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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

Steve 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
Molly Costilo
P.O. Box 968
Traverse City, MI 49685
1-800-447-7367

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Path of Light



For now, the night is clear and I can see the path of ground lights stretching out to the horizon. My attention is drawn to clustered galaxies that mark small cities and towns below. Each probably has an airport, and the closest ones welcome me with a winking green/white beacon,

a sign that says “we’re here, if you need us.”

The sight of a lighted runway is rare, especially from this altitude, but if I want to know more about the facility I can just scroll over it on the moving map here in my cockpit and read what’s in the database. When I started flying, the nights were much less friendly; a lot of small-town airports were just daytime-only grass fields, and sighting a beacon was about the only sign that one’s journey was going to have a successful conclusion. Having information available at your fingertips meant referring to a worn copy of the Airport/Facility Directory.

Knowing the airport’s location at that town below confirms my knowledge of the route; that must be Springfield, as expected, because the beacon lies northwest of the city lights, in a black area denoting the airport. I start scanning ahead for the next beacon, eager for the trip to end. This must have been how it was for the mail pilots of bygone days, alone in their cockpit with nothing but sharp vision and a rudimentary map to aid them. The airway beacons meant life, a sign that the weather had yet to close in and their groundspeed was holding up. What would they have given for an MFD with instant weather report just a touch away?

The lights at ten o’clock wink out of sight, then reappear. I expected this; a lower layer of cloud is beginning to form, playing peek-a-boo with us. Again I check destination weather; a little precip but decent ceiling. We’ll keep the approach loaded, even though everybody is making it in on a visual. Altitude is our friend, for now; a dark ridge, revealed by the obscuring of ground lights ahead, must be crossed before we can surrender the precious safety of the heights.

Maintaining orientation is easy, because of the tools I have here in my snug cabin. Distance to go, a course line to lead us, and the steady blinking of a reply light to confirm that I’m being watched by a radar controller. Better this than a drafty cockpit with a fluttering chart strapped to my knee. Soon we’re sliding down on the arrival, dropping through the mid-layer clouds to see the panorama of the city and a beacon ahead. There’s the approach-light rabbit, bounding along for us to follow to the runway. Still, we mind the altitude; too many pilots, eager to get home, have forgotten about the nearby obstructions, hiding in the dark among the friendly lights.

Rolling down the path of runway lights, now turning amber as we search for the blue of our turnoff and the green centerline lights, I can reflect that this is what piloting is all about. As those who flew before us had done, we’ve used our resources to defeat the scourges of darkness and weather, bringing our flight safely to its planned destination. The path of lights, once airway beacons and bonfires, have given way to more modern paths. Vigilance, however, is still what keeps us safe.

LeRoy Cook, Editor

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NBAA Convention

By LeRoy Cook

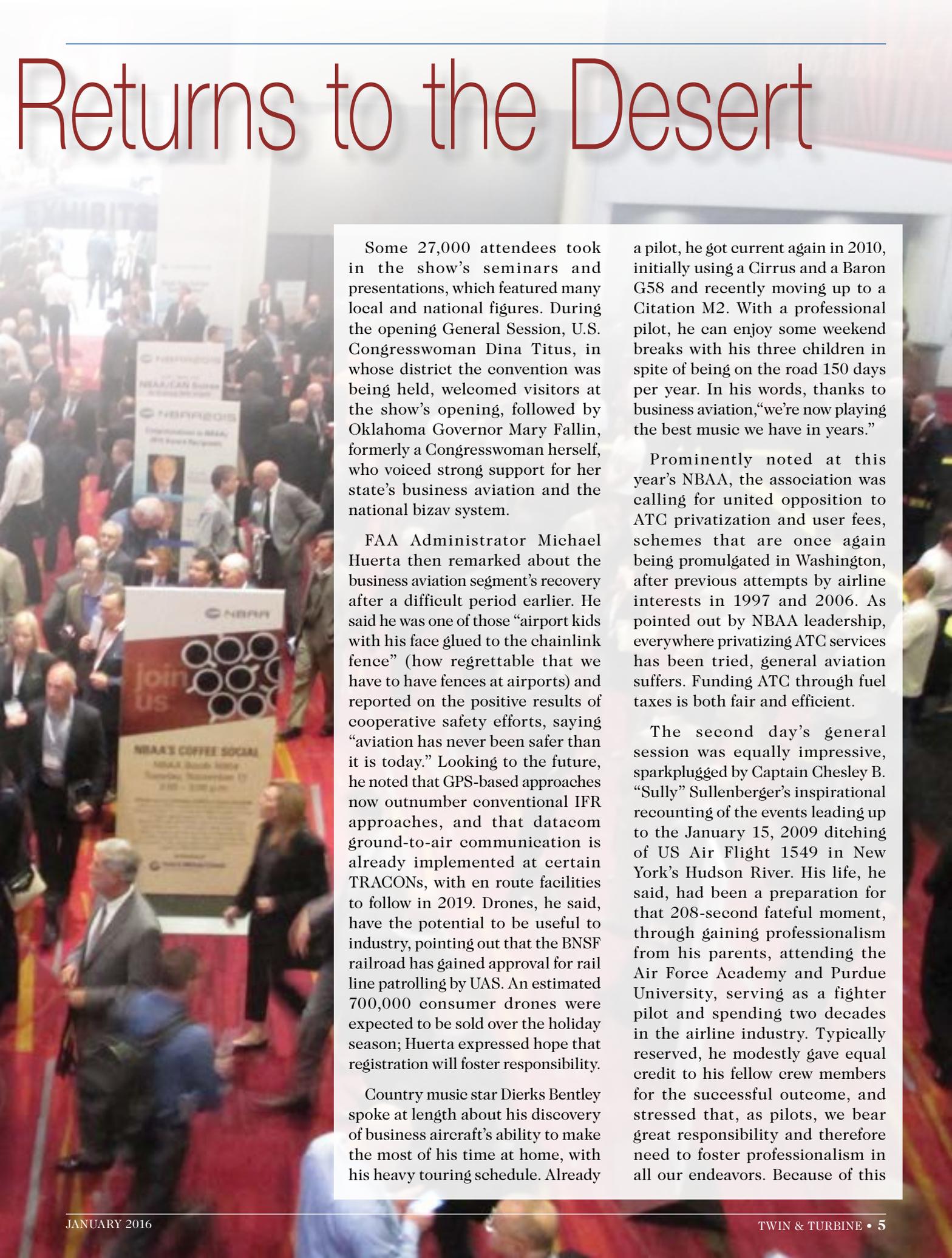
The National Business Aviation Association's annual convention and exhibition returned to Las Vegas, Nevada in November, a site that's always a popular diversion for business aircraft operators. Held later than usual, just a week before Thanksgiving, the show was preceded by cold temperatures and blustery 60-knot wind gusts that thankfully moderated as the week went on.

NBAA 2016 was a strong, healthy event for the bizav industry, despite sagging new aircraft sales activity. Support for the fleet requires MRO (maintenance, repair and overhaul)

and service firms to maintain and refurbish legacy business airplanes to the latest standards, and these always account for a substantial number of exhibitors. Space in the cavernous Las Vegas Convention Center was taken up by 1,100 exhibits; some, like Gulfstream, HondaJet and Jetex, occupied huge volume with impressive structures, while others plied the crowd with showgirls, fast cars, personalities and sports stars. William Shatner, aka Captain James T. Kirk, arrived on the show's opening day in a Bombardier Global, promoting Bombardier's WAVE Wi-Fi system with Honeywell and Inmarsat technology.



Returns to the Desert



Some 27,000 attendees took in the show's seminars and presentations, which featured many local and national figures. During the opening General Session, U.S. Congresswoman Dina Titus, in whose district the convention was being held, welcomed visitors at the show's opening, followed by Oklahoma Governor Mary Fallin, formerly a Congresswoman herself, who voiced strong support for her state's business aviation and the national bizav system.

FAA Administrator Michael Huerta then remarked about the business aviation segment's recovery after a difficult period earlier. He said he was one of those "airport kids with his face glued to the chainlink fence" (how regrettable that we have to have fences at airports) and reported on the positive results of cooperative safety efforts, saying "aviation has never been safer than it is today." Looking to the future, he noted that GPS-based approaches now outnumber conventional IFR approaches, and that datacom ground-to-air communication is already implemented at certain TRACONs, with en route facilities to follow in 2019. Drones, he said, have the potential to be useful to industry, pointing out that the BNSF railroad has gained approval for rail line patrolling by UAS. An estimated 700,000 consumer drones were expected to be sold over the holiday season; Huerta expressed hope that registration will foster responsibility.

Country music star Dierks Bentley spoke at length about his discovery of business aircraft's ability to make the most of his time at home, with his heavy touring schedule. Already

a pilot, he got current again in 2010, initially using a Cirrus and a Baron G58 and recently moving up to a Citation M2. With a professional pilot, he can enjoy some weekend breaks with his three children in spite of being on the road 150 days per year. In his words, thanks to business aviation, "we're now playing the best music we have in years."

Prominently noted at this year's NBAA, the association was calling for united opposition to ATC privatization and user fees, schemes that are once again being promulgated in Washington, after previous attempts by airline interests in 1997 and 2006. As pointed out by NBAA leadership, everywhere privatizing ATC services has been tried, general aviation suffers. Funding ATC through fuel taxes is both fair and efficient.

The second day's general session was equally impressive, sparkplugged by Captain Chesley B. "Sully" Sullenberger's inspirational recounting of the events leading up to the January 15, 2009 ditching of US Air Flight 1549 in New York's Hudson River. His life, he said, had been a preparation for that 208-second fateful moment, through gaining professionalism from his parents, attending the Air Force Academy and Purdue University, serving as a fighter pilot and spending two decades in the airline industry. Typically reserved, he modestly gave equal credit to his fellow crew members for the successful outcome, and stressed that, as pilots, we bear great responsibility and therefore need to foster professionalism in all our endeavors. Because of this

dedication, he pointed out, it has been 14 years since a fatal U.S. large-airline accident has occurred, with 28,000 uneventful arrivals taking place every day.

Joe Clark, innovator at Aviation Partners, who reportedly “did more for the environment than anyone in aviation” by developing fuel-saving winglet technology, received NBAA’s Meritorious Service to Aviation Award. Bob Showalter, famed FBO owner at Orlando Executive Airport for almost 70 years, received the Jack Doswell Award, and the John H. Winant Award went to Jeff Lee of the Westchester Aviation Association.

News Of The Show

Textron Aviation’s Cessna Citation division caused much of this year’s NBAA buzz, by announcing a new Hemisphere mid-size jet, an even larger and longer-ranged Citation than the Longitude. The latter aircraft was shown in the form of a fully-decked out static test article at the airport display. The Citation Latitude, now in service, was parked nearby; all three aircraft feature flat-floor stand-up cabins and the latest advanced avionics. The Longitude’s engine is now to

be the Honeywell HTF7700L; the airplane will be built at Textron’s former Beechcraft plant in east Wichita, taking advantage of space and skilled workers there. First flight will be in 2016, with deliveries beginning in 2017.

The Hemisphere, slated to fly in 2019, will be a Mach .94 airplane with 4,500 n.mi. range, targeted to sell for \$35 million. Engine and avionics choices are yet to be announced. With the Latitude and Longitude, Cessna will have a progression of choices for Citation buyers moving up the size and performance ladder. Textron Aviation President Scott Ernest also said Textron plans to move ahead with development of a large-cabin single-engine turboprop, to be powered by 1,300 shp GE turboprop, offering 1,500 n.mi. range and 280-knot speed.

New aircraft, of course, abound at every NBAA show. Dassault brought an unpainted Falcon 8X, still in flight test, and Gulfstream showed up with one of the G500 flight-test airplanes. HondaJet showed its perennially ready-for-certification HA-420; FAA certification was subsequently issued on December 10, clearing the way for deliveries to begin after the first of the year. Piper’s new M600 turboprop is expected to be available by Q1 2016. Pilatus celebrated the first flight of its second PC-24 “versatile jet” in Switzerland on Day 2 of the show, while announcing significant 2016 product improvements for the PC-12NG turboprop. Bombardier’s Challenger 650 achieved FAA certification just a week prior to NBAA.

Big order announcements are also typical of the NBAA show, with Flexjet President Kenn Ricci signing an agreement to buy 20 of Aerion’s proposed AS2 supersonic business jets, now projected to be available in 2023. More currently, Flexjet also ordered 20 more Bombardier Challenger 350s, doubling its order size. One Aviation, meanwhile, announced a Chinese deal for 20 of its Eclipse 550 very-light jets.

Retrofitting older airplanes was big news as well. In addition to Nextant’s 400XTi and King Air 90XT refurbishing, Elliott Aviation announced its 400E upgrade program for Beechjet/Hawker 400’s, which includes a Garmin G5000 panel.

Rockwell Collins and Duncan Aviation announced the availability of a Proline Fusion touchscreen update for the Proline 21 panel in Citation CJ3s, allowing owners to maintain ProLine familiarity while gaining ADS-B and WAAS capability. Sandel Avionics jumped into the flight deck business with an Avilon retrofit suite for the Beech King Airs, to be STC’d by June 2016. Universal Avionics was showing a Citation VII with its Insight flight deck instrumentation, and Innovative Solutions and Support had a Pilatus PC-12 on hand with its Future Flightdeck retrofit package, including an autothrottle installation that can be used with other PT-6A-equipped airplanes.

In the propeller world, Hartzell announced a five-blade composite propeller for the Pilatus PC-12, cloning its



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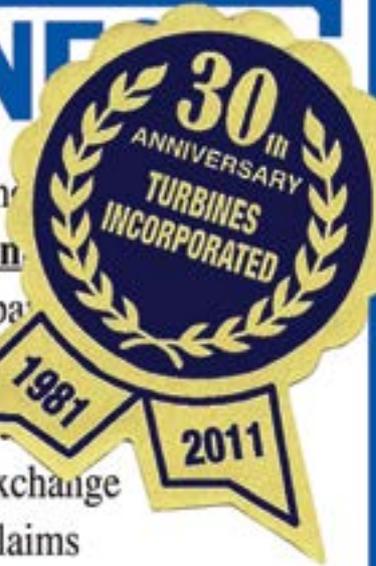


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successful program for the TBM airplanes, as well as similar props for the King Air line. Not to be outdone, BLR Aerospace has developed a swept, five-blade "Whisper Prop" retrofit for the King Airs 90 and 200, using MT natural-composite propellers. For the first time, BLR also introduced Whisper Props for the King Air 350 at the show, designed to work with BLR's factory-standard winglets.

On The Field

The static displays were jammed with the latest new-manufactured offerings and gleaming brokered aircraft. Once again, 18 aircraft were on display in the exhibit hall, towed over from McCarran International, including a King Air 300 from Commuter Air Technology with a high-gross, extended-range fuel system mod. Over 80 airplanes were at Henderson Airport at the south edge of town, everything from a Boeing business jet to the Viking Twin Otter amphibian. Textron Aviation dominated with its combined exhibit of all the Citation and King Air airplanes. The hit of the static show, however, had to be a time-warp Howard 500 executive plane from the 1960s, based on the WW-II Lockheed PV-1 patrol bomber, a hulking taildragger with Pratt & Whitney R2800 radials and wide-chord four-blade Hamilton-Standard props. It could still run a good race with the modern business planes, offering 300-knot speed, stand-up amenities and picture windows.

Once the weather ameliorated, the 2015 NBAA convention was an outstanding event. Despite lagging new-plane sales, worldwide economic malaise and terrorism threats, satisfying the necessary business travel requirements of companies continues to be a major industry; nothing else can bring players together as efficiently and conveniently.

The 2016 NBAA Convention will take place in Orlando, Florida, from November 1 to November 3, 2016. For further information, visit www.nbaa.org. 

I LOST AN ENGINE ON TAKEOFF...!



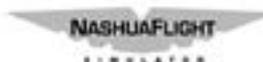
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AOA Redux

(Aspen's Angle Of Attack Solution)

By Adam Alpert



The Grumman Widgeon stalled at 200 feet above the water, with only a small buffet from the wing to signal the event. The pilot, cognizant that the amphibian's design excluded any kind of stall warning device, constantly monitored his airspeed – especially when low – to mitigate the risk of a stall. And yet, even with the airspeed indicating above-stall, a classic stall/spin event was unfolding. The pilot was quick to apply power and lower the nose, but his actions came too late, the altitude was just too low. The Widgeon impacted the water, left wing first, with such force that a post-crash fire ensued. The pilot was seriously injured, along with one of the two passengers. The airplane eventually sank and was never recovered.

This unfortunate accelerated-stall accident occurred during a photo shoot of a sailboat race. The physics in play that day apply to many loss-of-control accidents, one of the leading causes of GA fatalities according to the General Aviation Joint Steering Committee. How can this be? From day one of their training, students are drilled on the disastrous outcomes of stall/spin accidents, and how to prevent them. Furthermore, stall recognition-and-recovery is a big part of recurrent training, especially in Part 142 schools. And still, these accidents continue to occur.

The explanation is largely rooted in an incomplete understanding of the dynamic nature of lift required to maintain controlled flight. While airspeed is a significant factor, it alone is a relatively poor predictor of lift. And yet, airspeed is the primary metric that most GA pilots lean on to assess their margin and predict how close the airplane is to stalling. To more precisely determine how much of the wing's lifting capacity is consumed, the wing area, weight, temperature and altitude (for establishing air density), load factor, and center of gravity must all be included in the calculation.

From the NTSB Files:

LAX87LA174

File No. 245 04/12/1987 VENTURA ,CA Aircraft Reg No. N32BB Time (Local): 14:03 PST

ACCIDENT SEQUENCE:

Sequence event #1: LOSS OF CONTROL – IN FLIGHT

Phase of Operation: DESCENT – NORMAL

Findings

1. (F) THROTTLE/POWER CONTROL – EXCESSIVE – PILOT IN COMMAND
2. (C) STALL – UNCONTROLLED – PILOT IN COMMAND
3. (F) REMEDIAL ACTION – DELAYED – PILOT IN COMMAND

Sequence event #2: DITCHING

Phase of Operation: DESCENT – UNCONTROLLED

Findings

4. (F) TERRAIN CONDITION – WATER,ROUGH

Sequence event #3: FIRE

Phase of Operation: LANDING – FLARE/TOUCHDOWN

Findings Legend: (C) = Cause, (F) = Factor

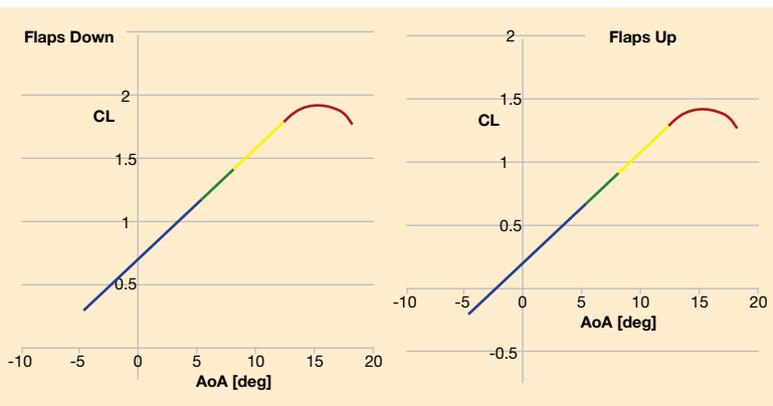
A much better indicator of lift capacity is the Angle of Attack (AOA), the angle between the wing chord and the relative wind. This angle precisely correlates with the coefficient of lift (CL), the inverse of which is the lift capacity remaining. Knowing the lift capacity remaining means knowing how close the airplane is to a stall at any time (CL Max). As CL increases toward CL Max, the lift capacity remaining decreases, reducing the margin of safety. At CL Max all the available lift capacity is consumed and the airplane is at risk for a stall, potentially leading to a loss of control event. Conventional AOA instruments, typical of airliners, business jets, and military airplanes, monitor such conditions as air pressure, temperature, weight, CG, and load factor, and often employ a complicated exterior vane sensor that literally measures the angle. These systems work well, but they are expensive and difficult to retrofit, largely the two reasons they have not enjoyed much success in the single-engine piston and twin markets.

A New Day For AOA

Fortunately, change is in the wind. A new series of GA-targeted AOA products has recently emerged,

including the latest innovation from Aspen Avionics. Unique among the lower-cost offerings, the Aspen AOA software integrates into the Evolution EFD 1000 PFD and MFD and requires no vanes, special pressure sensors, or component displays. Instead, the system leans on airspeed, temperature, altitude, pitch, and acceleration information provided by the EFD 1000's ADC and AHRS, along with some simple weight and V-speed parameters unique to the aircraft. And rather than measuring AOA to determine CL, the Aspen product calculates the coefficient directly. Ironically, angle of attack, in the sense of relative wind and wing chord, does not play a direct role in the calculation. This 100% software upgrade retails for around \$1,900 – a bargain compared to the big airplane products. But the question begs, does the system really work?

In pursuit of an answer, we purchased the software upgrade for the installation in our 1944 G44 Widgeon. We chose the Widgeon not only to redeem its namesake but because, like most airplanes built before 1950, the Widgeon has no stall warning device whatsoever. Furthermore, the airplane, a complex, heavy piston twin amphibian with a symmetrical wing and flaps, promised to test the full envelope of support offered by Aspen. Our Widgeon already benefitted from a single Aspen Evolution PFD, so, in theory, the installation would require no more than a download and memory card reprogramming. In



reality, the installation process required starting with a version of Evolution base software that was compatible with the unlocking software used to enable the AOA functionality. It turns out some versions (ironically, the newer ones) were not recognized by the unlocking software, a problem that has since been corrected. Once this was sorted out, our avionics technician was able to successfully complete the installation.

After installation comes calibration. First, information, including the aircraft's "near" cruise speed (80% Vno), max gross weight, short field approach speed, basic empty weight, and calibration weight (the weight of the aircraft as loaded) is entered into the system. Next, the pilot must fly three different aircraft configuration/

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airspeed scenarios. Each scenario requires the pilot to hold airspeed, vertical speed, pitch, and roll precisely for up to 2.5 minutes. Exceeding any one of the tolerances invalidates the calibration. For example, the speed target is ± 3 mph, and the pitch cannot vary by more than one degree. (Most autopilots cannot achieve this level of precision.) I found the calibration process to be challenging, especially during the final step when the airplane has the flaps and gear extended. On our particular day, the airplane was loaded with CG forward, so hand-flying and holding a target speed just above stall, while complying with the tolerances, demanded concentration and strength. Performing the calibration on a calm day is a must.

Following calibration, the Aspen Avionics AOA manual instructs the pilot to configure the airplane for landing, flaps and gear down, and perform a power-off stall to test the system. As the airplane slows, the pilot observes a graphic on the EVO 1000 PFD (or EVO 2000 MFD). Two pointers travel vertically along a set of stacked colored bands that represent the CL range. The lower pointer indicates the CL when the airplane is dirty, the upper when it is clean. Starting at the bottom, the bands are colored blue (representing high remaining lift capacity), green, and then yellow. At the top, yellow with black hash marks represents low remaining lift capacity. As the airplane slows both pointers move upward, but

with the airplane configured dirty, only the lower point indicates CL and proximity to a stall. It is this pointer that the pilot follows.

The second test is conducted with the airplane clean, this time keeping an eye on the upper pointer to determine CL. I queried Michael Studley, Aspen's Director, Customer Service – Field Service Engineering, about the need for two pointers (confusing). He acknowledged that the two-pointer representation requires some practice, but affirmed that it is more accurate than competitor products that use one pointer and blend multiple configurations for their CL calculation. Also, according to Studley, the configuration that amphibians use to land on sea – wheels up, flaps down – changes the CL calculation minimally compared to land ops, so happily a third pointer is not necessary.

Using The System

The post-calibration tests ultimately proved that the system was working. Power-off stalls in the Widgeon while dirty are very honest. Applying a normal recovery, pitch down/full power, flaps to approach, positive rate, gear-up, can be accomplished with fewer than 200 feet of altitude. Even more impressive is the performance of Aspen's branded AOA. Just prior to the stall, the lower pointer was near the top of the yellow hashed band, exactly where it should be. The same excellent performance was observed

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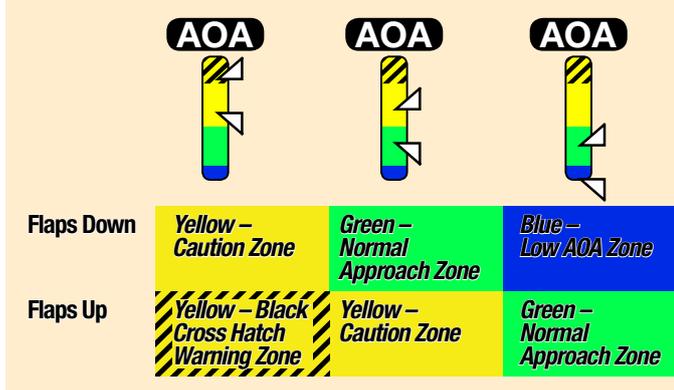
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in the clean configuration, although remembering which pointer to follow took some effort.

We also flew the instrument in steep-banked turns to observe the effects of acceleration. Not wanting to cause a real loss-of-control event, we did not actually stall the airplane. Configured clean and with the airspeed considerably above published Vs, it was sufficient to experience the onset of buffets exactly coincident with the upper pointer reaching the hashed band zone.

The Aspen supports several modes of operation including “Auto”, where the indicator is only displayed on the PFD when the upper pointer (clean configuration) is approximately a quarter of the way up from the bottom of the green band. For airplanes equipped with their own MFD, the indicator can be enlarged for easier viewing. This is helpful for flying a safe speed or angle more precisely. And, while Aspen Avionics acknowledges that the device is not quantitative, the company’s recently-published promotional video suggests that it can be used to determine certain V-speeds to fly. For example, the best rate of climb may be accomplished with the upper pointer held exactly between the green and yellow bands. Still, not having an accompanying MFD in the Widgeon to display the larger indicator, it seems probable that holding the pointer so precisely would be difficult. I expect determining a bug speed and following the airspeed tape might be a more realistic answer. We did, however, discover that targeting the lower pointer between the green and yellow bands while on approach with the airplane configured to land nicely correlates with Vmc, making for a handy cross reference.

Aspen Avionics deserves a lot of credit for developing a practical and inexpensive AOA/CL device, one that functions well and supports a large number of airplane types. While I might wish for more features, including configuration sensitivity, audio output, a stick-shaker interface, and 1.3 X stall pointer bug on the airspeed tape, similar to what we have in our Citation CJ3, I am not sure I would be willing to pay the extra tens of thousands of dollars needed to accomplish the task in the smaller airplane. More to the point, knowing the available lift capacity remaining (CL) at all times is likely the best way avoid a loss control accident. And that is something the Aspen Avionics product does very well, indeed. 

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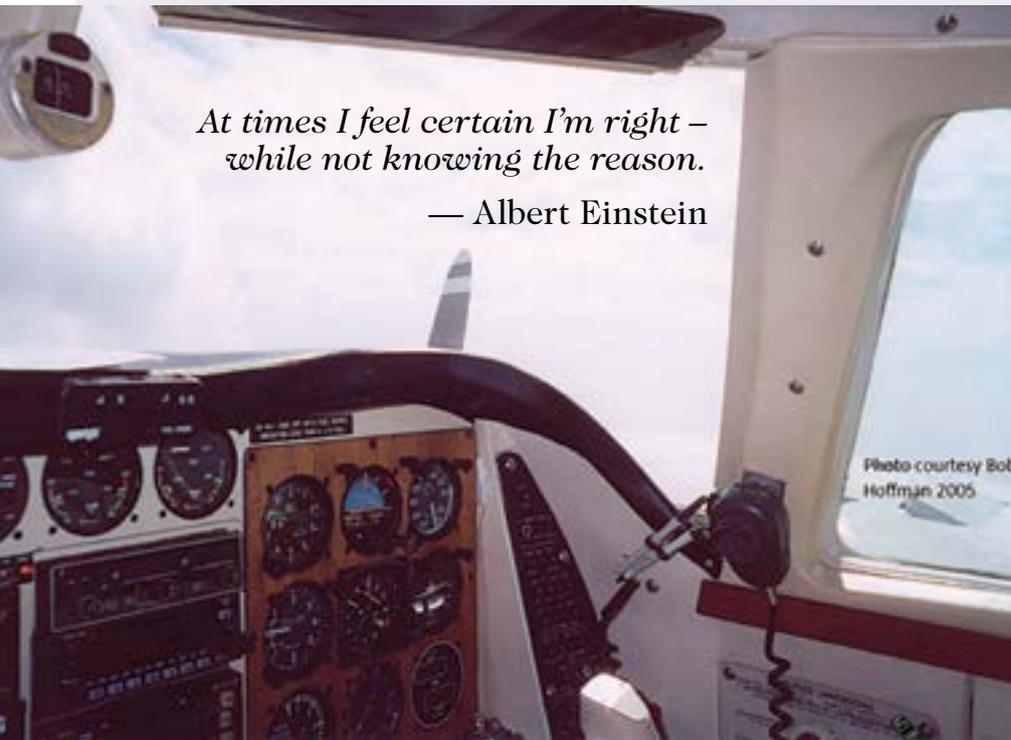
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From the Flight Deck Intuitively Obvious

by Kevin R. Dingman

*At times I feel certain I'm right –
while not knowing the reason.*

— Albert Einstein



it saved the motor first, then the golf clubs. I'm grateful it all worked, but it made me reflect on decision making. I'd been pecking away at a story about decision making and pilot intuition for a while – ever since a lightning strike caused a compressor stall and engine roll-back in the MD-80 over a year ago (“Shocking” March, 2014 *T&T*).

I was finally coaxed into finishing the story by the above episode in the Duke. But because of the lag-time between writing and publication, particularly when only pecking, a writer from another magazine beat me to print. So, here I am, going missed approach, my article retracting into the wheel well of unfinished articles. Back into the dark clouds of second place while he taxis to the sunny ramp with his article about pilot intuition held high: “Dewey Defeats Truman!” A crowd cheering like he just delivered the

Beatles to America. I should have trusted my intuition and pecked faster – I like cheering crowds and a sunny ramp.

Now relegated to a metaphysical musing after a missed approach, there's not enough fuel to divert nor time to peck. But since you may have missed the other article, I'll offer my story just the same; no cheering crowd and no Beatles. Something tells me you'll appreciate it.

Spidey Sense

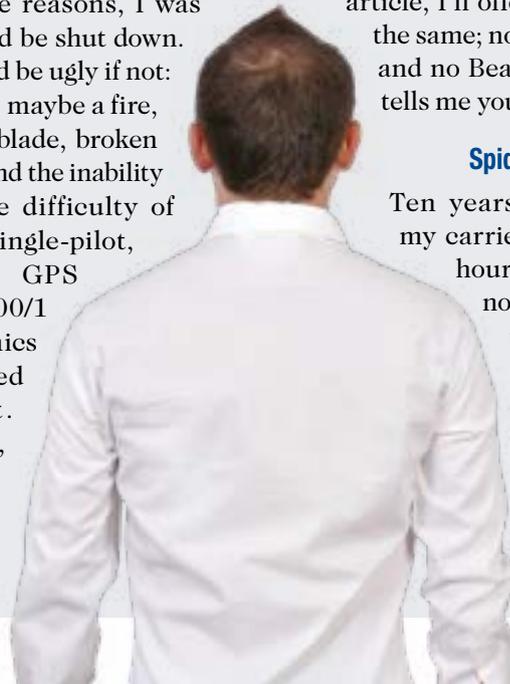
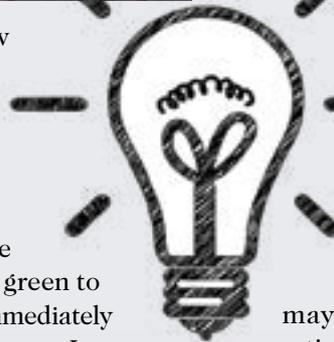
Ten years ago, pilots at my carrier flew about 75 hours per month; it's now 90. Intuitively, the increase seems to be correlated to the company's coffers. But not what you'd choose to do as you approach

A leisure activity for all of us, but also a source of research and study for professional pilots and writers, aviation periodicals help to keep us in-the-know. There's a heap of them and they're more palatable than manuals, graphs and regulations. We read them to keep up with developments in the industry including new airplanes and avionics, pay, politics, powerplants, security and maintenance, and to live the adventures of others vicariously – including the disasters and near-disasters of fellow aviators. If we admit that we are vulnerable to the same disasters and force ourselves to contemplate how we would react, it will improve our decision making. As a writer, reading the stack of magazines also helps to keep us from repeating what others have said. One magazine from the heap recently published an article about intuition and decision making. The topic bears repeating and

makes for a good New Year's resolution. And therein lies the tale....

Dewey Defeats Truman!

As the right engine oil pressure slid from green to yellow, and without immediately quantifying the reasons, I was certain it should be shut down. The future could be ugly if not: a seized engine, maybe a fire, a thrown prop blade, broken motor mounts and the inability to feather. The difficulty of the resulting single-pilot, single-engine GPS approach to 400/1 with new avionics was a neglected afterthought. Apparently, intuition has its priorities – one disaster at a time please;



age 60 – and beyond. Flying till-you-drop makes maintaining health, home, hangar and the airplane, as well as beating other writers to print, more challenging. But a sound-barrier-breaking acquaintance that had the Right Stuff once told me that the best way to become a better pilot was to get your ass in the air – and often. A recently-retired airline pilot friend with 40,000 plus hours said the same thing, mostly. The downside is that any spare time remaining is used to catch up on things that the 9 to 5 crowd are able to do every day. The upside to all of this flying, however, is that pilots with 20, 30, or 40k total time who continue to fly 90 hours each month may have ESP. No, not the sports channel: Extra Sensory Perception. It's perception occurring independently of any of our sensory processes and includes telepathy, clairaudience, clairvoyance, precognition and retro cognition. A tantalizing hypothesis, but, at this point in our evolution, one still considered by most to be baloney, and I agree. However, the "Spidey-Sense" that experienced pilots develop is a real and proven trait. It's called intuition.

Intuition is like your peripheral vision, you don't notice it unless there is something to see. It comes from the recognition of things you've experienced before: sounds, smells, the timing of events or their sequence, temperature sensations and visual clues. When one or more of the hundreds of recognized and practiced sensory inputs are out of place, we get an alert – something doesn't feel right. Like catching something out of the corner of your eye – a momentary glimpse. Intuition is a realization or conclusion that occurs rapidly. Some might mistakenly use the word instinct. Instinct is an inborn pattern of activity common to a given biological species. Birds build nests, spiders spin webs and salmon swim upstream because of instinct. Most human instincts are subdued

by reason – who wants to swim upstream, anyway. Intuition is a proven phenomenon of the human mind and describes the ability to acquire knowledge without inference or the use of reason. When you see a tiny detail of a familiar design you instantly recognize the larger composition. The canopy of a certain airplane, a section of an airport diagram or a set of engine parameters, for example. Your intuition is what fills in the rest of the story. When confronted with a choice or situation, we use intuition to help complete a mental picture so as to recognize what is happening and what we should do about it.

Whether we're alerted by automation or discover it on our own, a critical element of intuition is having enough experience (getting your ass into the air, and often) to recognize when something is askew. We may doubt our intuition, however, if the action we choose

fails to yield the expected result. Several scenarios may reveal the problem: You did the wrong thing, like pulling back on the yoke while the stall warning system is activated or shutting down the wrong engine. Or, maybe your intuition was telling you to try three or four actions in a specific sequence and the first action wasn't enough: fuel selector, fuel pumps, mixture or start lever, and mags or ignition, for example, after an engine failure/flameout. Perhaps your intuition was right but you accidentally pushed the wrong button or that particular button accessed an inoperative component. And, finally, your intuition and actions were correct, the system you accessed works just fine and it should have fixed the problem, but there is more happening that you have yet to discover.

Well, Crap

Even the most experienced aviator can be confused initially.

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Maybe not confused, more like a rapid analysis of a condition for which you have yet to select a solution. In all of my serious system failures, I observed several consistent themes. First, is the two seconds of “No way... ..seriously! Well, crap...” that flashes through your mind. The second consistent lesson is time compression. The fifteen minutes it takes you to deal with the situation will take a mental hour to get through; it’s like dog years. Also, your gut analysis, the first thing that comes to your mind, is probably right or really close; at least much more often than that of a less-experienced pilot. The operating manual for your airplane likely has a few procedures that you should memorize: engine failure on takeoff, rapid or explosive depressurization, runaway trim and various inflight fire scenarios, for example. A smart pilot would also know to perform these procedures right away once it was determined to be the likely solution. After that, we may or may not need to use our intuition again. Did the memory procedure do what it was supposed to do? Are there more things going on than what the procedure covers? If the procedure didn’t work, or if there are other things happening, trust your intuition, because it’s real.

It Ain’t Over

A golf stroke begins with you seeing it in your mind and ends when the club contacts the ball. After that, it’s a matter of physics and geometry. All of the calculations, practice and intuition that went into hitting the ball become irrelevant. You can talk to the ball and lean left or right and it won’t change the trajectory – I know because I’ve tried. When flying an airplane, it ain’t over till it’s over (tip of the cap to Yogi) and you are the one who decides when it’s over. As you delve into the first T&T of the New Year, let’s resolve to gain experience as often as we can, including reliving the experiences of other pilots through their tales of success or failure. Allow yourself to admit that it could have been you in the left seat. It’s the fuel for developing intuition, and intuition can save your bacon – and your golf clubs. Have a safe and happy New Year my Spidey friends. Bet you had a feeling I’d say that. 



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



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Procedural Noncompliance

by Thomas P. Turner



When I was a young officer in the U.S. Air Force, we often discussed the difference between “doing things right” and “doing the right thing.” If you’ve ever been a small part of a large bureaucracy (and the military office corps is nothing if not a large bureaucracy), you can probably understand the distinction: “doing things right” means following directives and procedures, regardless of their effectiveness or outcome, and “doing the right thing” means working to achieve a desired outcome, even if that means taking a shortcut or stretching the limits of formal directives. Whether you value doing things right or doing the right thing is a matter of your personal viewpoint, and often determines your level of success in the organization. As you gain more experience, you probably find, as have I, that the line between the two is not always easy to discern.

In flying a single-pilot airplane, we are challenged to do things right, and do the right thing, every time we fly. Luckily, in flying, the result of not meeting the goal of a safe flight and a safe arrival is pretty obvious, so those procedures and guidance that exist are overwhelmingly realistic and easy to follow. Doing things right means doing the right thing, and vice versa – as they say, the “regulations are written in blood,” i.e., most flying rules and limitations came from situations that resulted in a crash. Troubles (and mishaps) usually occur when the pilot does not follow established procedure. The National Transportation Safety Board (NTSB), FAA and industry call failing to do things right procedural noncompliance.

NTSB Member and pilot Dr. Earl Weener recently spoke at a Commercial Aviation Safety Team (CAST)

meeting, where he highlighted “a safety problem [NTSB] sees emerging from our accident investigations: failures of procedural compliance.” Procedural Compliance is on the NTSB’s Most Wanted list of critical transportation safety improvements for the current year. “During investigations,” Dr. Weener states, “we too often find that pilots have deviated from or failed to follow procedures related to flying stabilized approaches,... maintaining a sterile cockpit [environment], monitor[ing] critical flight parameters, including airspeeds, or heed[ing] aircraft limitations. Our investigations have discovered missed or incomplete preflight briefings, checklists and callouts.”

At the recent NBAA convention’s National Safety Forum, NTSB Chairman Chris Hart cited the investigation of a Gulfstream G-IV crash on May 31, 2014 at Bedford, Massachusetts that killed all seven aboard. Investigators blamed the crash on the crew’s attempt to take off with the control lock engaged. Analysis of the flight data recorder revealed the crew had not moved the flight controls through a pretakeoff control check in 173 of the 175 most recent flights. Clearly, this is an example of procedural noncompliance, according to Chairman Hart.

Although the NTSB’s focus on procedural compliance (and noncompliance) is targeted specifically at the airline and corporate aviation community, it has direct bearing on single-pilot operators as well. If the full-time professionals acting in two-person teams are failing to do things right (and therefore, to do the right thing), I suspect those of us flying without another pilot providing oversight are even more likely to deviate from standard operating procedures.

SOPs

Standard Operating Procedures, or SOPs, are any routine and repeatable way to accomplish a task. SOPs naturally evolve for two main reasons:

- They're the simplest or quickest way to do something, and
- They cover all the necessary tasks in the proper order, with little chance something is left out.
- SOPs minimize workload and ensure that the results of our inputs are predictable. They ensure you both do things right and do the right thing.

Here's an example of flying with an SOP. Flying a Model 58 Baron, I'm on vectors for an ILS approach. After briefing for the approach and setting up the cockpit, I reference an approach checklist I wrote to make sure I've not forgotten anything. Given the final vector to intercept the localizer inbound, I enter an "approach configuration":

- Manifold pressure: 16 inches
- Propeller speed: 2500 rpm
- Mixture: As required for field elevation
- Flaps: Approach (15°)
- Airspeed: 120 knots indicated
- Trim: Set

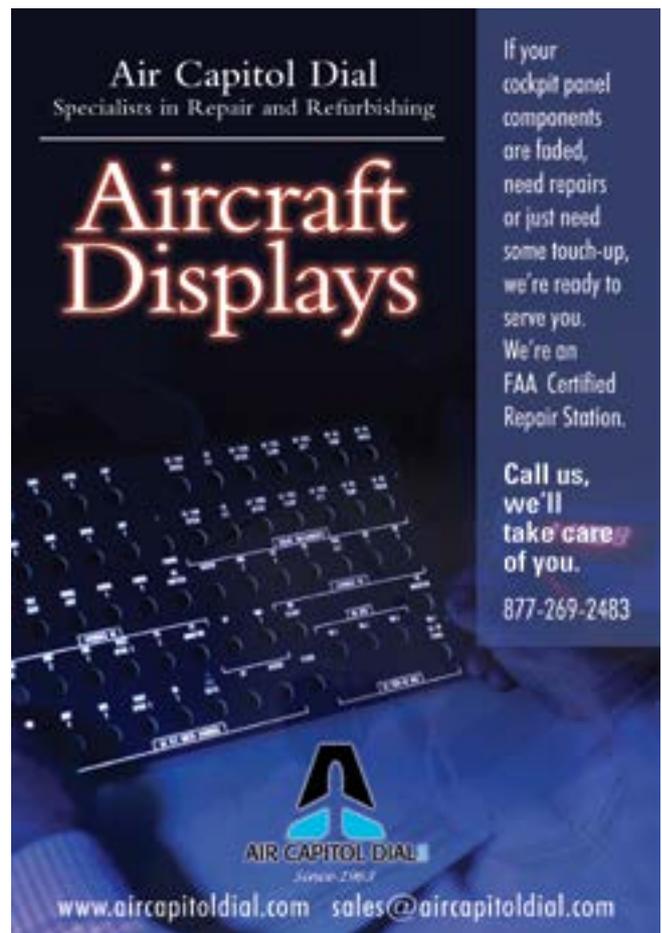
When the glideslope centers, I extend the gear and establish the proper pitch attitude and rate of descent to track the glideslope. Two outcomes result from using this SOP:

- I don't have to "make it up as I go," so my workload is much lower, and I'm mentally freed up for the navigation tasks without having to work hard on basic aircraft control.
- The resulting approach performance is extremely predictable, so I can quickly detect the effects of winds and turbulence and make minor changes to keep the needles centered. This sounds like a good way to fly an airplane: low workload, with high predictability.

You might do things differently. That's fine, as long as you have some standard procedure. The technique will differ with different types of aircraft. The important point is to do things in a way that the airplane's performance is very predictable. This lets you concentrate on the larger picture of navigation and situational awareness while flying an approach.

Middle-Of-The-Envelope Safety

You might say that a main function of standard operating procedures is to keep the airplane safely in the middle of the flight envelope. With rare exception, most of us never need to squeeze the maximum performance



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out of an airplane. A good set of SOPs, well used, should ensure a safe flight. For example, a fuel management SOP might include:

- Confirm, through multiple means, fuel on board before takeoff.
- Monitor fuel burn in flight, and regularly re-compute fuel remaining at the estimated time of arrival (ETA), and
- Divert and land for fuel if that computed figure ever dips below one hour's worth at cruise power.
- A landing gear SOP might be to:
- Extend retractable landing gear at the point you descend from or through traffic pattern altitude when flying a VFR traffic pattern.
- Confirm through multiple means the proper extension of the landing gear, and
- Re-confirm gear extension on short final, immediately going around if the gear cannot be confirmed to be down and locked.

If you follow these SOPs every time you won't fall victim to a fuel exhaustion crash, and you won't have a gear-up landing simply because you forgot to extend the wheels. Procedures like these keep you solidly in the middle of the airplane's safe flying envelope.

Beyond Standardization

There are times, however, when you may need to fly closer to the edge of the flight envelope. Only by knowing what you must do to safely complete a flight task, and how the airplane predictably responds to changes in attitude, power and configuration, can you safely venture away from the safe, middle-of-the-envelope center. In other words, you can't safely experiment with new ideas and new techniques unless you are very firmly grounded in the SOPs.

Here's a real-world example: I'm flying that same Baron 58 into a busy airport, and controllers ask me to fly "best speed" to the outer marker ... a very common request. My approach SOP won't work because that's too slow for the turbine traffic behind me. Ultimately, I want to transition to approach SOP before I reach decision height so I can make a normal landing and clear the runway as quickly as possible. Since gear extension is necessary under this SOP, and putting down the landing gear is the quickest way to decelerate, I pick a power setting that keeps me just under the Baron's maximum gear extension speed in level flight. As I'm intercepting the glideslope, I'll transition to the approach SOP and decelerate down the glideslope until I'm flying a normal approach. It meets the speed restriction and my safe-landing goals; I can accurately predict what the airplane will do, so it is not a huge increase in workload that might distract me from landing safely.

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In other words, I use my knowledge of the airplane's performance under SOP conditions to extrapolate what it'll do if I change any of the variables. I then experiment with a new plan, adjusting my inputs if actual performance varies from expectations. In effect, I develop a technique "on the fly," fine-tuning it on subsequent flights until it becomes a new SOP for use in this special circumstance.

Writing your SOPs

How can you go about developing a set of SOPs for the airplane(s) you're flying? Start with:

Airplane checklists. Almost all airplanes have written normal, emergency and (in some types) abnormal procedures checklists in an Approved Flight Manual (AFM) or Pilots Operating Handbook (POH). These are the basis of a good set of SOPs for the actual operation of the airplane. There are several aftermarket sources for checklists for the most popular types of airplanes as well, often more detailed in some areas than those from the manufacturer.

Supplemental checklists. Most additions to the basic airplane – for example, autopilots and GPSs – have a POH supplement that contains additional checklists. Educational programs should give you ideas for customizing your operations. There's nothing that says a specific checklist is mandatory, so most pilots

eventually create their own SOPs that are a synthesis from POH, supplements and other sources.

Regulatory sources. Weather minima, fuel requirements, oxygen use and all manner of other decisions are made easier if you compare your alternatives to those you have under aviation regulations. Remember that most rules were written because of an accident, or the strong likelihood of a mishap.

Instructor and/or type club guidance. Ask the experts in your airplane type – often an owner's group ("type club") or a CFI or MEI experienced in your aircraft type – what they use as SOPs.

Your own experience. What works for you? As you gain experience and knowledge, you'll undoubtedly update your personal SOPs to reflect your greater ability.

Your personal SOPs are a best-practices guide based on all available information. Follow them and you'll avoid repeating the procedural noncompliance history the NTSB warns us about. 

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.

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Battle Over ATC Privatization Coming in 2016

A New Year Starts With A Continued Threat Requiring Industry Action

by Ed Bolen NBAA President and CEO



As we head into the New Year, the general aviation community faces the very real threat I wrote to *Twin & Turbine* readers about in 2015: in Washington, DC, proposals have been introduced, supported by the airline lobby, which

would create a privatized Air Traffic Control (ATC) system, funded through user fees, as part of legislation for the upcoming reauthorization of the Federal Aviation Administration (FAA).

Just before the conclusion of last year, multiple CEOs from the nation's largest airlines gathered in Washington with their association president for a press teleconference to call for privatizing ATC and funding it with user fees. A resulting USA Today headline made their intent quite clear: "Airline executives urge privatization of air-traffic control."

Clearly, the airlines are readying for the coming battle over ATC privatization, funded by user fees as part of FAA reauthorization, and we must do likewise. Our shared GA community must once again also band together in active opposition to such a proposal.

In calling for ATC privatization, the nation's airlines want nothing less than a system they define and control for their own benefit. Under such a setup, Congress would be stripped of its long-standing authority over aviation-system governance, which safeguards the public's interest, including the companies and small communities that rely on general aviation.

That role would instead be relegated to a self-serving "board" or similar entity, equipped with sweeping authority to make decisions in the airlines' business interests - for example, determinations about where and when companies using business aviation can fly, how much it will cost to do so, which community airports will (or won't) be given priority, and what type of payment, including user fees, will be demanded of operators.

I have raised concerns about this matter for some time, in testimony before Congressional lawmakers, and in policy forums hosted by such diverse interests as the U.S. Chamber of Commerce and the Air Traffic Controllers Association. NBAA members, local business aviation groups and others have likewise been weighing in, alerting Congress to this concern.

Our continued mobilization on this issue is critical, and among the ways that you may weigh in against these proposals is through use of NBAA's Contact Congress resource, which allows industry stakeholders to quickly and succinctly share their concerns with their elected leaders on Capitol Hill.

I encourage readers of *Twin & Turbine* to utilize Contact Congress to make your voices heard, as well. By using Contact Congress, we can start the New Year by sending lawmakers a clear, powerful, and singular voice from their constituents on this issue.

In short, by remaining mobilized on this issue now and into the coming months of 2016, we can help shape our destiny on a matter of critical importance to our industry. 

NBAA Takes Next Step to Collaborate with NTSB on Lessons from Fatal 2014 Accident

Acting on a recommendation spelled out by the NTSB in its final report on a fatal 2014 accident involving a business jet, NBAA recently took an initial step in responding with a plan to analyze the extent of a problem that contributed to the accident, and communicate the results.

The recommendation was one of five – along with three directed to the FAA, and another to the International Business Aviation Council (IBAC) – that came as part of the board’s investigation of a fatal runway overrun of a Gulfstream IV, which crashed following a rejected takeoff with the elevator gust lock engaged at Hanscom Field (BED) in Bedford, MA on May 31, 2014.

In its final report issued last September, the NTSB called upon NBAA to work with business aviation flight operational quality assurance groups to analyze existing data for compliance with manufacturer-required routine flight-control checks before takeoff, and provide the results of this analysis to NBAA Members as part of the Association’s data-driven safety agenda for business aviation.

“Procedural compliance with checklists, standard operating procedures, regulations and company policies is critical to aviation safety,” said NBAA President and CEO Ed Bolen following the recommendation.

NBAA’s senior manager of safety and flight operations, Mark Larsen, CAM, is coordinating NBAA’s effort. The plan calls for the creation of a project team whose members will come from the NBAA staff, NBAA’s safety committee, industry safety leaders and relevant safety experts.

Each flight-operations quality assurance group participating in the project will analyze its existing data on noncompliance with manufacturer-required routine flight-control checks before takeoff. The project team will aggregate the results to derive the extent of the problem and provide a data-driven foundation for its solution. By collating the results of analysis of different data sources, further opportunities to mitigate the risk can be identified.

The working group will create a report highlighting the collective compliance rate for the manufacturer-required routine flight control checks before takeoff by business aviation operators. The report will also highlight the value of participating in these data analysis programs as a means to proactively analyze and assess risks to business aviation operations.

Safety has always been the top priority of NBAA. In the nearly 70 years that the NBAA has been in existence, the Association has been addressed in 10 NTSB recommendations, all of which were closed acceptably by the board. 



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NBAA Applauds FAA Ruling Preserving Santa Monica Airport Access

NBAA recently welcomed a Federal Aviation Administration (FAA) ruling that will require the city of Santa Monica, CA to keep the historic Santa Monica Municipal Airport (SMO) open at least through 2023.

Last February, court officials ruled in favor of the FAA over an October 2013 lawsuit by city officials maintaining that Santa Monica never relinquished control over airport land when it leased the property to the United States government for use as a military airfield and manufacturing base ahead of World War II. That condition, the city asserted, voided any subsequent agreements with the FAA requiring the city to maintain the land as a civilian airport.

The FAA countered that any questions over which entity holds the title to SMO must be settled under terms of the Quiet Title Act, which requires such lawsuits to be filed within 12 years following learning of the federal government's interest in the property. That first occurred, the agency asserted then, when both parties agreed in August 1948 to return control of the airfield to the city.

NBAA was among the parties that filed a "Part 16" complaint with the FAA, challenging the city of Santa Monica's claim that its federal grant-based obligations expired on June 29, 2014. The complainants, which also included the Aircraft Owners and Pilots Association (AOPA), asked the FAA to make a formal determination that the \$240,600 in federal Airport Improvement Program (AIP) funds received on Aug. 27, 2003 extended the 20-year grant-based obligation to continue to operate SMO through 2023.

"America's airports are part of a federal transportation system, and this determination highlights FAA's recognition of the overall importance of grant commitments and demonstrates to other municipalities that recently have attempted to impose illegal



Google Earth

restrictions, such as the town of East Hampton, NY, the significance of the commitment that airport owners and operators make when accepting federal funds," said NBAA Chief Operating Officer Steve Brown.

"We hope that the city will end its short-sighted efforts to restrict operations at SMO, especially now that they have been declared impermissible," Brown added. "These measures result in disputes and litigations that are a waste of public dollars."

SMO is able to accommodate a wide range of business and personal aircraft. The airport serves as a base to numerous aircraft, businesses, flight schools, provides jobs and serves as an important economic contributor to the community. Additionally, SMO is an important reliever airport for the Los Angeles International Airport (LAX) and other airports in the Los Angeles area.

In addition to the 20-year grant commitments, the 1948 deed that transferred control of SMO from the federal government to the city, after substantial improvements made by the federal government during World War II, requires the airport to be maintained for public use in perpetuity. The city unsuccessfully sought to challenge that deed in federal district court, and is currently pursuing an appeal.

In both that case and any appeal that the city may pursue of the Part 16 decision, NBAA will continue the fight to keep the airport open and free from illegal restrictions. 

No Plane No Gain Advocacy Website Upgraded for Better Mobile Compatibility

Highlighting the many benefits from business aviation to citizens, companies and communities across the country is the purpose of the No Plane No Gain campaign, co-founded by NBAA and then General Aviation Manufacturers Association (GAMA). Recently unveiled improvements to the popular No Plane No Gain advocacy website will help industry stakeholders tell their stories about the industry's contributions, and to share these positive messages with their elected officials and community leaders.

Announced Nov. 17 at NBAA's Business Aviation Convention & Exhibition (NBAA2015), the website's most significant changes are designed to make the site more compatible with smart phones and tablets.

"Optimizing the No Plane No Gain website with a practice called 'responsive web design' means the site's content is represented optimally across a range of devices," said NBAA Senior Vice President, Communications Dan Hubbard. "A significant amount of the traffic to the site is from smartphones and tablets, because people in our industry are often on the go. This change will make it easier than ever for people to get the latest news from the campaign, and to take part in its work to promote business aviation."

Along with its personal device-friendly setup, the new website now has several important added features, including:

A new "Take Action" resource that enables website visitors to send messages to their elected officials in Congress, to educate them about the importance of business aviation.

A "Share Your Story" area that enables visitors to tell their own stories about the value of business aviation to their companies and communities, which can be shared with policymakers and opinion leaders.

"Business Aviation Facts" segments that summarize how business aviation provides more than a million jobs in the U.S., serves as a critical transportation lifeline for communities, enhances company productivity and offers humanitarian support.

New social media features including infographics, which can be shared via Facebook, Twitter and Pinterest.

In addition, the website has retained a number of well-liked resources for those who want to advocate on behalf of business aviation, including:

Studies and surveys that illustrate the value of business aviation, based on current, quantifiable data compiled by respected sources.

Media coverage focused on the positive aspects of business aviation.

Interview tips and sample letters to the editor.

Downloadable No Plane No Gain logos and campaign ads.

NBAA and GAMA jointly launched the No Plane No Gain advocacy campaign in 2009 to educate elected officials and thought leaders about the value of business aviation to citizens, companies and communities across the U.S.

The campaign's website at www.noplanenogain.org is a robust, dedicated, informational tool designed to support the program, and to highlight business aviation's essential role in America today. 





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Rear Admiral Richard E. Byrd didn't know what was coming – heck, he couldn't even see the ground. But his goal was to reach the North Pole. And he found a way to make it happen. That's the attitude we admire at NBAA. It's why we've compiled hundreds of resources for our members. So whether it's higher profits, greater efficiency or more customer visits, we monitor the conditions so you can keep your sights set on your goals. Because business aviation enables people to reach places they otherwise couldn't. And at NBAA, we enable business aviation.

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Rockwell Collins and Duncan Aviation unveil Pro Line Fusion® flight deck upgrade for Citation CJ3

Rockwell Collins and Duncan Aviation jointly announced at the 2015 NBAA show that Citation CJ3 owners have a new aftermarket option for meeting mandates while simultaneously enhancing their ownership and flying experience – the Pro Line Fusion® flight deck upgrade. The system is expected to be certified for the CJ3 at the end of 2016 and will be available for additional CJ models in the future.

Pro Line Fusion for the CJ3 replaces the factory-installed portrait displays with larger 14.1-inch touchscreen landscape displays. The new system includes intuitive, touch-interactive maps and easy-to-use icons, giving the pilot the ability to control items on the screen through touch. It also eliminates the need for Flight Management System (FMS) control display units originally installed in the pedestal. The pilot displays and controls are replaced with Pro Line Fusion products while the CJ3's modern and reliable autopilot and radios remain on the airplane.

"CJ3 owners have an extraordinary, all-in-one alternative for complying with airspace modernization deadlines," said Craig Olson, vice president and general manager, Business and Regional Systems for Rockwell Collins. "This upgrade brings turn-key compliance with ADS-B, WAAS and more, plus pilots will enjoy extensive situational awareness and a revolution in simplicity."

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“We are excited about partnering with Rockwell Collins on the CJ3 Pro Line Fusion program,” said Steve Gade, vice president of business development and aircraft sales for Duncan Aviation. “Our enthusiasm is based on the confidence and trust we have in our working experience with Rockwell Collins, the excellent platform represented by the CJ3 in its loyal ownership group, the proven features and functions of the Fusion product, the timing of the solution, and the fact that Duncan Aviation is experienced with these types of avionics installations.”

“This announcement is the culmination of extensive talks over the past year between CJP, Duncan Aviation, and Rockwell Collins to provide an attractive and cost-effective avionics upgrade solution for CJ3 pilots,” added Citation Jet Pilots (CJP) President, David Miller. “We are extremely excited with this development, and in particular how this upgrade will allow CJ3 pilots to utilize the very latest technological advances in the FAA’s ‘NextGen’ air traffic control network, including compliance with the FAA’s 2020 ADS-B mandate.”

To find out more, please visit www.rockwellcollins.com. or visit www.DuncanAviation.aero 

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by David Miller

Pressure to Perform

In the airplane, that is. As owner pilots, we feel it from time to time. Departing through building thunderstorms, to get home for the kids basketball game. Launching in low vis conditions with no suitable takeoff alternate because of a family emergency. Flying all night, to be ready for the big business deal.

But no group feels it like professional pilots. In many cases, their jobs hang in the balance. Those that fly freight in awful weather, knowing that if they refuse, the next guy in line will go. Those that depart with a “strange noise” from the left engine because the airplane just has to be there on time. And those that try to land in Aspen at night, after curfew, with the boss in the cockpit admonishing them to push on.

Recently, I had a front row seat to see the “pressure to perform” in an airline environment.

Sitting at the gate in a major hub waiting for my evening flight home, I heard this announcement from the agent at the next gate. “Ladies and gentlemen, we apologize for the delay. The Captain is refusing to take the aircraft due to maintenance issues. He is on the phone with our maintenance base, who say the aircraft is fine. So, we have a disagreement here and as soon as we work this out, we will be ready to go.”

There was an audible gasp from about 150 people. I was stunned. Several passengers headed for the bar. The agent had just created a massive public conflict between pilot, passengers, and the airline. Her comments were so unprofessional, I transcribed them on my phone.

A few minutes later, she says, “The airplane is fine. We are finding another crew that will take you to your destination.”

The airplane was not fine.

The Captain emerged from the jet bridge and was immediately surrounded by worried passengers. “Is the airplane safe?” they said. Calmly, he said, “There are un-resolved issues. It is our first priority, and my job, to make sure you are safe.” He was visibly shaken. The agent grabbed the microphone at her stand and said, “Ladies and gentlemen, please do not listen to the Captain. He is now timed out of his duty hours and should be on the bus headed for the hotel.”

This was getting interesting. I moved a little closer to hear more.

Soon, several senior passenger service guys wearing sport coats arrived and urged the Captain to step behind some closed doors. No



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.

yelling, but very tense. A senior agent spoke to the now extremely concerned passengers. “Ladies and gentlemen, we now have a totally different airplane with a new crew that will be here soon to take you home.” The Captain headed back to the wounded ship as the dazed passengers followed the agent to a new gate. Everyone disappeared as if nothing had happened.

Twenty minutes later, the Captain and entire crew emerged from the airplane. They huddled together, still visibly distraught by what had transpired. I approached them. “Sir, I fly a Citation and just thought you should know what was said to the passengers about this situation.”

“One of our FMS’s failed,” he said. “There are moderate mountain waves over the Rockies and widespread weather over the east coast. I didn’t think we should take the airplane in this condition.” The co-pilot nodded in agreement. I listened.

Could this just have been a union versus management issue? Or simply a disgruntled flight crew? From the genuine looks on their faces, I don’t think so.

We all shook hands. It wasn’t necessary to say anything else.

Paid or not, we are all pilots in command. Sometimes, under pressure, we have to make tough decisions.

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