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VOLUME 19 NUMBER 1



An Almost-Missed Approach

Wrap-Up Report From NBAA 2014

Taking A New Citation M2 To Europe & Africa

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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-IIIB
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 IIIXL
22 CHEYENNE IV

303 CONQUEST I
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 IIB
20 MERLIN IIIB
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
18 PIPER 700P AEROSTAR
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
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

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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**

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FEATURES

4 Editorial
Nothing Else Will Do It
– LeRoy Cook

6 The Great M2 Migration Of 2014
On Tour With A New Citation M2

14 NBAA 2014 Wrapup
Record Crowd In Orlando

20 We Almost Missed
Missing An Approach To A Better Place
– Kevin Ware

From The Flight Deck

26 Clouds in My Coffee
– Kevin Dingman

Twin Proficiency

30 Single Pilot Safety Standdown
The Window
– Thomas Turner

33 NBAA Focus

40 En Route:
Sierra Plans AeroVue For Sapphire Upgrade
FAA "Climb Via" Clearance
Pacific Coast Avionics Upgrades King Air B200 Panel
CentTex Aerospace Installs King Air 350 Saddle Tanks
TBM Owner Pilots Association 2014 Convention

46 Advertising Index

48 On Final
Perfectious
– David Miller



6



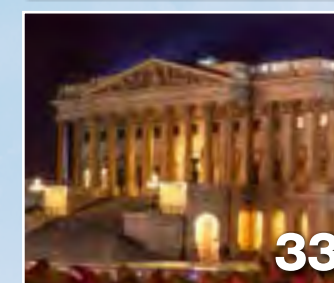
14



20



26



33

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Nothing Else



Every so often, I, and probably you as well, get asked the question: “Why Do You Fly?”. While there can be varied and convoluted answers, it really boils down to “nothing else can do what it does.” When it comes to a business tool, only our company airplane can bring us

home on an early schedule of our choosing, following a wrapped-up deal. Or, conversely, allow us to stay over a few more hours to wrap up the deal. Our plane leaves when we do.

As a personal indulgence, our aircraft often makes memories that are worth much more than the cost. I have done birthdays and anniversaries and games and, yes, funerals, that were more easily accomplished because my airplane let me be there, on my schedule. Life experiences can't be replaced, so I've learned not miss the opportunity. Just having an airplane at our disposal is a tool to create these experiences.

But sometimes it's just about the journey. I have often flown without a specific destination, when I just needed the uplift. Seeing the world from altitude both humbles us and recharges the soul. As the landscape spreads out before us, we realize our puny earthbound accomplishments count for very little, in the grand scheme of things. Seen from above, my holdings disappear into the matrix, as do those of my neighbors. How refreshing it is

to just bore a hole in the air, feeling the feedback of the controls and carving a path around a cloud.

And so, our answer of “Nothing Else Can Do What It Does” may be reason enough to fly, if we need a reason at all. Do not apologize for having a company plane waiting to take you on a vital trip, any more than you would apologize for the standby generators in the plant or replacement of the building's roof when isn't leaking, yet. When the airplane's needed, it's worth every bit of the capital investment. In business, you have to be ready at all times.

The National Business Aviation Association and General Aviation Manufacturers Association have long collaborated on stressing “No Plane, No Gain”, citing evidence that companies employing business aircraft are more successful. It's not that firms doing well can better afford to buy a company plane. Studies have shown that the most growth occurred AFTER the airplane was put into service. Business aircraft, properly sized and used, are just one more way to go out in search of new business and to retain current clients through improved support.

On the other hand, my personal airplanes are an indulgence, but one I've never regretted. I like the option they present, such as turning a hazardous five-hour drive into a relaxing, routine hour-and-a-half flight. Having them in the hangar means I can choose how I travel, just as when I leave the car in the driveway and ride the motorcycle. Nothing else will take the place of flying in our lives.

LeRoy Cook
Editor



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THE GREAT M2 MIGRATION OF 2014

by LeRoy Cook, with The Travelers

**On Tour With
A New Citation M2**

Every true adventure begins in the imagination. Picture this: you love to see the world, experience different cultures, have your mind changed by new ways of seeing things. Africa, the home of great lions, graceful giraffes and elusive leopards, has irresistible appeal. You haven't even imagined yet that a hippo will be bathing in the river outside your colonial tent while you rest after a day of safari. And you see yourself wandering through the ghostly city of Prague, with the imprint of centuries of change in Europe, and you want to do it all in style.

The real promise of travel is the gift of faith that it bestows, faith in the unknown; after all, you do have the keys to a brand-new Citation M2, purchased in March 2014, and 2,000 jet-flying hours. Our pilot had previously flown a Citation Mustang with the Garmin G1000-based cockpit. His earlier-acquired C525 type rating needed only some differences training to reactivate, bringing him up to speed on the M2's G3000 touch-screen suite.

Our adventurer had made similar trips to Europe and South America, with his steadfast girlfriend, co-owner, companion and co-pilot, shared with friends who came along for various legs of the journey. Thus, the enterprising pair set out in May, for a series of remarkable self-guided travels over the next four months. Three separate itineraries were developed, with interspersed multi-week breaks so they could airline home for business. In all, 72 hours of Citation M2 flying was accomplished during 10 weeks of dedicated travel, a great way to learn the airplane's newly-found capabilities.



A fortnight later, the odyssey resumed with a well-planned African sortie, accompanied by two friends. The initial outbound was a 100-minute hop to Prague, leading them to stops in Aqaba, Djibouti and on to Nairobi, Kenya. Radio communications provided some good entertainment for the pilots during the early stages of the Africa leg. Thick Arabic accents and dialects often had the two airmen asking each other, 'Did you get that?' There were several ominous long silences from ATC, leading up to



"Leaving the Mara Reserve was bittersweet, but we had to move on. Spectacular Victoria Falls, or Vic Falls, as it is affectionately known, is 300 feet taller than Niagara's drop and is shared by Zambia and Zimbabwe. The Royal Livingstone Hotel sits right on the river, and we shared our day with zebras casually grazing by the swimming pool while monkeys played mischief just outside our rooms, while impalas and giraffes strolled the grounds. A walk through the park pathways within yards of the falling waters left incredible impressions of mists and rainbows.

The Trips Begin

His business and personal pursuits had made many contacts in other countries, friends he could rely on during the course of his travels. The first leg of the summer's M2 adventure was from Orlando, Florida up to Brunswick, Maine, followed by a flight northeast to Goose Bay, Labrador, the jumping-off point for the trip across the Atlantic. With

accommodating winds aloft, the hop to Reykjavik in Iceland was accomplished easily and the M2's first European landing was made in Amsterdam, The Netherlands. After some sightseeing, the jet was flown to historic Biggin Hill airport outside London, where it would remain while duty called the owners home.



forward to seeing them both. During the dark African night there was rustling of bush alongside our tents as lions passed close by! The daily game drives were always exciting with knowledgeable safari guides taking us with a few yards of adult elephants with their young, viewing beautiful

cheetahs and lions. A spectacular hot-air balloon flight in the early dawn hours had us gliding silently over the Mara Plains, providing a grand view of herding game from above. The African sunsets were spectacular. We had a grand time, and all of us agreed to return soon.

"Cape Town: What a beautiful cosmopolitan city, surrounded by dramatic scenery and magnificent 'Table Mountain'. It's all about food, fashion, and beautiful people. A short drive took us to several great vineyards where one gapes at the surrounding vistas and dines in ultimate style. Another highlight lay in store with a helicopter tour



the crew asking 'Do you have radar contact with Citation?' The rapid return answer of 'No!' had them squawking 1200 at Flight Level 390 with no radar coverage!

After a safari with Internet and phone service, the flight proceeded to Victoria Falls, located on the border of Zambia and Zimbabwe, and to Johannesburg, South Africa. It was then on to Cape Town, before retracing the southbound hops, back northward to Djibouti, Somalia.

The excitement of the African trip was measured by this narrative, shared with us by the co-owner: "Animals strolled across my 'window' every day: our tent was situated along the river and a hippo would sun on the bank every day. He brought along his crocodile friend, and I looked

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Russia, then to Stockholm, Sweden, Oslo, Bergen and Molde in Norway. From there, it was time to recross the North Atlantic to Keflavik, Iceland, with a stop at Akureyi on Iceland's north coast. After crossing to Greenland to land in the fjord at Narsarsuaq, the travelers flew up Greenland's west coast to Nuuk and Ilulissat. Stockholm was such

of the city, flying over the dramatic countryside to circumnavigate the Cape of Good Hope from above. We enjoyed several days together exploring magnificent Cape Town".

After the return stop in Djibouti, and Luxor, Egypt, the route led across the Mediterranean Sea to Mykonos, Greece. After a stop in Bologna, Italy, it was time to return the M2 to temporary storage in London for another work break.

Upon returning to London, the M2 was taken to St. Petersburg,



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a great city to visit that it will become their “go to” stop in the future. And with friends in Iceland and Greenland, they were able to experience volcanos in Iceland and glaciers in Greenland. Stunning sites in both countries. Then it was time to head back to North America, landing at Goose Bay and reentering the U.S. at Brunswick, Maine. A side trip to Newport was made before returning to Sanford, Florida in early September. What an Odyssey!

The M2

From a certification standpoint, the Citation M2 is a Cessna 525, the same model designation that was used back in 1993 with the original CitationJet, later becoming the CJ1 and CJ1+. With the appearance of the CJ2 and CJ3 and the Mustang light jet, there began to be little marketing justification for the smallest CJ, and it was phased out the line.

However, it soon became evident that a gap existed between the entry-level Mustang and the CJ2. The CJ1 would be too expensive to build in its original form, but with some pricing concessions the 525 airframe could be revived as

a step-up from the Mustang, to be called the M2. What was changed? For starters, the Collins ProLine 21 flight deck was exchanged for a Garmin G3000 suite, which involved much more than just a different supplier. The CJ1+’s ProLine gear was remotely located in the nose bay, while the G3000 hardware goes mostly in the cockpit; this caused a rearward shift in C.G., so a slight ballast may be required up front when flown by a single pilot. With normal loads, there’s no need for ballast if some baggage is loaded in the nose. A nose-mounted auxiliary battery was made available to power up the M2’s avionics before starting.

The M-2’s Williams FJ44-1AP-21 engines are rated the same as the CJ1+’s FJ44-1AP, but FADEC enhancements boost thrust at altitude by 10%, and the overhaul cycle of 4,000 hours was a 500-hour increase from the previous engine, to eventually be raised to 5,000 hours. No thrust attenuators were needed for ground operations.

Externally, the M2’s major visual distinction from the CJ1 is the addition of a set of small winglets; the engine pylons were also relocked. These, along with

more usable thrust, boosted max cruise speed to 405+ knots and brought maximum range up to 1,400 NM. As with the earlier CJ’s, bleed air windshield heat remained, supplemented by an alcohol spray bar for the left side, and the hot wing was retained, with pneumatic boots on the horizontal stabilizer.


An aft lav, with solid doors, is an option for the M2, with a belted seat. New LED lighting is used in the M2 cabin, along with the optional Clairity wireless entertainment system. Up front, the center pedestal is slimmer, compared to the CJ, and the instrument panel was slightly tilted.

Overall, the Citation M2 represents a good value and a good step-up choice for Mustang owners seeking more of everything. Embraer’s Phenom 100 was the obvious reason Cessna chose to offer a gap-filler model in the Citation line. The M2 has become an excellent option for the owner/pilot looking for a light jet upgrade

Recap

The owner of the spanking-new Citation M2 had done his homework and had employed the resources of Air Journey’s trip-planning department, which he calls his “Guardian Angel”.

The Rocket Route flight planning website is an excellent help in Europe, he told us. His best resources, however, were a long list of friends and business contacts from previous travels, always available to lend a hand in their locale. American Express’ travel agency does a great job of finding accommodations in Europe, he said. He also reported that the Honeywell AeroWave internet service on board the M2 worked well, at a reasonable cost.

With prior experience and planning, and with the capability of the new Citation M2, a multi-continent excursion is possible and practical. 



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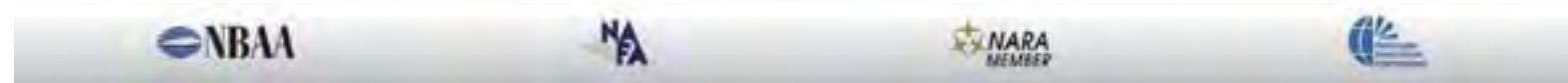
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Photo courtesy of Cessna Aircraft Corporation



NBAA 2014 Posts Blockbuster Attendance

by LeRoy Cook

Continuing on a recent string of highly successful Business Aviation Conventions and Exhibitions, the National Business Aviation Association's 2014 show in Orlando, Florida's Orange County Convention Center was another blockbuster. Over 100 aircraft were stuffed into static displays on the Showalter Flying Service ramp at Orlando Executive airport and inside the convention center itself. The exhibitor count of 1,100 firms held steady with the pace of the latest record-setting shows, as did the total of 26,000 registered attendees from 95 countries worldwide.

The mood at NBAA 2014 was upbeat and hopeful; all signs point to continued growth in business flying activity, with new products

announced to take advantage of this optimism. Gulfstream Aerospace surprised most of the crowd by unveiling planned G500 and G600 models, positioned just above the G450 and G550, incorporating a larger fuselage cross-section that will be slightly smaller than the G650's. Among the many innovations of the G500/600 are active fly-by-wire sidestick flight controls instead of control yokes, designed to move in unison whether either pilot or the AFCS is flying the aircraft. The new airplanes will be powered by Pratt & Whitney PW800-series engines, the

first time Gulfstream has not used Rolls Royce powerplants on its larger products. G500/G600 range at Mach .85 is projected to be

5,000 and 6,200 n.mi., respectively. The already-taxiing G500 is slated to fly in 2015 and the G600 will follow in 2017. A longer-range Gulfstream G650ER was certificated at show time, bringing the G650's capability up to 7,500 n.mi.

At show time, Dassault was preparing to roll out its 8X long-range business jet, solidifying its lineup of new-technology aircraft, with first flight scheduled for Q1 2015. With a cabin 3.5 feet longer than the 7X, the 8X will offer added range and comfort. Dassault's twin-engine, wide-cabin 5X continues in ground test, aimed at a first flight in Q2 2015. Meanwhile, perennial supersonic bizjet hopeful Aerion announced a partnership with Airbus to help develop its Mach 1.6 AS2 SSBJ.

Textron/Cessna brought the number-two production example of

its large-cabin Citation Latitude to the static display, and Textron also showed the Beechcraft King Airs 350i, 250 and C90Gtx. The C90Gtx now features standard-equipment Raisbeck aft-body strakes and swept-blade Hartzell 96-inch propellers. These have reduced max-gross takeoff distance by 591 feet, to 1,984 feet. The King Air 250 can now be ordered with CenTex Aerospace's Halo 250 conversion factory installed, permitted it to be operated with a maximum takeoff weight of 13,420 pounds (a type-rating is required), boosting useful load by 870 pounds. BLR Aerospace reportedly worked with Textron/Beechcraft on the increased gross-weight option.

Embraer's Legacy 500 has secured FAA certification in reciprocal fashion, after Brazil's ANAC approved the Legacy 500 two months earlier. Also in the lineup at





the full-line Embraer static display was the prototype Legacy 450, 3.5 feet shorter than the 500; the 450's certification is expected in Q3 2015.

Bombardier made the first public showing of its new Learjet 85, bringing the flight test airplane down to Orlando from Wichita in two

hours and 23 minutes. Bombardier also announced plans to evolve the Challenger 605 into an upgraded Challenger 650, a move similar to the 305/350 evolution.

HondaJet is closing in on certification of its HA-420 light jet, having just finished a sales tour with

the serial #11 production aircraft. At NBAA time, the order total was quoted as "over 100" and production of 50 aircraft is predicted during the first year of deliveries.

In new flight-deck products, Universal Avionics unveiled its new InSight integrated avionics suite at the show, a fully-capable system that brings the company into the ranks of complete Part 25 business jet cockpits. Innovators of the first FMS for business jets, Universal worked to create a flight deck that could use input from many existing boxes, keeping the cost down and saving much re-certification effort for owners. A three-display system is priced at \$250,000 and a four-tube setup is \$375,000. Display size is 10.4 inches.

Business Sessions

At NBAA 2014's Opening Session, Chris Hart, acting chairman (and presumptive next head) of the National Transportation

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Safety Board, decried the loss of professionalism seen in some recent high-profile aviation accidents, stemming from over-reliance on automation to keep the flight safe. Following Hart, Enterprise Holdings chairman Andrew Taylor related his car-rental company's growth with the aid of business airplanes, from \$70 million in revenue 35 years ago to \$18 billion today.


The Al Ueltschi Humanitarian Award was presented to International Jet Aviation Services and Make-A-Wish Foundation. Denver-based International Jet uses a brightly-painted Learjet 35A, called the "Dream Chaser", to fulfill travel requests for seriously-ill children selected by Make-A-Wish. This year's Dream Chaser is the fourth Learjet IJA has temporarily painted in fanciful candy colors,

each supporting Make-A-Wish with special flights that began in 1990.

The second-day General Session saw unvarying "pilot's pilot" favorite R.A. "Bob" Hoover honored with NBAA's Meritorious Service Award for providing a lifetime of inspiration to his fellow aviators. Accompanied by his friend Sean D. Tucker, the still-sharp nonagenarian reminisced at length about working with Charles Lindbergh and Roscoe Turner; he was slated to receive the Wright Brothers Award in December.

This being an election year, the General Session also featured political power couple Mary Matalin and James Carville, who each gave their opposing views of the Washington, D.C. landscape and the possibilities for change at the looming mid-term election.



For 2015, NBAA's exposition returns to Las Vegas, Nevada, scheduled for later-in-the-year dates of November 17-19. The world of business aviation will be gathering for the biggest dedicated show and information-sharing event of its kind. We'll see you there. 



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We Almost Missed

by Kevin Ware

In a Lear 40, it's a very short 28 minute, 177 nm-mile trip from Skagit Regional (BVS), just north of Seattle, to Hillsboro Airport (HIO), west of Portland. As we pass over the volcano-flattened mountaintop of Saint Helens and start our descent, Jeff H (the pilot flying) and I find ourselves wishing we could delay arrival by another hour or so.

Although VFR conditions were predicted for our arrival when we planned the flight, we are now just six minutes from the Initial Approach Point (IAP) and HIO is reporting fog, ceiling variable 100–200 feet and visibility varying between ¼ and ½ mile. But, the weather otherwise is pretty decent, with tops at 1,500 feet and calm winds. In addition, HIO has a good (200 and ½) ILS approach to runway 13, with the surrounding terrain relatively flat. The missed approach procedure is also quite simple, a climbing right turn back to the VOR for a hold, where we could reconsider our options. Unfortunately, no other aircraft have tried the approach this morning, so we are going to be the brave guinea pigs.

After a long respite of fairly good weather, this is my second approach to minimums in two days, including one yesterday into Juneau, Alaska with a Lear 35. The experience makes me again appreciate the effect local topography can have on flying weather, sometimes good, sometimes bad. A basic understanding of how this can affect the region you are operating



in, plus knowledge of the services available at nearby airports, can make the approach procedure itself much more relaxed, and the missed approach options much easier to decide upon. It can also influence the passengers' experience, either frightful or comfortable and reassuring.

HIO is located in a valley on the western side of the Cascade Mountains, at the confluence of the Columbia and Willamette rivers. In the fall, as surface temperatures drop, the temperature/dew point spread closes, and fog can blanket the entire area for days at a time. A key to understanding what the HIO missed-approach options might be is that the fog-producing conditions rarely move eastward up

the Columbia River gorge more than 30–40 miles. The reason for this is the pressure is usually higher on the eastern side of the Cascades, the mountains themselves act as a barrier, and the gorge itself is so narrow that moisture-bearing weather has trouble squeezing through. For all these reasons, The Dalles (DLS), just 75 nm east of HIO, almost always has sunny and bright conditions when the entire Portland area is fogged in.

In addition to topography, another item to consider during a low-minimums approach is what the passengers are going to think about the experience, and your abilities as a pilot, after it is all over. For most passengers, a missed approach is a just plain frightful event. At one

moment, they are calmly expecting to land, then the airplane abruptly pitches up, engines strain and roar, acceleration pushes them back in their seats, half-finished coffee cups spill their dregs, the ground or trees flash by their side window at what they will later describe as “inches away”, loud clunking sounds and worrisome whines occur as the gear and flaps come up, and they may see the pilots moving their hands over the levers and dials in (what they imagine to be) a desperate fashion. Many assume that when pilots say “we missed”, they really mean that everyone narrowly “missed” a gruesome death.

A Better Place To Be

Given these emotions in the back of the airplane, it is very useful to know that DLS (just 12 minutes away) is out in the sun and has a nice airport restaurant with picnic tables on the lawn, right in front of which you can park your airplane...serving really good pie made from local apples. Given the choice, nearly all passengers will opt for hobnobbing with the pilots while they eat apple pie in a sunny location, waiting for conditions to improve, rather than sit through another death-defying “missed”. Pilots who promptly go back for another try at the approach (particularly if there is a second



miss) will probably be considered overly-zealous lunatics who are not to be trusted. Pilots who instead fly to the sunny airport with great apple pie are considered aviation geniuses, mature, wise and safe.

Similar to HIO, Juneau, Alaska (JNU) has a unique set of weather problems caused by its location. In the fall and winter,

as the sun moves back closer to the equator, a low pressure system forms over the Gulf of Alaska, rotating in a counter-clockwise fashion. This tends to push moist, cold air from the Gulf eastward, and the first eastbound break it gets along the coastal Brabazon Range is the entrance at Cape Spencer to Cross Sound. Unlike the narrow Columbia Gorge, this wide break in the mountainous shoreline allows moisture-laden clouds to pour eastbound past Glacier Bay through to Icy Strait, where they get held up again by the Coastal Range and the Taku Glacier. Juneau happens to be located right at the terminus where all this occurs, and, as a result, frequently has very unpredictable weather.

To make matters worse, even though Juneau is the state capital, it does not have an ILS approach, for a variety of technical reasons. In addition, the airport lies at the entrance to a fjord with high mountains to the east, and runway 8 is ten degrees offset from the final 071 heading on the RNAV approach. This results in a Minimum Descent Altitude (MDA) for the LDA ‘X’ RWY 8 approach of 3,200 feet. With special training and a waiver, the LDA ‘Z’ approach can be used, which has a 1,200 foot MDA at the Missed Approach

Point (MAP), the Cochlan Island beacon, located 3.2 miles from the runway. Effectively, the lowest IFR approach possible at JNU requires VFR conditions. The missed approach procedure is an immediate climbing, steep 180+ degree turn to the right, then back over the water to the Sisters Island (SSR) VORTAC via the 027 radial. From SSR you can hold, try it again, or be more sensible and just go to Sitka (SIT).

Similar to the situation at DLS, the weather at SIT, just 95 nm to the south, is usually much better than anywhere else in the vicinity. This is because Sitka lies right on the Gulf of Alaska, and the weather systems that get all bottled up in the Juneau area usually just blow on by. In addition, from a passenger perspective, SIT has a nice airport restaurant, with windows that face the runway and a picturesque harbor where fishing boats and cruise ships can be seen moving about. It serves fresh, locally-caught halibut and chips, plus (for the pax) Alaska Amber Ale. Now, it's only pilots of extraordinary dedication to their art who carry the latter kind of detailed missed-approach information around in their head.

Down To Mins

Back in the Lear 40, with Saint Helens behind us, Jeff and I are quickly closing in on HIO. Two minutes from the IAF, the tower controller announces the bittersweet news that he can't see the ground from his cab, but the equipment is reporting 200 and ½. We continue on and intercept the ILS to 13. Just inside the IAF, our helpful, ‘lost in the fog’ tower controller says the visibility is now varying between ¼ and ½ with ceiling 100 – 200. But, since we've already begun the approach we elect to continue, and, as the pilot monitoring, I start the usual crew callouts. The airplane is on autopilot and Jeff is ‘head down’ watching its progress. Just to be sure, he again asks “you watching outside, Kevin?”... you betcha. We

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go through 1,000 feet and lose sight of the sun above us. At 500 to go, we are surrounded by a curtain of light gray. At 400, 300, 200 and 100 feet to go, the gray just gets darker and even the nose of the airplane just four feet away gets hard to see. I think, this is not looking too good... it is probably going to be an 'apple pie' type of morning.

Leaving 100 feet, I start calling out altitude-to-go in 20-foot increments, "80, 60, 40, 20"... At '20' I can see Jeff's thumb on the left throttle move over the go-around button... I was looking for that and it clearly confirms we are thinking the same thing. Then, just as I get ready to say 'minimums, no contact', a strobe light pops into view at 12:30. I change my words to 'strokes in sight', and then see the first 300 feet or so of the runway come into view with a big 13 written on it. Jeff looks up, clicks off the autopilot and five seconds later we land at a very wet, cold and foggy airport.

No apple pie and warm sunny picnic benches today. We almost missed.



Kevin Ware is an ATP who also holds CFI, MEII and helicopter ratings, and is typed in several business jets. He has been flying for a living on and off since he was 20, and currently works as a contract pilot for several corporations in the Seattle area. When not working as a pilot, he is employed part-time as an emergency and urgent care physician for a large clinic in the Seattle area.

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From The Flight Deck

by Kevin R. Dingman

Clouds in My Coffee

None of us got to where we are by avoiding hard work or tough decisions. But, when contemplating choices with potentially life-altering consequences, often times it's rejuvenating to set aside the daily grind and embrace the visceral. My hangar office is just about finished; one of last year's resolutions. Now I find myself at my desk, feet up with a cup of coffee, staring at the Duke, when, according to the calendar (and the IRS), I'm supposed to be writing, not staring. If my articles are a bit late to the editor, it's the Duke's fault. But, sometimes, writing can be like trying to get the last glop of toothpaste squeezed from the tube. After staring at the Duke, I often find a full tube is right there for the squeezing. Stepping back from the issue to get a fresh perspective can be revealing.

Perhaps a resolution to the question of whether to fly, or not to fly, is simple. We do things to elicit or avoid sensations: fear, joy, pain, exhaustion, discomfort, excitement, relaxation, gratification, love and hate. Why did we get into flying in the first place? And are those reasons still valid, or have they been replaced by new or better reasons? For many, it's the emotions and the sensations of flying an airplane—particularly the gratification of completing complex tasks that combine mental and physical abilities, having control and the sights and the freedom. It's also sharing these emotions with other pilots, family and sometimes even normal, wingless earthlings.

Altered States

One of the most enjoyable contrasts, and perhaps another of the main reasons we fly, is our

ability to alter the environment by choosing a destination that has a climate that we want. This can be either tropical or arctic. Some want to play in the sun and sand; others want snow; some want solitude and some want a crowd. Some want friends, and some want relatives—a condition that is occasionally mutually exclusive. All are rewarding possibilities and provide a change in scenery. Pilots are blessed to see many things that non-pilots and most passengers do not: the view out the front window. While in-flight we may see majestic panoramas or massive weather formations. We have seen countless sunrises and



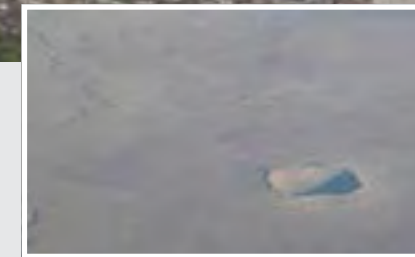
sunsets from, arguably, the best seat in the house. We witness drastic changes in climate – for better and for worse, and geographic features only visible from the air. In the U.S. alone there is Mt. Rushmore, the Grand Canyon, Niagara Falls, the Barringer meteor crater and views of major cities, oceans, lakes and the heavens.

UFO's

Technically, we have all seen them, on just about every flight in fact. Airplanes from a distance are unrecognized at first; birds, party balloons, even what we assume are meteorites, could just as easily be space debris in the final stage of a decaying orbit. Until recognized, they're all UFOs. Have I seen any? I can't tell you how many times I've been asked the question by non-pilots – usually airline passengers, hundreds I suppose. I answer no,



of course, because they mean have I seen the flying-saucer kind. I'm pretty sure I wouldn't admit to it even if I had.... until I'm retired anyway. Venus was the only UFO we had the kahonas to ask Center to identify. Yes, Venus the planet. It was really bright and the colors were fluctuating, so give me a break. I know better now. And to



prevent you from having the same embarrassment, Venus is very bright and when near the horizon, its color changes from white to blue to green

and then red. It looks very much like the navigation lights and strobes of an airplane. I know from experience that ATC can't see it on radar, so don't ask. It probably won't even show up with the newfangled ADS-B.

From The Cockpit

I carry a camera everywhere. Not that I'm on the lookout for E.T. but you never know. It's because we see so many great things while flying. Extra-terrestrial sights included Hale-Bopp and Halley's comets, many meteorites, full moons and the Northern Lights. I've seen both a funnel cloud and a tornado, the side of a thunderstorm while in a vertical climb in a T-38, explosions from missiles, rockets, bullets and bombs delivered by me or my wingman, witnessed a spinning out-of-control missile from Vandenberg, a weather balloon the size of a football field and tethered border patrol balloons. I've seen the returning space shuttle, a launch from Cape Canaveral, and

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at three hundred feet and 480 kts. I saw the fires from the LA riots and was diverted after the earthquake.

Share The Love

Providing flight instruction and Young Eagle flights, the Civil Air Patrol, volunteer flights for patients, vets and pets are excellent avenues in which to pass along our thrill of flying to newbies and the public. I've never really fallen in love with providing basic flight instruction – I don't have the patience for it and become frustrated when good students run out of money. Instructing and evaluating "students" in the F-16, however, was very rewarding. As you can imagine, they were, for the most part, already very well accomplished pilots. It was simply a matter of teaching them how to use the airplane as a weapon in air-to-air and air-to-ground combat—both of these endeavors necessitated plenty of looking-out-the-window.

What are they worth to us, our airplanes? Productivity, time-saving travel and a long list of emotional gratification – how much value is that? Once we've figured out how to make them work, understand the presentation and filter out the useful from the irrelevant, avionics of today present so much accurate and timely information that we scarcely need to look out the window.... except to land. And at the airlines, when using autoland, we don't need

a close view of the desert floor while supersonic. I've flown formation with a dozen different




fighters, a C-150, PA-28's and a B-52. Hundreds of hours of formation flying and aerobatics allowed me to experience what it's like to become one with the airplane. I was shown how to recognize the old buffalo watering holes from 35k, and in Alaska I've seen glaciers and watched a moose run from a lake as I passed over

to look out the window even then. Because of modern technology, our situational awareness is at a Zen-like level of understanding. Plus, some of the NextGen procedures prevent sightseeing even more.

For Sale?

When considering a suite of ADS-B compliant avionics, new de-ice boots, a prop overhaul and some engine work, the Duke could easily absorb a year of my salary in upkeep and new stuff. So, I'll lean into the wind, start picking off the stars in the night one at a time and keep flying; it's an expensive resolution but what else can I do, sell the Duke? Not this year.

I'm not ready to stop seeing new things from the air or looking at the Duke through my office window. Perhaps the emotions of aviation give us the equivalent mental sensation as that of a tailwind, even when life presents us with headwinds. I'll stare a bit longer to convince myself the hypothesis is true. If you resolve to give up looking out the window of your airplane, find another window first because looking out the window is important. Other than a good fire, it may be the only thing that really is. 



Kevin Dingman has been flying for 40 years. He's an ATP typed in the B737 and DC9 with 20,000 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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GOVERNORS

Single-Pilot Safety Stand-Down,

Part II

by Thomas P. Turner

Last month I described the first presentation made in the National Business Aircraft Association's 2014 Single-Pilot Safety Stand-down, held in October. That first session focused on single-pilot resource management. Additional sessions, one on loss of control and upset/emergency maneuver training by Paul "BJ" Ransbury of Aviation Performance Solutions, another by Dr. Scott Shappell of Embry Riddle Aeronautical University on spatial disorientation, were excellent reviews of these important topics. This month, however, I'll focus on a particularly interesting presentation: "Airframe Icing: Filling in the Details," by Scott Dennstaedt.

Scott Dennstaedt is an FAA-certificated instrument flight instructor and former National Weather Service research meteorologist. He specializes in teaching pilots how to minimize their exposure to adverse weather. In the last 15 years, Scott has authored over 100 articles published in various aviation magazines. He is now employed by ForeFlight LLC as its weather scientist—this hints of interesting and perhaps unique new weather features in future updates of the market-cornering ForeFlight Mobile flight planning application. Scott also owns and operates *AvWxWorkshops.com*, a subscription-based aviation weather training website.

To prompt your consideration of airframe ice detection, avoidance and escape, let me present a few of my many notes from Scott's NBAA presentation:

Airframe Icing: Filling in the Details

The presentation focused primarily on operating aircraft certificated for flight in icing conditions... the so-called FIKI, or Flight Into Known Icing, aircraft

certification. Scott asked a question: "How many feel that your primary training did not adequately prepare you from an icing perspective?"

The classroom participants, packed primarily with business pilots of light turbines and piston twins, unanimously agreed that primary training does basically nothing to prepare a pilot for ice flying. Addressing the ice-certificated crowd, Scott noted that: "We're taught how to plan a flight to *avoid* ice, not plan a flight *through* ice."

Is gaining icing experience the answer? Just get out and fly more often, that's all you need to do, right? Well, no. Scott agrees with the conclusions of the National Transportation Safety Board's report *Risk Factors Associated with Weather-Related General Aviation Accidents* (September 2005). On page 38 of that report the NTSB states:

- It appears that pilots generally require formal training to obtain weather knowledge, and cannot be expected to acquire it on their own as they simply gain more flight experience.
- "There are no 'great' rules of thumb with respect to airframe ice," Scott reports. "You need to understand the science behind airframe ice:"
- Airframe ice is directly related to how supercooled liquid water is realized in the atmosphere.
- In a pure vapor environment (no condensation nuclei), condensation won't occur until the relative humidity exceeds 300%.
- Condensation occurs when adequate volumes of cloud condensation nuclei, or CCN ("dirt") exist.

- As relative humidity increases CCN become "wetted" and visibility becomes obstructed.
- A relatively clean environment (fewer CCN) will typically *increase* the drop size.
- Larger drops represent a greater icing hazard.
- Where are the clean environments? Over large bodies of water, over snow covered ground, in clouds above temperature inversions, near the tops of clouds.
- "Cloud top temperatures warmer than -12°C means the cloud is likely *dominated* by supercooled liquid water."
- "The only way to guarantee there will be no ice [above the freezing level] is to fly at colder than 40° below [zero]," Scott advises.

Supercooled Liquid Droplets

Even airplanes certificated for flight into icing conditions (so-called "FIKI" approval) are *not* approved nor permitted to operate in Supercooled Liquid Droplet (SLD) conditions.

SLD Conditions: An environment containing drops with a median volumetric diameter (MVD) greater than 50 microns.

1,000 microns = 1 millimeter

50 microns = Half the width of a human hair

If you can see water droplets or distinguish drops in the mist on the windscreen or leading edges before takeoff, or as you fly through clouds or precipitation, it's SLD conditions. Flight Into Icing Conditions approval is *not* valid in such an environment; FIKI equipment will *not* protect you. The worst SLD condition is freezing rain. In freezing rain, the rate of ice accumulation is so great that no amount of ice protection equipment is going to prevent the dangerous build-up of aerodynamics-destroying ice in very short order.

We're taught the almost universal presentation that conditions resulting in freezing rain involves a shallow band of freezing air near the surface, perhaps only a few hundred feet thick, over which lies a band of warm air, with above-freezing temperatures. Far higher, a second freezing layer marks the

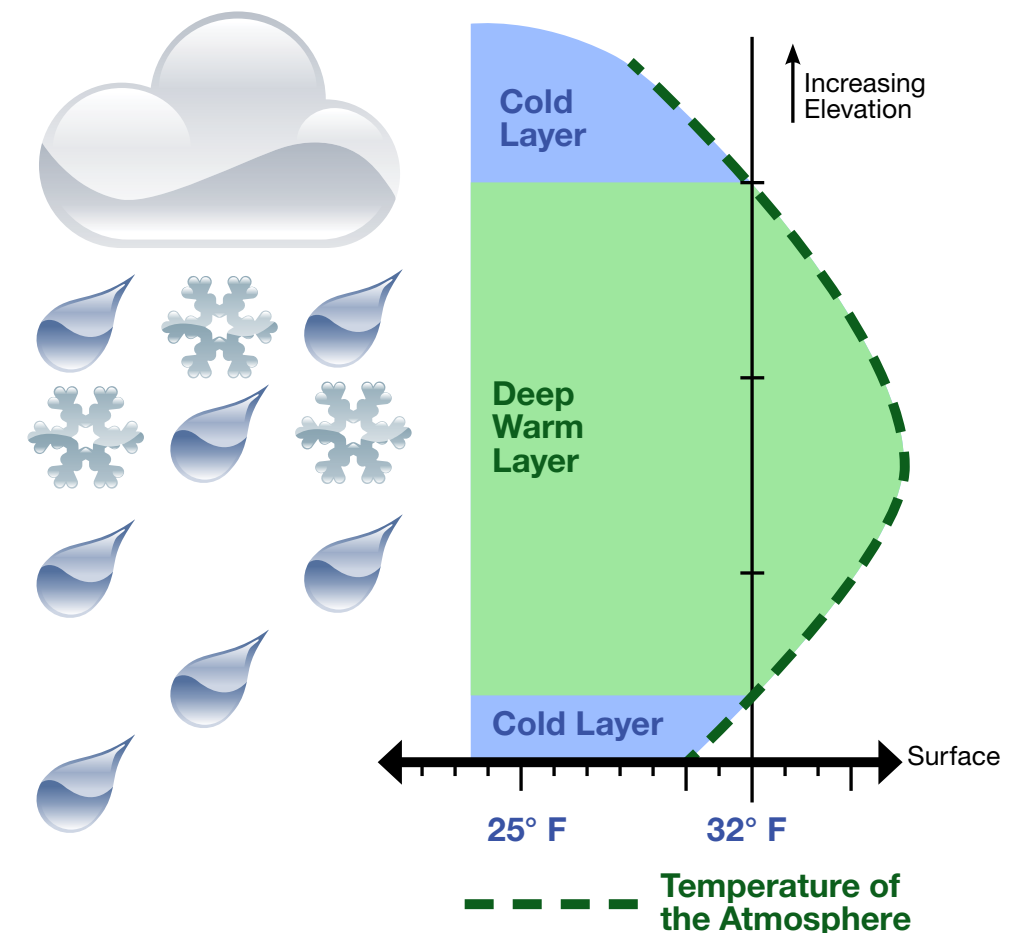
boundary above which the air is below freezing again. The freezing rain model we all learn goes like this: Snow forms in the cold air at altitude. As snow falls through the above-freezing layer of air it melts, with water droplets coalescing into larger, supercooled raindrops. These large raindrops, upon striking surfaces chilled to below freezing by the cold air near the surface, flash-freeze onto those surfaces. This creates a thick and irregular coat of clear ice—freezing rain.

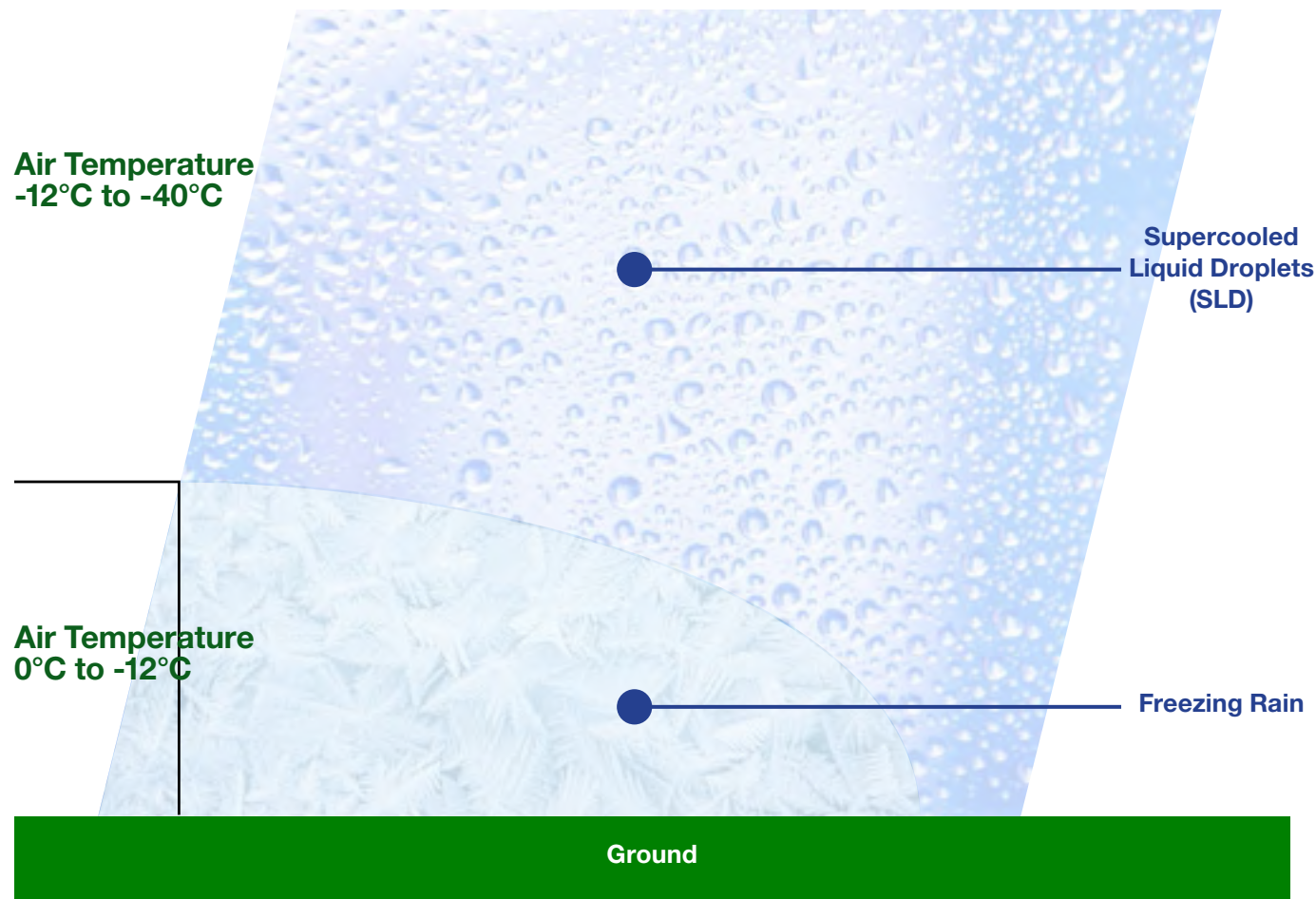
Using this model for the formation of freezing rain, one in which above-freezing air is just above the surface, suggests pilots may employ these common avoidance and escape tactics for flight in areas of freezing rain:

If freezing rain is reported at or near the surface, cross the area a few thousand feet above the height of the freezing rain and you'll remain in ice-free, albeit potentially wet air.

If at any time you encounter freezing rain conditions, climb. Above-freezing air is just a few hundred feet above you.

The trouble is that, meteorologist and commercial pilot Scott Dennstaedt warns, this set of conditions is what's happening in **only 8%** of all freezing rain events. **In 92% of all freezing rain events**, Scott tells us, below-freezing





temperatures exist from the surface, with *no* warm band of above-freezing air above the lowest layer. Instead, this is how freezing rain usually forms: Above a boundary defined roughly by the height where the temperature is at -12°C, small supercooled water droplets (SLD) are suspended in the atmosphere. These droplets collide with one another and fall into the lower levels, where the temperature is still below freezing, but closer to the freezing point. In this environment, larger supercooled droplets can form without themselves freezing. These large supercooled raindrops, upon striking surfaces chilled to below freezing by the cold air near the surface, flash-freeze onto those surfaces. This creates a thick and irregular coat of clear ice—freezing rain.


Why is it so vital to know this? Because *everything we have been taught about freezing rain avoidance and escape is wrong,*

Scott tells us, *in 92% of all instances when freezing rain occurs.* Since there is no band of above-freezing air overlying the freezing rain, flying at a higher altitude still exposes the airplane to SLD conditions—for which no aircraft is certificated. And trying to escape by climbing out of freezing rain conditions, hoping to melt off the ice accumulation, would only result in adding additional ice to the airframe.

The only workable strategy when freezing rain is reported, Scott tells us, is to avoid flight in clouds or precipitation anywhere near or above the freezing rain unless the outside air temperature is colder than -40°C. This applies to Known Ice airplanes as well as those not certificated or equipped for flight in icing conditions.

Many *Twin & Turbine* readers may never have been exposed to information such as was presented at the NBAA's Single-Pilot Safety

Stand-Down. Yet, it's this level of pilot education that makes the difference between the superb safety record of airlines and professionally crewed corporate aircraft, and the much less desirable accident history of business and personal IFR flying. IFR flying is a profession whether you pursue it as your livelihood or not. It takes significant continuing educational investment of time and, yes, money, to enjoy the benefits of personal aviation at an acceptable level of risk.

The 2015 NBAA Single-Pilot Safety Stand-Down will be held November 16 in Las Vegas. I hope to see you there. 

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.



As 2015 Begins, What a Difference a Year Makes

by Ed Bolen NBAA President and CEO

As we hang a new calendar on the wall, it occurs to me how much difference just one year can make.

flight activity is holding steady, the inventory of used aircraft is declining, and prices for previously owned aircraft are stabilizing.

However, that does not mean we won't continue to face significant challenges. A variety of issues, from the coming FAA reauthorization debate (which could prompt renewed proposals for user fees, and efforts to privatize the ATC system), to onerous tax legislation, and even new "pop up" challenges like the one we saw with the FAA's sleep apnea proposal, could all potentially affect the industry's future.

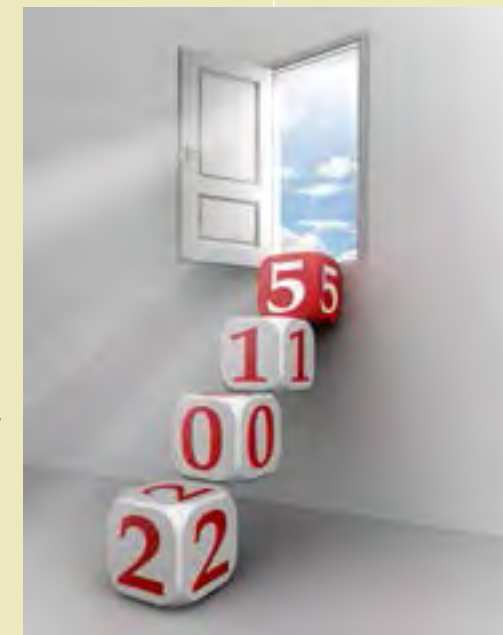
So, as we look to 2015, it is clear to me that policy outcomes for business aviation will fare, at least in part, on how galvanized our community can continue to be when faced with political challenges.

Of course, we at NBAA will continue to work with federal officials every day, reminding legislators and regulators of the value of business aviation. However, continued vigilance will be required, and there may be times when everyone in the industry will need to mobilize in order to impact legislative and regulatory outcomes. When such moments arrive, I know we can count on the business aviation community to make its voice heard.^m

For example, at the start of 2014, we were contending in Washington with a controversial proposal from the FAA – introduced at the close of the previous year – that the agency planned to begin mandating that all pilots with a body mass index of 40 or greater be screened for obstructive sleep apnea before receiving a medical certificate. Outside Washington, it appeared that the economy might be gaining some long-awaited traction, although that outcome wasn't yet certain.

By the time the business aviation community came together in Orlando last October for NBAA2014, signs of a stepped-up level of optimism were visible everywhere, most notably in the wide array of new products and services on display.

Today, at the beginning of 2015, I believe our industry is stronger now than at any time since 2007. Demand for business aircraft continues to increase across the board. Fuel sales are also on the rise,



NBAA Applauds House Vote to Renew Accelerated Depreciation on Business Assets, Including Aircraft

If your plans for the upcoming year include the purchase of a new aircraft for business use, NBAA has good news for you. Just last month, Congress once again demonstrated its strong support for business aviation by voting to extend several expiring tax provisions, including accelerated depreciation, for one year.

“NBAA applauds this action by the House to renew bonus depreciation and other tax incentives that encourage businesses to upgrade equipment and invest in assets such as aircraft,” said NBAA President and CEO Ed Bolen.

Bonus depreciation expired at the end of 2013, but NBAA and a broad coalition of industry groups have backed efforts in Congress to renew it retroactively as part of a package of tax “extenders.”

“Bonus depreciation strengthens our economy in two essential ways,” Bolen explained. “It gives our nation’s businesses immediate access to the most advanced equipment, including aircraft, making them more competitive, and

it preserves jobs in America’s vital aircraft-manufacturing industry.”

For qualified property, accelerated depreciation allows businesses to take a first-year deduction equal to 50 percent of an asset’s cost basis. After the first year, the asset is depreciated according to the Modified Accelerated Cost Recovery System.

The House-passed bill also would renew increased limitations for Section 179 expensing. The provision allows businesses to expense, rather than depreciate, certain assets (such as aircraft parts) with a value up to \$500,000.

The House of Representatives and the Senate have been working toward agreement on a tax extender bill for most of this year. In April, the Senate Finance Committee approved a plan to renew several tax extenders for two years.

At the time of this writing, the House of Representatives and Senate plans were to be reconciled before a final bill was sent to the president for his signature. [m](#)



NBAA REGIONAL FORUMS

FEBRUARY 19, 2015 | WEST PALM BEACH, FL

JUNE 25, 2015 | TETERBORO, NJ

SEPTEMBER 17, 2015 | ST. LOUIS, MO

The 2015 NBAA Regional Forums bring current and prospective business aircraft owners, manufacturers, customers and other industry personnel together to get critical business done. At the Regional Forums, attendees will have access to:

- ✓ Exhibitors showcasing their latest products and services
- ✓ Business aircraft on static display
- ✓ Education sessions on topics relevant to aircraft owners and operators
- ✓ Networking with peers, along with new and existing vendors and suppliers

To learn more, visit:

www.nbaa.org/forums/twinandturbine



NBAA Continues Work with NTSB On Behalf of Business Aviation Community

For years, NBAA has represented the business aviation community in working collaboratively with the National Transportation Safety Board (NTSB) to help enhance aviation safety. That tradition continued on Dec. 3, when an NBAA delegation spent several hours at NTSB's headquarters in Washington, DC.

Some 20 representatives from the Association toured NTSB's upgraded facilities, including NBAA President and CEO Ed Bolen; Doug Carr, NBAA's vice president of regulatory and international affairs; Mark Larsen, NBAA's senior manager of safety and flight operations and members of NBAA's Board of Directors and Associate Member Advisory Council.

NBAA representatives toured the NTSB's cockpit voice recorder and flight data

recorder labs, as well as the board's facilities tasked with repairing electronic equipment, researching materials from accident scenes, and creating post-accident event sequence animations.

Larsen noted that during his meetings with NTSB officials, the safety board indicated it is clearly interested in continuing the focus it has had in recent years on better understanding the operational concerns of NBAA Members and other general aviation operators – including owner-aviators – in order to improve safety.

In addition to the work that the NTSB does with the Association's professional staff, the safety board also routinely provides input to NBAA's Safety Committee when the committee develops its annual list of the Top Safety Focus areas for business aircraft operators.

"NBAA maintains regular communication with NTSB members and staff, and the crux of those conversations involve finding common ground and working together on all aspects affecting the safety of our Members," Larsen explained.

Personnel from NTSB also participate frequently in NBAA meetings. Most recently, NTSB's Acting Chairman Chris Hart delivered the keynote address at the 2014 NBAA Business Aviation Convention & Exhibition (NBAA2014) in Orlando, FL.

NTSB staff will also participate in the NBAA Safety Committee's annual risk-assessment meeting in January. [m](#)



FAA Clarifies Policy That Fuel-Tax Revenue Must Fund Aviation

NBAA welcomed a recent announcement from the FAA, amending the agency's airport revenue usage policy to emphasize that tax revenue from aviation fuel sales must go back into the aviation system. The change, published as a "Final Policy Amendment" and effective Dec. 8, reconfirmed a nearly three-decade-old policy that nevertheless had faced periodic challenges due to perceived ambiguity in the regulations.

General policy mandating that airport revenue be returned into the aviation system was established in a 1987 update to airport grant approval requirements. In 1999, FAA released its "Policy and Procedure Concerning the Use of Airport Revenue," further codifying how airport-generated funds must be used.

Both the initial policy and the 1997 clarification aimed to keep municipalities from placing so-called "hidden taxes" on air transportation. However, efforts by several state governments looking to use aviation fuel tax revenue for non-aviation purposes convinced the FAA that still more clarity was needed.

For example, in 2009, Nebraska considered adding aviation fuel to a list of products that carry a statewide sales tax linked to a general fund. Hawaii sought in 2010 to have aviation fuel included in a statewide tax on petroleum products, arguing that because its tax language did not mention aviation fuel specifically, it was not in violation of federal law.

In these cases and others, the FAA issued legal opinions clarifying that revenue from a tax on aviation fuel, regardless of how the tax language is worded or how the levy is applied, must be put back into the aviation system.

While acknowledging in the amended policy guidance that state governments and local municipalities – and not airports – have ultimate control over the disbursement of taxes they

receive, the FAA also noted "the plain language of the statute at issue, [and] the detailed legislative history, reflect strong Congressional intent that aviation fuel taxes be used for airport purposes and State aviation programs."

Attorney Jol Silversmith, a partner with Washington, D.C.-based Zuckert, Scoutt & Rasenberger LLP who advises NBAA, said the FAA's determination also clarifies that the agency will not hold airports accountable for any non-aviation-related uses of those revenues outside their control.

"There previously was some uncertainty about the FAA's ability to regulate taxes not levied directly by the airport or its owner," he added. "In this ruling, the FAA is asserting broad jurisdiction to take actions against state or local governments which collect fuel taxes but use those funds for purposes not related to the airport or in support of aviation."

The latest amendment updates FAA's 1999 policy to incorporate the agency's interpretations and underscore that the policy and related law apply to local governments, such as cities and counties, as well as states. It also codifies the long-practiced policy of permitting revenue from state-imposed taxes to fund state-level aviation initiatives.

"When states, counties, cities and other local jurisdictions tax aviation fuel, it is critical that the proceeds are used for the capital or operating costs of an airport, a local airport system or any other airport facility," said Scott O'Brien, NBAA's senior manager, finance and tax policy. "The amended Revenue Use Policy is helpful in clarifying the prohibition on taxes of any kind on aviation fuel, unless the revenues are used in a manner that is consistent with federal law and policy."

NBAA joined about two-dozen other groups in voicing general support for FAA's effort. [m](#)

Regional Forums Offer Owner-Operators Convenient Access to Industry Resources

While NBAA's annual convention provides an unparalleled opportunity for owner-operators in the business aviation industry to network with their peers from across the United States and around the world, it is not always possible for these busy professionals to commit to a multi-day event. That's where NBAA's Business Aviation Regional Forums come in.

These valuable, single-day events offer an important opportunity for representatives from the business aviation community to participate in many of the activities that are staples of NBAA's annual Business Aviation Convention & Exhibition, in locations closer to home and offering quick and convenient, "in and out" access.

In 2015, editions of these popular forums will be held at airports in Florida, New Jersey, and Missouri.

On Feb. 19, 2015, Atlantic Aviation at Palm Beach International Airport (PBI) will host the inaugural Business Aviation Regional Forum for the year, with additional facility support courtesy of GAMA Aviation and Signature Flight Support. The Teterboro, NJ forum takes place June 25 at Landmark Aviation at the Teterboro Airport (TEB). The final forum of 2015

is set for Sept. 17 at the St. Louis Downtown Airport (CPS) in East St. Louis, IL at the Jet Aviation facility located just 3 miles from the St. Louis Gateway Arch.

"These cities have been popular locations for past forums given the high concentration of NBAA Members and Member Companies in the area, the locations' access to airline service, their variety of lodging options and other benefits," noted NBAA President and CEO Ed Bolen. We're confident these venues will be well received in 2015."

Bolen added that the regional forum venues also complement the location of the 2015 NBAA Business Aviation Convention & Exhibition (NBAA2015) to be held Nov. 17-19, 2015 in Las Vegas, NV.

Participants in NBAA's Business Aviation Regional Forums benefit from many of the same seminars, side-by-side static displays of aircraft, and education sessions offered at the annual convention, in a handier format. These events also offer an important venue for local business aviation leaders to exchange information about specific airport policies, environmental protocols, safety and security proposals, taxation and other issues.

In addition to these services for the business aviation community, NBAA's regional forums also offer the valuable opportunity for industry representatives to meet with local officials and other leaders interested in learning more about the industry, and underscore the importance of a healthy and vibrant general aviation and business aviation the industry to local leaders in business and government.

Additional information about NBAA's Business Aviation Regional Forums is available at www.nbaa.org/events/forums/. [m](#)



NBAA MAINTENANCE MANAGEMENT CONFERENCE

MAY 5 – 7, 2015 | PORTLAND, OR

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Join the decision makers and key influencers responsible for managing aircraft maintenance from across all aspects of business aviation at MMC2015. This unique industry event attracts directors of maintenance, flight department managers, maintenance technicians, aircraft owners/operators and chief pilots, who return to the conference year after year for valuable professional development and to get business done with their providers.

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- ✓ Dedicated face-time with new and existing customers
- ✓ Opportunities to showcase both indoor exhibits, and outdoor displays like service vehicles and ground equipment

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Submit your application today:
www.nbaa.org/mmc/twinandturbine

Exhibitor lottery deadline is January 16, 2015



EN ROUTE

AeroVue™ identified by Sierra Industries as an integrated avionics solution for the “Sapphire” Citation Jet upgrade program


On September 19, 2014, Sierra Industries, Ltd., part of the SkyWay Group, followed its announcement of the Sapphire program, a new suite of performance upgrades to the Cessna 525 Citation Jet series, by revealing that it is currently in discussions with Honeywell’s Bendix King for an avionics integration solution, centering on the recently introduced AeroVue™ platform.

In addition to the GE Honda HF120 engine and aerodynamic upgrades, the *Sapphire* program will incorporate new-technology avionics systems to integrate the airframe and engine modifications. The avionics integration, likely based on the Bendix King AeroVue™ platform, will provide the Citation Jet with state-of-the-art flight deck displays, integrating critical health parameters for the new engine.

Mark Huffstutler, founder and CEO of the SkyWay Group remarks, “*The 525 Citation Jet is an ideal platform to bring together two of the current industry-leading technologies in one retrofit solution.*”

As previously announced, the Sapphire program targets all 525-series Cessna business jets, including all CitationJet, CJ1 and CJ1+ models. Sierra’s sister company, SkyWay Aerospace Technologies (SWAT) and Honeywell’s Bendix King are in discussions on the level of integration required for this fleet upgrade as well as the improved utility and pilot’s situational awareness that can be accommodated through the highly sophisticated avionics platform.

Derived from industry-leading Honeywell avionics systems used worldwide on large and midsize business jets and air transport aircraft, the AeroVue™ Integrated Flight Deck offers a sophisticated avionics platform, including Flight Management System, Autopilot, SmartView™ Synthetic Vision, and INAV™ functionality with electronic charts displayed on three large LCD screens. Also included is a robust inflight Internet solution, the BendixKing AeroWave™ 100.

For more information, visit www.sijet.com, or contact Sierra Industries, Ltd., 122 Howard Langford Dr, Uvalde, TX 78801, (830) 278-4481 

EN ROUTE

What you should know about “Climb Via” FAA Notice Number: NOTC5469

On April 3, 2014, the FAA changed ATC phraseology and procedures associated with Standard Instrument Departure (SID) clearances. The new key phrase is “climb via,” which is closely related to the long-standing “descend via” phraseology used in Standard Terminal Arrival (STAR) clearances. Misunderstanding of the new “climb via” SID phraseology has caused the filing of numerous pilot deviation reports. Some of these deviations resulted in less than standard aircraft separation. It is the pilot-in-command’s responsibility to ensure compliance with an ATC clearance. For “climb via” clearances, remember the following:

- **Top Altitude:** Prior to takeoff, pilots must identify the appropriate initial altitude to maintain as described on the SID chart or assigned by ATC. This altitude should not be confused with altitude restrictions or expected final altitude.
- **Correct phraseology is imperative.** Comply with proper “climb via” phraseology on initial climb-out radio transmissions to ATC. Phrases such as “on the” or “climbing on” a procedure are not appropriate and can create confusion and additional ATC workload to verify the clearance that was issued to the pilot by the previous controller.
- **Pilots are required to respond to climb or descend via clearances by repeating the “climb/descend via” clearance verbatim.** Abbreviated readbacks can result in controllers repeating instructions until pilots give verbatim readback of the clearance.
- **When subsequently changing frequency, pilots must advise ATC on initial contact of current altitude, “climbing via/descending via” with the procedure name, and runway transitions, if assigned.**
- **If assigned an altitude or speed not contained on the procedure, advise ATC of restrictions issued by a previous controller.**
- **For more information, visit the sites below:**
- **FAA Video Tutorial: Climb/Descend Via at <http://www.faa.gov/tv/?mediaid=507>**
- **FAA Notices to Airmen: Climb/Descend Via and Speed Adjustment Clearances (PDF) at www.faa.gov/air_traffic/publications/notices/2014-6-26/GEN14000.cfm**

Contact Stephen J. Lloyd, FAA ATO, Director of Safety: 202-267-4645 



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Pacific Coast Avionics Completes All-Garmin Panel Upgrade On King Air B200

Advanced Garmin G600 with Synthetic Vision, dual GTN750 touchscreens and GDL88 ADS-B gives this 23-year old King Air 21st century capabilities.

On November 6, 2014, Dewey Conroy, Vice President and COO of Pacific Coast Avionics Corporation in Portland, Oregon, announced that the company recently completed its latest complete panel upgrade on a Beechcraft Super King Air B200.

“This King Air is owned and flown by Rick Coulter. Being in the software business, he makes frequent trips to the Bay Area and with the traffic and airspace congestion challenges in California, he needed more situational

awareness capabilities to ease his workload,” Conroy said. “We looked at a lot of options, but it became clear that, dollar-for-dollar, this configuration gave him all the capabilities he needs now, along with the flexibility to grow in the future.”

“The first time Rick saw the new panel, he really couldn’t believe it was his King Air,” he added. “Sitting in the left seat, you’d never know this is a 23-year-old airplane. He’s very happy and I’m extremely proud of the work our guys did in creating

this panel.” Conroy explained that the all-new panel features:

- Garmin G600 EFIS with Synthetic Vision
- Dual Garmin GTN750 touchscreen GPS/NAV/COMs
- Dual Garmin GTX330/ES Mode S/ES Transponders
- Garmin GDL88 ADS-B
- Garmin GMA350 Audio Panel
- Garmin GWX70 Digital Weather Radar.


“We worked with Rick to design the panel to his exact specifications. We kept some of the original analog instruments, but moved them around to optimize the new Garmin digital displays,” Conroy said. “Then we did the CAD design and powder-coated the new metal panel in-house. We also built new wiring harnesses to ensure optimum performance and reliability of the new avionics.”


“This King Air now has three, full-color MFD’s, EFIS with synthetic vision, dual WAAS GPSs for LNAV/

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LPV approaches, and is fully ADS-B compliant,” he said. “It is now a much more capable and safer airplane that it was when it rolled out of the Beech factory in 1991.”

While this was another extremely sophisticated Garmin panel upgrade that Pacific Coast Avionics completed on a King Air, the scale and relatively short turn-time of the seven-week-long project did not intimidate Conroy’s team.

“We have over 160-years of combined technical experience in our shop and we’ve done custom panels for a variety of high-end homebuilts to cabin business aircraft,” he said. “Other than it was a legacy King Air, this project held very few surprises for our guys. They really enjoy these types of challenges.” for more information, visit: www.PCA.aero. 



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Fly Farther, Loiter Longer

CenTex Aerospace, Inc. recently announced a just-completed installation of its Saddle Tank system on a King Air 350. Guardian Flight, with corporate headquarters in South Jordan, Utah, is the largest air Medevac provider in the state of Alaska, with seven bases statewide. Rick Wysowski, Director of Operations, says that the Saddle Tank system “will allow Guardian Flight the operational flexibility required to operate to any remote locations throughout Alaska non-stop to a higher level of medical care”.

CenTex Aerospace recently received FAA approval of an amendment to its Saddle Tank system STC that makes a number of additional King Air models eligible for the conversion. The new system can now be installed on the Beechcraft C90 series King Air and the larger Beechcraft 200 series and 300 series King Air airplanes. Originally approved for the 65-A90-1 or “U-21” King Air, CenTex’s Saddle Tanks provide an additional 180 gallons of fuel for the King Air 90s and 190 gallons for the larger King Airs. An optional “Saddle Tanks Plus” configuration offers a combination of fuel plus

an integral storage bin, providing 120 gallons of fuel plus 8 cubic feet of lockable storage. The president of CenTex Aerospace, Greg Barnes, said “The Saddle Tanks make an excellent addition to any King Air, specifically those that fly over long stage lengths or to remote locations. The tank’s construction and finish are second to none. This quality plus the simplicity of operation ensure the customer will be satisfied for many years to come.”

CenTex Aerospace is a Waco, Texas engineering-based company staffed with highly experienced engineers and technicians dedicated to producing utility enhancing products and providing industry leading customer service. With innovations such as the Saddle Tanks Plus, Halo 250 IGW conversion, Halo 90 IGW conversion, affordable engine upgrades for King Air 90s, and replacement engine control cables for King Airs, Barons, and Bonanzas, CenTex Aerospace is “Making Aviation Better!”

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TBM Owners and Pilots Association 2014 Convention Still Rising

Another record-breaking TBMOA Convention brings 107 TBM aircraft to New Orleans' Lakefront airport 111 owners, 30 vendors and over 330 attendees were present at the event

DAHER-SOCATA and the TBM Owners and Pilots Association (TBMOA) announced that the 2014 TBMOA convention broke another attendance record with the presence of more than 100 TBM 700s and TBM 850s, along with several brand-new TBM 900s.

Attracting almost a quarter of the entire TBM fleet in North America, this became the largest fly-in convention dedicated to a single-engine turbine aircraft or small private jet – registering a 3% increase in attendance from last year.

The 2014 TBMOA Convention was held from October 29 to November 1 in historic New Orleans, Louisiana, with aircraft accommodated at the city's Lakefront Airport. The meeting included three days of dynamic academic sessions customized for the TBM aircraft family, featuring presentations by industry leaders and DAHER-SOCATA, as well as TBM system vendors like Pratt and Whitney, Canada.

Among the speakers were Jerry Cockrell, whose discussion was entitled: “How to Exercise Poor Judgment and Survive;” Earl F. Weener, a Member of the U.S. National Transportation Safety Board (NTSB), speaking on general aviation safety; and Bill Panarello, addressing characteristics of the TBM radar system. The guest speaker was U.S. Air Force Capt. Brian Udell, who recounted how he bailed out of his F-15 fighter aircraft at over 800 mph.

As with the association's previous annual conventions, participation in the technical sessions qualified members for savings on insurance premiums that are exclusive to TBMOA.

Pilot companions were offered activities at the event as well, including a visit to Oak Alley plantation – a preserved historic mansion of the Old South's golden age – as well as a “pinch hitter” flight training program designed for non-pilot companions.

“The 2014 TBMOA convention marked our best turnout to date, and enabled the TBMOA ‘family’ to take part in much-appreciated safety seminars and sessions relating to operational techniques,” explained Frank McKee, the Chairman and Director of TBMOA. “Once again, our annual event offered an excellent way

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for owners to learn and socialize with each other, meet with vendors, and talk with personnel from DAHER-SOCATA. The social events encouraged further discussions about flying and offered the means to develop friendships.”

McKee expressed his appreciation to the vendors who provided support and financial contributions for TBMOPA’s charitable foundation. In 2014, more than \$100,000 was raised to provide, among other things, scholarships for disabled veterans to learn to fly through the non-profit Able Flight association.

Stéphane Mayer, DAHER-SOCATA’s President and CEO, joined a U.S.-bound TBM 900 ferry flight to attend the convention. He said the TBM 900’s recent introduction has raised interest throughout the aviation community, which was reflected in the presence of newcomers at this year’s event.

“These new attendees share the passion for aviation, and

are welcomed to join the TBM community,” he added. “Overall, the TBMOPA team’s excellent work once again resulted in a series of top-quality events for the organization’s annual conventions, which attract increasingly large audiences.”

Nicolas Chabbert, Senior Vice President of the DAHER-SOCATA Airplane Business Unit, said the 2014 TBMOPA convention was very well managed by the TBMOPA team, under the direction of Frank McKee, assisted by Bill Alberts and Andrew Knott.

“This 11th TBMOPA Convention continued the event’s ascension, and was remarkable by its professional organization and the camaraderie of the owners who attended,” Chabbert concluded.

The 2015 TBMOPA Owners Convention is scheduled for October 7-11 in Charleston, South Carolina.

Ad Index	
1st Source Bank.....	13
Aircraft Performance Modifications.....	41
Aviation Technology, Inc.....	42
Avidyne Corporation.....	2
B/E Aerospace, Inc.....	27
Covington Aircraft Engines.....	10
Falcon Insurance Agency, Inc.....	5
Free Flight Systems.....	41
Hartzell Propeller Service Ctr.....	22
Hillaero Modification Center.....	46
LEKTRO, Inc.....	40
LightHawk.....	40
Nashua Flight Simulator.....	43
NBAA.....	11, 35, 39
Paul Bowen.....	19, 28
Pilots and Paws.....	43
Preferred Airparts LLC.....	44
Raisbeck.....	24-25
R C Avionics.....	46
Rockwell Collins.....	Back Cover
Rocky Mountain Propellers Inc.....	29
Scope Aircraft Finance.....	9
Select Airparts.....	45
Simcom Training Centers.....	Inside Back Cover
SMARTug.....	16
Stevens Aviation.....	23
Survival Products Inc.....	22
Trace Aviation.....	44
Turbines, Inc.....	29
VAC-Veterans Airlift Command.....	47
Winner Aviation.....	45
Woodland Aviation.....	17
Yingling Aviation.....	43

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ON FINAL

by David Miller

PERFECTIOUS

per-fect-ious (pur fek shus) *noun*. 1. The art of attempting perfection. 2. Description of any pilot.

There you have it. I have created a new word. Perhaps you have not given this word much previous thought. But recently, I had two occasions to do so. The first was during a visit to ProFlight in San Diego for my recurrent training in the CJ3 simulator.

There I was at 10,000 feet in a steep turn. Power precisely at 67% N1. No, make that 70% as the turn began. Precisely at a 45-degree bank angle. With an acceptable tolerance of 5 degrees of bank, plus or minus 100 feet in altitude, within 10 knots of airspeed, and rolling out within 10 degrees of heading. In addition, I had to avoid any indication of a stall, abnormal flight attitude or exceeding any structural or operational limitation.

All this, just to meet “minimum standards.”

For two and an a half days, I had to perform all sorts of tasks, multiple times. Rejected takeoffs, engine failures, recovery from unusual attitudes, holding, precision and non precision approaches, circling, missed approaches, no-flap landings, and more.

Perfectious.

Our flying vocation, or avocation, leaves little room for error. And, as good as we are, we never master it. I realized after my simulator ride that I have been attempting perfection for over 40 years and will never achieve my goal. I just have to keep trying.

Perfectious also describes one who is a stickler for details. For instance, we must memorize countless emergency checklists and vocalize them during the most stressful situations. With no mistakes. I try to be perfectious in my writing too. It just doesn't always turn out that way.

Thus, my second experience.

In November's **ON FINAL**, “Do You Remember?” I wrote that in 1965 I was “in junior high school.” Shortly thereafter, I penned that



With 5,000-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.

in 1968, I was “a junior in high school.” Although both statements were technically correct, I led many of you astray.

Boy, did I hear about it.

From Fred, “Was David Miller a junior in high school in 1968 or 1965?”

From Ralph, “David, I always enjoy reading your articles in *Twin and Turbine*. I am sure that you have heard from many readers like me who were surprised to learn how successful you have become after spending 3 years as a junior in high school. Keep the blue side up and may the wind always be smooth and on your tail.”

From Jeff, “Your **Do You Remember** article in *Twin and Turbine* was very interesting, but it seems you were a junior in high school in 1968 and 1965.”

Fred, Ralph, and Jeff are all perfectious pilots. I'd bet they could all fly circles around my steep turns.

From one perfectious pilot to another,

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