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FEATURES

- 2 Editorial**
To Drone, Or Not To Drone
- 4 The Long Haul**
The North Atlantic And The PC-12NG
– Todd Hotes
- 10 Drones, A Cautionary Tale**
– John Loughmiller
- 14 Drones, An Opportunity**
– Scott Smith
- Twin Proficiency**
- 18 Are You Clear?**
– Thomas P. Turner
- From The Flight Deck**
- 22 Mad Dog**
– Kevin R. Dingman
- 26 En Route:**
Daher Announces Expanded TBM Family
NavWorks Inks Agreement With Garmin
West Star Partners With NorWest
Jeppesen Teams With Avionics Source

CJ Special Section!

- 30 The Earliest Citation**
Great Citations Just Keep On Going
- 36 Touchy Feely**
– David Miller
- 40 Communicating Clearly**
- Perspectives:**
- 42 Except...**
– Kevin R. Dingman
- 44 CJ Updates:**
JetAVIVA Acquires Kansas Aircraft
Corporate Angel Network Celebrates Milestone
Textron Announces Factory-Direct Coverage Programs
Textron Celebrates 25 Years Of CitationJets

- 47 Advertising Index**
- 48 On Final**
Sixty-Two Inches Of Rain
– David Miller



4



10



22



30



36

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To Drone, Or Not To Drone...



There is probably no more contentious subject kicking around aviation gatherings than the topic of small unmanned aerial vehicles, a.k.a. “drones”. Love ‘em or hate ‘em, they are out there, and with energetic Chinese mass-producers capable of churning them out by the hundreds of thousands, they aren’t going to

go away. How users and regulators of the public airspace handle them is open to considerable debate.

What bothers a great many pilots is the sudden invasion of the traditionally wide-open airspace, normally usable by our manned aircraft with no threat other than an occasional flock of birds. We didn’t like towers being erected, fireworks displays erupting under us and military ordnance being discharged in our way, and we certainly railed against the imposition of TFRs for no good reason. And now, there are heedless hobbyists, snooping law enforcement and venturesome voyeurs of all kinds, buzzing around with cameras and who-knows-what attached to their quad-copters.

But, is there really a threat? The great majority of drone flyers don’t want to lose sight of their UAV because it represents an investment, and they don’t want it to be run down by a manned airplane. For them, the traditional 400-foot altitude cap is more than enough. “Regular” aircraft pilots, other than agricultural applicators, fly no lower than an 800-foot traffic pattern in normal operation. So far, there’s hasn’t been an identified disaster of a manned aircraft running into a drone and cratering with fatalities. On April 17, a British Airways Airbus, arriving at London Heathrow airport from Geneva, apparently did run into a loitering drone; however, the airplane was allowed to proceed to its next stop after an inspection. There have been a lot of flash-by sightings, but no ingestions by a jet-engine inlet.

So, we’re presenting two views of the Drone Controversy in this issue: John Loughmiller’s comparison of the FAA’s inept handling of the polluting horde of mass-marketed flying objects to an earlier bureaucratic debacle, and Scott Smith’s opposing explanation

of how we got here and why drones present an opportunity to revitalize aviation. Some of us are never going to change our mind, for fundamentalist reasons. However, by listening to both sides, I’ve learned a lot about the motivation behind their views. One thing’s for sure; if we expect our government to “fix” this problem, or even identify if one exists, it’ll probably be a fruitless example of “too little, too late,” and it’ll wind up making no one happy. All of us airspace users are going to have to work it out while endless committee meetings and hearings attempt to grind out solutions that don’t solve anything.

Also In This Issue:

Because this is our Citation bonus edition, our cover features a beautiful Paul Bowen rendition of an early-model Citation 500, to accompany a tribute to what is very likely the oldest Citation still in service. N503CC is the third Model 500 built, belying its age while it still fills its role as a corporate transport.

David Miller, president of the Citation Jet Pilots association, contributes to our Citation supplement by detailing his run-in with touch-screen avionics training. Don’t worry, he’s also found in his usual spot as the “On Final” page.

Ever wonder what it would be like to take a single-engine turboprop across the North Atlantic? Todd Hotes shares the experience in a Pilatus PC-12NG, on a company mission to Iceland. To the airplane, of course, this is old hat; the PC-12’s are flown over from the Stans, Switzerland factory by the same route.

Captain Kevin Dingman shares with us his feelings about severing his 25-year relationship with his faithful MD-80. Like anyone who’s had a long-running affair with a willing partner will relate, breaking up is a painful experience. It wasn’t his idea, of course, and finding a replacement won’t be easy.

And Tom Turner reminds us not to neglect our duty to clear ourselves for departure. As he says, “you may be cleared, but are you clear?” He almost witnessed an event with tragic consequences, had not one pilot been alert and ready to avoid disaster.

LeRoy Cook



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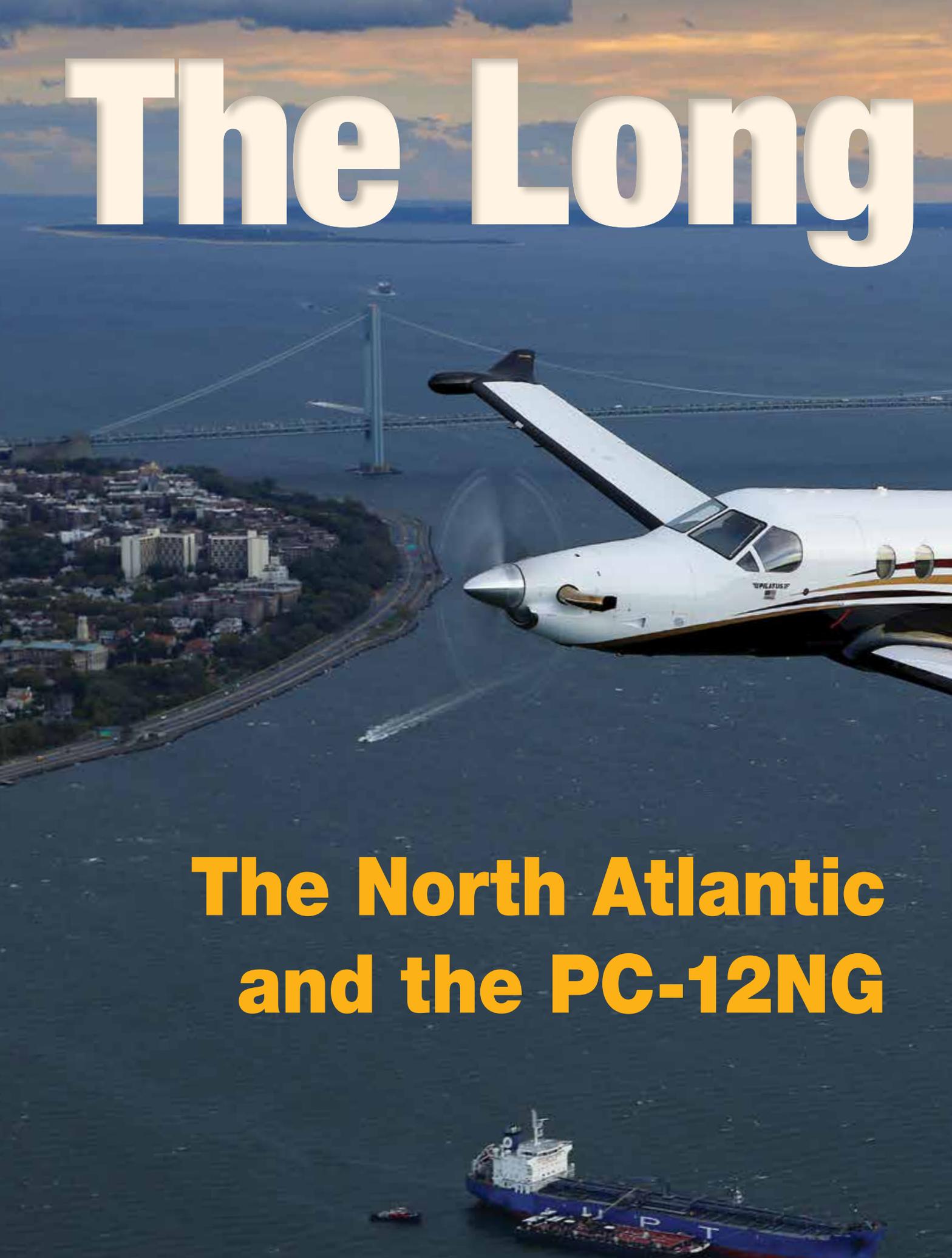
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The Long

The North Atlantic and the PC-12NG



Haul

by Todd Hotes



“Pilatus N47NG, Goose Bay. Ready to copy your oceanic clearance?”

Even in today’s technological world, aviation continues to evoke many virtues of the past: Exploration, adventure, forging new roads (or, in our case, “holes in the sky”) and a myriad of other feelings, memories, sights, and sounds. One such privilege of flight wraps all of these virtues into one: international flying. There are endless joys to flying internationally: The delicious food and drink; the mixture of cultures; beautiful topographic changes; the excitement and challenge of different weather patterns, languages, rules, and tribal knowledge of foreign land. However,

Newton’s third law of motion states that for every action there is an equal and opposite reaction. Well, as magnificently and romantic as international flying can be, it can be just as daunting and ruthless: Due diligence in preparation is essential.

Follow along, as I take you on a Pilatus PC-12NG journey from Oxford, Connecticut to beautiful Iceland. I’ll begin by walking you through my processes and procedures, then conclude by narrating my journey. I should note, however, that this is just my way of operating and is by no means an end-all-be-all. Our operations manual fulfills our objectives, but everyone’s operation is different and so, too, will be procedures.

Study, Plan, Study!

There are many ways to tackle an international flight. Luckily, in today’s day and age there are endless resources at one’s fingertips to review, plan, engage, and facilitate the mission. I started my journey

by Googling the most widely-visited destination in Iceland, after I was given word that we’d be traveling there. Up popped Reykjavik – a beautiful seaside city on the island’s western coast. I was more familiar with Keflavik, as this is the larger international airport and one of the ETOPS alternates for oceanic crossings. However, Reykjavik is the most popular destination for smaller business/corporate aircraft, and thus it was the choice. Destination chosen, it was now time for route planning, familiarization, and all the considerations of taking a single-engine, albeit turbine-engine, airplane over a large body of cold water.

Our PC-12 does not have HF or the performance and range to join the track system, so the planned route was taking us up over northern Maine, above New Brunswick, over the Gulf of St. Lawrence, and descending into Goose Bay (CYJR) for our first and only fuel stop. I should also note that our passengers wanted to travel overnight, so we departed Connecticut at 2300



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local time in order to allow them to sleep enroute. Since overnight flying wasn't part of our typical operation, it required me and the other pilot to adjust our body clocks physiologically a few days before the flight. Chocolate espresso beans and coffee also helped! Moreover, the logic of the late-night departure was to put us in a position to coast out over the ocean after sunrise. I did not want to cross the Atlantic in darkness, as that adds the obvious element of reduced visual acuity and, psychologically, a bit of

pessimism. The sunrise, as in the old days, I'm sure, lends itself to hope and prosperity.

From CYYR we would launch over Lake Melville, coasting out to our first fix, HOIST. Unlike the airlines that pick up their oceanic clearance enroute, we could receive the oceanic clearance on the ground at Goose Bay, as part of the normal clearance procedure. This made the process very easy. Overflying HOIST, now talking with Gander Oceanic (Gander FIR), we proceed to N58W50, then fly direct

to N60W43 (OZN- tip of Greenland), crossing into the Sondrestrom FIR, henceforth to N61W40, direct to N63W30, EMBLA, and finally into BIRK. Needless to say, the route of flight was taking us over a bit of water, and given our engine situation (only one, but a good one! A very good one...nice engine, good engine...) we needed to mitigate as much risk as possible.

Some of the ways we accomplished this was as follows: (1) Daylight operation over the open water; (2) Survival suits, life raft, and jackets-the water, even in summer, is only a few degrees above freezing; (3) a route with as much access to land as possible; (4) VHF; (5) timing the flight so as to have other aircraft around us; (6) a solid and well-rehearsed ditching plan, should the need present itself, and lastly, (7) realization. You can take the risk (some of it) out of the ocean, but you can't take the ocean out of the risk. There are just some elements to flying that you have to be mentally prepared for and this was one of them. Again, good engine...nice engine...

In addition to the route planning considerations, there are also the communication and operational aspects: ICAO procedural compliance, country regulatory requirements, airway/space rules, oceanic crossing etiquette and communication, and security precautions, just to name a few. All of these can be found in the many online and offline resources, including the FAA's North Atlantic Resource guide, each specific country's AIP (Airman Information Publication), Jeppesen publications, handling companies (which I'll cover later) and additional sources of info. It's imperative to study all of the material ahead of time, so as to overturn as many stones as practical before you go. You'll have enough pitfalls to deal with as they're thrown at you, so it's in the best interest of everyone aboard (and most professional) to have all the ducks in a row.

Unlike the airlines that have an entire team looking out for the safety and efficiency of the flight, you're usually left up to your own devices in a small Part-91 flight department, and that's why I chose to have a handler (Universal Weather) for the flight. Essentially, Universal brought all the tools of a large flight department (flight following, weather briefs, performance data – a dispatch, if you will) right to our own operation. It was necessary (and comforting) to have a “team” backing the flight.

In regards to the charts, some specifics to become familiar with are FIR boundaries, non-compulsory reporting points (I derived a chart modeled after the American Airlines position report log), Transition Altitudes and Levels (remember, outside the USA they're not all at FL180, so Transition Altitude- QNE- and Transition Level- QNH- can be different), the usual MEAs, etc., the Oceanic transponder code (2000), the Oceanic common Frequency 123.45, and other small details (i.e. 10-minute call-aheads for FIR boundaries) that need to be taken into account prior to launching. What's more, it's important to calculate and monitor the conversions between U.S. gallons and liters, and feet to meters, depending on where you are in the world. Miscalculation has obvious consequences! And speaking of Jet-A, fuel additives are not always available so, again, planning ahead can make or break the trip. Additionally, it's worth familiarizing yourself with ICAO terminology because, as experienced on another international trip, slang or abbreviations often heard in the U.S. may not be understood or perhaps accepted in other countries.

Taking to the Skies!

At this stage, the planning and briefing is complete and the aircraft is packed, passengers boarded up. It's 2300 local as we lift off runway



36 at Oxford. It's a beautiful summer night, lit by the moon and stars and distant thunderstorms; an interesting juxtaposition. As we progress, we sail over northern Maine and the last few lights of the USA. We transition over to Moncton center and are greeted with a suave “Bon Jour.” We return the gesture and progress through the night. It's now close to 0400 local time and the sun is already starting to peek from underneath the horizon; a beautiful sight, and a psychological boost to boot. We're now 100nm from CYYR and are prepping for the arrival. Soon, we find ourselves number one for the airfield and initiating the RNAV to runway 26. The weather is clear and a million and the runway is illuminated in stark contrast to the surrounding vastness of northern Canada.

Shortly after, we touch down without as much as a screech from the tires (credit to trailing-link gear). The taxi-in and customs process is a breeze. In fact, we were processed via telephone rather than an agent (most likely a function of arrival time). A quick fuel stop, and we're loading up the survival suits, rented from a Scottish company out of Wick Airport, Far North Aviation. The rental process is very easy, as they have suits on both sides of the pond. Generally, an aircraft picks them up in Goose Bay and

drops them off on the return. At that instant, a reality check sets in: The thought of the chance of needing these things is enough to be needing these things! Needless to say, this was an interesting physiological dilemma.

Coffee in hand and clearances received, we're ready to launch off CYYR's runway 8. We're given a climb straight to our cruising altitude of FL270. What's nice geographically about CYYR is that you still have a little over 100nm before you coast out. This facilitates plenty of time to settle in, confirm aircraft systems, fuel burns, and radio checks. Unfortunately (or fortunately), it also gives you plenty of time to contemplate the mission ahead. Cruising out over Lake Melville, 25 minutes into the flight, we're just about to coast out. The scenery is gorgeous. The sun is rising out over the Atlantic and the pieces of icebergs are sitting in the water as if they were big blue ice cubes in a very large bathtub.

We're now talking to Gander Oceanic as we settle in for the five-hour leg to BIRK. The weather is as forecasted with very light winds for the North Atlantic. As we approach our fixes, we make the required position reports: “N47NG Position. N47NG go ahead. N47NG, N58W50, 0900Z, FL270, Estimating N60W43 at 1120Z,

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N61W40, Fuel 2.3.” The vastness of water is beautiful in a lonely kind of way. Occasionally, we see the passing of a ship or the contrail of another aircraft, but overall, you feel entirely isolated from the world, which is actually a nice, albeit strange, feeling. Of course, that’s not the case, given the amount of air traffic.

Two and half hours in and we’re flying over the tip of Greenland. Narsarsuaq, Greenland is our alternate point, slightly north of our route and very close to the calculated equal-time point (ETP). Although a fun airport, I’m sure, on that particular day it was nice to see it from above rather than attempting an NDB approach on the back side of our clocks. The airport sits just on the end of a fjord, and although there is an approach, it appears to be more of a cloud-break procedure than an actual approach. What’s more, viewing YouTube videos of the approach prior to the flight gave me just enough insight to want to attempt it for the first time on a visual day rather than in IMC. Nevertheless, the scenery is majestic as we sail on past. Soon enough, we’re out over water again and passing N63W30 on our way to our last fix, EMBLA.

At this point, the sun is shining and we’re seven hours into our overnight duty day; our destination is within reach. Before we know it, we’re briefing the descent, approach and taxi-in, and preparing the passengers in the cabin. Shortly thereafter, we’re given a frequency and code for Reykjavic FIR and subsequently given a descent,

taking us along the western coast of Iceland. A silent sigh of relief can almost be heard as we see land. Again, being prepared and studying the charts and plates gives us an idea of what to expect, but, shortly after our approach brief is complete, the fog clears and we’re given the visual approach to runway 1. Lining up on final and receiving clearance to land, we finally touch down 10 hours after we left Connecticut. The hotel is calling our names. Then again, so was the whale burger!

A few days later we’re prepping for the flight back, but not before we do a VFR day trip between Reykjavic and a small island just off the southern coast of Iceland, called Vestmannaeyjar. This, however, is another story, in and of itself.

The flight to Iceland was an incredible journey. The PC-12NG is a reliable, formidable aircraft; however, regardless of equipment, you **MUST** do your homework, as the efficacy of one’s preparation will derive the outcome of the trip – good or bad. I still can’t imagine the courage, precision, and determination the aviation pioneers of the past must have had! **T&T**



Todd Hotes is the current chief pilot and flight department manager for Polymer Resources, LTD. Todd is also a former check airman for a regional airline, flight instructor, and contract captain for a part 135 air carrier on the Eclipse Jet. Todd’s love of aviation began at a very early age and continues to facilitate his passion for safety, professionalism in aviation, and aviation education.

Photo courtesy of Pilatus



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Drones: A Cautionary



As I write this, yet another near-miss has occurred, this time in the U.K., where a small drone came within 20 feet of an Airbus 319 on approach at Heathrow. Encroachment of these aerial missiles into controlled airspace is becoming an everyday event, affecting FAR 91, 121, and 135 operations. It's only a matter of time before an airliner's jet engine ingests a mixture of plastic, metal, electronics parts and Lithium Polymer batteries, with predictable results. For operators of smaller aircraft, a drone will eventually bull's-eye a cockpit windshield, or maybe hit a wing and rupture a fuel tank, resulting in a fire. Of course, it could hit the elevator: "What happened to my pitch control?" We don't know the way it will play out, but, at some point, two of these airborne objects will try to occupy the same place at the same time.

What are the "authorities" doing about this?

In much of the world, the authorities aren't doing anything, other than wagging a finger towards a TV camera and reminding viewers that they have an obligation not to

fly their new toy anywhere near airports. The reaction of many drone owners? Yawn.

In the U.S., you are now required by law to register your drone with the FAA and place the assigned tracking number on each of your devices.

But, what's the FAA going to do with the registry data? Well, if enough of the device survives an encounter with an airplane or helicopter, the Feds will be able to track down the malefactor and cuff 'im. Of course, airplanes are still damaged (best case) and/or people are dead (worst case.)

Will this registry idea work?

There is a precedent we can study. It doesn't involve dead people but it does involve the general public and a federal agency. It's a cautionary tale about what happens when a technical enterprise collides with human nature. The agency was the Federal Communication Commission (FCC) and the event was the creation of the Class D citizens-band radio service, in September of 1958.

Class D citizens band radio was created by stealing – sorry, “repurposing” – the 11-meter high frequency radio band from amateur radio enthusiasts. The FCC went through the required notice of proposal/public comment period and received around a 10-to-1 response against the plan, driven principally by the amateur radio community's abhorrence of the idea. Ham operators pointed out that they often provided the only means of emergency communications in times of natural disaster - plus other public services - and they needed the 11-meter spectrum.

Those in favor of the idea were mostly made up of the usual suspects: people that stood to gain financially. In 1958, just as now, that group held trump cards over the great unwashed masses, so the FCC ignored the voices of reason and sided with the robber barons.

How did the bureaucracy handle the implementation?

The FCC required those wanting to operate CB radios to obtain a license before they fired up their new toys. There was no training or supervised testing required (unlike the mandatory requirements for the

Tale

by John Loughmiller

Ham Radio operators formerly using the spectrum). Just apply, check a few boxes promising to be good little boys and girls, and abide by Federal radio regulations. As soon as you got a piece of paper with your call sign in the mail, you were good to go.

Other than the time spent filling out the application, and payment of a nominal fee, that was it.

Then what?

A few docile people did apply and were given call signs to be used faithfully (the equivalent of marking the side of a drone with a registration number). Shortly thereafter, some operators were rewarded with nasty letters from the FCC when they were caught violating some rule, such as failing to identify or re-identify their station with their assigned call sign within the mandated time period. Or perhaps they – horrors – allowed a non-family member to use their family radio system or allowed a non-employee to use their business system.

Whatever, fines were threatened, so it soon became obvious to even the most law-abiding person that it wasn't in an operator's best interest to request a call sign or let anyone know their true identity on the air. Big Brother was listening.

Citizens rebelled and stopped applying for or using call signs. In fact, they adopted something called "Handles", in place of official call signs, which were often colorful names, such as "Bandit" in the Burt Reynolds movie or perhaps an X-rated variant.

No one applied for licenses because human nature has two motivators: pursuit of pleasure and avoidance of pain. Of the two, the latter always prevails over the

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henceforth, Citizens Band radio would no longer require licenses. A government-approved free-for-all then ensued on the 11-meter shortwave band and what was supposed to be a regulated situation became a chaotic conglomeration of people doing whatever they wanted to do with a spectrum originally allocated for two specific purposes.

Days of Future Past

So, based on that citizen/federal agency template, how is the current system of registering drones, and allowing untrained people – some of them scofflaws - to fly them, going to work out? Let's see.

On the one hand, you could register the drone and wait for a knock at the door if you ever get caught doing something you shouldn't. Or, you could not register it – in fact, not even admit to anyone you have it – and have plausible deniability if something untoward happens.

former. The pain in this case was threats from a Federal Bureaucracy that knew who they were and where they lived. The pleasure was the safety and convenience brought by an inexpensive two-way radio system in those pre-cellphone days.

A sizeable group of CBers also wanted to use the new (to them) technology to do what the displaced Ham operators did as part of their hobby, but without the annoyance of obtaining an amateur radio license, involving a relatively-difficult test plus

learning Morse code. They wanted to “work skip”, which meant they wanted to talk to people hundreds or thousands of miles away by reflecting signals off the ionosphere – a no-no, since the purpose of the Citizens Band was to facilitate short-range communications for family and/or business purposes. In essence, this is similar to wanting to fly an aircraft in controlled airspace without the inconvenience of gaining a pilot's license.

It wasn't long before the FCC admitted defeat and decreed that

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Should you could be a good little citizen and do what the FAA says you should do, or not?

Gee, this is a tough one.

Are there solutions?

Some manufacturers are building a GPS receiver into their craft which will not allow flight around air carrier airports.

Flaw: That's a good step towards protecting airliners, but it does nothing to protect helicopter operators anywhere, or aircraft operating near the much larger number of small airports used by general aviation.

In addition to GPS lateral control to avoid some airports, how about limiting altitude to, say, 100 feet above the ground, using GPS and a barometric sensor integrated into the controller?

Flaw: Expensive to do and what about the millions of drones already being operated?

How about requiring registration by forcing the new owner to input the FAA registration number into non-volatile memory in the drone's controller and receiver, prior to each flight? Legally, that would force acceptance of responsibility for every flight.

Flaw: not practical without a way to verify the number was actually assigned and valid before the drone will fly. And, even then, what would prevent an operator from simply "appropriating" someone else's registration number?

How about a version of the data recorder so treasured by crash investigators? Something that has the registration number encoded on a chip that could survive an encounter with a real aircraft in most scenarios?

Flaw: Possible, but expensive and what about the millions of drones already being operated?

In my humble opinion, unless a compliance law exists with teeth – such as a mandatory one-year prison term for anyone caught flying an unregistered drone or other unmanned aerial vehicle weighing more than one pound – the majority of people are not going to participate in a registration program.

Pretty stiff penalty you say? You're right, but, without a way to find out who the operator was, should a mishap occur, drone hobby law enforcement will become akin to the Citizen's Band debacle. This time, though, physical property damage and death are the potential consequences of operation of an unlicensed transmitter by an unknown person. **T&T**

Mike Simmons is President of Plane Data, Inc. and may be reached at 800-895-1382 or 828-737-1599 (Direct & International), or by visiting www.planedata.com

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Drones: An Opportuni

Let's get this out right up front. I am a pilot and I own a drone.

With all the talk about drones mixing with aircraft, I thought it might be good to start this article by clarifying what a "drone" is. When I'm talking about drones, I am talking about sUAV or small Unmanned Aerial Vehicles. The FAA likes to use the term, sUAS or small Unmanned Aerial Systems. Sometimes they are called RPV, Remotely Piloted Vehicles. But, in the end, most people just call them drones.

I'm not new at this; I've been a modeler since I was a kid flying remote-controlled aircraft and helicopters, and a licensed pilot since I was in high school. And, for those that don't know me, that's 1975. I have been in the aircraft and aviation insurance business since 1985. It seems to be that there are two sides to this issue of drones and I just want you to know which side I am coming from, which happens to be both.

Getting into drones was an easy transition for me, particularly since many of the aviation insurance underwriters have been insuring drones for years. I've found it to be a

fun and exciting area of business, but for many of my customers and pilot friends it's something substantially different.

The drone industry is growing exponentially and can potentially be good for aviation. Many pilots see drones as a danger, because this new rapidly-growing industry can open the doors to many people getting into the airspace without experience or training. But it can also offer opportunities for drone pilots to move into other areas of aviation. In reality, I think it's a chance to promote aviation.

A Big Opportunity

Okay, what's the big deal about drones? Well, the FAA estimated that over a million drones were sold just at Christmas. That's a lot of flying machines. I was at a drone convention last September and it was reported that one major manufacturer was selling 15,000 drones a day, worldwide. Think of your cell phone and how fast the smart phone market took off.

It's a numbers game. With that many drones flying around, any report of a near-miss will add to the pilot's concerns. But, before we get

too worried, let's think about how a drone can work for us. As pilots and aircraft owners, thousands of people flying drones have made the public more aware of the world of aviation. Sure, it's just a "model", but now people that never got involved with aircraft are thinking about drones as a hobby or business. In the model aircraft world, many of the model aircraft pilots are full-size aircraft pilots too. I went from models to full size, as did many other people I know. Why can't this new drone trend be the same?

It is important to note that, in order to operate a drone as "for hire" or "commercial" use, the drone needs to be registered with the FAA, have a 333 Exemption, obtain a Certificate of Authorization (COA), and be flown by a licensed pilot. In the legal sense, the commercial operators should already know the "rules of the air", compared to the hobbyists. But, with the huge number of drone operators, I would guess that many do not meet those minimums.

If that's the case, those inexperienced pilots will need to have some sort of training to get them up to speed with the rest of the aviation community. Sure, there are drone-



ty For Aviation

by Scott Smith

specific training programs such as UAV Boot Camp or Unmanned Safety Institute. But what's available for the drone operators if they want more? I, along with many underwriters, recommend that a drone operator take an FAA ground school or even work towards their pilot's license. I gave a webinar for the EAA a few weeks ago and was informed by a powered-parachute CFI that you can get your sport-pilot powered parachute license with something like 12 hours of training. While it might not seem like much, I believe that any training and any sort of pilot rating is not only a plus for the drone operator but also a plus for the aviation community.

Applying For Commercial Operation

My son and I decided that we should know about the process for getting

our drone approved for commercial use. We wanted to experience what our customers go through. We started the process of filing for the exemption and discovered what a nightmare it was. The FAA required we submit an explanation of what we will do with the drone, how we will do it and what FAR's we wanted to be exempted from. If you weren't a pilot, you would sure know a lot of the regulations by the time you were done creating your request. No, it is not a pilot course and it won't make you an expert, but sure it can't hurt. Not only did we learn a few new things, but we also became an FAA-qualified commercial drone operator!

These commercial requirements are destined to change, but probably not for another year or so. I think, before they change the rules, the

flying public has the opportunity to recognize the drone community and offer some guidance and help. In my mind, it would be better for me (a pilot) to help a drone operator that is not a pilot.

Thinking out loud here, many of the people that file for this 333 Exemption are not pilots. But, to operate officially, they need a pilot to fly the drone...hmmm...I'm thinking part-time job. If you know of a drone operator, maybe you can offer your pilot services and help keep the operator within the boundaries of the FAA requirement.

Another important rule states that a drone shouldn't fly higher than 400 feet; it has happened and it will happen. It also says that drones shouldn't fly within five miles of an airport without telling the airport,

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and that happens. So, be aware and be vigilant. As a pilot, it is in your and other pilots' best interest to help educate drone operators. If you have hobbyists that are flying in the area, take a minute and stop and see what they are doing. It is not a time to lecture them about the "evils of drones", it is an opportunity to talk to them about their interest and maybe share information from a pilot's perspective.

Word of warning: I stopped to watch a First Person View (FPV) drone race, and couldn't believe how much fun it was. I was able to get a demo view of the race from "inside the drone"; it was like I was in the drone. The warning is, it's a blast and it can have an effect on your pocketbook (I recently ordered a race drone).

In the end, aviation is a small community and yet drones are part of it. And, yes, drones do present a risk to pilots. But instead of complaining about the drones, get involved and help educate the drone operators,

and maybe even help transition them to the next level – full-scale aircraft.

Okay, back to the reason I bring this up; there are and have been drone operators and model aircraft pilots flying as hobbyists all around the country for years. The model rules already tell them to stay below 400 feet, day-VFR.

And there are commercial drone operators that have went through the process of getting the 333 Exemption and flying legally with a licensed pilot. And they hopefully will know and follow airspace rules.

And then there are those people that are flying wherever they want, whenever they want and at whatever altitude they want.

But, there's more: Now there are power companies using drones to check their power lines. Oil and gas companies are using drones to make inspections on wells and pipe lines. Wind generator companies are using drones to inspect windmills. And the

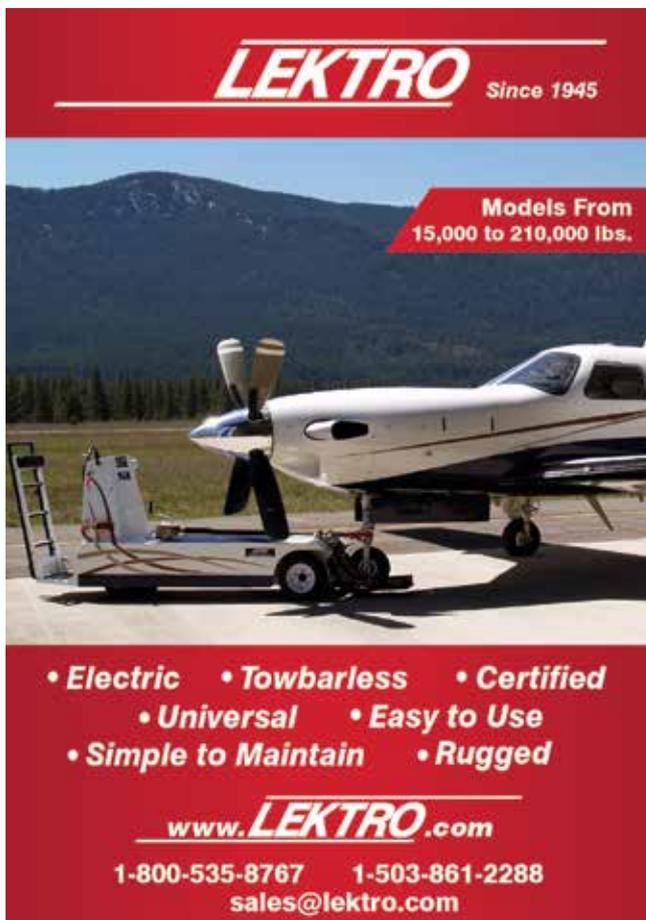
list goes on, including law enforcement, search and rescue, research, surveyors and even claims adjustors.

What I am trying to get at is (and here is where the numbers come in), with the huge growth in drone usage, it won't just be the modeler at the local model-aircraft field. It will be worldwide usage that can impact almost everyone wherever they fly. Remember, one company sells 15,000 a day! **T&T**

Scott "Sky" Smith is a nationally recognized writer and speaker.

He is the author of "How to Buy a Single-Engine Airplane", How to buy a Skymaster", "Ultimate Boat Maintenance Projects" and "How to Build a Hot Tuner".

Smith is a single and multi-engine pilot with over 30 years' experience. Smith is the owner of Sky-Smith Insurance Agency, which is a nationally recognized specialty insurance agency, insuring aircraft, drones, boats and custom vehicles since 1985.



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You're Cleared...but Are You Clear?

I recently saw a near-collision on a runway, between a business jet and a corporate turboprop.

I was in the right seat of a Beechcraft Bonanza A36, instructing a pilot I'd first taught 25 years ago. To our right, on the ramp, the pilot of a Piaggio P180 Avanti was starting up. We taxied to the run-up pad. The Piaggio pilot, apparently alone in the aircraft, taxied past us and stopped just short of the end of the runway.

The weather was 1,100 overcast, visibility greater than 10 miles. Like most pilots departing Wichita/Colonel James Jabara airport that morning, we would call Clearance Delivery through a remote outlet on 125.0 to get our Instrument Flight Rules (IFR) clearance. At this non-towered airport, nestled in a cluster of airports in or near the busy Class C airspace, this clearance includes instructions to hold for release and contact Approach Control on 134.8 when ready to take off.

For pilots not familiar with this procedure, when you call for release the controller will determine whether there is other IFR traffic in the immediate area. If there is none, Air Traffic Control (ATC) will release the aircraft, i.e., permit you to depart on your IFR clearance. If there is other IFR traffic passing nearby or on the approach, ATC will not release you. You'll need to wait on the ground, ready to go, while monitoring the Approach frequency until the controller calls back with your release after the traffic clears. Section 5-2-4 of the Aeronautical Information Manual describes the term this way:

HOLD FOR RELEASE: ATC may issue "hold for release" instructions in a clearance to delay an aircraft's departure for traffic management reasons (i.e., weather, traffic volume, etc.). When ATC states in the clearance, "hold for release," the pilot may not depart utilizing that instrument flight rules (IFR) clearance until a release time or additional instructions are issued by ATC. In addition, ATC will include departure delay information in conjunction with "hold for release" instructions. The ATC instruction, "hold for release," applies to the IFR clearance and does not prevent the pilot from departing under visual flight rules (VFR). However, prior to takeoff the pilot should

cancel the IFR flight plan and operate the transponder on the appropriate VFR code. An IFR clearance may not be available after departure.

The Avanti pilot was undoubtedly monitoring 134.8 awaiting release. My student switched to 125.0 to pick up our clearance, but we were still monitoring Unicom (122.7) as well. About then, the pilot of a Cessna Citation reported on Unicom that he was on a four-mile final. He had broken out of the overcast, shining a constellation of pulsing and fixed landing lights. The Citation pilot called at two miles out, and again when he was on a one-mile final.

The Citation jet was within a quarter-mile of the runway when the Piaggio pilot powered up and taxied onto the runway. I suspect he had received his departure release from ATC (on 134.8); he made no call on Unicom (122.7). The unique pusher turboprop aligned with the runway centerline and, without pause, began its takeoff roll. The Citation pilot had no choice but to execute a go-around, side-stepping to the left to avoid the Piaggio as the turboprop climbed.

My student and I taxied to just short of the runway and called for our release...still monitoring Unicom also. As we waited—the Citation came back around visually in a low circuit of the traffic pattern, and another IFR Bonanza was inbound on the approach—my student said, "I bet that Piaggio pilot feels bad about pulling out right in front of the jet." I replied, "I bet the Piaggio pilot doesn't have a clue the Citation was even there."

Unique departure

The unique requirements of obtaining an IFR release at a nontowered airport create a communication challenge. Traffic detection and avoidance demand, however, that you make the effort. An IFR release requires you take

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⚠ For inoperative MALSR, increase LPV all Cals visibility to 1 mile and LNAV Cat D visibility to 1½. DME/DME RNP-0.3 NA. When local altimeter setting not received, use Wichita Dwight D Eisenhower National altimeter setting and increase all DA/MDA 40 feet. VDP NA with Wichita Dwight D Eisenhower National altimeter setting.			MALSR	MISSED APPROACH: Climb to 3600 direct JUNI and hold.
ASOS 134.025	WICHITA APP CON 134.8 269.1	CINC DEL 125.0	UNICOM 122.7 (CTAF) 📻	

off expeditiously, but that does not mean you can't delay a few seconds to announce your departure before you take the runway. Further, you need to monitor the Common Traffic Advisory Frequency (CTAF), 122.7 in this case, long enough before you announce your departure that you'll hear any other pilots calling in...for example, a Citation pilot who has broken out high on the approach and cancelled his IFR clearance, permitting controllers to issue your release, or the pilot of a VFR airplane legally entering the pattern beneath the clouds in the Class G airspace.

"Shouldn't the controller have advised the Piaggio pilot about the Citation on final approach, when the controller gave the Piaggio pilot his release?" you might ask. Yes, but recall that even between two IFR airplanes traffic advisories need only be provided on a time-available basis. It was pretty busy over Wichita that morning, and the controller may not have had time to issue a traffic advisory. Regardless of whether a traffic callout is given, controllers will make sure two IFR airplanes or an IFR airplane and a VFR airplane participating in radar services are kept separated from one another. However, since the Citation was no longer an IFR airplane and was no longer participating in ATC services, and since, by virtue of having cancelled his IFR clearance in the air, the Citation pilot was signifying that conditions were visual in the pattern over Jabara, visual "see and avoid" becomes the separation standard. The controller was not required to warn the Piaggio pilot of visual traffic on the approach, and even if he did it was assumed the pilots would see and avoid each other.

Even more importantly, you need to *visually* clear the runway and the airspace before "taking the active." Not all airplanes have radios; pilots sometimes transmit on the wrong frequency or don't transmit at all. And workload may cause you to miss

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The **runway** is clear
The **approach** is clear
I'm clear to go

Some might make the argument that there was no hazard, that the pilot of the Citation jet simply executed a balked landing and a visual pattern to land when he or she noticed an obstruction on the runway (the Piaggio). For many years, however, the Federal Aviation Administration has warned of the extreme hazard of runway incursions, such as this event. Yes, a go-around should be an expected, normal and easily-flown maneuver for the proficient pilot. That does not excuse another pilot for failing to clear the runway and the approach airspace before taxiing out, however, and creating the requirement for another aircraft to go around at the last moment to avoid a collision. We **all** have a responsibility to **look** for traffic before we take the runway, **listen** for what may be heard on the CTAF, and **report** our position and intentions in the airport environment, to avoid a runway incursion collision. **Never assume it's clear, just because you're cleared.** **T&T**

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

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Engine type: Pratt & Whitney JT8D

Thrust: 21,700 pounds

Unit cost: \$41,500,000 - \$48,000,000

Crew: Captain, First Officer and three Flight Attendants

Manufacturers: McDonnell Douglas, Boeing Commercial Airplanes

In the olden days, pilots all knew who Jimmy Doolittle, Hap Arnold, Pappy Boyington and Paul Mantz were. They all read *Wind, Sand and Stars*, as well as *Fate Is The Hunter*. They quoted *The High and The Mighty*, *Flying Leathernecks* and *Twelve O'Clock High*. Pilots drank coffee and whiskey, smoked cigars and didn't wear digital watches. Pilots didn't bend over for a strip search in front of the passengers at security. They didn't go through the terminal pulling a suitcase, computer, guitar and food bag. And they hand-carried their suitcases and kitbags – no wheels. They wore jackets, hats, ties and kept their bright-white shirts pressed and tucked in. There was no pink string with granny glasses and ID dangling from their necks and they didn't bump into passengers while talking on their cell phones. They nodded an acknowledgement of respect to other pilots that passed by. And these real pilots, well, they flew real airplanes too.

When Jets Roamed the Earth

In the day of the 707, 727 and DC-9, there was very little plastic or composites on the airplane. They were proportional and sexy. They had no vortex generators, ventral fins, winglets, flow diverters, tattoos

or nose rings. They were the last of the “real” airliners: ones that had flight controls connected to the yoke with something solid and made smoke and noise. Along with military fighters of the day, they gave birth to the moniker “the sound of freedom.” Airlines were run by men like C.R. Smith (American), Juan Trippe (PanAm) and Bob Six (Continental), who built their companies virtually from scratch, knew most of their employees by name and were lifetime airline employees themselves. Except when low on fuel, economy cruise was something buried in the performance book. And when the clacker went off, no one got nervous or scared, because Lockheed, Boeing and Douglas built their machines out of iron. Nothing was going to fall off these jets and the barber-pole sound caused the same result on pilots then as Viagra does now. After all, this was the jet age and the idea was to go fast – really fast.

The McDonnell Douglas DC-9 is a series of twin-engine, short to medium-range, single-aisle commercial jet airliners, lengthened and updated to become the MD-80 and acquiring the marketing name of Super-80 (S-80) and the nickname Mad Dog. It's an accurate and

enduring description of the darling that has been my home for almost 20,000 hours. Note the “has been.” The airplane is leaving our fleet this fall, ostensibly due to high operating costs – even with oil, and therefore jet fuel, being comparatively cheap these days. Management wants to tout a younger average fleet age and smaller overall carbon footprint (aka, cheaper to operate). Of course, our new generation of customers enjoy the new-car smell, the new-cabin gadgetry and the new-hire flight attendants of these new-generation airliners, despite the new lack of legroom. Sometimes newer isn't nicer. Truthfully, the primary reason for retiring the Mad Dog is a looming and costly fuel tank AD, precipitated by the loss of TWA flight 800. The 747 fuel tank explosion in 1996 was caused by a spark at one of the submerged fuel pumps in a fuel cell. The MD-80 has a similar fuel system with pumps in fuselage-mounted tanks and is, therefore, like many AD's, guilty by association. And it's this association that management doesn't want to be associated with. As the airplane is retired, and like the GPS and ADS-B updates for the Duke last year, the new-world is once again running me over as I'm forced into a new, next-gen airliner.

Arrogant Fighter Pilot

In 1990, the 737-200 systems were still old-style and the instrumentation was round-dial “steam gauges.” In order to apply



to Southwest, I completed a 737 type course in just such a jet. Having come from GA and a single-seat fighter, training in an airliner with two pilots and antique, manual systems was strange, and quite a challenge. I had to borrow money for the type-class but it was money well spent, because it eased my transition into the Part-121 jets at my carrier. Two years later, when I went through initial training on the MD-80, there was a Captain in the class transitioning from the left seat of the 727. I remember that he was struggling during the systems class and in the simulator. He had been at the airline for about 25 years, likely all of it on the 727. Having begun his career as a Flight Engineer then moving to FO and Captain, he was a master of the three-hole Jurassic Jet. Since I trained on the 727 panel as a new hire myself, I was surprised at his difficulty with the MD-80. I had found the 727 to be much more complex and difficult to learn than the 737 and MD-80. But, be silent and bow low in respect, oh ye arrogant fighter pilot—ye are but a squire. It took years, but this new-hire airline pilot would learn that not all was as it appeared.

It's only now, as I become an antique pilot myself after finishing 25 years on the MD-80, that I am able to empathize and fully understand the Noble Knight of the 727's dilemma. The comfort level you acquire in an airplane after 20,000 hours is significant. It's wonderful to recognize the quirks, idiosyncrasies and even the moods of your machine, and to feel like you're always ahead of the airplane. The trust that passengers intuitively feel when they see a grey-haired captain is well placed. But I've also come to realize that a grey-haired, 60-year old body and brain are very different than that of a 30-year old. It's similar to when you were young, you could play baseball, tennis or golf all day and remain alert, engaged and active during the evening. You could also remember things without writing them down

and the reason you walked all the way to the other end of the house to get..... something? At some point after 55, those physical and mental gifts begin to deteriorate. Stamina, vision and memory degrade. Body parts begin to creak, groan and fail. Eventually, the degradation becomes significant and you must adapt your behavior in order to continue at the same level of competence and safety. If you are fortunate, increased effort, study and fortitude will be enough to compensate. But in a profession where you need both mental and physical dexterity, age, like fate, is the hunter.

One of many great MD-80 FO's I've flown with, Greg, is already 60 and had to leave the MD-80 as well. He chose a transition to the Baby Bus—the Airbus 319. I've been picking his brain to see how he handled the training; making light of our age in an attempt to clue him in on my concern. He showed me a stack of study material he got from the company to help with the transition. Another writer/associate retired after a lifetime as a surgeon to become a professional Citation pilot. Training in a completely new and complex aircraft, especially when at retirement age, is not for the faint of heart – or absent-minded. Perhaps the secret is simply to coax enough brain cells out of hibernation and into action. But many pilots don't suffer, or enjoy, my affliction. Anthropomorphism is both a blessing and a curse. What is the airplane thinking, what does it want and what is it trying to tell me? It has been a successful method of interacting with the Mad Dog. At first, my knowledge level in the 737 will be low and its anthropomorphic language difficult to understand. It will be my task to transition from squire to knight as quickly and smoothly as possible. With pun intended, I anticipate it will be difficult to teach this Mad Dog captain new tricks. I will soon feel the pain and frustration of that 727 captain trying to learn the MD-80



some 26 years ago. Hopefully, my love of airplanes and flying will wake some brain cells that still have memory space remaining.

End of the Trail

Except for a couple of years, my entire airline career has been spent on the Mad Dog. I'm often dismayed how some pilots buy and sell airplanes and change equipment without feeling a profound emotional loss. I tell its detractors that the Super-80 is one of the last real airliners. One that not only makes smoke and noise, but one that needs a pilot as badly as the pilot needs it. It's a symbiotic relationship and I surely have needed that airplane. All along, you have been my smoky, noisy, reliable and steadfast partner. As we reach the trail's end, I'm grateful we rode it together. Leaving you isn't my idea and I will miss you profoundly. **T&T**



Kevin Dingman has been flying for over 40 years. He's an ATP typed in the B737 and DC9 with 21,000 hours. A retired Air Force Major, he flew the F-16 then performed as a USAF Civil Air Patrol Liaison Officer. He flies volunteer missions for the Christian organization Wings of Mercy, is employed by a major airline, and owns and operates a Beechcraft Duke. Contact Kevin at Dinger10d@gmail.com

The Worldwide General Aviation owner/operators and chief pilots of these air

100%
TOTAL MARKET COVERAGE

JETS

CHIEF PILOTS & OWNERS

Aircraft Count

4 AIRBUS ACJ319
32 ASTRA 1125
31 ASTRA 1125SP
63 ASTRA 1125SPX
51 BEECHJET 400
275 BEECHJET 400A
58 BOEING BBJ
391 CHALLENGER 300
65 CHALLENGER 600
58 CHALLENGER 601-1A
133 CHALLENGER 601-3A
56 CHALLENGER 601-3R
279 CHALLENGER 604
5 CHALLENGER 800
169 CITATION 500
319 CITATION 525
284 CITATION BRAVO
151 CITATION CJ1
69 CITATION CJ1+
202 CITATION CJ2
160 CITATION CJ2+
390 CITATION CJ3
180 CITATION ENCORE
306 CITATION EXCEL
5 CITATION I
288 CITATION I/SP
478 CITATION II
50 CITATION II/SP
173 CITATION III
329 CITATION MUSTANG
138 CITATION S/II
257 CITATION SOVEREIGN
284 CITATION ULTRA
287 CITATION V
20 CITATION VI
104 CITATION VII
257 CITATION X
199 CITATION XLS

1 DIAMOND I
53 DIAMOND IA
3 DORNIER ENVOY 3
282 ECLIPSE EA500
47 EMBRAER LEGACY 600
8 EMBRAER LEGACY 650
158 EMBRAER PHENOM 100
82 EMBRAER PHENOM 300
123 FALCON 10
28 FALCON 100
25 FALCON 200
176 FALCON 2000
21 FALCON 2000EX
81 FALCON 20C
17 FALCON 20C-5
26 FALCON 20D
3 FALCON 20D-5
7 FALCON 20E
8 FALCON 20E-5
59 FALCON 20F
82 FALCON 20F-5
229 FALCON 50
8 FALCON 50-40
113 FALCON 50EX
135 FALCON 900
21 FALCON 900C
116 FALCON 900EX
98 GLOBAL 5000
112 GLOBAL EXPRESS
25 GULFSTREAM G-100
161 GULFSTREAM G-200
8 GULFSTREAM G-300
27 GULFSTREAM G-400
222 GULFSTREAM G-450
7 GULFSTREAM G-500
330 GULFSTREAM G-550
42 GULFSTREAM G-I
110 GULFSTREAM G-II
31 GULFSTREAM G-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 IIXL
22 CHEYENNE IV
303 CONQUEST I

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502 KING AIR 200
12 KING AIR 200C
12 KING AIR 200T
203 KING AIR 300
3 KING AIR 300LW
588 KING AIR 350
34 KING AIR 350C
17 KING AIR 90
7 KING AIR A/B90
120 KING AIR A100
203 KING AIR A200
58 KING AIR A90
221 KING AIR A90-1
135 KING AIR B100
902 KING AIR B200
78 KING AIR B200C
63 KING AIR B200GT
2 KING AIR B200SE
3 KING AIR B200T
66 KING AIR B90
295 KING AIR C90
32 KING AIR C90-1
160 KING AIR C90A
316 KING AIR C90B
7 KING AIR C90SE
278 KING AIR E90
160 KING AIR F90
17 KING AIR F90-1
1 MERLIN 300
1 MERLIN IIA
29 MERLIN IIB
12 MERLIN III
20 MERLIN IIIA
49 MERLIN IIIB
14 MERLIN IIIC

5 MERLIN IV
13 MERLIN IV-A
13 MERLIN IV-C
105 MITSUBISHI MARQUISE
1 MITSUBISHI MU-2D
29 MITSUBISHI MU-2F
1 MITSUBISHI MU-2G
22 MITSUBISHI MU-2J
32 MITSUBISHI MU-2K
15 MITSUBISHI MU-2L
23 MITSUBISHI MU-2M
30 MITSUBISHI MU-2N
38 MITSUBISHI MU-2P
55 MITSUBISHI SOLITAIRE
673 PILATUS P-12
341 PILATUS PC-12 NG
549 PILATUS PC-12/45
154 PILATUS PC-12/47
492 PIPER MERIDIAN
10 ROCKWELL 680T TURBO
6 ROCKWELL 680V TURBO II
7 ROCKWELL 680W TURBO II
9 ROCKWELL 681 HAWK
89 SOCATA TBM-700A
91 SOCATA TBM-700B
4 SOCATA TBM-700C1
115 SOCATA TBM-700C2
318 SOCATA TBM-850
22 SOCATA TBM-900
6 STARSHIP 2000A
51 TURBO COMMANDER 1000
27 TURBO COMMANDER 690
129 TURBO COMMANDER 690A
113 TURBO COMMANDER 690B
58 TURBO COMMANDER 840
16 TURBO COMMANDER 900
23 TURBO COMMANDER 980

TWIN PISTON

OWNERS

Aircraft Count

9 ADAM A500
1550 BARON 58
479 BARON 58P
137 BARON 58TC
5 BARON A56TC
142 BARON G58
43 BEECH BARON 56 TC
2 BEECH BARON 58 PA
217 BEECH DUKE B60
193 CESSNA 340
556 CESSNA 340A
120 CESSNA 402B
BUSINESS LINER
64 CESSNA 402C
38 CESSNA 404 TITAN
288 CESSNA 414
374 CESSNA 414A
CHANCELLOR
72 CESSNA 421
61 CESSNA 421A
454 CESSNA 421B
757 CESSNA 421C
66 CESSNA T303
124 PIPER 601P AEROSTAR
29 PIPER 602P AEROSTAR
18 PIPER 700P AEROSTAR
465 PIPER CHIEFTAIN
28 PIPER MOJAVE
870 PIPER NAVAJO
24 ROCKWELL 500 SHRIKE
33 ROCKWELL 500A SHRIKE
69 ROCKWELL 500B SHRIKE
46 ROCKWELL 500S SHRIKE

8 ROCKWELL 500U SHRIKE
28 ROCKWELL 520
COMMANDER
15 ROCKWELL 560
COMMANDER
21 ROCKWELL 560A
COMMANDER
17 ROCKWELL 560E
COMMANDER
11 ROCKWELL 560F
COMMANDER
36 ROCKWELL 680 SUPER
17 ROCKWELL 680E
19 ROCKWELL 680F
COMMANDER
22 ROCKWELL 680FL GRAND
COMMANDER
14 ROCKWELL 680FLP
GRAND LINER

HIGH PERFORMANCE MOVE-UP SINGLES

OWNERS

Aircraft Count

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

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TWIN & TURBINE

Daher Announces Expanded TBM Family

On April 5, 2016, Daher unveiled its expanded TBM very fast turboprop aircraft family, which now consists of the TBM 900 and TBM 930 versions – each retains the features that have made the TBM 900 a success, with more than 110 sold since its launch two years ago.

Daher has introduced the e-copilot® function on Model Year 2016 aircraft for both the TBM 900 and TBM 930, incorporating the following systems and functionality:

- Angle of attack (AOA) sensor and calculator, providing angle of attack information on the primary flight display.
- Electronic stabilization and protection systems (ESP) and Under Speed Protection (USP), connected to the AOA computer.
- An emergency descent mode (EDM) in the autopilot, which places the aircraft in automatic descent to a safe altitude of 15,000-ft. in the event of cabin depressurization and lack of pilot response.
- New voice alerts, providing notification on stall, overspeed, landing gear status and oxygen mask use,

replace aural sounds for better warning identification.

Distinguishing differences between the TBM 900 and TBM 930 are concentrated on their primary avionics. The 2016 TBM 900 retains Garmin's G1000 avionics system, incorporating a pair of 10-inch screens and a 15-inch multifunction display, along with a physical keyboard for navigation and communication functions. New this year is the TBM 900's Bluetooth FS 210 connection system, which enables the use of a tablet or smart phone to prepare maps and flight plans.

Introducing the TBM 930 as the latest step in Daher's very fast turboprop aircraft family evolution, this version integrates Garmin's G3000 avionics suite – the first touchscreen-controlled glass flight deck ever designed for light turbine aircraft. Its three wide-format WXGA displays can operate in a splitscreen mode, enabling maps and flight plans to remain on the screen side-by-side with primary, traffic and weather information.

A new touchscreen controller serves as the primary point of entry for the G3000 system, displaying communication and navigation controls. In addition, the

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EN ROUTE

G3000 avionics suite's high resolution displays enhance the presentation of simulated 3-D perspective topography for Garmin's SVT™ Synthetic Vision Technology.

Daher has also developed a new interior for the TBM 930 with redesigned seating and headrests, along with a new choice of wood or carbon finishes. For an additional touch of style, polished metal is used for handles, door sills and steps.

Didier Kayat, CEO of the Daher group parent company, said more than 50 new TBM aircraft in the TBM 900 and TBM 930 versions are expected to be delivered in 2016.

Listening to customers has guided the TBM's evolution, according to Nicolas Chabbert, the Senior Vice President of Daher's Airplane Business Unit and CEO of SOCAT North America. "With enhanced resources provided by the Daher group for technical studies, design and production, we've taken a new step forward with the current TBM family while also positioning ourselves for future developments," he concluded. 

NavWorx Inks Agreement with Garmin for Affordable ADS-B Solutions

NavWorx, Inc. announced on March 31 that the company has entered into a licensing agreement with Garmin enabling connectivity to the company's GNS and GTN line of navigators. Under the agreement, NavWorx's ADS600-B will interface with existing certified position sources, providing the required WAAS GPS to meet the FAA's mandate for ADS-B equipage.

NavWorx offers equipment designed to operate within the parameters of the FAA mandate for ADS-B. The company recognizes that utilizing existing equipment provides an affordable path to a certified ADS-B Out solution. For many aircraft owners, this includes existing installations of Garmin GNS and GTN navigators. Through the licensing agreement, NavWorx is able to offer ADS-B compliance solutions for these existing installations at an attractive price.

For aircraft operators with Garmin GNS and GTN navigators, the installation of NavWorx's ADS600-B requires only a wiring connection to the aircraft. The ADS600-B is a remote mounted Universal Access Transceiver (UAT), providing 2020 compliant ADS-B Out (transmit) and ADS-B In (receive) for installation in certified aircraft. The ADS600-B utilizes the navigator's existing WAAS GPS and antenna, offering a significant cost savings. Less equipment to purchase and lower installation costs all contribute to the savings.

The ADS600-B is priced from \$1,999.00.

Garmin's GNS and GTN display systems are installed in many certified aircraft. With more than 100,000 produced, there's a sizeable installed base, although Garmin ceased production of the GNS line in 2011/12. GNS 430 and 530 models without the "W" designation do not carry an approved GPS position source, although they are upgradeable and the company continues to support the platform. Garmin's GTN navigators, including 650/750 models, replaced the GNS line and include WAAS GPS.

While much has been written about meeting the FAA's 2020 mandate, aircraft owners remain confused about the availability of solutions that minimize the cost of installation. NavWorx can assist with finding a 2020 compliant ADS-B solution for any aircraft. The company offers UAT receivers/transceivers, Wi-Fi connectivity, transponder connectivity, plus TSO and experimental solutions for a range of aircraft applications.

For further information, contact NavWorx, Inc. at 3706 Big A Road, Rowlett, TX 75089; call 1-888-628-9679; or visit www.navworx.com. 



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EN ROUTE

West Star Aviation Partners with Norwest Equity Partners

West Star Aviation is pleased to announce it has successfully reached an investment partnership with Norwest Equity Partners (NEP), a leading middle market investment firm founded in 1961.

Norwest has made a significant investment in West Star Aviation, one of the world's largest and fastest-growing independent providers of Maintenance, Repair, and Overhaul (MRO) and related services to the business aviation industry. The transaction was completed on April 28, 2016.

"On behalf of the entire West Star team, we are confident that our new partnership with NEP will help us successfully achieve our next level of growth. In partnership with NEP, our operating philosophy will remain grounded in our strong technical expertise, experienced employees, attention to detail, and a constant focus on customer service and satisfaction," stated Robert Rasberry, West Star Aviation CEO.

Tim DeVries, NEP Managing General Partner, stated, "West Star's solid business model and industry-leading management team have helped to establish extremely high barriers to entry within the business aviation maintenance market. West Star has done a great job to earn a global reputation as a highly-valued, 'go-to' MRO services provider, and we're going to work hard to leverage their existing growth momentum along with our combined NEP capital and resources to further build and grow the company."

Todd Solow, NEP Partner, shared, "From expanding service capabilities and facilities to key contracts and strategic growth initiatives, West Star is well-positioned for continued success. The right team is also in place to help lead the way."

Voted #1 Preferred MRO in the 2014, 2015 and 2016 Professional Pilot magazine annual "Preferences Regarding Aviation Services and Equipment" (PRASE) Survey for three consecutive years, West Star Aviation specializes in the repair and maintenance of airframes, windows, and engines, as well as major modifications, avionics installation and repair, interior refurbishment, surplus avionics sales, accessory services, paint and parts.

In addition to its facilities in East Alton, IL, Grand Junction, CO and Chattanooga, TN, West Star Aviation runs maintenance operations at Aspen-Pitkin County Airport in Aspen, CO, Chicago Executive Airport in Chicago, IL and Centennial Airport in Denver, CO. The company also provides complete FBO services for transient aircraft at its newly remodeled East Alton and Grand Junction facilities.

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EN ROUTE

JEPPESEN TEAMS WITH AVIONICS SOURCE ONLINE MARKETPLACE

Pilots who buy a 12-month Jeppesen NavData® subscription will receive one month free

Jeppesen, a part of Boeing Commercial Aviation Services, has partnered with Avionics Source, a premier online avionics marketplace, to provide general aviation pilots with avionics system expertise and industry-leading flight data subscriptions, offered together in a one-stop shopping environment.

“We are ecstatic to partner with general aviation’s leading brand, and we look forward to providing Jeppesen customers around the world with an enviable customer experience and an exclusive cost-saving promotion,” said Chase Larabee, founder of Avionics Source. “Jeppesen is transforming the way the world moves, and together, we’re transforming the way their general

aviation customers connect with Jeppesen.”

As part of the new relationship, pilots purchasing a one-year Jeppesen data subscription through Avionics Source will receive one additional month of NavData® navigation information and digital charting services at no additional charge. The Seattle-based Avionics Source connects aircraft owners with manufacturers, avionics shops, and other aviation consumers. Buyers and sellers are able to conduct business through a single online resource, in real time.

“Connecting the general aviation community with the resources they need to fly, in a one-stop research and

purchase environment, simplifies what can be a complex process,” said Reggie Arsenault, director, Jeppesen General Aviation Client Management. “With a wide array of avionics hardware and Jeppesen’s leading global data services now available through Avionics Source, pilots will be able to take to the skies backed with the top equipment and data available.”

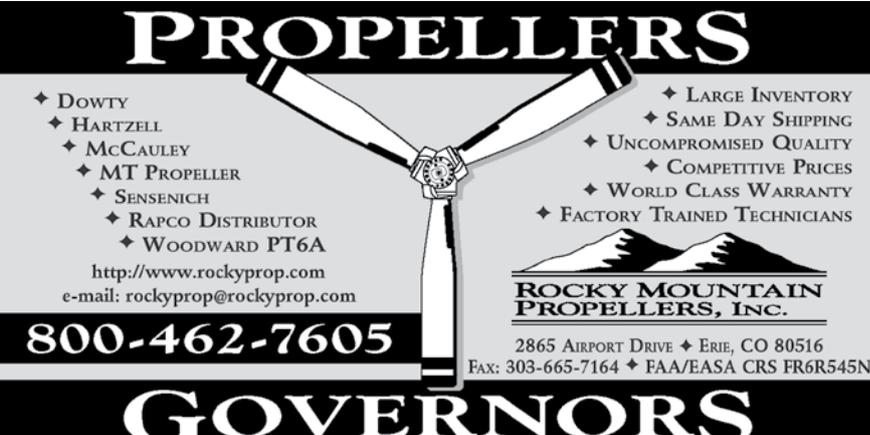
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Just Keep On Going**



Citation

When it began selling Citations in late 1971, Cessna had already been in the jet-building business for a very long time. Almost twenty years earlier, back in December 1952, the U.S. Air Force announced that little Cessna Aircraft Company had been awarded a contract to develop a new model 318 twin-jet trainer, to be called the T-37. The first XT-37 flew on October 12, 1953 and the production T-37A entered service in June, 1956. The T-37 served as the Air Force's primary jet trainer for over 50 years, until mid-2009.

Drawing on the T-37's success, Cessna president Dwane Wallace proposed a military-utility and civilian version of the aircraft; a wooden mockup of a four-seat model 407 was unveiled in 1959. Although the airplane was never built, the mockup, with a realistic interior, still existed on April 27, 1961, when I encountered it sitting in the back of a hangar at Wichita Municipal airport.

Some 1,272 T-37s were built from 1954 to 1977, providing valuable experience in how to, and how not to, produce a light jet airplane. The T-37's little Turbomeca/Continental J-69 turbojets were noisy and inefficient, and it was obvious that a fanjet engine would be needed for civilian use. Most importantly, the airplane would have to provide utility in a way that would appeal to businessman-pilots and small companies. In October, 1968, a mockup of the new Cessna Fanjet 500 business jet was shown for the first time, designed to use Pratt &Whitney-Canada JT15D-1 engines of 2,200-lb. thrust. A short 11 months later, on the promised date of September 15, 1969, the prototype

of the renamed "Citation" jet took to the air, with Milton D. Sills and James LeSueur at the controls.

Transport-category certification for the C-500 was achieved under FAR Part 25 on September 10, 1971; Cessna's intentions to the contrary, two pilots were required, per FAA rules at the time. It took until 1984 for Part 25 airplanes to finally be given single-pilot exemptions, with special training and equipment requirements. Prior to that time, the Citation I SP (501, certified on January 15, 1977) and II SP (551), as 1977 and 1978 models, had been certified in Normal Category under Part 23 as "small aircraft", so single-pilot approval could be obtained.

The Little Plane That Could

Early on, detractors were harsh with criticism of Cessna's little bizjet. It only flew at 400 mph, it couldn't operate higher than 35,000 feet, and range was limited to 500 miles or so with a full cabin. But the whole point of Dwane Wallace's vision was to serve a market that was unserved; the businessman who wanted to go faster than a turboprop and operate in and out of 3,000-foot runways. The Citation's niche was to go places other jets couldn't, simply and safely. The airplane had no gimmicks, just pulley-and-cable controls, an 80-knot stall speed, simple systems and a fat, straight wing.

In reality, what Cessna had built was a semi-turboprop, sans the propellers. Two-thirds of the JT-15D engine's thrust is produced by the fan, one-third by the jet. The



fan is merely a closely-shrouded fixed-pitch propeller, wrapping the shriek of the jet in cool bypass air, and it delivers vastly more fuel efficiency than a pure turbojet, particularly at the middle altitudes used on typical short business trips.

When I watched Milt Sills turn off at mid-field as he landed an early C-500 at our town's 3,250-foot runway, I knew the game had been changed. Here was a quiet little airplane with no propellers, sitting at a small-town airport, ready to load up passengers for a hop to Chicago's Meigs Field or New Orleans Lakefront airport. The smell of Jet-A was no longer reserved for the big cities.

The Oldest Citation

In late 1971, serial #3, N503CC, rolled out of the factory door, very likely one of the very first, if not the first, of the customer-delivery Citations. The airplane is still flying today, in great shape and a testimony to the correctness of the original market niche.

Since the early 2000's, N503CC has been owned, in part or wholly, by Chuck Foster, chairman of Corporate Transit of America, an Arkansas-based courier and logistics company that services clients in 50 markets in 15 states, primarily in the middle and southeastern U.S. Foster understood the value of a corporate aircraft early in his business career; having a company plane allowed CTA to fly several clients to three or four cities, and still be home in time for dinner. Their first aircraft, purchased in 1981, was a Cessna 340 cabin-class twin, followed by a Beech King Air 90 that was retrofitted with a Blackhawk engine upgrade. A Learjet 35 replaced the King Air, but Foster has found the C-500 to be the perfect plane for the company's purposes. It's not as fast as the Lear, but, as he says, "for most trips, you just get up 30 minutes earlier; it does a great job."

Foster gives high marks to Superior Aviation Arkansas, the management firm at Conway, Arkansas (KCXW) that operates N503CC for CTA. Pilot Chris Fisher, Director of Development for Superior Aviation, agrees with Chuck Foster's analysis of the Citation as ideal for his trips, most of which average 500 miles in length. Chicago is an easy 1+15 trip time from the Conway base, and the airplane has taken longer trips to Miami and Phoenix.



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Because N503CC is not certified for RVSM (reduced vertical separation minimums), the airplane is currently restricted to FL280 instead of its original 35,000-foot operating limit. Therefore, comfortable endurance is limited to about 2.5 hours. However, 28,000 feet is very near the early Citation's best-speed altitude, and Fisher says it'll climb up there quickly at 2,000 fpm or more and run dependably at 340 knots, burning 150 gallons of Jet-A per hour.

Maximum usable fuel is 536 gallons (3,600 pounds), and with an aircraft empty weight of about 7,000 pounds, an early Citation would have been short of payload with full tanks in its original as-certified configuration. However, a steady progression of gross weight increases added utility to the Citation 500s, and by serial #303 the ramp weight was up to 12,000 pounds. These factory increases have been retrofitted to most early C-500s, via upgrades or STC.

Other than the King EFIS 50 panel on the left side, installed as part of a Silver Crown avionics upgrade in 1998, most of the vintage Citation cockpit remains intact, including the vertical-readout engine gauges. A reliable KLN90B GPS provides space-based navigation output, and the KFC325 digital flight control system is a far cry from the original Bendix FGS-70 flight director and autopilot of 45 years ago.

N503CC's only significant modification was Sierra Industries' Longwing mod, which adds three feet to the wingspan, much as Cessna did at serial #350; Sierra also holds an STC to increase the C-500's takeoff weight to 12,500 pounds, greatly enhancing utility at very little cost. Sierra Industries, of course, is well known for its work in adding performance and value to the original Citation airframe, including retrofit with Williams FJ-44 high-efficiency fanjets.

The Longwing mod enhances the wing's aspect ratio to 8.5: 1, improving climb, cutting drag and further reducing the Citation's already-minimal runway length requirements. Fisher says he routinely operates at 3,500-foot runways, and he has used strips as short as 3,000 feet. As a Part 25 certificated airplane, a balanced-field length must be calculated and observed for each takeoff. However, the reference speeds are similar to the operating numbers for light twins, in the 100-knot range. Thrust reversers are not worth their weight for these slow-landing airplanes, their chief value coming on contaminated runways.

With only 3,500 hours on the airframe, and over 1,000 hours remaining on the engines' TBO, N503CC is still a relative youngster, despite its chronological age. More importantly, it's a benchmark airplane, a significant indicator of the correctness of Dwane Wallace's vision, bringing jets to towns and companies of every size. It still has a lot of life left in it. **CJ**

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Touchy Feely

by David Miller



Learning to fly a new model of airplane can be challenging. But, now a days, it's not controlling the airframe that provides the stress. It's learning the avionics. Many of us go to large training centers, sit in small classes, and are introduced to avionics systems that are new to us. In owner flown jets, there are usually three choices when it comes to flight decks: (1) the true legacy, non-integrated packages (2) Rockwell Collins' ProLine 21 FMS 3000, or (3) Garmin's G1000 or G3000. Having flown all of the above, I can truthfully say that all are very capable and each has its own strengths and weaknesses. But when it comes to classroom training, I have definite preferences.

No flat screen training devices, please. I am a knob man.

I like the tactile feel of tuning the navs, selecting the altitude, and



A mass of up to eight giant iPads fastened together in a make-shift horseshoe. Few, if any, knobs exist. You tap on the screen to wake up the computers. Another tap to create green boxes around each simulated knob, like heading, autopilot modes, landing gear, virtually everything. Then you tap on the + or - to change a digit. Then, another tap to exit the green box. Changing the altitude pre-select from 8,000 feet to FL390 might involve 50 taps. I counted them. Unfortunately, by the time

I had tapped my way to the new altitude, I stalled.

I forgot to tap the autopilot on.

I did, however, become really good at tapping. At dinner, I found myself tapping on the table. I couldn't stop. My dinner guests moved to another table. But, there is a bright side to this story.

After all that tapping, I became very proficient at Morse code.

Fly safe. 



engaging the autopilot with a real knob. Laugh if you want, but the type of training device can make a real difference in how quickly you learn. Take the Mustang non-motion trainer at Flight Safety, for instance. It is an exact replica of the C-510 cockpit with every knob, switch and button you would find in the real airplane. Even the throttles work. And although it doesn't move and has no visuals, you can program the FMS, shut down an engine, and "crash", just like in the multimillion dollar simulator. I can touch a knob and things happen just like they should. Later, I can jump in the full-motion simulator or the real airplane and make an instant transition to reality.

Other training devices are not so friendly to me.

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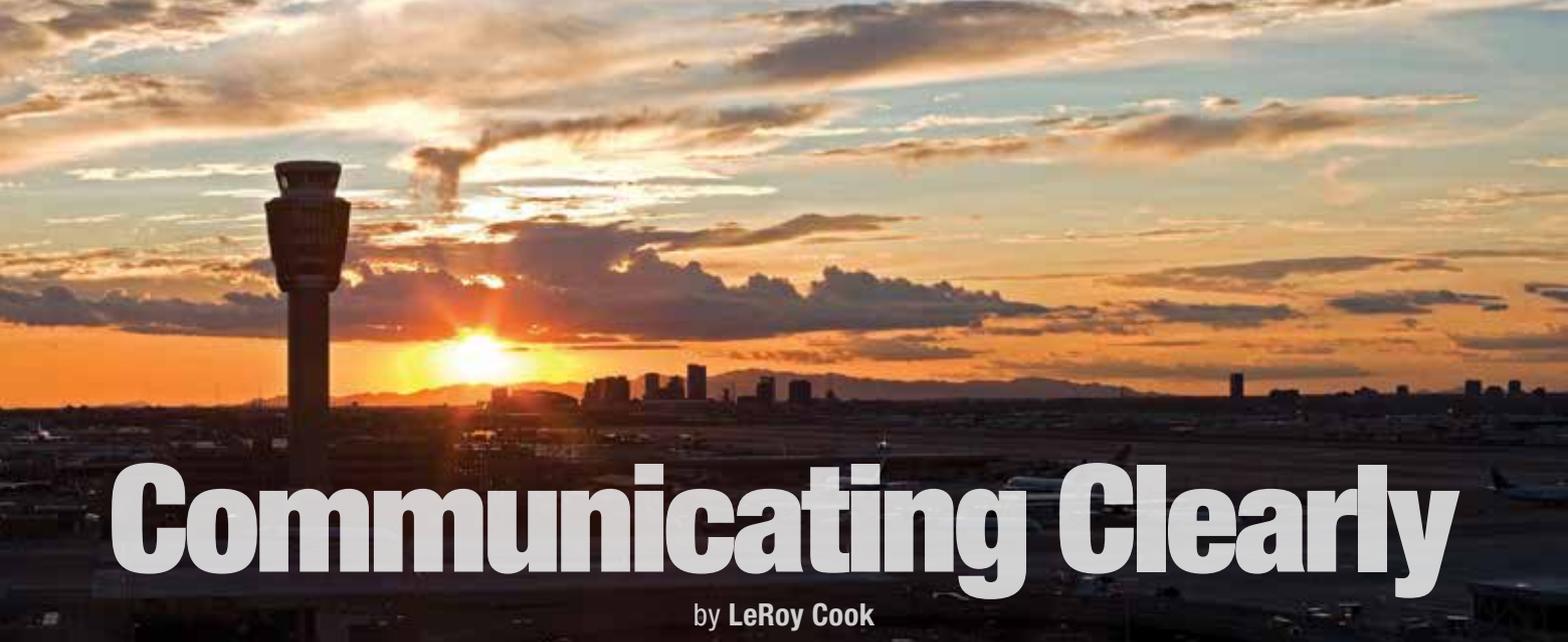
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Communicating Clearly

by LeRoy Cook

Despite the looming advances in datalink communication, much of our interaction with the air traffic control system, as well as other pilots, remains very firmly anchored with verbal instructions and acknowledgement. All of us, I rather imagine, have had hair-whitening experiences with miscommunication during our career. Aviation is critically dependant on knowing what we, and the other aircraft, are supposed to be doing. To achieve this, we have to communicate clearly.

You have not communicated if you're not understood. And misunderstanding of ATC instructions is often founded on expecting to hear an anticipated response. If what is heard is not the same as what was meant, and we act upon this false premise, the system breaks down. The problem is compounded, of course, when cultural and language factors add inflection to the words.

Pilots are diverse lot; while controllers are mostly trained to a uniform standard and must adhere to procedures governing their every action, pilots may present themselves as a stumbling student, freshly-minted private pilot, blossoming commercial or ace-of-the-base ATP. Expectations to the contrary, these pilots, with their widely-varying capabilities, don't

always hold to specific phraseology, often leaving the controller to sort it all out. Not surprisingly, controllers get taken in once in a while, trusting what they've heard until it's proven otherwise.

The desire to communicate clearly should be taken seriously by all of us, because so much depends on being understood. Training and procedural manuals spell out specific methods of requesting and acknowledging instructions, and even how to speak ICAO numbers and letters. Common usage tends to shortcut proper phraseology, which can be dangerous. My own weakness is not saying enough, in the interest of saving precious airtime. I tend to choose my radio words carefully, and perhaps a bit too parsimoniously, because I frequently get asked to repeat or "say intentions", after I thought I had already said it all. The minimalist approach may save some airtime up front, but it loses the advantage when a second set of transmissions has to be made.

Another frequently-occurring roadblock to clear communication is not understanding what the other party needs from you. ATC needs to know three vital things; WHO you are, WHERE you are and WHAT it is you want to do. Placing these items in order on the initial call-up gets the preliminaries out of the way, opening the door to further

communication. Save the details for later; embellishments such as a lengthy description of aircraft type, runway desired and transponder code being squawked don't belong in the initial call. Adding the ATIS password is expected, of course. However, I've found that "with Romeo" doesn't have nearly the clarity of "we have Romeo."

Where Is He?

A common place for a mid-air collision threat to manifest itself is during the handoff between controllers in congested airspace (and radio time) near the airport. Recently, we were inbound on a visual arrival, flying an extended left base leg to Runway Two, about to make a requested report to Tower, when a Beech King Air zipped across our bow from right to left. "Must be on the ILS," I said to my copilot, "although he was pretty close to us." However, the King Air leveled off and continued past the airport boundary, and the pilot was heard to report "Downwind for Two-Zero." The tower controller was busy handling three of us already; he thought the pilot meant "Downwind for Zero-Two", an incorrect but common appellation for Runway Two.

So, here we were, on base, in queue to receive a cleared-to-land, but with a rogue airplane flying a downwind to an opposing landing, still not visually acquired

by the tower controller. When the King Air pilot finally made the tower realize he was far past the mid-field position, headed the wrong way, the conversation went something like this:

Tower: "Did Approach tell you to do that?"

King Air: "I guess we were supposed to land Runway Two. We'll circle back for a downwind to Two."

Tower: "Negative, negative, just continue on for Runway Two-Zero; the wind's light and variable. Aircraft on base, give me a right 360 and report reestablished."

Fortunately, we could see the conflict developing before the tower controller sorted it all out, and we had already stopped our descent and cleared the airspace for a 360-degree turn. By the time we were back in position the King Air was on the rollout, clearing as we turned final.

How did this miscommunication develop? First, the King Air was deep into Class D airspace before the tower knew it was there. Approach control evidently sent the airplane to the tower as a straight-in arrival, but the pilot had fixated on flying his usual downwind. The tower was occupied by one person, who was tasked with handling all duties, and the controller's initial snapshot developed into a false image. The weakness of radio communication is that it takes about three times as long to correct a statement as it took to make it in the first place.

Where Did He Go?

It is important for us to place the words into motion, as we hear them. If a pilot reports "Two miles west of the field, northbound at two-thousand five-hundred," we know where he was at the moment he called, but we also need to visualize where he will be a minute or two later. He will have moved down his track by some distance, and if we want to remain separated from him, we have to factor in both of

our movements. Don't look for the airplane where it was last reported, unless it is coming straight at you.

If ATC assigns you the task of following unseen traffic, you must let the controller know you don't have it in sight by responding "no contact" in your readback. Words like "no joy", "looking" or "watching for the traffic" are not appropriate responses. "I have the traffic" is the correct terminology if you acquire the called-out aircraft, not "tally-ho" or "got him in sight." If you lose sight of the traffic ahead, advise the controller immediately ("Six-Three-Niner has lost the traffic"), so spacing can be maintained with ATC help. Following the preceding airplane with TCAS can be helpful as well, of course.

Slow Down

If you want to be understood, speak a little more slowly than you would in a heated conversation, assuming the airwaves aren't jam-packed with radio calls. Getting the information out in audible, understandable form avoids a lot of repeats and mistakes. I tend to imitate the staccato delivery of air traffic controllers, but I'm not good at it, leading to "Say again" requests. It's better to slow down to save time.

Reading back all instructions is a necessary evil in this litigious era, when "putting it on the tape" is required to cover liability exposure. Unfortunately, this adds a lot of often pro forma verbiage to the airwaves. Do not take your responsibility to confirm receipt of instructions lightly; be sure you are indeed proceeding as cleared, and make your readbacks unambiguous enough to validate your understanding.

Communication is the tenuous thread that binds us into a family of flight. Take the time to do it right, so you'll get your intent across and avoid surprises. Never forget to supplement the microphone with your eyeballs and brain cells. **CJ**

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Since the introduction of GPS and WAAS, many innovative, useful devices, systems, and procedures have been developed and certified. And much written about the resulting departures, arrivals and approaches, using the technology. As we become more reliant on GPS, we are less inclined to need memorization and math to fly our machines. Perhaps the E6-B and plotter have finally gone the way of the abacus and slide rule. Information is now calculated, compiled and presented in such a way that our situational awareness is higher than ever before. And this has greatly improved the safety and utility of our airplanes. Single-pilot IMC in high performance aircraft is a safe endeavor because of training, mandatory equipment, and the reliability of avionics, powerplants and airframes. But, most significantly, it's because of the decreased workload these new technologies and reliability provide. However, as our airspace becomes more saturated, and we attempt to lessen controller workload, we have seen some of that workload shifted back to the pilot.

We've all seen changes over the years: TCA's (Terminal Control Areas—now Class B), TFR's (temporary flight restrictions – that often aren't temporary after all), RVSM (reduced vertical separation minimums), LAHSO (land and hold short), PRM (precision runway monitoring), enroute RNAV (area navigation), RNAV approaches, and descend-via and climb-via RNAV arrivals/departures. These procedures have been developed for a variety of reasons, some of them to increase the utility of our airspace system and airports and some to allow more aircraft to use the airspace and airports simultaneously. There's no doubt the procedures are more stable, predictable and accurate than ever before. And GPS/WAAS has opened thousands of "little" general aviation airports through the use of LPV minimums. But the changes are not without some new issues.

Knees Up Your Nose

One major influence in the effort to increase airspace utilization has been the Part 121 operators.

The philosophy of cramming more seats, and therefore more paying passengers, into airliners by removing galleys, bathrooms and leg-room, can create an environment for record-setting revenues. In airline parlance, arranging more airplanes into the ramp, runway and enroute structure means higher departure and arrival rates, quicker turn times and higher gate utilization. And, therefore, more efficient use of high-dollar assets—which,

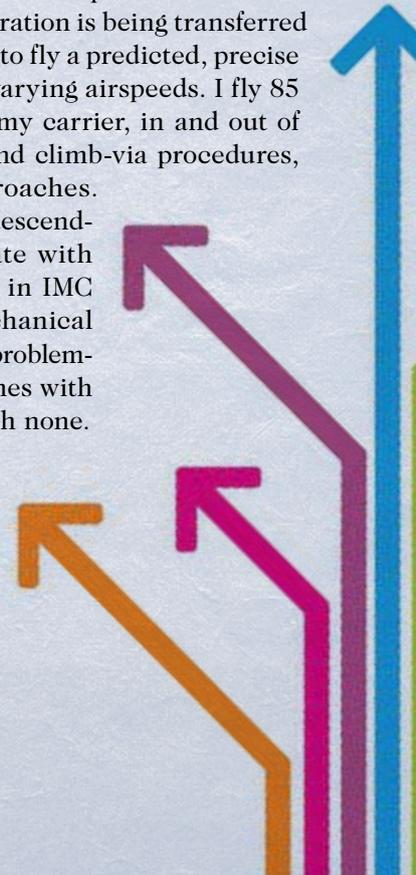


when managed properly, means higher profits. And this sounds good from the boardroom or from the perspective of the airspace redesign consortium... in theory. But, when you're the one with your knees up your nose in a coach seat, sitting in a long line of departing aircraft, or the PIC in your single-pilot jet with a full plate of issues trying to fly a "controller-modified" arrival or approach in congested airspace, it looks quite different.

Three Dimensions + Velocity

Descend-via and climb-via procedures have created a potential task-saturation issue for pilots. More of the responsibility for traffic separation is being transferred to the pilots, by requiring us to fly a predicted, precise three-dimensional track at varying airspeeds. I fly 85 to 95 hours each month at my carrier, in and out of airports with descend-via and climb-via procedures, as well as RNAV/GPS approaches. Most arrivals begin with a descend-via procedure and terminate with an ILS. Sometimes at night in IMC with bumps, ice and a mechanical issue, sometimes in smooth, problem-free, daytime VMC. Sometimes with lots of traffic, sometimes with none. This equates to about fifty climb-via departures, descend-via arrivals and ILS's each month, in varying weather and traffic saturation levels – so I'm familiar with the concept.

As long as we do some simple math and



calculate when to begin the descent and how fast (vertical speed) to do it, the arrivals are manageable. By multiplying the altitude you need to lose by three, in order to get the required miles needed to meet an altitude requirement, all the rest (headwind/tailwind, time/distance to slow down, etc.) is finesse – same as before, no E6-B required. And we should be doing these mental calculations not just to exercise our brains, but as a backup to our avionics. Even so, there is a potential fly-in-the-ointment in our calculations. Not because the airspace utilization and efficiency procedures are too difficult for single-pilot use, but because of the tendency for controllers to use the word “except” when issuing a clearance to fly a three-dimensional (plus velocity) procedure.

It's Your Behind

We like to be prepared for the descent and approach, but sometimes we get behind. ATC, weather, traffic and mechanical issues are common culprits. Even before descend-via arrivals, because of the variables involved, we pretty much needed to be ready for anything. No surprise there, and this all sounds familiar. The new issue arises when we are tired, ATC has conflicting traffic, or we are having a problem with the plane or a passenger—and then ATC changes the rules of the game. Controllers are modifying procedures and using the word “except” to change how we fly arrivals and departures – even instrument approaches. For example, when they tell you to cross a fix on the approach “at” 5,000 when it’s published as “at or above” 5,000 feet, that is an unpublished modification – it’s an extremely short-notice NOTAM, is what it is.

The same is true when they tell you to fly 250 knots to fix A, 210 knots to fix B, and then 180 to the marker. How much, and how often can ATC modify a published procedure before it ceases to be a “published” procedure? I mean, if you are going to change half of the speed and altitude restrictions,

and even vector me off the procedure, then tell me to resume the procedure downstream, and assume that I can catch up with the remaining “published” speeds and altitudes, then what’s the point of publishing the procedure in the first place? Don’t forget, it’s your behind if you get behind.

In defense of our controllers, many have told me they don’t like the procedures any more

than we do. Many of them are still trying to adapt, same as us. Some controllers will simply have you fly the arrival track the old way. That is, they assign speeds and altitudes one-at-a-time as they see fit, based on traffic, and they don’t use the “descend-via” verbiage. Ah, the good old days. After all, why do we need to meet ten different speed and altitude gates at 2 a.m. when we’re the only airplane within 100 miles?

Chances are, you reviewed the arrival and approach as published, including related NOTAMS, and you are prepared to fly them – as published. And if controllers were to make the exact same changes and “excepts” each time, we could anticipate and plan for them as well – but this is not the case. Even the words controllers use to make those exceptions are not the same from controller to controller, from day-to-day, or even state to state. It’s less of an issue in a multi-pilot cockpit, because we can share the burden. But when you’re by yourself and get behind, the rolling snowball of poo can get large, smelly and unmanageable very quickly. Perhaps you have a passenger issue, or some of your automation has failed, perhaps you pushed your fuel or your luck a bit too much, or perhaps you had multiple changes to your plan. Perhaps you don’t even understand all of the pieces of the puzzle yet. Add these things together, along with the word “except” from ATC, and that smelly snowball will run you over every time.

How do we protect ourselves from the bazillions of short notice changes? Shall we add a note to our flight plans in the remarks section: (PAPO) “Procedures As Published Only?” Or, do we simply respond with “unable” when we’re asked to comply with a made-up, modified, inconsistent and unpredictable arrival or approach procedure?

Listen Up and Ask

Here’s the thing, my friends: be prepared for modifications to published procedures. Until ATC gets a handle on how many, and how often, restrictions and issue changes can be added, and until they can enforce the use of a nationwide standard phraseology, we must be ready for continuous changes in airspeed, altitude and direction, all issued differently – unless we throw down the “unable” card. This includes completely deleted fixes. That is, a clearance direct to another fix downstream, with a clearance that may, or may not contain a statement to “resume” the procedure. If you don’t hear the word “resume” sometime after the word “except” in the modification of a speed, an altitude or a fix, then you are released from parts of the procedure. But, released from which parts? The speeds? The altitudes? The actual track? Listen up and query the controller if the clearance can be interpreted in more than one way. It clogs up the radio, but, for now, it’s our only recourse. Maybe we should go back to using the E6-B and plotter – or just shut off the comm radios; now that would certainly lessen our workload. 

JetAVIVA Agrees to Acquire Kansas Aircraft Corporation

JetAVIVA, the world's leading seller of light jets, announced May 3, 2016 that it has reached an agreement to acquire Kansas Aircraft Corporation (KAC), a highly-respected aviation sales firm based in the Kansas City metropolitan area. In the last year, the two organizations transacted over 120 aircraft, making the new alliance one of the largest and most influential in the industry, covering the spectrum of piston, turboprop, and jet aircraft. The combined strength and capacity of the two organizations will further support jetAVIVA's market-leading positions in the pre-owned Citation and Embraer markets, as well as the turboprop and piston aircraft markets.

"Since our inception, it has been jetAVIVA's core mission to make our clients' and stakeholders' dreams come true. As we enter our 10th year of business, we have made it our goal to extend that mission to



include more segments in the general aviation industry," said Cyrus Sigari, jetAVIVA CEO. "KAC shares our core values of integrity, trust, and service above self, making the acquisition a very natural fit for us."

Effectively immediately, Kansas Aircraft Corporation CEO Tim White has been named a Managing Partner for jetAVIVA. White joins the jetAVIVA team having previously served as Sr. Vice President of Sales for the Americas at Cessna Aircraft, overseeing sales of all new and pre-owned Citation, Caravan, and single-engine aircraft for North, Central, and South America. In addition to his extensive senior executive experience at Cessna, he also previously served in a senior sales executive role at Bombardier Aerospace, overseeing sales efforts for the Global, Challenger, and Learjet business jet product lines. In the above capacities, Tim was responsible



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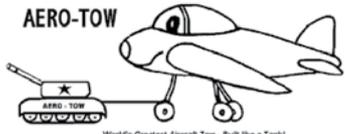



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for the sale of \$4.25 billion worth of Cessna and Bombardier aircraft.

To further jetAVIVA's mission, Dustin Cordier has been named a Managing Partner. In his new role, Dustin will be responsible for general management of the combined sales organizations. He previously served in an executive sales capacity at both Cessna Aircraft and Embraer Executive Jets.

Following the integration of Kansas Aircraft, Dianne White has assumed the role of Vice President of Customer Experience. She will be responsible for developing innovative interactions and events to enhance the aircraft ownership experience of the organizations' combined global base of 2,000 clients, located in more than 40 countries. Dianne previously served as Vice President, Corporate Communications for

Cessna Aircraft as well as the Editor-in-Chief of *Twin & Turbine* magazine.

Going forward, Kansas Aircraft will continue to focus on high-end piston and turboprop aircraft. The company has built a 25-year reputation of offering exceptional knowledge and expertise in Piper, Cessna and Beechcraft products.

"The KAC team's passion for aviation, both personally and professionally, will absolutely build upon jetAVIVA's commitment to serving the general aviation industry. Both teams have an incredible legacy of integrity, talent, and work ethic that has elevated our companies and will continue to make us the best in the industry," said Sigari.

Information: www.jetaviva.com 

Corporate Angel Network Celebrates Milestone Flight

At 9:22 PM on April 14, 2016, a Bombardier Challenger 300 owned by NCR, departed from the Meridian FBO at New Jersey's Teterboro Airport for NCR's headquarters in Atlanta, Georgia. Onboard, along with NCR executives, were one-year-old cancer patient Baron Yerby and his parents Casey and Jonathan. They were heading home to Atlanta after Baron received treatment in New York City. Baron was diagnosed with retinoblastoma, a rare form of eye cancer, at three months of age and has been undergoing treatment at Memorial Sloan Kettering.

This milestone flight was Corporate Angel Network's 50,000th cancer patient flight since its founding 35 years ago.

"The people at Corporate Angel Network are very caring, dedicated and on top of everything," said Johnathan Yerby, Baron's father. "The logistics and communications that they facilitate are incredible. It seems too good to be true, but it is true. From the moment we got on the plane, to the moment we arrived at the hangar, the hospitality was unreal. The pilots were fantastic. This flight took away so much of our stress and it was also much easier for Baron, who tends to squirm and get feisty when we fly commercial, because he's sitting on our laps and can't move around. We are very grateful for the opportunity to fly with Corporate Angel Network. We felt so cared for."

"Giving back to communities in which we operate is interwoven in the fabric of NCR's 132-year, rich history," said Andrea Ledford, Executive Vice President, Chief Administration Officer and Chief Human Resources Officer for NCR. "In keeping with our mission and shared values as a corporation, we started working with Corporate Angel Network in 2010. We are honored to be a part of this historic milestone flight and more importantly, our prayers and well wishes are with Baron and his parents."

"On behalf of Corporate Angel Network's Board of Directors, volunteers, staff and most importantly, the thousands of cancer patients we are able to transport to specialized treatment every year," said Randall Greene, Chairman of the organization, "I'd like to personally thank NCR for this milestone flight. It's because of NCR and the many other corporations, along with the entire business aviation community's support, that we are able to assist so many with cancer-related travel on the aircraft of America's leading companies."

Ken Forester, Meridian CEO, was honored that his company could play a role in this event. He said, "The good work that Corporate Angel Network does exemplifies how business aviation gives back to the community. We are very proud of our customers who support this wonderful organization, and I am both excited and humbled that our company was able to celebrate this amazing milestone with our friends at CAN."

Corporate Angel Network, founded in 1981, arranges free transportation to treatment for cancer patients using seats donated on corporate aircraft. With the participation of more than 500 major corporations, a staff of 6 and 30 volunteers, CAN averages 225 patient flights each month to cancer treatment centers.

Information: www.corpangelnetwork.org 



Textron Announces Factory-Direct Coverage Programs

Textron Aviation Inc announced on April 20, 2016 that it has added new factory-direct coverage programs – Pre-Buy Assurance, Extended Care and King Air Direct – furthering its commitment in supporting the world’s largest installed fleet. Through these new programs, Citation, King Air and Hawker customers can increase efficiency, reduce costs and optimize the value of their aircraft.

“As the manufacturer, nobody can better support Citation, King Air and Hawker aircraft than Textron Aviation. Maintaining the pedigree and value of their aircraft is a top priority for our customers, and these programs have been tailored to provide operators with comprehensive, cost-competitive solutions with the expertise only the manufacturer can provide,” said Brad Thress, senior vice president, Customer Service. “With these newest support options, we continue to widen our coverage and make factory-direct service more accessible and attainable for our customers.”

Textron Aviation’s Pre-Buy Assurance plan provides peace of mind to customers when considering buying or selling Citation, King Air and Hawker aircraft. With an enhanced pre-buy inspection performed by Textron Aviation, operators selling their aircraft can obtain

a six-month plan, giving buyers the added assurance of factory-backed protection.

“The added security of the Pre-Buy Assurance program presents an exclusive incentive for both buyers and sellers of Citation, King Air and Hawker aircraft,” said Kriya Shortt, senior vice president, Sales and Marketing. “Not only do buyers and sellers find confidence in the aircraft meeting the high standards of the OEM, but they receive the peace of mind that comes with a factory-backed protection.”

Extended Care extends the coverage and protection to which customers under warranty have grown accustomed. Eligible Cessna Citation and Beechcraft King Air customers can enroll in the program and receive two years of factory-direct coverage from Textron Aviation company-owned service centers or by mobile service units.

King Air Direct is a factory-direct coverage plan for King Air operators looking to reduce their direct operating costs. Through this new program, customers gain a comprehensive support program that can significantly reduce parts and labor expenses for both scheduled and unscheduled maintenance events.

For more information, visit www.txtav.com. 

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For more information, contact Nate Young, 831-373-0100

Textron Aviation Celebrates 25 Years of CitationJets

Cessna Aircraft Company, a subsidiary of Textron Aviation Inc., recently celebrated the 25th anniversary of the maiden flight of the Model 525 CitationJet prototype, the aircraft that would become the foundation of the light jet segment. The flight took place on April 29, 1991, with deliveries starting two years later.

Innovation in the 525 line has been a constant, with eight platforms certified. The CJ family continues to outperform the competition with its proven performance, reliability and versatility. Cessna has delivered more than 1,800 Model 525 aircraft, including the current production M2, CJ3+ and CJ4, making the CJ line the best-selling light jet series in the world.

“We’re closing in on 2,000 Model 525s delivered to customers around the globe, nearly three times that of our nearest competitor,” said Kriya Shortt, senior vice president, Sales & Marketing. “We continue to innovate in this segment, driving significant investment in our products based on our customers’ evolving mission requirements.”

Cessna created and continues to lead the light-jet segment, with more than 4,900 light jets delivered around the world, offering customers the broadest range of products on the market. From the popular entry-level Citation Mustang and Citation M2 jets, to the upgraded efficiency and comfort of the CJ3+ and the top-performing CJ4, Cessna’s Citation family of light business jets has evolved to offer a range of capabilities, systems and options unmatched in its class.

Cessna’s Citations are the most popular line of business jets ever produced, with more than 6,900 jets that have been designed, manufactured and delivered. Citations represent the largest fleet of business jets in the world and have surpassed 31 million flight hours.

For more information, visit txtav.com. 

Ad Index

1st Source Bank	9	Meltner & Associates	20
Advent Aircraft Systems, Inc.	21	Monterey Jet Center	46
Aero-Tow LLC	44	National Flight Simulator	19
Air Capitol Dial	28	NBAA	33
AOPA Insurance Agency	6, 37	Pacific Coast Avionics	13
Arizona Type Rating	47	Plane Data Inc.	19
BLR Aerospace	26	Preferred Airparts LLC	28
Concorde Battery Corp.	41	Prop Sync Solutions	11
Covington Aircraft Engines	12	R.C. Avionics	29
David Clark	11	Rocky Mountain Propellers Inc.	29
Garmin	Inside Front Cover	Select Airparts	27
Gill Battery	8	Strategic Moves	34
Gogo Business Aviation	Inside Back Cover	Survival Products Inc.	19
Hillaero Modification Center	20, 35	Textron Aviation	Back Cover
Icarus	20	Tru-Simulation + Training	17
JetBed	38, 39	Turbines, Inc.	15
LEKTRO, Inc.	16	Valley In Flight Training	16
LightHawk	29	Winner Aviation Inc.	44
Luma Technologies LLC	3		

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by David Miller

Sixty Two Inches of Rain

That's a lot of water in one year. Actually, for Dallas Texas, it's an all-time record. I thought about that as I prepared for a post-Thanksgiving round trip to KBHM (Birmingham, AL). A huge low had deposited itself and about seven inches of rain over the Dallas area. Ceilings of 300 overcast and visibilities of one mile covered several hundred miles of north Texas. A line of TRW's with tops to FL450 lay between me and the destination. AIRMETS for moderate icing covered the entire route. The passengers were all VIP's. My grandchildren.

And I hadn't flown in 30 days.

As I laid awake the night before departure, I went over and over my personal limitations. Maybe the weather would miraculously improve at daybreak. Perhaps the forecasters didn't know what they were talking about. As the sun rose, I took a peek at the 5-a.m. METARS.

It was actually worse than forecast. I called Southwest, booked three tickets and apologized to my family. I felt like a failure.

Three days later, it was time to bring them back. The KADS (Addison, TX) weather was the same.

03010KT 1SM OVC 003

The minimums for the KADS Runway 33 ILS are 250 DA and 1 SM. Scattered TRW's covered the route with moderate icing from 3,000 feet through FL310. The destination weather was forecast to be marginal VFR with rain showers. I needed some help.

I called my pro-pilot buddy Gary Matlock to see if he wanted to ride right seat. "Sure," he said. "As soon as I drop off the CJ3 in San Antonio, I will airline to Dallas and meet you at the hangar." A sense of relief fell over me and all was well.

We met at the hangar, briefed responsibilities, and blasted off, Gary handling the radios and checklist, and me the flying chores. I felt relaxed with no pressure, just having him there. As forecast, we picked up moderate ice in the climbout. We landed in BHM in light rain after deviating around a couple of cells and loaded up the passengers. The flight home was a little more interesting.



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.

Descending into the Dallas area with light rain and light icing, center handed us off to approach control. Listening to the conversations, it was obvious that some controller training was in progress. The trainee was in a little over his head. "November 1865 Charlie, cleared direct HOWDY." From my experience flying in the area, I knew this fix was on an arrival to KDFW, not KADS. "Ahh, six-five Charlie is landing at Addison," I said. "Where?" came the reply. "Ok, just continue on your arrival." We were still at 16,000 feet within a few miles of YEAGR, the feeder fix. I knew the crossing restriction was 9,000, so I slowed to get ready for the dump. "Do you want 65 Charlie at 9,000 at YEAGR?" I queried. Then another controller took over. "65 Charlie, cross YEAGR at 9000." Then, "65 Charlie I will need to vector you out of sequence into Addison." "No problem", Gary replied. After a big, right 360, we were established on the localizer and descended through the murk. We broke out at 400 feet for an uneventful landing.

Could I have done all this by myself? Sure. Would I have been comfortable? Absolutely not.

On this day, having a pro in the right seat made the flight just another training exercise.

I really enjoyed it too.

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