Dismiss infer that City officials may be conceding that they overreached, and that those policies will be reviewed and the airport reimbursed."

Meanwhile, city officials remain intent on eliminating aviation-related businesses from their airport. On April 28, Justice Aviation – the largest flight school on the field – accepted a $450,000 buyout from the city to shutter


NBAA BACE
BUSINESS AVIATION
CONVENTION & EXHIBITION
NOVEMBER 1–3, 2016
ORLANDO, FL
ATTEND THE WORLD'S LARGEST
BUSINESS AVIATION EVENT
Join 27,000 industry professionals for the most important three days of business aviation, with over 1,100 exhibitors, 2 static displays of aircraft – one inside the exhibit hall and the other outside at Orlando Executive Airport, and over 50 education sessions. Visit the NBAA-BACE website to learn more and register today.
REGISTER TODAY: www.nbaa.org/2016/twinandturbine

operations. About half of SMO's existing business comes from training operations based on the field, although the airport's landing fees incentivize student pilots to fly to other area airports to practice.

That shutdown places a financial strain on remaining aviation businesses at SMO, including the company's former maintenance provider, Bill's Air Center. Andres Gonzalez purchased Bill's in February 2014, one month before city officials refused to renew the business's long-term lease; since then, rent has been paid month-to-month.

"It was clear that the city didn't like [SMO] and basically wanted us to go away," Gonzalez said of the long-term leasing issues. "The city's attitude is unfortunate, because in a couple of years I'll likely be able to expand. It's clear the city will do anything within its power to limit us."

Although Gonzalez said he expects the field's remaining flight schools to buy up Justice's fleet, minimizing his losses in the near future, he and other business owners on the field are extremely concerned by the precedent set by the city's actions.

Despite his difficulties, however, Gonzalez is optimistic about SMO's future. "I believe the airport is going to be here for a very long time, but the question is how the city might further restrict our operations," he added.

Flight Management Systems Can Help, Or Challenge Single-Pilot Operators

By helping single pilot operators keep track of their location, fuel burn, weather and traffic conditions, and more, flight management systems (FMS) are a particularly valuable tool in modern cockpits. However, systems differences between different FMS manufacturers and models of FMS may also make managing these systems an unwelcome challenge at an inopportune time.

"If you're so overly focused on how to do the FMS, it takes away a lot of your time from flying the airplane and managing it," pilot Long Nguyen said in a recent episode of NBAA's Flight Plan podcast.

Although Nguyen regularly flies a Cessna Citation CJ3, he is occasionally required to fly a CJ2. The aircraft are similar to one another, and they share a common (CE525) type rating. However, Nguyen admits he sometimes has difficulties when transitioning between the two, as each aircraft has an FMS from a different manufacturer. Not only do the user interfaces between the two systems look completely different; each also has a distinct operating logic behind it.

"It's always stressful because I don't fly [the CJ2] enough to stay really familiar with its FMS," he added. "Whenever I have to go fly single pilot in it, I have to have the current pilot give me a familiarization to the box, [and] let me go sit down inside the airplane and go over how to program it." Nguyen also recorded one of his previous CJ2 flights specifically so he could review FMS operation prior to stepping inside the cockpit.

That level of preparation is key to operating safely with an unfamiliar FMS, said NBAA Safety Committee member Jay White. "Assess yourself, and how familiar am I [with the specific FMS,]"

he said. "Assess where you're going, understand what the threats are as far as airspace, terrain, weather, and the software itself. It will only take one small distraction to increase the level of task saturation in a high workload environment."

In recognition of these and other factors that make single pilot operators particularly at risk for loss of control inflight (LOC-I) accidents, NBAA's Single Pilot Working Group, as part of the NBAA Safety Committee, recently formed a dedicated working group tasked with raising awareness of the importance of LOC-I training, recovery, and other mitigation methods for operators. The group will be led by Paul "BJ" Ransbury, president of upset prevention and recovery training specialist Aviation Performance Solutions (APS).

More information on single pilot safety is available in the May/June issue of NBAA's member publication, *Business Aviation Insider*. A digital edition is available at *www.nbaa.org/news/insider/*.

NBAA Joins with Other Groups to Support Federal Oversight of UAS

NBAA recently joined with several aviation groups in signing a letter opposing two proposals that would eliminate federal oversight for the regulation of unmanned aircraft systems (UAS), and their integration into the National Airspace System.

The proposals were offered as amendments (#3558 and #3650) to H.R.636, the Senate bill reauthorizing FAA programs and funding, and are included in the measure subsequently passed by lawmakers in April.

"It has long been established that the federal government, through the FAA, has sole authority to implement and enforce regulations for all navigable airspace, including regulations for UAS, and the Senate's FAA bill reiterates this position," said NBAA COO Steve Brown. "The intent of this pre-emption is to avoid the creation of a patchwork quilt of local airspace policies, which could impact the mobility, flexibility and safety of airspace navigation. The amendments offered to the Senate FAA bill would undercut the FAA's ability to govern airspace with a single, federal set of standards."

Brown added that the proposed amendments also overlooked the fact that local authorities are able to implement requirements pertaining to takeoff and landing locations for UAS, given that land-use policies are local in nature.

The groups' April 12 letter opposing the amendments was signed by NBAA, along with the Association for Unmanned Vehicle Systems International, the Aerospace Industries Association, the Aircraft Owners and Pilots Association, Cherokee Nation Technologies, the Consumer Technology Association, DJI, the General Aviation Manufacturers Association and the Small UAV Coalition.

NBAA has long maintained that it is imperative that any introduction plan for UAS be focused on safety. This means UAS should not share the same airspace with manned aircraft until they have equivalent certification and airworthiness standards as manned aircraft, including the ability to take timely directions from air traffic control, and to sense and avoid manned aircraft and other UAS.

NBAA personnel have participated in UAS working groups for nearly 10 years, and the association has published expansive online resources covering developments in the UAS industry of importance to the business aviation community.

In December 2015, NBAA welcomed a document from the FAA, reasserting that the agency has sole authority to implement and enforce regulations for all navigable airspace, including for UAS.

NBAA's Regional Forum Coming to White Plains, NY in September

Throughout the year, NBAA hosts three Regional Forums across the country to bring together local business aircraft owners, operators, manufacturers, customers and other industry professionals to share knowledge, discuss issues affecting the region, and learn how business aviation can help companies succeed. *Twin & Turbine* readers are encouraged to attend NBAA's last 2016 Regional Forum, to be held Sept. 15 in White Plains, NY.

NBAA's Regional Forums are held at some of the most accessible airports and FBOs across the country, The Forums offer the opportunity for potential buyers and operators to compare and examine cutting edge business aircraft, side-by-side in one location.

Regional forums incorporate exhibits, static displays of aircraft and education sessions into one-day events located across the country to help introduce business aviation to local officials and prospective owners and operators, and to address any current issues in the regions. In the Forums' exhibit halls, manufacturers and suppliers showcase their latest aviation equipment, products and services and are available to answer questions for interested parties.

Perhaps most importantly, the Forums also provide a local venue for aviation professionals to network and expand their knowledge about specific airport policies, environmental protocols, safety and security proposals, taxation, risks and regulations.

These gatherings serve to underscore the importance of business aviation to local leaders in business and government, as it positively impacts communities by aiding companies in efficiently performing day-to-day operations, generating new jobs and spurring economic activity and local investment.

Despite heavy rains, more than 2,200 people turned out for NBAA's first regional forum of 2016 at West Palm Beach International Airport (PBI). With 120 exhibitors and 25 aircraft on static display, the event set an attendance record for NBAA's South Florida forums. NBAA expects an equally enthusiastic gathering this month as aviation stakeholders throughout Southern California gather at Van Nuys Airport (VNY) on June 9.

Additional information about the White Plains forum, to be held at Westchester County Airport (HPN) is available at *www.nbaa.org/events/forums/2016HPN/.*

The Worldwide General Aviatio

owner/operators and chief pilots of these air

100% TOTAL MARKET COVERAGE

JETS

CHIEF PILOTS & OWNERS

Aircraft Count

4	AIRBUS ACJ319
32	ASTRA 1125
31	ASTRA 1125SP
63	ASTRA 1125SPX
51	BEECHJET 400
275	BEECHJET 400A
58	BOEING BBJ
391	CHALLENGER 300
65	CHALLENGER 600
58	CHALLENGER 601-1A
133	CHALLENGER 601-3A
56	CHALLENGER 601-3R
279	CHALLENGER 604
5	CHALLENGER 800
169	CITATION 500
319	CITATION 525
284	CITATION BRAVO
151	CITATION CJ1
69	CITATION CJ1+
202	CITATION CJ2
160	CITATION CJ2+
390	CITATION CJ3
180	CITATION ENCORE
306	CITATION EXCEL
5	CITATION I
288	CITATION I/SP
478	CITATION II
50	CITATION II/SP
173	CITATION III
329	CITATION MUSTANG
138	CITATION S/II
257	CITATION SOVEREIGN
284	CITATION ULTRA
287	CITATION V
20	CITATION VI
104	CITATION VII
257	CITATION X
199	CITATION XLS
1	DIAMOND I
53	DIAMOND IA
3	DORNIER ENVOY 3
282	ECLIPSE EA500
47	EMBRAER LEGACY 600
8	EMBRAER LEGACY 650
158	EMBRAER PHENOM 100
82	EMBRAER PHENOM 300
123	FALCON 10
28	FALCON 100
25	FALCON 200
176	FALCON 2000
21	FALCON 2000EX
81	FALCON 20C
17	FALCON 20C-5
26	FALCON 20D
3	FALCON 20D-5
7	FALCON 20E
8	FALCON 20E-5
59	FALCON 20F
82	FALCON 20F-5
229	FALCON 50
8	FALCON 50-40
113	FALCON 50EX
135	FALCON 900
21	FALCON 900C
116	FALCON 900EX
98	GLOBAL 5000
112	GLOBAL EXPRESS
25	GULFSTREAM G-100
161	GULFSTREAM G-200
8	GULFSTREAM G-300
27	GULFSTREAM G-400
222	GULFSTREAM G-450
7	GULFSTREAM G-500
330	GULFSTREAM G-550
42	GULFSTREAM G-I
110	GULFSTREAM G-II
31	GULFSTREAM G-IIB
186	GULFSTREAM G-III
188	GULFSTREAM G-IV
317	GULFSTREAM G-IVSP
182	GULFSTREAM G-V
40	HAWKER 1000A
9	HAWKER 125-1A
2	HAWKER 125-1AS
1	HAWKER 125-3A/RA
2	HAWKER 125-400A
29	HAWKER 125-400AS
1	HAWKER 125-400B
4	HAWKER 125-600A
11	HAWKER 125-600AS
113	HAWKER 125-700A
50	HAWKER 4000
187	HAWKER 400XP
21	HAWKER 750
223	HAWKER 800A
2	HAWKER 800B
335	HAWKER 800XP
14	HAWKER 800XPI
67	HAWKER 850XP
131	HAWKER 900XP
4	JET COMMANDER 1121
6	JET COMMANDER 1121B
12	JETSTAR 731
11	JETSTAR II
51	JETSTREAM 31
40	JETSTREAM 32
15	JETSTREAM 41
15	LEARJET 23
26	LEARJET 24
5	LEARJET 24A
19	LEARJET 24B
53	LEARJET 24D
14	LEARJET 24E
9	LEARJET 24F
33	LEARJET 25
57	LEARJET 25B
7	LEARJET 25C
94	LEARJET 25D
6	LEARJET 28
28	LEARJET 31
172	LEARJET 31A
43	LEARJET 35
426	LEARJET 35A
21	LEARJET 36
34	LEARJET 36A
24	LEARJET 40
219	LEARJET 45
193	LEARJET 45XR
115	LEARJET 55
5	LEARJET 55B
12	LEARJET 55C
293	LEARJET 60
130	PREMIER I
16	SABRELINER 40
13	SABRELINER 40A
7	SABRELINER 40EL
3	SABRELINER 40R
24	SABRELINER 60
1	SABRELINER 60A
2	SABRELINER 60AELXM
12	SABRELINER 60ELXM
3	SABRELINER 60EX
1	SABRELINER 60SCEX
85	SABRELINER 65
1	SABRELINER 75
17	SABRELINER 80
3	SABRELINER 80SC
101	WESTWIND 1
4	WESTWIND 1123
45	WESTWIND 1124
76	WESTWIND 2

TURBO PROPS

CHIEF PILOTS & OWNERS

Aircraft Count

275	CARAVAN 208
1087	CARAVAN 208B
3	CARAVAN II
34	CHEYENNE 400
221	CHEYENNE I
14	CHEYENNE IA
303	CHEYENNE II
59	CHEYENNE III
21	CHEYENNE IIIA
59	CHEYENNE IIXL
22	CHEYENNE IV
303	CONQUEST I

n & Business Aviation Markets

craft *ALL RECEIVE* Twin &Turbine every month

Do you want your marketing message to reach these key decision makers?

It will when you advertise in Twin & Turbine

354	CONQUEST II
49	KING AIR 100
502	KING AIR 200
12	KING AIR 200C
12	KING AIR 200T
203	KING AIR 300
3	KING AIR 300LW
588	KING AIR 350
34	KING AIR 350C
17	KING AIR 90
7	KING AIR A/B90
120	KING AIR A100
203	KING AIR A200
58	KING AIR A90
221	KING AIR A90-1
135	KING AIR B100
902	KING AIR B200
78	KING AIR B200C
63	KING AIR B200GT
2	KING AIR B200SE
3	KING AIR B200T
66	KING AIR B90
295	KING AIR C90
32	KING AIR C90-1
160	KING AIR C90A
316	KING AIR C90B
7	KING AIR C90SE
278	KING AIR E90
160	KING AIR F90
17	KING AIR F90-1
1	MERLIN 300
1	MERLIN IIA
29	MERLIN IIB
12	MERLIN III
20	MERLIN IIIA
49	MERLIN IIIB
14	MERLIN IIIC
5	MERLIN IV
13	MERLIN IV-A
13	MERLIN IV-C
105	MITSUBISHI MARQUISE
1	MITSUBISHI MU-2D
29	MITSUBISHI MU-2F
1	MITSUBISHI MU-2G
22	MITSUBISHI MU-2J
32	MITSUBISHI MU-2K
15	MITSUBISHI MU-2L
23	MITSUBISHI MU-2M
30	MITSUBISHI MU-2N
38	MITSUBISHI MU-2P
55	MITSUBISHI SOLITAIRE
673	PILATUS P-12
341	PILATUS PC-12 NG
549	PILATUS PC-12/45
154	PILATUS PC-12/47
492	PIPER MERIDIAN
10	ROCKWELL 680T TURBO
6	ROCKWELL 680V TURBO II
7	ROCKWELL 680W TURBO II
9	ROCKWELL 681 HAWK
89	SOCATA TBM-700A
91	SOCATA TBM-700B
4	SOCATA TBM-700C1
115	SOCATA TBM-700C2
318	SOCATA TBM-850
22	SOCATA TBM-900
6	STARSHIP 2000A
51	TURBO COMMANDER 1000
27	TURBO COMMANDER 690
129	TURBO COMMANDER 690A
113	TURBO COMMANDER 690B
58	TURBO COMMANDER 840
16	TURBO COMMANDER 900
23	TURBO COMMANDER 980

TWIN PISTON

OWNERS

Aircraft Count

9	ADAM A500
1550	BARON 58
479	BARON 58P
137	BARON 58TC
5	BARON A56TC
142	BARON G58
43	BEECH BARON 56 TC
2	BEECH BARON 58 PA
217	BEECH DUKE B60
193	CESSNA 340
556	CESSNA 340A
120	CESSNA 402B BUSINESS LINER
64	CESSNA 402C
38	CESSNA 404 TITAN
288	CESSNA 414
374	CESSNA 414A CHANCELLOR
72	CESSNA 421
61	CESSNA 421A
454	CESSNA 421B
757	CESSNA 421C
66	CESSNA T303
124	PIPER 601P AEROSTAR
29	PIPER 602P AEROSTAR
18	PIPER 700P AEROSTAR
465	PIPER CHIEFTAIN
28	PIPER MOJAVE
870	PIPER NAVAJO
24	ROCKWELL 500 SHRIKE
33	ROCKWELL 500A SHRIKE
69	ROCKWELL 500B SHRIKE
46	ROCKWELL 500S SHRIKE
8	ROCKWELL 500U SHRIKE
28	ROCKWELL 520 COMMANDER
15	ROCKWELL 560 COMMANDER
21	ROCKWELL 560A COMMANDER
17	ROCKWELL 560E COMMANDER
11	ROCKWELL 560F COMMANDER
36	ROCKWELL 680 SUPER
17	ROCKWELL 680E
19	ROCKWELL 680F COMMANDER
22	ROCKWELL 680FL GRAND COMMANDER
14	ROCKWELL 680FLP GRAND LINER

HIGH PERFORMANCE MOVE-UP SINGLES

OWNERS

Aircraft Count

250	BEECH BONANZA
493	CESSNA 182
71	CESSNA 206
448	CESSNA P210N
26	CESSNA P210R
58	CESSNA T182
1	CESSNA T206
2714	CIRRUS SR22
240	PIPER MALIBU
387	PIPER MALIBU MIRAGE

37,744 TOTAL AIRCRAFT

TWIN&TURBINE

John Shoemaker, Advertising Director
2779 Aero Park Drive • P.O. Box 968 • Traverse City, MI 49685-0968
(800) 773-7798 • (231) 946-3712 • Fax: (231) 946-9588
E-mail: john.shoemaker@VPDemandCreation.com • www.twinandturbine.com

Objectivity and R

by **Gavin Leake**

Aviation, certainly more so than many other professions, relies on the "Honor System". Let's think about it: how many times have you been ramp checked by the FAA, or had to present your pilot or medical certificate to anyone else in an official capacity? How many times have you met an FAA inspector, in any capacity? Does it seem strange that you could, theoretically, go flying 23 months after your last flight, with nothing legally holding you back, common sense notwithstanding?

Yes, you, the Pilot in Command, are entrusted with the authority to self-evaluate in medical, proficiency and legality standpoints. The overseeing authority in aviation, the FAA, is not usually looking over your shoulder to make sure you're following the rules; probably the last time you interacted with someone associated with the FAA was on your last checkride, and that person was likely a designee! Primarily, the FAA has to rely on pilots to self-police when it comes to various safety and legal issues, since we outnumber them by a wide margin, and they just aren't able to have representatives out in the field all the time. Luckily for all involved, it's in our own best interest to maintain a safe operation; most of us are concerned with coming home safely from each flight and can see the value in rules, regulations, and procedures.

There's just one problem with placing the burden of self-evaluation on the shoulders of pilots: *humans are notoriously bad at self-evaluation.* For better or worse, it's tough for any of us to look at our own performance and end up with a truly objective fact-based and accurate finding. Every experience, performance and failure is layered in with various personality traits, defense mechanisms, excuses or misperceptions, when we look at it ourselves. People tend to assume information that comes to them through their own perceptions directly reflects what is true in "reality", while believing that others' perceptions are biased and influenced by outside factors *(1)*. We rate ourselves higher in almost every positive trait than our peers *(2),* and we take into account our internal desires and intentions when judging ourselves, but only rely on outward behavior when judging others *(3)*.

Sometimes, in the context of flight training (whether for proficiency or to gain a new certificate or rating), we end up employing defense mechanisms to protect our ego from what might be a harsh truth. Have you ever met a person who displays one of the defense mechanisms below? Do you think you may have ever been subject to one or more of them yourself, in the context of aviation?

- Compensation: disguising a weak or undesirable quality by emphasizing a more positive one. For example, maybe you were asked to perform slow flight on your last Biennial Flight Review and performed poorly, but you placed special emphasis on your ability to do great steep turns.
- Denial of Reality: While coming in for a landing, you flare too high and stall from two feet above the runway; the resultant landing is abnormally hard. When the passenger asks if that landing was normal, you do not acknowledge the question or indicate that the landing "wasn't that bad".
- Rationalization: This is when you sincerely believe the excuse you make for a poor or undesirable outcome: "Tower made me fly a right-hand traffic pattern, and my landings are always worse when I have to fly right traffic!"

As you see, there are a multitude of reasons why trying to look at one's own performance objectively is very difficult or even impossible, so how do we make sure we're not overlooking a potentially dangerous flaw in our flying technique or knowledge? How can we know that we're the type of pilot who is aware of the level of our own skills, and who continually works to improve them in a guided and focused way?

Recurrent training is the key

Professional pilots (Airline, Corporate or Charter pilots, for example) undergo recurrent training and/or checking, often in intervals as short as six months. That's a far cry from the 24-month Flight Review required for the average private pilot, and it's done that way for a reason. There is no better way to receive an objective and unbiased opinion of your flying performance than to be evaluated against a set of standards, to see how your skills measure up. While you can improve some current skills by practicing on your own, practicing incorrect procedures will be detrimental to your skill set, as well as the safety of your flight operations. Additionally, not many people enjoy working on their weaknesses, since there is more immediate satisfaction gained by repeating a skill in which one is already proficient. Getting another set of eyes on your flying,

ecurrent Training

particularly the eyes of a CFI who flies and teaches every day, can make a huge positive impact on your flying and the safety of your operation.

So, why don't more pilots volunteer for additional recurrent training, going above and beyond what is required by the regulations? Here are a few reasons that come to mind:

- It doesn't always feel good: no one likes to feel the pressure of being tested, especially in something they do for fun. Having one's shortcomings exposed is not always the most pleasant thing; however, it is necessary, to maintain your safety and that of your passengers.
- False belief in one's own proficiency: Let's say you fly every two or three weeks, heading out to the local practice area, and usually have pretty good landings. You never fly when the wind is over 10 knots, or at night. Given your restrictions, you believe yourself to be a pretty good pilot, and that your level of proficiency is equivalent to, or maybe better than other pilots of similar experience levels. But how can you really know unless you've been recently tested?

Aviation is based in objective reality, and the circumstances of a real emergency don't care about your perceptions of your own skill; only your actions will determine the outcome.

Yes, in my opinion, the system as it stands is fairly lax, when it comes to pilot oversight. Fortunately, aviation seems to attract and self-select mostly folks who are savvy, self-reliant and smart enough to know that more recurrent training is necessary to maintain proficiency than is required to be legally "current".

So what can you do to improve your own skills and conquer intimidating conditions, in a safe and enjoyable way?

You can make a personal commitment to ongoing recurrent training

Recurrent training with a CFI is a great way to hold yourself accountable and make real, measurable improvements in your flying skills. Why not schedule a monthly lesson with a CFI, with the purpose of improving your existing skills (landings or instrument approaches, for example) and working on areas and operations that you don't feel as comfortable with or have never tried, or targeting weaker areas noted by your instructor? There's no better way to improve your skills and knowledge than to have an experienced instructor take a look at them and make recommendations for improvement, sharing their hard-earned wisdom from years of flying.

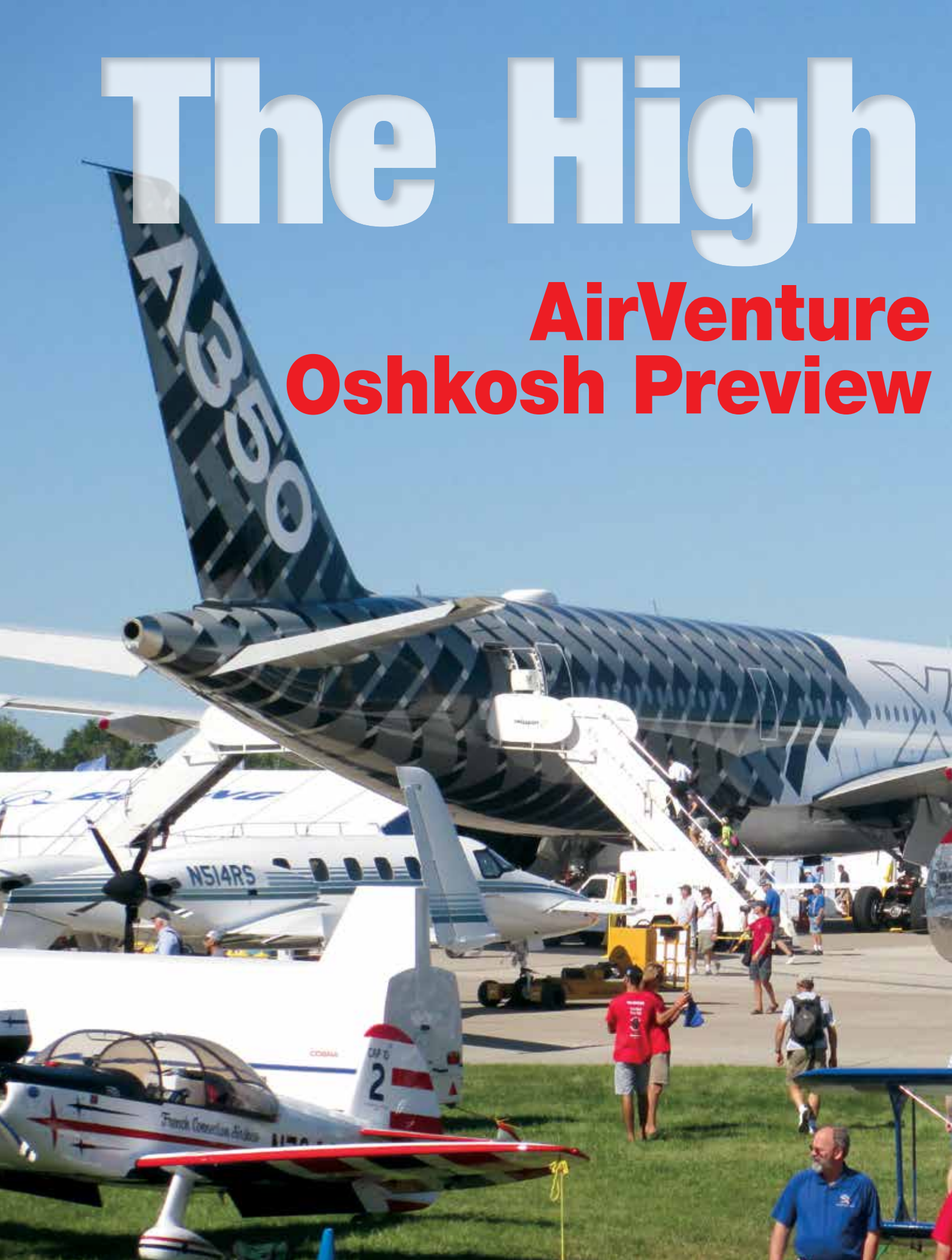
The prospect of willingly signing up to be "evaluated" may not be your favorite idea, but the improvements in your skills and confidence that come from taking an active role in your ongoing training, rather than limiting yourself to the standard 24-month flight review, will be more than worth it! What's more, as you develop a relationship with a CFI for ongoing training, that instructor will get to know your strengths, your weaknesses and your flying goals, and can make more pertinent and useful suggestions for improvement, as opposed to the small snapshot of your flying abilities shown during a Flight Review. In short order, you'll find yourself tackling new aviation challenges with improved confidence and safety. Set up a recurrent training program and invest in your own safety today! T&T

1. G. Ichheiser, American Journal of Sociology, 55 Suppl, (1949)
2. S.E. Taylor, J.D. Brown, Psychological Bulletin, **103,** 193 (1988)
3. J. Kruger, T. Gilovich, Pers Soc Psychol Bull 30, 328 (2004).

Gavin Leake is Chief Flight Instructor at Spring City Aviation, Inc. in Waukesha, Wisconsin. Gavin has been with Spring City Aviation since 2006, and is a long-time Flight Instructor and Commercial Pilot. His cell number is (218) 280-2615

The High

AirVenture Oshkosh Preview



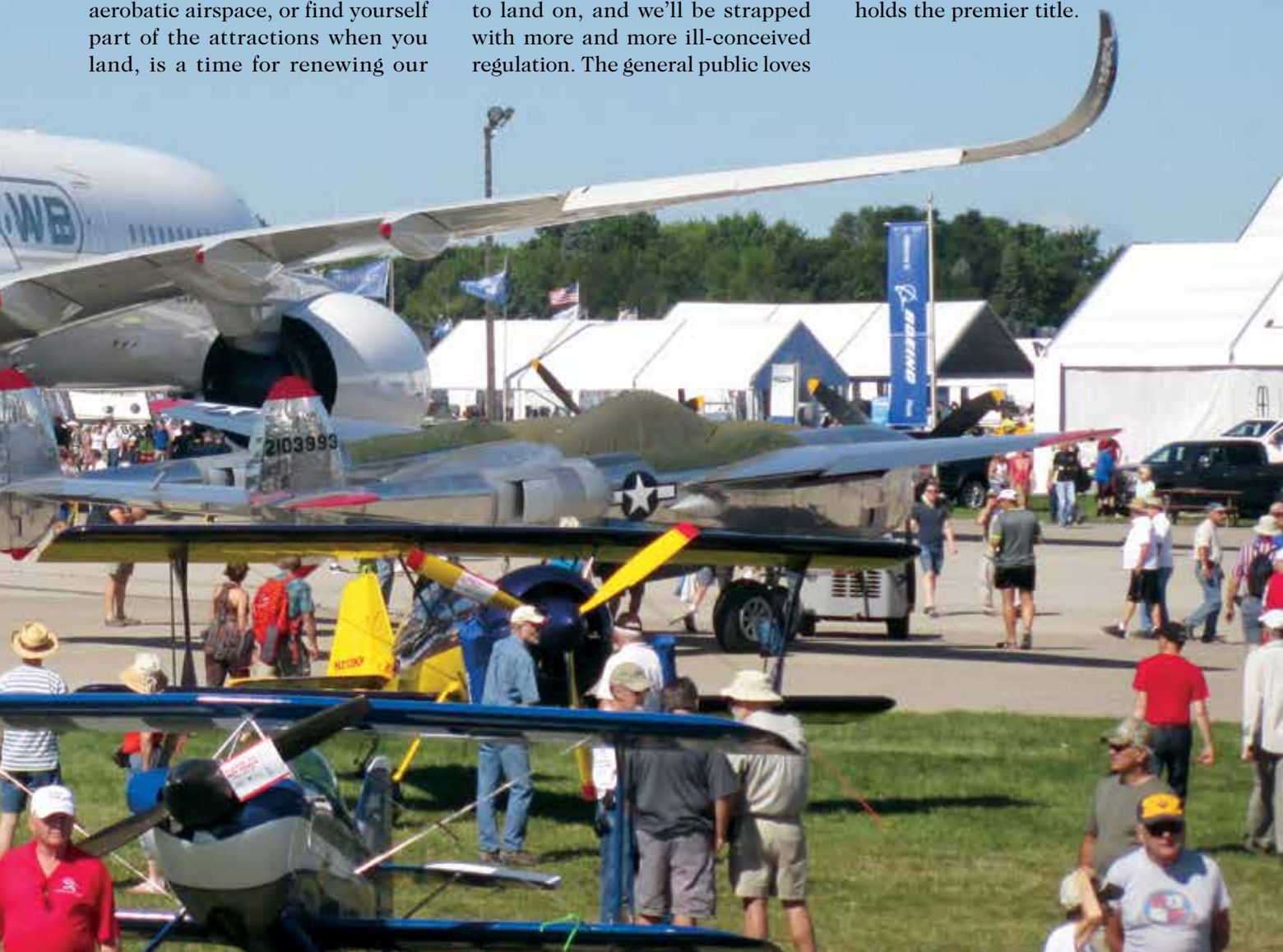
Season

The annual mid-summer celebration of aviation, absolutely the greatest airshow on earth, will be staged in Oshkosh, Wisconsin from July 25 through July 31. If you haven't been there, make it a priority to attend. If you haven't been to EAA AirVenture for a while, make this the year. And if you go every year, don't miss this one.

Airshow season, that late-spring to early-autumn period in which you might encounter a NOTAM for aerobatic airspace, or find yourself part of the attractions when you land, is a time for renewing our enthusiasm for flight. Maybe you could care less about watching a smoke-belching loop being flown over the runway, or eating a tired hot dog while standing in the sun. I identify, but you need to look deeper into the airshow phenomenon, and take a look at the people around you.

As pilots, and airplane owners, we're a shrinking minority of the total population. If we cling to elitism and exclusivity, we will find fewer and less-welcoming runways to land on, and we'll be strapped with more and more ill-conceived regulation. The general public loves to watch airplanes fly, and they like to get up next to them at an airshow. These open houses and entertaining extravaganzas are a way to get our support renewed.

What makes EAA AirVenture unique is the broad sweep of its attractions. Nearly every aspect of flight is on display for the week at Oshkosh. And every year you can see something you will not be able to see anywhere else. Among airshows, Oshkosh (to use the popular tag) holds the premier title.



The management of the Experimental Aircraft Association is probably closer to its constituency than most alphabet organizations, because of its Chapter affiliations and the volunteer participation required to put on its annual convention and exhibition. EAA AirVenture could not happen with mere hired labor. So, when you are waved back by a sun-burned teen or turned away from a crowded shuttle tram, remember that these folks are not getting paid; in fact, they are expending considerable personal funds for the privilege of working at the show. Dedication to the cause starts with an enjoyment of aviation. And that's why we all come to AirVenture – for one reason or another.

What To See This Year

Some of the special themes for EAA AirVenture's 2016 edition are commemorations of the 100th Anniversary of the U.S. Coast Guard's aviation division, the 75th Anniversary of World War II's Pearl Harbor attack, the 100th Anniversary of World War I aviation, and the Centennial of the Boeing Company.

Monday, July 25, opening day, is traditionally marked by news announcements from exhibitors releasing new products at the show, and there will be an evening music concert by San Francisco band Third Eye Blind. Tuesday is Innovations Day, showcasing the latest flying technology and the finals for the Founders Innovation Prize. Wednesday is Pearl Harbor Day, with a massive afternoon airshow and a night airshow as well. It's also WomenVenture Day, when female aviators gather. Thursday will honor Coast Guard aviation and the Two-Millionth Young Eagle introduced to aviation by EAA volunteer pilots. Friday will be a Salute to Veterans Day, with a Yellow Ribbon Honor Flight trip to Washington DC via American Airlines, courtesy of Old Glory Honor Flight (*www.oldgloryhonorflight.org*), award-winning swing band Big Bad Voodoo Daddy will perform that evening, and it will also mark the 25th Anniversary of Operation Desert Storm, featuring aircraft of that era. Saturday is the

Salute to World War I aviation and a tribute to the 100th Anniversary of Boeing Aircraft Company; another night airshow will be presented that evening. Sunday is Fox Valley Day, thanking the local area for its support as the annual pilgrimage reverses itself.

The Big Boat, And Other Sights

Spectacular aircraft are a tradition at Oshkosh, and this year attendees will have a chance to see the last flying example of the huge JR2M-1 Martin Mars four-engine flying boat, of which seven were built in the closing years of World War II. It's billed as the largest operational warbird ever built; among waterbirds, only the Hughes H-4 was bigger. The U.S. Navy operated them as transports between Hawaii and California from 1945 to 1956, and afterward they have been used as wildfire-control water bombers. The last two are owned by Coulson Flying Tankers of British Columbia, whose "Hawaii Mars" is scheduled to land on Lake Winnebago, next to Oshkosh. The music of its four Wright R-3350 engines will be heard, cruising over AirVenture.

Some of the other notable airplanes slated to appear are a rare Douglas A-20 Havoc World War II attack bomber, a 100-year-old Curtiss Pusher antique, and the Commerative Air Force's "Fifi" B-29 Superfortress. Back by popular demand are the STOL demonstrations by airplanes from the Valdez, Alaska competition; for this year, the super-STOL activities have been relocated to the Ultralight airstrip at the south end of the flight line.

On July 30 and 31, the Canadian Forces Snowbirds jet demonstration team will be part of the afternoon airshows, after a 33-year absence at Oshkosh. The Snowbirds fly ultra-close formation aerobatics with Canadair CT-114 Tutor

jet trainers, presenting a spectacular display of precision flying with up to nine ships in formation.

Given the building shortage of qualified pilots and technicians in aviation, a week-long Job Fair is being held in AirVenture's Aviation Gateway Park, where job seekers and employees can connect. Assisted by JSfirm.com, an aviation career website, the job fair will operate from 9 to 5 each day.

Getting There

It happens every year. Some clueless individual will decide to "fly to Oshkosh" without availing himself of the extensive NOTAM and will create a major headache for controllers and pilots. An entertaining narrative in the news section at the *http://www.eaa.org/en/airventure* website, titled "Bubba Goes To AirVenture," tells of an actual arrival by such a pilot in 2015; if you read it, you'll be motivated to download the actual NOTAM from *www.airventure.org*. There are some changes this year, including taxiway closures on the north side and new departure frequencies.

Flying into the show isn't difficult, if you're prepared. Coming in VFR, using the Fisk Arrival, is the preferred method, but operating IFR or on the Turbine/Warbird Arrival is possible, as long as you can accept being worked into the string of widely-varying aircraft at the end. You may be sharing airspace with a World War II fighter, a Ford Tri-Motor, an aerobatic biplane or a no-radio antique. During VFR arrival, transponders are to be turned off within 30 miles of Wittman Field, since they would be essentially useless in the swarm, and you just join up to follow the old railroad roadbed from the town of Ripon, 15 miles southwest, staying in nose-to-tail spacing at 1,800 or 2,300 MSL. If there's a weakness in the system, it's negotiating the split into two different streams of traffic at Fisk, a hamlet 5 miles southwest of Oshkosh. Fisk Approach will assign either an east-west or north-south runway at that point, requiring attention to navigation and frequency selection as the string of aircraft diverges.

When landing, be prepared to demonstrate a bit of precision; you can be asked to land not just on the runway (or a parallel taxiway pressed into service for the show) but to touch down on a literal spot on the runway, to help maintain the special spacing allowed for the show. Aircraft under 6,000 pounds are expected to exit the runway without delay, which can mean rolling off into the grass along the side, used for a taxiway controlled by flag-persons. When departing, follow the flaggers to the runway in use, monitor the appropriate frequency, and follow the NOTAM routing out of the area to avoid incoming flights. Windshield cue-cards are to be displayed for the marshallers.

Avoiding the AirVenture horde is best done by landing at Appleton (KATW) or Fond du Lac (KFLD). Slot reservations are required for IFR operations during AirVenture, so if you are coming in unexpected, anticipate an early IFR cancellation, perhaps with a landing at Madison, Green Bay or Juneau. Rental cars will be booked months in advance, as will lodging; planning for AirVenture must start early.

It Is Worth It?

Most definitely, it's worth it; mere description does not prepare one for the spectacle of thousands of people with their eyes and hearts on the sky, experiencing aviation in a dozen forms. Whether it's homebuilt aircraft, light sport and ultralight flying, antiques and classics, aerobatics, warbirds, seminars, construction, flea market bargains, commercial displays and booths, avionics and engines, or even drones, it's all at AirVenture.

If you've attended other mass gatherings, like motorsport events,

music concerts and rallies, you'll find EAA AirVenture a tame, family-oriented affair. Aviation people are, in general, decent sorts that you can invite into your home. Trash is deposited into containers, theft is unheard of, your dropped sunglasses will probably be turned into the lost-and-found booth, and a call for security is a rare event. Considering that this is a small temporary city, set up for one week, it works amazingly well.

So, if you can leave your rest-of-the-year workaday manners at home and join the Oshkosh contingent, come to AirVenture, even it's just for a day trip. You can't see it all, even in a week, but you can find your niche with like-minded people. Remember, what happens at Oshkosh, DOESN'T stay at Oshkosh. Instead, it goes home with us, to keep us going the other 51 weeks of the year. T&T

Twin Proficiency:

by **Thomas P. Turner**

Near-Collision Part II: When to Cancel IFR

In last month's column, I described a very-near collision I witnessed on the runway of a non-towered airport. The pilot of a turboprop twin, obtaining his IFR release on an 1,100-overcast day, apparently not monitoring, and certainly not transmitting on, the CTAF (Common Traffic Advisory Frequency), pulled out in front of a Cessna Citation that was on short final. The Citation pilot executed a go-around, side-stepping left to avoid the climbing Piaggio Avanti, then flew a left-hand pattern to return and land uneventfully. Although most of the blame for the near-collision – if indeed blame is affixed – goes to the pilot of the Avanti for not determining the way was clear before taxiing onto the runway, the Citation pilot may have made some mistakes too.

Let's look at this event – realizing that this is *very* speculative – from the cockpit of the Citation. The pilot (or crew; we'll use the singular) flew the Runway 18 instrument approach (ILS or RNAV/GPS, it doesn't matter) and broke out of the 1,100-foot ceiling a few miles from the airport. Wichita/Colonel James Jabara Airport (figure 1), where this event took place, has a 1,420-foot field elevation. This means the cloud bases (verified by several pilot reports, including mine when my student and I departed shortly afterward) were at about 2,500 feet MSL. On the ILS glideslope/LPV glidepath, this put the Citation about 1/3 of the way from the Final Approach Fix (FAF) to the Missed Approach Point (MAP) … roughly three and a half miles from the airport when it broke out. Notably, the first I heard from the Citation on CTAF was when its pilot reported "four miles out," and I saw the jet's landing lights shortly afterward.

Now, take a look at the airspace the Citation was in at the time. Figure 1 is a segment of the Sectional chart. Jabara (KAAO) is depicted by the upper-left magenta airport symbol. What type of airspace was the Citation in at approximately 1,100 AGL, roughly three miles from the airport?

The Citation was in Class E airspace. Class E airspace can begin at the surface, at 700 AGL, at 1,200 AGL, at 14,500 MSL, or at any different altitude where charted. Now look at Figure 2, highlighting the depictions of airspace around other airports in the area. See Augusta (3AU) and El Dorado (KEQA), and contrast them with

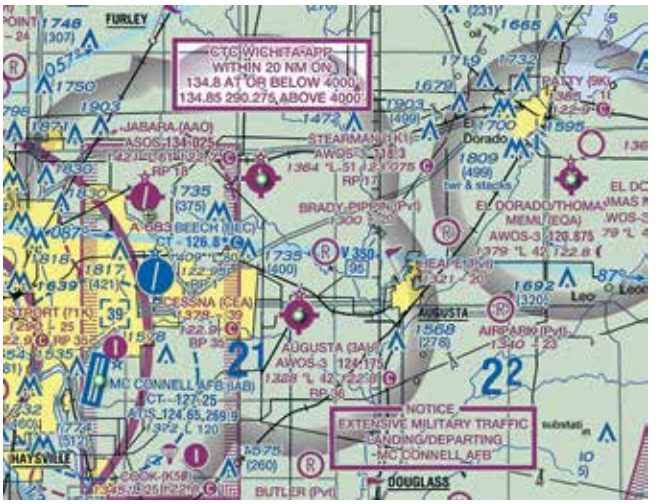


Figure 1

Jabara (KAAO). The arrows point at key features of these airspace depictions. What is the major difference?

The red dashed ring around Jabara Airport signifies that Class E airspace extends *all the way to the ground* – the ***surface area***. KEQA and 3AU are more typical non-towered airports, with the base of Class E airspace at 700 feet AGL. In Class E airspace under 10,000 feet MSL, pilots operating under Visual Flight Rules (VFR) must maintain at least *three miles'* flight visibility (visibility was greater than 10 miles on the day of the near collision). They must also remain at least *500 feet below, 1,000 feet above and 2,000 feet laterally* from clouds (figure 3).

The Citation pilot had obviously cancelled IFR, or Air Traffic Control would not have given the Piaggio pilot his IFR release to take off. Hence, the Citation pilot was flying under Visual Flight Rules, and was required to maintain VFR minimums. Yet, 500 feet below the cloud base would have been about 600 feet AGL, or 2,000 feet MSL. The Citation pilot *appears* to have canceled IFR as soon as he broke out of the clouds, but well *before* he could legally operate under VFR.

It's very likely the controller asked the Citation pilot to cancel IFR as soon as possible so the Piaggio could be released, in time for a G36 Bonanza behind the Citation on the approach to be cleared, and for my student and me to be released on our own departure clearance after that.

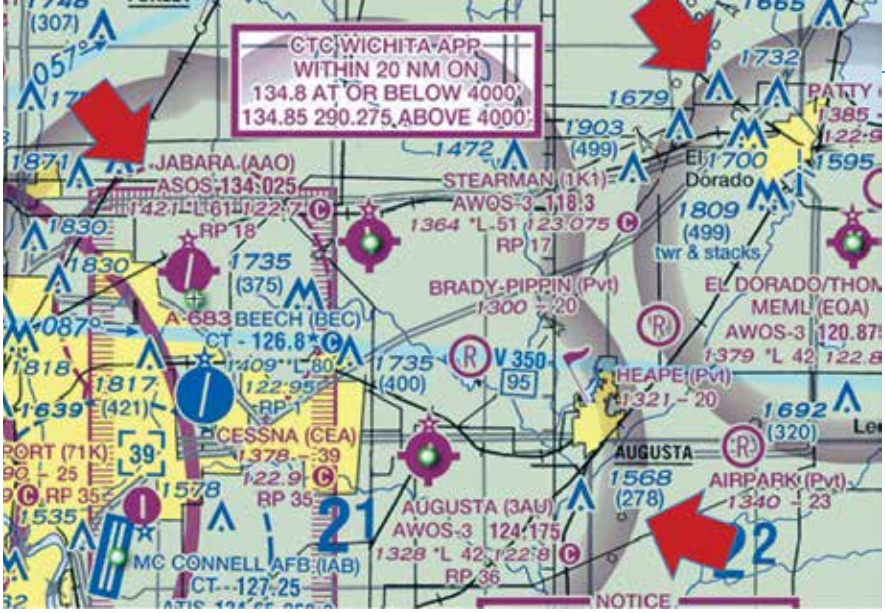


Figure 2

I've had requests from controller to do lots of things to expedite releases on busy IFR days, including keeping my speed up, slowing down on the approach, and cancelling my clearance as soon as possible. I always try to comply with these requests – as we all should – but I know I cannot violate the regulations in doing so … and *the controller does not expect us to.*

So, the Citation pilot may have been in violation of VFR cloud clearance requirements when he cancelled his clearance (I can't be sure; remember, this is very speculative). He would have had to be about 600 feet AGL to be 500 feet below an 1,100-foot overcast. This would have put him about one mile out on the approach glideslope/glidepath in order to cancel IFR, not the four miles out where he cancelled.

Would adhering to the regulations have delayed other operations at the airport? Certainly. But, so what? The Citation would have landed and cancelled on the ground. The Piaggio would have continued to hold for release until the G36 flew its low approach and executed the published missed approach procedure (per the pilot's request). Then the Piaggio would have been released, and finally my student and I would have been released. The Piaggio would have been delayed, but because we waited for the Citation to circle back and land, our departure time would probably have been about the same as it actually was.

Airspace			Flight Visibility	Distance from Clouds
Class A			Not applicable	Not applicable
Class B			3 statute miles	Clear of clouds
Class C			3 statute miles	1,000 feet above 500 feet below 2,000 feet horizontal
Class D			3 statute miles	1,000 feet above 500 feet below 2,000 feet horizontal
Class E	At or above 10,000 feet MSL		5 statute miles	1,000 feet above 1,000 feet below 1 statute mile horizontal
	Less than 10,000 feet MSL		3 statute miles	1,000 feet above 500 feet below 2,000 feet horizontal
Class G	1,200 feet or less above the surface (regardless of MSL altitude).	Day, except as provided in section 91.155(b)	1 statute mile	Clear of clouds
		Night, except as provided in section 91.155(b)	3 statute miles	1,000 feet above 500 feet below 2,000 feet horizontal
	More than 1,200 feet above the surface but less than 10,000 feet MSL.	Day	1 statute mile	1,000 feet above 500 feet below 2,000 feet horizontal
		Night	3 statute miles	1,000 feet above 500 feet below 2,000 feet horizontal
	More than 1,200 feet above the surface and at or above 10,000 feet MSL.		5 statute miles	1,000 feet above 1,000 feet below 1 statute mile horizontal

Figure 3

The Go-Around

Yet another issue is that, after going around, the Citation pilot flew a left-hand traffic pattern to a runway for which right traffic is prescribed (see "RP18" on the Sectional chart in figure 1). This meant that, on its downwind, the Citation was about aligned with the approach into Beech Field, flying opposite the direction of traffic. And, in order to maintain VFR, the jet would have had to remain below about 600 feet AGL. If an IFR airplane broke out on Beech Field's approach the Citation might have been in direct conflict with that traffic.

We cannot excuse the Piaggio pilot for failing to visually clear the final approach and for not making a radio call on CTAF, as a back-up to visual scanning. But if the Citation pilot had complied with the Federal Air Regulations it's most likely the controller would not have given the Piaggio pilot the release that prompted his taking the runway in front of the jet.

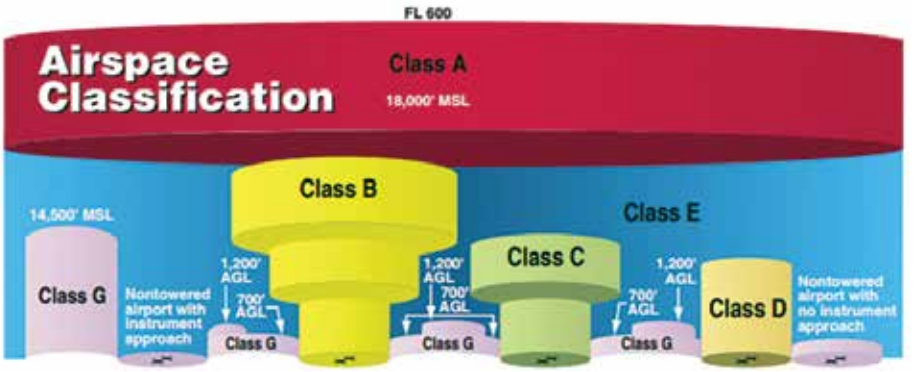


Figure 4

You Have to Look

Notably, there's *nothing* to indicate the vertical limits of Class E airspace around non-towered airports on instrument approach charts or IFR Low Altitude En Route charts. *You have to look at the VFR Sectional Chart* to know the base of the Class E airspace. Yet, this is vital information to know before you can decide to cancel your IFR clearance before landing.

There's a difference between flying a visual approach (while still on an IFR clearance) and cancelling IFR to fly under Visual Flight Rules. People may think "one mile and clear of clouds" is the standard for a visual approach, but it's *only* good for *VFR* flight in Class G airspace, or if you request, and Air Traffic Control grants, a Special VFR clearance in Class D airspace or the surface area, where Class E extends to the ground (as at Jabara).

Making yourself aware of "all available information" (FAR 91.103) means knowing this as well. That's one reason I use the Sectional Chart view on my Electronic Flight Bag during IFR flights unless I have a specific need to check information on the Low Altitude En route.

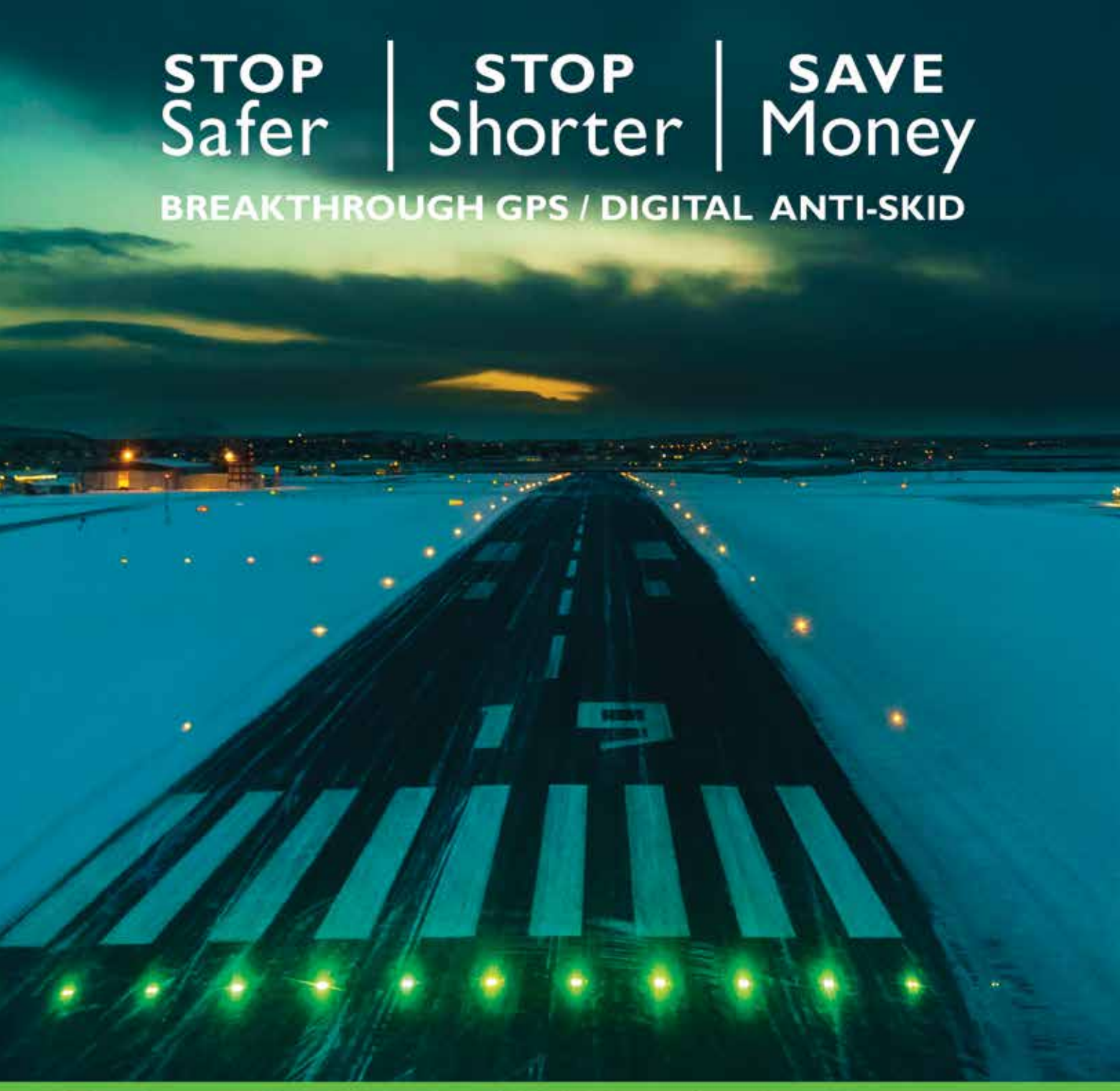
You're a VFR Pilot

Many pilots tell me they file and fly IFR every time they fly, regardless of weather conditions, because it's easier and they "don't have to worry" about airspace rules and regulations. They're absolutely correct that flying IFR takes a lot of the guesswork out of airspace clearances. However, we still have to be aware of the Visual Flight Rules cloud clearance and visibility requirements for controlled (and uncontrolled) airspace, even if we "always" fly IFR … because *as soon as you cancel IFR before landing, or you take off visually to pick up a clearance in the air, you're a VFR pilot.*

Had the Citation pilot not acted quickly and correctly to go around from his visual landing, and sidestepped away from the runway to avoid the rapidly-climbing Piaggio turboprop, *and* if a collision had in fact occurred, then it's possible that cancelling IFR when conditions did not permit it *might* have been found to be a contributing factor. Most likely, under the conditions that existed at the time of this near collision, VFR cloud clearance rules and good operating practice would have required the Citation pilot to cancel his IFR only after landing.

All pilots, including "always IFR" fliers, should review the airspace and VFR minimums information in Chapter 14 of the *Pilot's Handbook of Aeronautical Knowledge.* Knowing and following the rules that apply when you are a VFR pilot just might prevent a collision. T&T

Thomas P. Turner is an ATP CFII/MEI, holds a Masters Degree in Aviation Safety, and was the 2010 National FAA Safety Team Representative of the Year. Subscribe to Tom's free FLYING LESSONS Weekly e-newsletter at www.mastery-flight-training.com.



Effective, Affordable Anti-Skid Braking for Your Aircraft

Advent eABS

CERTIFIED | LIGHTWEIGHT | EASY TO INSTALL

Eclipse 500/550 | King Air B200/B300 | Pilatus PC-12/12NG

Advent Aircraft Systems

Contact tom.grunbeck@aircraftsystems.aero | 918.388.5940 | or see aircraftsystems.aero/dealers.php

Textron's SETP Revealed

Textron Aviation Inc., revealed further program details on May 23 at the European Business Aviation Convention and Exhibition (EBACE) regarding the development of its highly anticipated single engine turboprop aircraft (SETP). The company also announced that letters of intent for the high performance, clean sheet SETP are being accepted.

The SETP will be designed to have cruise speeds of up to 285 knots and full fuel payload of 1,100 pounds. With a planned range of 1,600 nautical miles at high speed cruise with one pilot and four passengers, the aircraft will be able to fly from Los Angeles to Chicago, New York to Miami, London to Moscow or Geneva to Istanbul. It will feature the widest and most comfortable cabin in its segment while offering best-in-class operating costs. The program is targeting first flight in 2018.

"Developed with the pilot and passenger at the forefront, we have designed this airplane to be the clear winner in this segment, from class-leading performance and ownership costs, to superior cabin comfort and versatility," Scott Ernest, president and CEO, Textron Aviation. "We have been intentional with every detail throughout the aircraft, resulting in an exceptional airplane that is sure to impress owners, pilots and passengers alike."

The G3000 touchscreen avionics suite planned for the SETP includes weather radar, advanced Terrain Awareness Warning Systems (TAWS), and automatic dependent surveillance-broadcast (ADS-B) capabilities, which will make it compliant with a significant aspect of future Next Generation (NextGen) air traffic control requirements.

The SETP will be powered by GE's new advanced turboprop engine. The FADEC-equipped, 1,240 SHP engine will ease pilot workload with its single-lever power and propeller control. The engine will provide an initial 4,000 hour TBO and offer class-leading performance retention for outstanding hot/high capability. The airplane will be equipped with McCauley's new 105-inch diameter composite, five-blade propeller, with reversible pitch and ice protection.

The SETP's flat floor cabin is designed to be the largest in its segment and will easily convert between passenger and cargo configurations. The aircraft will feature a class-leading 53-inch wide aft cargo door, perfect for loading large objects and ideal for use in many special-mission applications.

The SETP will seat up to eight passengers, and the digital pressurization system will maintain a 6,130 foot cabin altitude at a service ceiling of 31,000 feet. The aircraft will feature six individual reclining seats and an optional belted lavatory seat with pocket door enclosure, as well as large cabin windows, interior LED lighting, a forward refreshment cabinet and an in-flight accessible baggage compartment within the pressurized cabin.

"We are actively investing in new products and remain focused on bringing smart innovation to market that drives our customers' businesses and missions forward. The SETP is a testament to that approach," said Ernest. "This aircraft will be a perfect complement to our existing Cessna and Beechcraft product lineup and will give our customers the opportunity to move seamlessly through our family of aircraft, regardless of their mission."

The company has developed a cabin prototype, which it is showcasing to customers at its headquarters in Wichita, Kansas, with plans to display it at this summer's EAA AirVenture Oshkosh.

Information: *www.textronaviation.com* T&T

HondaJet Receives European Certification

On May 23, the HondaJet received type certification from the European Aviation Safety Agency (EASA). Honda Aircraft Company announced the achievement during a press conference at the European Business Aviation Convention and Exhibition (EBACE), in Geneva, Switzerland. Steven Higgins, EASA Section Manager for High Performance Aircraft and Turboprops, presented the type certificate for the HA-420 HondaJet to Honda Aircraft Company President and CEO Michimasa Fujino.

"We are excited to achieve EASA certification for the HondaJet today. This certification signifies the HondaJet meets the highest European safety standards," said Fujino. "Our customers have shared that this aircraft is not only high performance, but intelligent, fun to fly and very sophisticated. HondaJet deliveries in Europe have begun, and we are excited to see the HondaJet enter service in this important market."

HondaJet sales began in Europe after significant interest by customers wanting to own the world's most advanced light jet. The HondaJet received its type certificate from the United States Federal Aviation Administration in December 2015. Deliveries have included customers in the U.S., Mexico and Europe.

Patrick Ky, EASA Executive Director declared: "This certification shows that the HA-420 HondaJet fully complies with the most stringent European safety regulations and paves the way for its entry into service. It is the culmination of a particularly successful collaboration between Honda Aircraft Company and EASA. I wish a long and safe life in service to the HA-420."

The HondaJet's distinctive design incorporates advanced technologies and concepts. The HondaJet Over-The-Wing Engine Mount (OTWEM) configuration, natural laminar flow wing, and composite fuselage were developed from long-term research activities. These innovations combine to make the HondaJet the fastest, most spacious and most fuel-efficient jet in its class.

The HondaJet flies at a maximum cruise speed of 422 knots and has a maximum altitude of 43,000 feet. The aircraft is certified for single pilot operation and can seat up to six passengers. It is priced at $4.85 million (U.S.) and has an NBAA IFR range of 1,223 nautical miles.

For more information, visit *www.HondaJet.com*. T&T

by **Kevin R. Dingman**

We the Pilots

"Things may come to those who wait, but only the things left by those who hustle."

– Abraham Lincoln

For the Pilots of Owner-Flown, Cabin-Class Aircraft. That's what it says there on the cover, right under Twin & Turbine. Conversationally, we all just say "T&T." It's a boutique periodical for an elite and select few. Well, a select fifty-thousand or so that, as Honest Abe inferred, "have learned to hustle and to whom things have come." You've told me that you are proud to carry it in the plane and to display it at the office. We who help put it together are grateful; thank you.

Having pride in how far you've come in your piloting career and airplane ownership is a well-deserved acknowledgement of ability and hard work… and maybe some luck. None of the magazine's sub-title description of you, your airplane or your accomplishments are taken for granted by the advertisers, publisher, the editor or We the Writers. Like our national freedom, our aviation freedoms weren't easy to obtain or maintain. Perhaps a prideful raising of our chin and a contemplative sigh is all right as we celebrate our independence this July.

The words in our magazine's title were chosen with deliberation and purpose. "Pilot" is used to denote leadership, authority, control, diligence and trust; to guide and direct; to captain and shepherd – characteristics not unlike those of the brave souls that signed The Declaration of Independence. Not many folks are pilots and, if you read the other aviation magazines, you know that our numbers have dwindled. As far as the general population goes, they stand at the airport fence in awe, camera in hand, wishing they were you.

It's not "We the People", or "When, in the course of human events,"; our cover boldly proclaims: **For The Pilots**. That's you, and the position you hold when in The Seat. You're not part of the cabin crew or a chauffeured passenger and you're not at the airport fence taking pictures; you are the picture. You're not the financier, mechanic, baggage handler, fueler, scheduler or cleaner, although some, even all, of these titles may apply before you take the left seat and after you shut down. Most of the time we effortlessly shift between these hats and are pretty good at managing all of them. The task-compartmentalizer in you is part of what makes you a good pilot and helps you to engage laser-like focus when needed.

Slapped

"Aviation in itself is not inherently dangerous. But, to an even greater degree than the sea, it is terribly unforgiving of any carelessness, incapacity or neglect."

– Captain A. G. Lamplugh, circa early 1930's

Sometimes while in The Seat, the mission requires the undistracted ability to wear just one hat: that of the PIC. Like many professions, this one requires an ongoing commitment to education, training and practice in order to properly execute the responsibilities. Unlike most professions, however, if we display even the slightest carelessness, incapacity or neglect, to an even greater degree than the sea, it's not uncommon for the airplane, the weather, the system in which we operate or bad luck (Ernie Gann called it fate) to slap us down hard. So hard, in fact, that we may only get slapped once. Unfortunately, and in the true fashion of a properly delivered slap, sometimes even the best of us never see it coming. We must therefore be diligent in our duties in order to avoid being surprised by that terribly unforgiving,

one-time slap. How do we get there and do that? The same way you get to Carnegie Hall my friends: practice, practice, practice.

Entrepreneurial Gunslinger

"I could be president of Sikorsky for six months before they found me out, but the president would only have my job for six seconds before he'd kill himself."

– Walter R. 'Dick' Faull, helicopter test pilot.

You do not just command the pilot seat; you are the owner of the seat. The airplane is *Owner-Flown*, the next descriptive term on the cover of T&T. It's not a borrowed or rented machine and it's not flown by a hired gun; you're no pretender. Only in the movies can a novice be summoned from seat 28B or the board room, plop down in the left seat, don a headset, receive radio instructions from Lloyd Bridges and Robert Stack, then fly an instrument approach to a survivable landing – inflatable autopilot assisted or not. As test pilot Dick Faull said, most would kill themselves in short order. Because of the complexity of the machine, its operation and the regulatory hurdles involved, the task of piloting and aircraft ownership is no small undertaking. It's your doing that put the airplane in the hangar and made it available at your beck-and-call; it's you that is the entrepreneurial gunslinger. Ownership represents an ability and convenience easily minimalized if unfamiliar with the comparatively sacramental process of public transportation. Recent articles in this column describe some of the components in the ownership and operation of your high-performance airplane and how, in fact, the very complexity of the endeavor is one of the things that draws us to flying.

Classy Keys

"To invent an airplane is nothing. To build one is something. But to fly is everything."

– Otto Lilienthal

It was a magical time and they were all marvelous machines, but you're no longer dangling below the high-wing of a trainer under the tutelage of an instructor. You're not sitting atop a Hershey-bar wing droning along at 7,500 feet – new license in hand. And there's no ballistic recovery chute to save you from fate or yourself. You're likely not propelled by normally-aspirated, piston-produced horses and you no longer have the luxury of a large fudge-factor from the engineers. Turbocharged recips or jet turbines are your power source. Your glide ratio is less, the air is dangerously cold and thin where you fly, fuel disappears by the hundreds of pounds and a mile is consumed in the time it took you to read this sentence. Your altitude is called a Flight Level and the strength of your engines is described by shaft horsepower or pounds of thrust. The decisions you make are influenced by speed, often measured in Mach, by weather measured in RVR's, runways available by Mu readings and your fuel by time remaining in minutes. Expenses are not measured by dollars, but by tens of thousands and hundreds of thousands of dollars. The final descriptive words in the magazine's title is *Cabin-Class Aircraft*. Not quite as exalted as 'Galaxy Class' like the Starship Enterprise, and while it's gratifying to have a key in your pocket that says CAT, Jaguar, or Trinity Yachts, airplane keys that say Piper, Cessna, Beechcraft, Gulfstream, Citation, Lear, Falcon, Daher, Mitsubishi, Hawker, or Pilatus are in a rarified class of their own.

Born To Be a Pilot

"It's none of their business that you have to learn how to write. Let them think you were born that way."

– Ernest Hemingway

I wasn't born a writer, or a pilot for that matter – I have to work at them both. Thank you for elevating the bar and making it seem as if you were born a great pilot, even though we all have to work at it. Thank you for not flying as if each flight should be a demonstration of the performance envelope and for enduring the ongoing education, training and expense needed to remain a good pilot. For doing it right and making the rest of us look good. For upholding the trust of friends, family and the public. For having the courage to divert or cancel when the pilot-hairs stand up

DEDICATED TO HELPING BUSINESS ACHIEVE ITS HIGHEST GOALS.

NBAA

NBAA REGIONAL FORUM

September 15, 2016

White Plains, NY | Westchester County Airport (HPN)

ATTEND NBAA'S REGIONAL FORUM

The forum brings together local business aircraft owners, operators and manufacturers, and other aviation professionals for a one-day event at the Westchester County Airport (HPN) in White Plains, NY. As an attendee you can visit with exhibitors, view business aircraft side-by-side on static display and take part in education sessions throughout the day.

LEARN MORE & REGISTER: www.nbaa.org/forums/twinandturbine

on your neck. And for helping dispel the myth that little airplanes always crash and that GA pilots are entitled hobbyists. But you know all of this because you have hustled and things have come to you. I'm grateful to be one of the writers for The Pilots of Owner-Flown, Cabin-Class Aircraft and to sign my John Hancock boldly upon on each story.

"Loyalty to the country always. Loyalty to the government when it deserves it."

– Mark Twain

In addition to our regular flying schedule, July provides an opportunity to attend sundry fly-ins, pancake breakfasts and fireworks. We're in a unique position to view the rockets' red glare and bombs bursting in air from the plane if we choose, and fireworks are great, but not the metaphoric kind. Keep doing it right, so as to limit the drama and avoid any mechanical or procedural fireworks. As professionals, business leaders and educated Americans, we are also in a position to recognize political fireworks and challenges to our nation's founding documents. As we gather with friends and family around the grill, pool, boat, golf course, and the airplane, to celebrate "a government that derives its just powers from the consent of the governed…", We the Pilots know that nothing is free, especially freedom. We must assume a leadership role and check-six – aeronautically and metaphorically. Let's continue cultivating the things that have preserved our freedoms and got us to where we are as T&T pilots, business leaders and as a Nation. Have a safe and happy July, my friends. T&T

Kevin Dingman has been flying for over 40 years. He's an ATP typed in the B737 and DC9 with 21,000 hours. A retired Air Force Major, he flew the F-16 then performed as a 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

Ad Index

ADVERTISING DIRECTOR JOHN SHOEMAKER
2779 Aero Park Drive, Traverse City, MI 49686
Phone: 1-800-773-7798 • Fax: (231) 946-9588
E-mail: **johns@villagepress.com**

by **David Miller**

Those Pesky Flashing Lights

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, Miller, along with his wife Patty, now own and fly a Citation CJ1+. You can contact David at davidmiller1@sbcglobal.net.

We see them everywhere. On police cars, at railroad crossings, even on our airplanes. Do you ever go to Starbucks on Sunday morning at 0530, when absolutely no one is on the road, and still stop at the red light? I have been known to treat that red light as a "suggestion."

Perhaps that kind of thinking is what got me in trouble.

As I taxied out in the CJ3 simulator at Proflight in Carlsbad, CA, all was well. It was check ride time but I was primed and ready. The sim was set up for a very low visibility departure from runway 18R at KMEM. Ceiling 100 feet. RVR less than 600 feet. We were doing a SMGCS takeoff. That's an acronym for Surface Movement Guidance and Control System. It's an elaborate procedure where you follow a virtual pickup truck with its lights flashing to the taxiway, then stop and report to ground control for further instructions at a "pink spot" painted on the taxiway. It's how they move very large numbers of FedEx airplanes from Memphis in really low visibility. You know, because it "absolutely positively has to get there overnight." I had no intention of ever being in Memphis in this situation but what the heck, it was a check ride.

I also had no intention of having the FAA on board silently watching my every move.

"November 1865 Charlie, wind 180 at three, RVR less than 600, cleared for takeoff 18 right," came the instructions. I turned on the pitot heat, rechecked everything, released the brakes and slowly lined up.

Then came the tap on my shoulder.

"Dave, we have a little problem," said my instructor. "You just taxied over the flashing hold short lights." And indeed I had. We had practiced this before. A series of flashing red and white lights were manually controlled by the tower and had to be off for you to cross them, even if cleared for takeoff. In my effort to do everything right, I blew it. And from the back, I heard something I had never heard in 48 years of flying.

"Sorry, were going to have to end the check ride."

I was demoralized. Humiliated. Ruined. I would never fly again. I could not believe what I had just done. Something as simple as stopping at the flashing light. Something that I did all the time. I was sure the government would confiscate my airplane, Patty, and everything I owned.

The guy from the FAA went home.

"Dave, we're going to have to do some additional training and then start the check ride again," said my instructor. And sure enough, another instructor jumped in the sim. We taxied out to the exact same position on the taxiway. "Dave, do you see those flashing lights over there?" he said.

"Yes sir, I do."

"Don't drive over those."

Then we taxied back to the ramp, got another examiner and started the whole check ride all over again. I passed, and I bet I never make that mistake again.

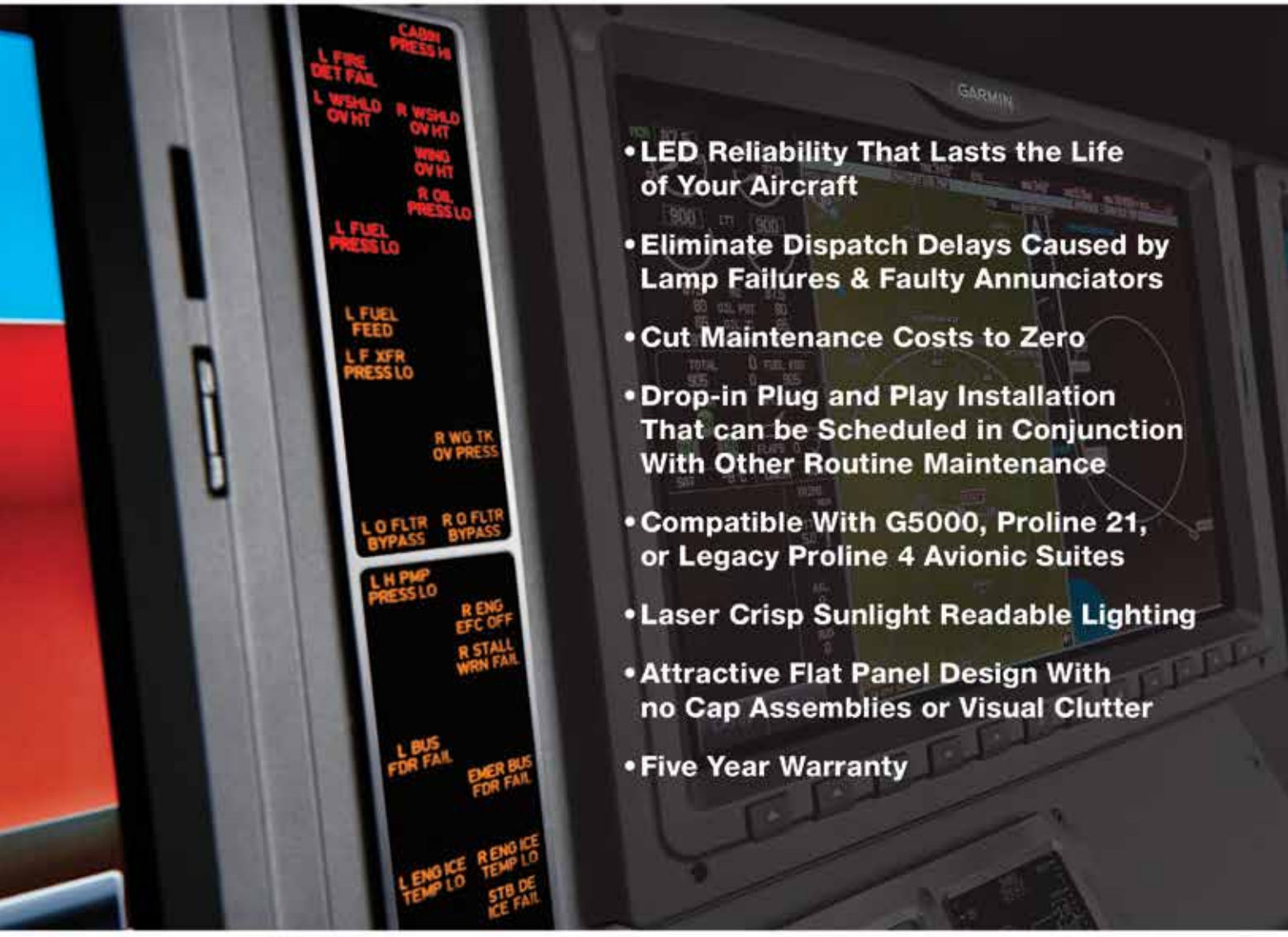
Unless I am on the way to Starbucks.

Fly safe.

Luma Technologies *LLC*
Partners in Quality & Innovation

New for BeechJet

Lumatech™ 4400 Series LED Master Caution Warning System
for BeechJet 400A, XP, XPR, & 400T Aircraft



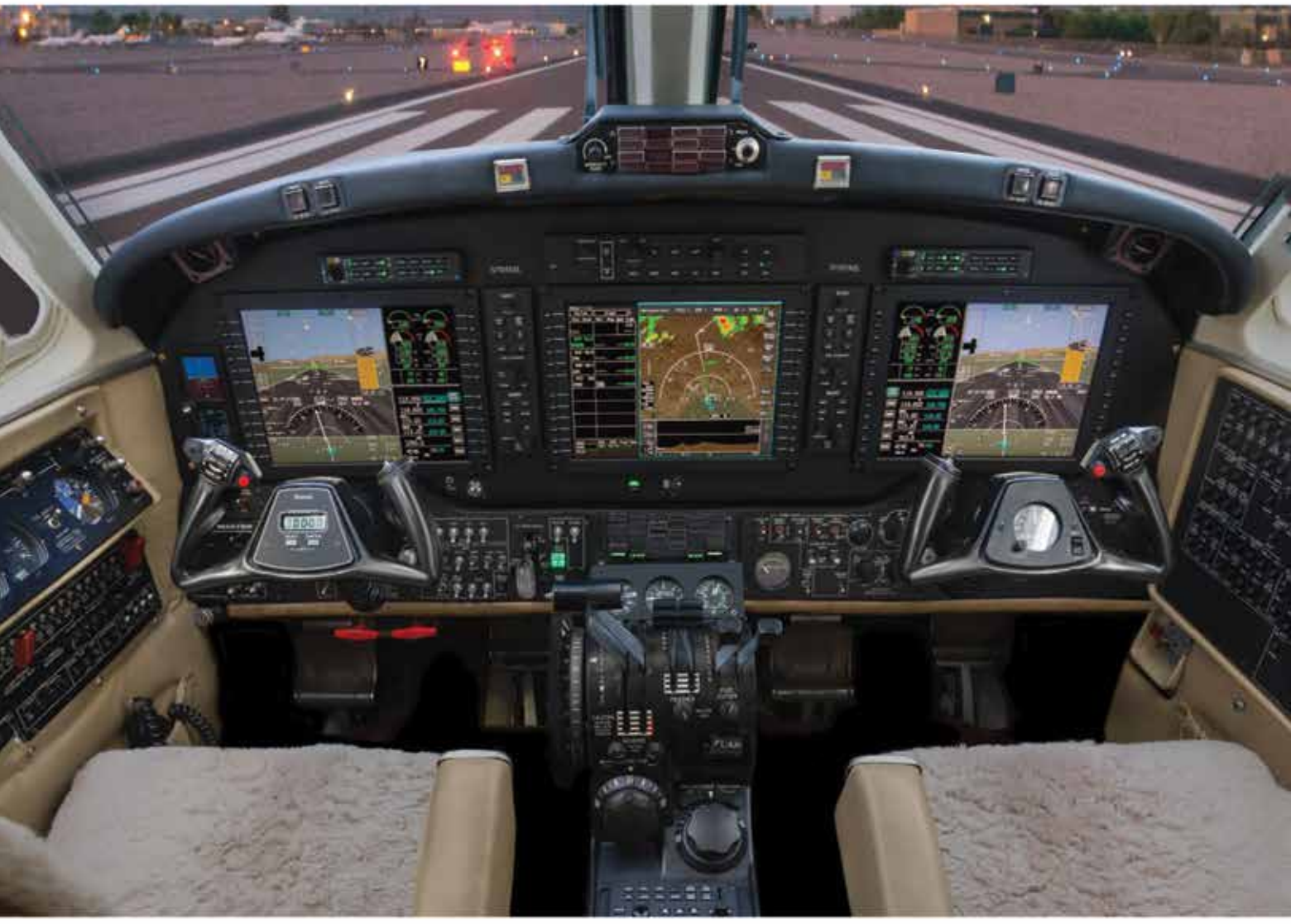
- **LED Reliability That Lasts the Life of Your Aircraft**
- **Eliminate Dispatch Delays Caused by Lamp Failures & Faulty Annunciators**
- **Cut Maintenance Costs to Zero**
- **Drop-in Plug and Play Installation That can be Scheduled in Conjunction With Other Routine Maintenance**
- **Compatible With G5000, Proline 21, or Legacy Proline 4 Avionic Suites**
- **Laser Crisp Sunlight Readable Lighting**
- **Attractive Flat Panel Design With no Cap Assemblies or Visual Clutter**
- **Five Year Warranty**

A Match Made in Heaven

Available as Standalone Install or Bundled With Other Avionic/Aircraft Upgrades.
Contact Luma or Your Preferred Maintenance Provider for Details.

13226 SE 30th Street (B3), Bellevue, WA 98005 • 425.643.4000, x305 • www.Lumatech.com

Welcome to Your All-New Office



AeroVue™ Integrated Flight Deck for King Air

BendixKing AeroVue offers King Air operators the same proud heritage of the Honeywell Epic™ avionics suite found in a wide variety of new corporate jets and turboprops, coupled with industry-leading features such as SmartView™ Synthetic Vision and Interactive Navigation, plus a user interface designed with you in mind.

With millions of operational hours flown by pilots like you, come discover what makes AeroVue the most capable, all-new integrated flight deck for your King Air.

To learn more call 1.855.250.7027 or visit **bendixking.com** for a list of authorized installers.

BendixKing
by Honeywell