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VOLUME 24 NUMBER 7

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Photo Courtesy of Joe Casey

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Editor's Briefing

by **Rebecca Groom Jacobs**

A Close Call With COVID

On April 2, I received a heart-dropping text: "Rich Pickett was put on a ventilator due to COVID. Praying for our friend."

It was the first that I heard that he was sick. And COVID-19? A ventilator? The sinking feeling deepened. The reality of the virus flooding media outlets suddenly hit home with a punch.

As you may know, Rich is a regular Twin & Turbine contributor and very involved, passionate pilot. He is also a good friend. It was impossible to imagine anything dampening his incredible energy. (Seriously, I can barely keep up with him at tradeshows!).

Over the next week and a half, I joined countless others in prayers for Rich and his family and followed the daily Facebook updates on his progress.

To our extreme joy, on April 11, he awoke! The day before Easter. He has since baffled everyone with the rapid rate of his recovery. Just two weeks after leaving the hospital, he was back in the air. And now he has returned to an active schedule of working, flying, traveling, biking, etc. Simply amazing.

But, I will let Rich take it from here. Below he shares a recount of the experience, along with his current mission to assist the healthcare community and recognize the medical staff who saved his life.

Welcome back, Rich. Twin & Turbine and the general aviation community are so fortunate to have you.

COVID - A Pilot's Experience

by **Rich Pickett**

"Will I pass my First Class flight physical?"

This was one of my first thoughts when I awakened from an induced coma due to COVID-19. I was in the Intensive Care Unit at Kaiser Permanente San Diego Medical Center. While I was surprised to be alive, keeping our medical certificate is critical as pilots!

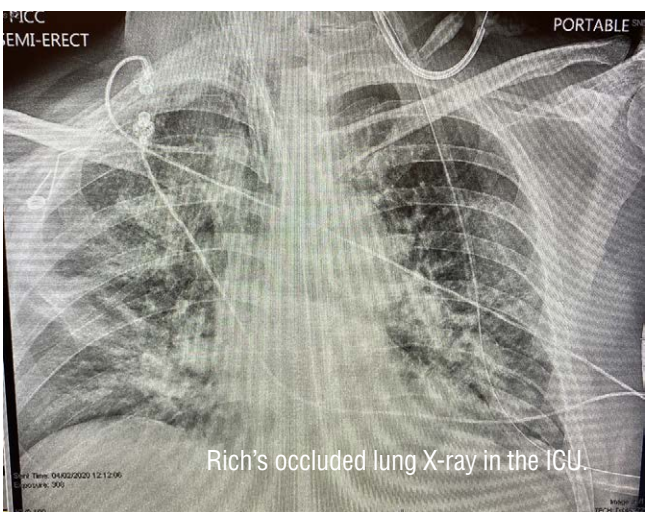
Twelve days earlier, I had entered the Emergency Room at Kaiser. In an act of stubbornness, I did not go to the hospital until my COVID test could be confirmed, which was not advantageous. I had been at home with a high fever and building pneumonia for over a week prior. Using a pulse oximeter my blood oxygen saturation, which is usually 99, was in the 80s resting and lower when standing – not a good sign. It was time to go to the hospital.

Arriving at the ER, my wife Jane was told to stay in the car. I was helped out and into a wheelchair. It was April 1 – April Fools' Day. I waved goodbye. That would be the last time I would be with her for 17 days.

In the ER, I texted my family financial account details, transferred cash to make sure they wouldn't have to worry, and told Jane that I hoped she didn't become infected. I texted one of my friends to sell our SR22 and Eclipse if I didn't survive, then basically said goodbye to my family. I turned off my phone so I wouldn't see their replies. At that time, I didn't expect to survive the night. I later learned that my family shared the same thoughts regarding my survival.

Sherri Case, the ER nurse who first helped me, made me comfortable after the X-ray of my lungs. (It looked like someone had stuffed them with cotton candy!). I signed permission forms for ventilation as well as a "Do Not Resuscitate" authorization in case the ventilation didn't work. I thought to myself, "I have had an amazing life, wonderful family and friends, flown extensively, helped a number of people, and this was just another phase." I then basically passed out, waking up 11 days later in the ICU.

Dr. Vi Bowman, an infectious disease expert at Kaiser, and experienced with Ebola, SARS and other diseases, was one of my medical team. Dr. Bowman approached Jane and asked if she thought I would want to be involved in a drug trial with Remdesivir. Jane, who has a Ph.D. in Biopsychology and Neuroscience, knew I would want to consent, no matter the outcome. At that time, little was known about Remdesivir, however, it looked promising. And since I was considered a very severe case, it was worth a try. I became a clinical trial test subject.



Rich's occluded lung X-ray in the ICU.

Awake!

Awaking with the ventilator apparatus inserted through my larynx, I could only use rudimentary sign language to communicate. Simon and Anna, two of my many wonderful nurses, tried hard to understand my version of charades. With my arms restrained to keep me from pulling out the tubes, I motioned that I wanted it removed. It wasn't particularly painful, just uncomfortable. It felt as if I was choking when coughing. I was ready to progress to the next phase – surviving. Apparently, I was very convincing as Dr. Tauseef Siddiqi, one of my ICU pulmonologists, along with Dr. Vigi Sankar and Dr. Randy Dalugdugan, agreed to remove it two days earlier than planned.

I wondered when they would remove the tube when suddenly I saw one of the nurses in front of me say, "1, 2, 3, pull!" That question was quickly answered. With the ventilator removed, the day before Easter, I still had a significant case of double pneumonia and fever to overcome, so another course of intravenous antibiotic was ordered.

Now breathing on my own, which was very painful with the pneumonia and coughing, my next step was to recover. I thought, "Here I go again." If I didn't fight hard enough and prove I could do it, they would intubate me again. At this point, I had lost more than 25 pounds during the first 12 days, which resulted in significant weakness. Still on phenobarbital, and with some of the sedatives still in my system, it was like flying through clouds without instruments – difficult to understand exactly what I was doing. Even under these conditions it was important to build my strength, so I started my own exercise program that day. At first, I could only raise my legs an inch or two, and simply lifting my arms was almost impossible. I looked at my legs and the muscles appeared to have disappeared. So much for mountain biking with Jane.

When I came out of the induced coma, my vision was in bad shape. Again, my first thought was my medical. I couldn't open up my left eyelid fully, and when I could, the vision in that eye was very poor and my depth perception was impacted. Ana knew I was a pilot and would repeatedly tell me to open my eyes. I then resigned to myself that if it didn't improve, Jane needed to complete her BFR so we could fly. Over the next several days I worked to focus my vision by doing my own eye exercises and using anything I could find as an eye chart. Within four days, my vision was almost normal – one less concern for my medical.

Two days later, I was out of the ICU, and still in isolation, moved to another floor. I told the nurses to avoid coming into my room unless necessary since I knew they could be exposed to the virus and the last thing I wanted was for them to get ill as well. The care and concern of the medical staff was simply amazing, and I immediately made it my primary goal to remember as many names as possible to thank them later. I would tell my doctors to just call me on the phone, however, they insisted on visiting in person. Every day housekeepers, orderlies, therapists, nurses would don multiple layers of protection to care for me. My sister Diana and my son Tigre started a fundraiser to purchase PPE for the Kaiser staff and other hospitals.

Three days after the ventilator was removed, I told one of my physicians that I would be leaving the hospital in three more days. Dr. Sapna Iyer politely told me it was her decision, not mine. I thought to myself I need to prove to her it could be done, and it became another goal!

The next day, a good friend of mine, a cardiologist and a pilot, told me he wanted to do a flyby of the hospital. He texted me from the Montgomery Airport (KMYF) that he was about to depart, knew where my room was located, and that it faced the base leg to Runway 28R. A few minutes later, Paul Teirstein, flies by my window in his Great Lakes and wags his wings. It was truly a wonderful sight.

The following day, two days after I told Dr. Iyer I would be leaving in three, she came into my room and said to me, "You are medically cleared. You need to write a story!" During my stay in the ICU, and afterward, a number of my friends contacted the staff directly and told them about my passion for flying, volunteer work and Angel Flight West. They knew I wanted to get back to flying as soon as possible.

I also learned that Jane had contracted the coronavirus from me, but thankfully she had relatively mild symptoms. I was relieved to hear that, and it also meant I wouldn't have to quarantine away from her. Discharged, with no prescribed medications, I wheeled out of the hospital into her arms!

Recovery

Recovery wasn't easy. During my two weeks of quarantine, I struggled each day to walk a few more steps, do more work around the house, work longer hours on my aviation business, continue my projects as the Safety Officer of Angel Flight West, and talk with the large number of friends who reached out with prayers and kind thoughts. I used a walker for two days, moved to a cane for three more, then put them away. I was determined to work as hard at recovery as the doctors and nurses did to save my life.

On the last day of my quarantine, Jane and I took to the skies in our Cirrus SR22. It was tough moving the heavy doors to our hangar, but it felt so good. We went up and did an entire series of steep turns (one of our favorites), toured the San Diego countryside and practiced an approach. The next day a friend of ours, Mike Turk, joined me in our Eclipse, both of us with masks, to make sure that I could fly that as well. I was teaching one of my Eclipse clients two days later and completed my Eclipse recurrent the following day with a PPE.

Ten days after my quarantine, I was off to FlightSafety at DFW for my PC-12 recurrent, flying my Eclipse to Texas. It was surreal to be at one of the largest airports in the world and experience the lack of traffic. I love airplane noise, so I missed that. I resumed my Part 135 charter flights the day after returning from FlightSafety.

Before every flight, I assess whether or not I am safe to fly, except now with more diligence. My AME and friend, Dr. John Raniolo in Phoenix, Arizona, was in contact with me during my recovery to ensure I was medically ready to fly. One month after my quarantine ended, he renewed my First Class Medical Certificate.

I remembered the pledge to myself to recognize the medical staff and others at Kaiser. I wrote a long detailed letter to the Kaiser Board of Directors, identifying as many people as I could remember, describing the passion and care of their colleagues. I probably didn't realize the true impact of my experience upon my family, friends and the staff at Kaiser until I wrote that letter and it was published widely in our community. One nurse told me afterward that she had been anxious about going to work due to the virus. After she read my letter thanking the staff and the difference she made in my life, she felt she could conquer the world!

Like those who help all of us on a daily basis, it is important to remember how others are impacted by diseases such as SARS-COV-2. Be safe, and enjoy the wonderful opportunity we have to fly above this unique planet. T&T

PC-12 recurrent 10 days after quarantine.

Rich visits Dr. Viji Sankar and Dr. Vi Bowman in June.

With 11,000+ hours of piloting more than 100 aircraft models **Rich Pickett** *still has a passion for flying. Rich holds an ATP, CFII SME, SES, glider licenses, and type ratings in the L29, L39, Citation 500/510s/525s, Eclipse 500S and DA10. His company, Personal Wings, provides training, mentoring and aircraft services. He is also a proud owner of an Eclipse and Cirrus SR22. You can contact Rich at* **rich@personalwings.com**.

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Pilot Tube

310 Pilot: Modern-Day "Sky King"

by **Dale Smith**

Not since the legendary Sky King's Songbird II brought the grace and beauty of Cessna's 310 onto TV sets across the county has the venerable twin enjoyed such a steadfast following as the fans of Kevin and Jaime Thornton's YouTube adventures in 771BC.

If you're like a lot of us Baby Boomers, you couldn't wait to park yourself in front of the old RCA on Saturday morning and hear the announcer say, "From out of the clear blue of the western sky comes Sky King…"

Yep, the Sky King TV series is one of the big reasons I got into flying. Every week, Sky, Penny, Clipper – I bet you forgot Clipper – and the Songbird came "out of the clear blue western sky" to take us on all kinds of thrilling adventures. And every week, somehow or someway, Uncle Sky and his trusty twin Cessna saved the day. Who wouldn't grow up wanting to be a pilot?

Having about 200 hours in 310s, I was thrilled when I came across Kevin and Jaime Thornton's YouTube channel, 310 Pilot. Pretty much every Friday afternoon, they take me, and over 125,000 other subscribers, along on some of their family adventures.


Kevin Thornton and his wife, Jaime.

310 Pilot: Episode One

It's easy to see where Thornton's love of aviation comes from. His grandfather was a pilot, his father flew helicopters in the Army, one uncle flew F-15's in the Air Force, and another was the Chief Pilot for the Coca Cola Company. Not a bad lineage.

"Back then my dad owned a 172 based at Falcon Field (FFC) just outside of Atlanta," he said. "After my first lesson I was hooked. I transferred schools from the University of Georgia to West Georgia so I could fly the Skyhawk as often as my savings allowed."

"By the time I turned 19, I was a CFI/MEI," Thornton said. "I instructed for a short time, then got hired on as an aerial mapping pilot flying a Turbo Lance and a Cessna 401. That's where I fell in love with the twin Cessnas."

Like so many of his generation, Thornton had his career sights set in the left seat of a major carrier. Unfortunately, 9/11 put a stop to that. Plan B was to join the Air Force and become an air traffic controller.

"After my tour of duty, I worked for a short time at a contract control tower at Phoenix-Mesa Gateway Airport, but was quickly hired by the FAA as a tower controller at O'Hare International," he said.

Thornton explained that one of the highlights of his time at O'Hare was the opportunity to spend three summers working as a controller during EAA's Oshkosh AirVenture. After several years at ORD, he decided to switch things up and transferred to the Chicago TRACON (Terminal Radar Approach Control) where he and his wife Jaime are both controllers.

Four Kids and a Twin

"Early on we would rent a nice Turbo Saratoga. It had enough seats, but when we actually filled them we weren't able to put enough fuel in the tanks to go anywhere," he said. "Plus, we wanted to take longer flights at night, in IMC, and over water. And we really wanted the redundancy and speed of a twin."

While he had considered both a Baron and 310, the Cessna had a lot in its favor. Thornton already had about 500 hours in twin Cessnas and he really loved the sleek twin's looks.

"The 310 would be the first airplane I ever owned – go big or go home, right? I knew I wanted a Q model because it had the larger cabin, but shorter nose so it would fit into our hangar," he said. "I also wanted the Continental IO-470 engines. I had learned that they typically have longer/healthier lives than the -520's and would be a bonus to our budget."

"The only downside was the owner hadn't flown much," he added. "Fortunately, the thorough pre-buy came back real clean and not long after 771BC was ours."

The 310's "hangar queen" status meant there was a list of items that needed attention in short order. Among them were overhauling both propellers, rebuilding two of the three landing gear struts, rebuilding two of the four engine exhaust stacks, doing 500-hour overhauls of two of the four magnetos, overhauling a fuel divider (spider) and replacing an alternator.

A thorough researcher, Thornton made accommodations for these projects and their costs in his final offer, so it wasn't as financially "painful" as you might think. Light twins require you to stay well ahead of their needs, even when they're in the maintenance shop. With that said, the work is never really done.

A Top-Shelf Panel Upgrade

"Right after acquiring her, I decided to take advantage of the new digital PFDs on the market to increase safety and redundancy. While large glass displays would be nice, I didn't like any of the options that were available then," Thornton explained. "So, I started with a pair of Garmin G5 displays."


A recent upgrade to Avidyne displays.

Next, came the replacement of the legacy Cessna 400 autopilot. Thornton researched every available option and decided on the new-generation Genesys Aerosystems S-TEC 3100.

"In my opinion, with features like altitude pre-select, envelop protection, GPS steering, auto-trim, and straight-and-level recovery, the 3100 digital autopilot is of the best upgrades an owner can make for flying single-pilot, instrument conditions," he explained. "I've flown a lot with it and I still can't stop smiling every time I use the 3100. Jaime calls it my happy face."

Most recently, the Thornton's upgraded their 20-year old Garmin 530w/430 GPS navigators with an all-Avidyne stack. Starting at the top, 771BC's full Avidyne upgrade includes an AMX240 audio panel, IFD550 and IFD540 touchscreen FMS/GPS navigators, FlightMax EX500 MFD, APX322 ADS-B Out remote transponder, and the SkyTrax 605A ADS-B capable Active Traffic Advisory System. They also added an Insight Digital Engine Monitor and integrated the 310's active weather radar with the Avidyne displays.

All Dressed Up

"When we bought it, 771BC had a nice '100-foot paint job.' It was a cheap spray over, and since it wasn't stripped down properly, it was flaking off at a pretty rapid rate," he said. "So, it really needed to be done right."

After doing a lot of research and getting the opinions of other twin Cessna owners, the Thornton's contracted Hawk Aircraft Services in Zephyrhills, Florida.

After stripping it to bare metal, the airframe was inspected and some minor airframe work was repaired as necessary. At the same time, the flight controls were removed and rebalanced. When it was all done, pretty much everything was brought up to better-than-factory condition by Hawk Aircraft's craftsmen.

"The entire airframe was fully alodined to prevent corrosion," Thornton added. "Jaime and I had sketched out the

Georgia Bulldog (Go Dawgs!) inspired red, black and silver color scheme. Hawk really knocked it out of the park. It's absolutely beautiful."

Along with the new paint job, Thornton also took advantage of the downtime to have Hawk's technicians install BLR Vortex Generators.

"They lower the stalling speed and VMC and will be a huge improvement in the airplane's safety and handling," he said. "Plus, the VGs add another 75 pounds to the max gross weight, which is great when you have a growing family."

With regard to fuel burn, Thornton said with all his experience in twin Cessnas, he's not a fan of the speed loss running LOP with the normally aspirated engines, so he stays on the rich side.

"I generally plan for 12.5 gallons-per-hour at around 60-percent power. That gives me between 175 and 182 knots true airspeed. With 163 gallons usable, she will stay in the air a lot longer than we prefer," he said. "On long trips we typically stop at 1,000 miles or five and a half hours, whichever comes first."

Flying with 125,000 Friends

As for starting and maintaining his popular YouTube channel 310 Pilot, Thornton explained that it all began as nothing more than the desire to share their family's love of general aviation.

"It started when Jaime gave me a gift card for Rosen Sun Visors. But, at the time, I didn't see the STC for our airplane, so I bought a GoPro camera instead and started filming our flights. Since then, we've added more cameras to give viewers added views," he said. "The flight planning and flying parts are easy, but the editing has been a constant work in progress."

While Jaime is not a licensed pilot, as an experienced controller, she's the ideal radio-handling right seater, making her voice and 771 Bravo Charlie instantly recognizable.

"Jaime and I are still getting used to being recognized by controllers and other pilots," Thornton said. "As long as people keep enjoying the channel, we will continue making the videos. The close-knit general aviation community is an amazing group of people and we are very happy to be able to share our part of it." T&T

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

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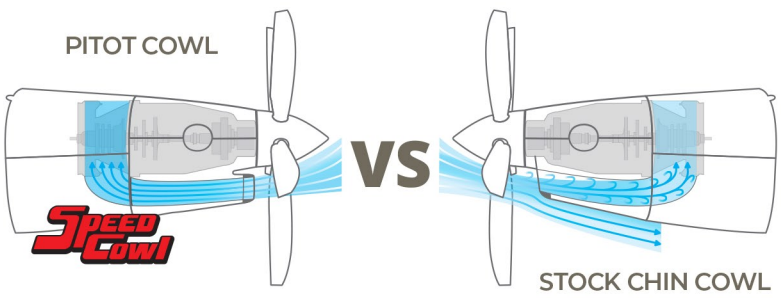
COWL INTAKE DESIGN

Internal Aerodynamic Design is a key factor in achieving optimal engine performance. The stock Pilatus cowl is referred to as a chin cowl. In general, chin cowls are not efficient due to the turbulent air they develop which reduces the airflow (ram air recovery) to the engine. The design of Speed Cowl is referred to as a pitot cowl. Like a pitot tube, the inlet is positioned lower and forward to capture uninterrupted airflow. Speed Cowl provides increased ram air recovery to the engine which equates to better engine performance.



HEATED INLET LIP DESIGN

Take a look at the left side of the stainless steel inlet lip on your PC-12. You will undoubtedly see discoloration on the lip due to excessive heat. There is roughly +800° F exhaust entering the lip at that point. The heated air moves to the right side of the lip where it exits at about 350° F. Over time the carbon fiber and paint start to deteriorate, especially on the left side of the lip. As all PC-12s age, heat damage to the carbon fiber and paint is inevitable. Speed Cowl's patent-pending heated stainless steel inlet lip features internal baffling reducing the temperature of the exhaust entering the lip and maintains a more even temperature of the heated air as it moves through the lip. This design will reduce the possibility of heat damage to the carbon fiber and paint over time.

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Diamond
AIRCRAFT
N62KZ
DA62

DIAMOND DA62

Across the Atlantic: A Ferry Flight Review

by **Joe Casey**

Photos Courtesy of Joe Casey and Deanna Wallace

Change is usually not welcome when it first enters your life, but often in hindsight that change ends up being the start of a good thing. The best-laid plans can be nice, but a diversion – an unplanned change that takes you down a road less traveled – can be the start of something exciting.

So was the case about six months ago when I was to fly a King Air 90 from India back to the United States. My colleague Deanna Wallace was flying with me to return a King Air 200. We were to fly in unison (not formation) together, landing at the same locations and within a short time from each other. Now, for me, that is a golden trip. I love long journeys in the mighty King Air. And the India to U.S. route takes a pilot through virtually every kind of climate, ranging from the humidity of India to the arid deserts of the Middle East, through Europe, and across the always unpredictable North Atlantic and Northern Canada.

All was well as we sat in business class aboard the big Boeing 767 to Europe, but upon landing, I found my phone inundated with phone calls and texts. It was a "good news/bad news" sort of message that got my attention. The bad news was the India ferry flight was pushed back at least a month and I had to return home. The good news was a DA62 needed to be moved from Austria to Florida. My first response: "What is a DA62?"

Deanna's Perspective: *I was so excited to be accompanying Joe to pick up the two King Airs in India, as this was to be a sort of "supervised solo" through the region, with him in one aircraft and myself in another. When we got the word that we'd be heading to Austria to pick up a DA62 instead, I just remember both of us looking at each other and asking, "Have you ever flown a DA62? Nope. Me either. Ask them to send us a POH to read on the way to the airport." There wasn't a question as to whether we could safely fly the plane, simply the excitement at getting to discover a new airframe and the enjoyment of flying it out of Europe and to the U.S.*

Yes, I was that much of a Diamond Aircraft rookie. The Diamond lineup of airplanes simply was not on my radar screen, but I was about to get a baptism into the Diamond world. There was a nearly new DA62 at the Diamond Factory in Weiner Neustadt (LOAN) and Deanna and I were to fly it back to the United States. I googled "DA62" and discovered pictures of one of the sleekest airplanes ever made. This was going to be a fun diversion.


Garmin G1000 avionics suite.

Upon arriving at the LOAN Airport, we found N62KZ, our steed for the North Atlantic flight. N62KZ is a gorgeous dark gray color with light gray accents. I found it to be particularly stunning in the dense fog of Austria. Deanna and I quickly found IFR departures are not allowed out of LOAN and the weather upon our arrival to the airport was seriously low IFR. This bought us time, time which we used to learn as much as possible about the DA62. And what's the best way to gain knowledge of the DA62 while in LOAN? Go on a factory tour.

Diamond Factory

Now, I've been inside several aircraft factories, including Piper in Vero Beach, Beechcraft in Wichita, and even the Huey Helicopter Factory in Amarillo. But this place was different. Instead of the rivet-filled, aluminum-everywhere scene found in the typical aircraft manufacturer facility, Diamond was filled with lots and lots of composite materials.

We started at the beginning and saw sheets on sheets of composite material beginning the formation process. The sleek lines of the Diamond aircraft were just starting its formative stages, but you could see the plane taking shape as we moved throughout the plant. Flight controls, avionics, windows and interiors were all installed as the aircraft moved through the facility. Toward the end, the wings were bolted into place and paint applied.

The Diamond facility was clean, modern, organized and a bit hot. The ovens that cure the composite process throughout the plant provided a bit of warmth that contrasted nicely to the rainy, coolness outside. This is hard to describe, but the Diamond factory sort of "fit" the Austrian location. When I think of Austria, I think of the classic movie, "The Sound of Music." Gorgeous mountain scenery and a European country that is one of the gems of the region. I think the same of the Diamond Aircraft. It is a beautiful airplane that is on the cutting edge of aviation. I gained an immense appreciation for the process and precision that the employees applied to the process.

Flying the DA62

Deanna and I flipped a coin to determine who would get the left seat, then decided that we'd switch places each day. I ordered a gob of deicing fluid for the FIKI airplane and soon discovered that it was one of the best decisions of the trip. The icy North Atlantic was in our future and I wanted all the additional fluid I could find. The DA62 has plenty of storage space, and we found the useful load sufficient to load up luggage, deicing fluid and top the fuel tanks with jet fuel.

Yes, you read that right: jet fuel. The DA62 is a multi-engine, diesel-burning airplane and jet fuel works perfectly. In fact, I learned to love those FADEC (Fully Automated Digital Electronic Control) diesel engines.

We launched from LOAN late in the day and were soon on the way to Hamburg, Germany (EDDH). We had a short tech stop (quick-turn stop) there, then continued to Stavanger, Norway (ENZV). Darkness dominated the leg to Norway and we used up a ton of deicing fluid in our attempts to thwart the ice and its bad aerodynamic effects. I used the deice fluid liberally, but knew I had plenty. We saw nothing but clouds the whole flight from Germany to Norway until our descent. Upon breaking out of the clouds, the small villages nestled in the fjords gave us our first view of this ridiculously beautiful country. Even at night I knew we were somewhere special.


The arrival into the Faroe Islands.

The next morning, I filled the fuel tanks and filled the deice fluid reservoirs. Our next stop was EKVG, the Vagar Airport on the Faroe Islands. I was more than excited to visit the Faroe Islands. I've flown over the Faroe Islands many times, but it was never a stopping point, as the airplanes I normally fly over the North Atlantic route have the range to bypass the Faroe Islands. I can unequivocally report the Faroe Islands are as beautiful as you may have heard. Rugged, jutting mountains rise from the sea and create a scene that made me want more. On our particular visit, the sun peeked through the broken, thin cloud layer to give us a natural laser show that was unparalleled to any view I've experienced before. The approach into EKVG is amongst the mountains and the video Deanna took of the approach records one of the most beautiful places on earth in my opinion.

Deanna's Perspective: *The arrival into the Faroe Islands was a stunning view of sheer cliffs and rock formations jutting out of the North Atlantic Ocean. The lighting was perfect and we requested a meandering, visual approach to the airport in order to explore the geography a bit more before landing. It was easy to tell why high winds and swirling wind patterns may deter many from landing there, but I wouldn't have traded the destination and view for anything.*

We went through security and found a nice eating establishment in the airline terminal building. The people seemed warm and friendly, and we thoroughly enjoyed our time. The departure was all too soon, and I look forward to the day when I get to return, hopefully with time to explore.

The weather on the way to Keflavik, Iceland, was nice, with the sun skimming the horizon for a long time. The gravity of the earth seemed to hold it from rising high at all, but it provided plenty of time for us to get comfortable


Eastern shore of Greenland.

in the DA62. In what was to be our final leg of this day, we flew to Iceland in just 2.3 hours and burned only 40 gallons of Jet-A while cruising at 184 KTAS. Those are some pretty remarkable numbers when considering the comfort, speed and efficiency. And, those numbers were not abnormal. We saw cruise speeds of 180 to 185 KTAS along the entire route to Florida and averaged 9 gph on each engine, or 18 gph total along the entire flight.

We landed in the middle of the day in Iceland, but the sun was already dipping to the horizon. The sun is short-lived in latitudes this far north in the wintertime, and we only had 5 to 6 hours of sunlight in the day. The weather in Greenland precluded a departure, so we ended up with a two-leg day, and lots of time in Iceland to explore. The next day the winds would not allow us to land in Greenland with acceptable reserves, so we ended up staying in Iceland for two nights, with a full day in between to explore. There are few places I'd rather explore more than Iceland.

Deanna's Perspective: *I always joke that Joe gets "stuck" in all the cool places on his trips, while I manage to get delayed in places where there is little to see without getting very creative. Although he was settling into his normal "non-flying day" routine of answering emails, returning calls and the never-ending administrative duties of his business, we decided to take advantage of the rare layover and explore an area known as the "Golden Circle." While we ran out of daylight before we made it around even an abbreviated tour, it was neat to see the variety of landscapes that portion of Iceland had to offer, including mountains, nature preservation, farmlands, waterfalls and barren, rocky shorelines.*

We finally were able to leave Iceland for Kangerlussuaq, Greenland (BGSF) in the darkness of the next morning, and the sun greeted us about an hour into the trip. There's not much to see over the chilly waters of the North Atlantic, but there is A LOT to see on the eastern coast of Greenland. On this day, east Greenland had high clouds that bathed the snow-covered mountains in what seemed to be an eternal sunset. The "golden hour," as many photographers call it, is when the colors are soft and perfect for photography.

Well, picture a scene of immense, unspoiled natural beauty bathed in such lighting, and let that scene roll along for nearly a full hour. It was splendid. We flew about 1,500 feet over the Greenland icecap and then landed in the "golden hour" light at BGSF. It was one of the more memorable flights of my career. We capped off the flight with a walk to the diner in the airline terminal at BGSF, where we had a muskox burger for lunch. Only in Greenland.

Deanna's Perspective: *"You want me to eat what…?"*

By now, I was completely comfortable in the DA62. It is certainly not a hard airplane to fly and has wonderful flight characteristics. I was completely familiar with the G1000 avionics suite and had grown to appreciate the nuances of the airplane, especially the control of the engines and deicing systems. More importantly, I had become very comfortable with the performance. I was able to push the range and allow a lesser reserve than the super conservative reserve I applied to the earlier portions of the trip.

We flew from BGSF to CYFB (Iqaluit, Canada) to CYWK (Wabush, Canada) and finally ended up in the good ole United States in Bangor, Maine (KBGR). This was by far the longest day of our journey and good weather dominated the trip except for the nighttime approach and landing at Bangor. We landed there in driving rain, harsh winds and terrible visibility. The performance of the DA62 was impressive as we had covered lots of inhospitable ground and inhospitable weather in one day.

No matter what country you come from, it is always nice to be back on "home turf." I always treasure the feeling of returning to American soil. But despite being in the destination country, we still had a long way to go. Maine is far from Florida, and the next day was to be filled with us flying down the Appalachian Mountains.

Ironically, I recently purchased a nearly-new Cirrus SR22T (G6) and I was to pick up this airplane at the Cirrus Completion Center at the McGhee Tyson Airport (KTYS) in Knoxville, Tennessee. The weather was splendid throughout our flight to KTYS and I fully enjoyed the view of the Appalachians. But, my part of this long ferry was coming to an end, with Deanna completing the delivery of the DA62 to its final destination (KFXE) in Florida.

In all, we flew just over 30 hours in the DA62, which was about the same time in the air that we would have expected of the much longer trip in the much faster King Air. But, this trip was at a much lower altitude with some views that can only be seen from that vantage point. Along the way, I gained a serious appreciation for the performance, comfort and style of the DA62. It is one fine aircraft that I'd happily fly anywhere on earth – literally. T&T

Joe Casey *is an FAA-DPE and an ATP, CFI, CFII (A/H), MEI, CFIG, CFIH, as well as a retired U.S. Army UH60 standardization instruc-tor/examiner. An active instructor in the PA46 and King Air markets, he has accumulated 14,300-plus hours of flight time, with more than 5,200 dual-given as a flight instructor. Contact Joe at joe@flycasey.com or 903.721.9549.*

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Cirrus SR22 vs. Diamond DA62

by **Joe Casey**

PHOTO COURTESY OF JOE CASEY

PHOTO COURTESY OF DIAMOND AIRCRAFT

Let's say your regular mission is to fly two to four people about 500 nm, and everyone has a small bag to bring along. You have a penchant for the nicer avionics, believe a newer airframe will have better safety features and lower operational costs, and your spouse is a non-pilot who is far more interested in the destination than the trip itself. The spouse just wants to get there safely and comfortably, so you've got to ensure that all the fears are quelled. Bottom line, you will get to fly more when your spouse is smiling.

Sound familiar? If so, what is the right airplane for your mission?

It will not take long to narrow your search down, as few airplanes will fit that bill. Somewhere near the top of the list will be the Cirrus SR22 and the Diamond DA62. I own a Cirrus SR22T (G6), so you already know I see its merits. And I was recently asked to fly a DA62 from Austria back to the United States (30 hours flight time), so I feel like I can articulate the differences and highlight which of these two fine airplanes belongs in your hangar.

The Cirrus SR series of airplanes is tailormade for the pilot described above. They are sleek, fast, good-looking, packed with the latest electronic gizmos, and are relatively cheap to operate. Yes, there is lots to love in the SR series of airplanes. But what really boosted sales for Cirrus is the parachute. It is both an effective sales tool and functional safety device. There have been many "saves." But, if we are forthright, the parachute gives many spouses the comfort they need to write the check. Everyone wins, including Cirrus.

Then there is the Diamond DA62. There's no parachute, but there is a second engine. That extra engine also gives the spouse the comfort needed to write the check. It too is sleek, fast, sexy and has all the latest gadgets. And, did I say the DA62 is sleek and sexy? Oh my, this is one incredibly sleek and sexy airplane! It looks like it is doing Mach 1 just sitting on the ramp. After flying the DA62 over the North Atlantic, I can testify that it cannot fly Mach 1, but it does perform quite well and is a true contender for the pilot described above.

First, let's go over the similarities. Both the Cirrus SR22 and Diamond DA62 will cruise at about 180 KTAS; both will burn less than 18 gallons per hour in cruise; both have four seats; both are FIKI-capable; both have ample baggage compartments. They are both also made up of composite materials and offer the latest and greatest Garmin avionics suites. Either will complete the mission for the pilot who wants a cutting-edge, super-nice, cross-country airplane. And, most importantly, both have an option

in case an engine fails. So, where are the differences?

One major difference is the landing gear. The DA62 has retractable landing gear while the SR22 has fixed gear. While there's certainly a bit of additional complexity with the retractable landing gear, the biggest issue is going to be the insurance rates. Any retractable gear airplane is going to have higher insurance rates as compared to a fixed-gear airplane because of the threat of a gear-up landing. As much as we'd like to think a gear-up landing cannot happen, it does. Stupid will enter any door left open. When stupid happens with a landing gear scenario, it's really expensive as there's almost always an associated prop strike and fuselage damage.

But, don't think the SR22 insurance will be cheap. Remember that parachute? Well, if the parachute is deployed, the aircraft is usually totaled. It is deployed ballistically, ripping large portions of the fuselage and rendering the airframe destroyed. The occupants now have a really good chance of surviving, but that T-handle pull is the death knell for the airframe. So, insurance companies know that an engine failure in an SR22 usually means a complete loss of the airplane in terms of value. So, in the end, both airplanes are going to have similar insurance premiums.

Both airplanes have unique doors with unique entry techniques as compared to other all-metal airplanes. In either airplane, you will climb up on the wing to get inside. I find the access on the DA62 to be slightly easier, but not by a large margin. Access to the back seats in a DA62 is certainly better than the SR22 because the DA62 has separate doors for the back seats.

Once inside, the differences are starker. The SR22 has a side-mounted yoke and a seat that moves fore and aft. The seatback will recline, but the seat will not move up and down. The yoke does not move, so the pilot must use it as the standard for selecting his or her seat position. In order to fit my legs properly (I'm 6 feet 4 inches tall), the seat must be all the way back. To add to the problem the seat does not go up or down, so to keep my head from rubbing the ceiling, I've got to lean the seat back, which brings my arms farther from the yoke. I often end up turning on the autopilot simply so I don't have to maintain the awkward scrunched position when I've got my left hand on the yoke.

The DA62 is the exact opposite. The seat does not move up or down nor forward or aft, but it will recline. All the other controls move so the pilot can gain comfort. There's no yoke, but a stick for pitch and roll control that comes up between the pilot's legs just like in older aircraft. I find the stick to be ergonomically comfortable and quite intuitive for airplane control. The rudder pedals have a huge fore/aft travel range, allowing for long-legged pilots to fully extend the legs.

Interestingly, the DA62 was also quite comfortable for Deanna, the pilot who flew with me on the DA62

flight from Austria to the United States. Deanna is barely 5 feet tall, but all she had to do when we switched seats was move the rudder pedals toward her. The control stick and throttles were ergonomically correct for both of us because the body didn't move fore and aft. To me, the DA62 is a far more comfortable airplane for a long cross-country, hands down.

Concerning luggage, both airplanes have ample luggage space, but the DA62 has more. The nose baggage compartments are rather narrow, but they are useful in balancing heavy loads and putting items that are not needed in flight out of the way. Plus, they are nice for storing the "dirty pilot items" such as fuel sample cups, oil rags, window cleaner and deice fluid. In a Cirrus, all of those items are stored in the aft baggage compartment along with the personal baggage. Both have easy access to the aft baggage compartment.

The obvious and biggest difference between these two airplanes is the engine type and number. I believe the Continental 550 engine found on the SR22 is one of the finest piston engines on the planet. It is the engine of choice for some of the best airplanes, and for very good reason. It is smooth, powerful and can be operated lean-of-peak, which makes it unbelievably efficient. And, if you are going to trust your life to a piston engine, the Continental 550 is the engine you want humming up front.

But, the DA62 has a great engine installation too. The diesel FADEC engines on the DA62 are powerful, super easy to manage, ultra-smooth and burn Jet-A. I had little diesel experience prior to my North Atlantic flight in the DA62, but I'm a true believer now. With all of the 100LL problems facing aviation, it is nice to see the diesel engines in the DA62 performing so well.

So, which is better, an extra engine or a parachute?

Well, there's nothing like the North Atlantic to provide some perspective on that question. You don't have to ask a ferry pilot about the level of risk on a flight over the North Atlantic; you simply need to see where the immersion suit is located.

An immersion suit is a huge suit that covers up the entire body except for a small opening for the face. If a water landing is required, the life expectancy in the frigid North Atlantic waters is mere minutes due to hypothermia. But, with a properly fitted immersion suit, a ditched pilot can survive for hours, if not more. It is an absolute requirement for a North Atlantic crossing. But, a pilot would have extreme difficulty flying while fully wearing an immersion suit, so ferry pilots place the immersion suit in varying positions of access.

If I'm flying a multi-engine turbine King Air 350 at FL330 between Greenland and Iceland, the immersion suit is a distant thought in the back of the airplane. In a single-engine turbine Piper Meridian over those same waters, the immersion suit is out of the suitcase, laid out nicely and in quick reach.

In a single-engine piston Piper Mirage at FL210, I'd wear the immersion suit up to my waist (legs in the immersion suit), ensuring I can get it completely on quickly in case an emergency arose.

Where was the immersion suit during my DA62 flight from Austria to Florida? I had it out of the suitcase sitting in easy reach, but I did not wear it in flight. Basically, I had the same level of concern as I would have in a single-engine turbine. That is an incredibly confident statement as I have an extreme level of confidence in the single-engine turbine airplanes that are on the market today.

Where would the immersion suit be if I flew an SR22 over the North Atlantic? I'd have the immersion suit on up to my waist, just like it would be in a pressurized PA46 piston. An SR22 is still a single-engine piston and the parachute would only provide a controlled touchdown into the icy waters of the North Atlantic. The bottom line is that the DA62, with its two diesel engines, would give me greater comfort than the parachute of the Cirrus SR22 when over totally inhospitable surfaces.

Fair analysis? You decide. But, the immersion suit test doesn't lie. For those who navigate the roughest parts of the world solo, the location of the survival equipment will give you a clear perspective on the comfort of the pilot. Me? I'd rather have two diesel engines than a parachute. But, I'd also rather have a turbine than any piston engine, and I'd rather have multiple turbine engines over one. For every step up in power, there's an associated exponential cost increase.

Are you flying over the eastern half of the United States with thousands of airports and generally flat terrain, or are you flying over the Rockies, Bahamas or Great Lakes routinely? You must look at the safety factors impacting your main mission, then apply mitigating factors to lessen the risk. Extra engine or parachute? Both have benefits and detriments.

In my opinion, the biggest advantage of the Cirrus SR22 is manufacturer support. Cirrus has simply made huge inroads into the aviation market by being at the top of the market in terms of support and training in aviation. There are Cirrus Service Centers all over the U.S. along with great maintenance options over much of the rest of the world, too. If you need a pre-buy inspection, annual inspection or just routine maintenance, it is a relatively simple process to find a competent maintenance facility with lots of experience and technical wisdom. If you want flight training, there are hundreds of Cirrus Standardized Instructor Pilots (CSIPs) that train as Cirrus trains.

Now, there are certainly reputable Diamond Aircraft Service Centers and good CFIs who serve the Diamond market, but there are fewer. There are fewer because there are simply fewer Diamond aircraft flying. As Diamond grows its fleet, availability to more service and more training will increase too. I think Diamond will increase its footprint by delivering more and more airplanes. So future ongoing support should be expected.

Also, if you fly outside of the United States, you might want to seriously consider the DA62 simply because of jet fuel availability. 100LL can be hard to find in some parts of the world while jet fuel is usually readily available and relatively cheap comparatively. Or if you live in the U.S., you might still want the DA62 since jet fuel is less expensive to purchase.

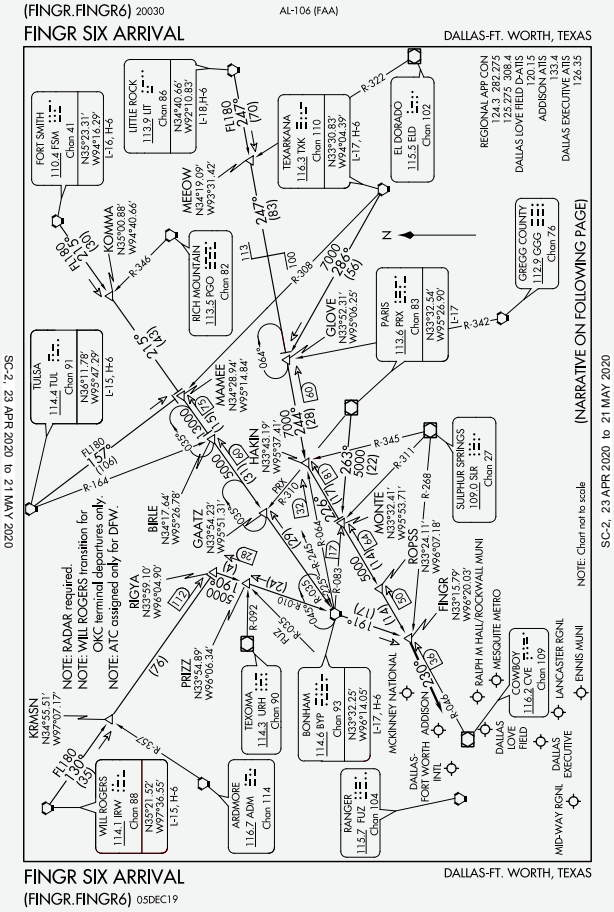
So, if your spouse is dragging heels to purchase an aircraft, I hope I've provided some realistic perspective that will help reduce the drag. Both the SR22 and the DA62 are fabulous airplanes that I'd trust to fly my loved ones and coworkers without a second thought. In fact, I do exactly that every week. T&T

Joe Casey *is an FAA-DPE and an ATP, CFI, CFII (A/H), MEI, CFIG, CFIH, as well as a retired U.S. Army UH60 standardization instruc-tor/examiner. An active instructor in the PA46 and King Air markets, he has accumulated 14,300-plus hours of flight time, with more than 5,200 dual-given as a flight instructor. Contact Joe at joe@flycasey.com or 903.721.9549.*

IFR Oddities

by **Thomas P. Turner**

When I earned my Instrument rating, it was common to include the phrase "No SIDs/No STARs" in the Remarks when filing an IFR flight plan. Partly we were being cheap. In those days you had to buy stacks of paper charts and books even for a single IFR flight, and the SIDs (Standard Instrument Departures) and STARs (STandard ARrivalS) were sold as a distinct series of books. Many personal, recreational and business pilots simply didn't want to spend the money. Many also assumed SIDs and STARs were something jet pilots do. We piston pilots didn't need the added complications. By including "No SIDs/No STARs" on our flight plans we knew controllers would not assign us those procedures.



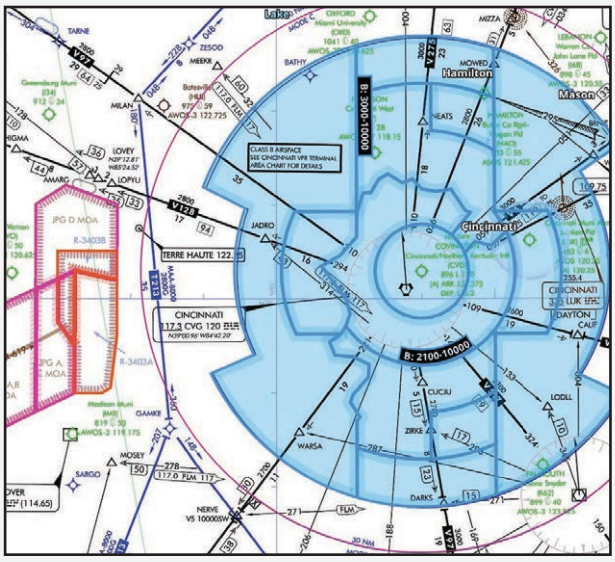
Like many pilots, I tended to find a way of doing things and then stick with it, including this flight plan notation. Then one day I flew from Wichita, Kansas, to Addison Airport northeast of the Dallas/Fort Worth metroplex. I filed "direct" route southbound in that LORAN-equipped speedster. I included No SIDs/No STARs in my IFR flight plan. As I crossed the Red River that forms that part of the Oklahoma/Texas border, I was assigned a new clearance: direct to an intersection, then a series of additional intersections to the airport. I hastily copied the new clearance and then dug out the Low Altitude Enroute chart to try to find where in the world these might be.

I must have taken longer than I should because the controller soon came back with a vector to the first fix. I turned on the new heading and finally found the intersection well to the northeast of Addison. From there, I found the two additional fixes in a roughly direct line southwest to the airport. Not being intimately familiar with the rental's LORAN (a failing for another time), I couldn't insert the new waypoints. So I deleted the active flight plan and plugged in "direct to" the first fix. I'd do this for each intersection as I passed the last until I was proceeding direct to the airport.

When the time came to depart, I filed LORAN Direct to Wichita. Clearance Delivery gave me a long set of instructions that began with a heading to intercept a VOR radial, then to an intersection, then along a new radial to a VOR, and then "as filed." Once more I scrambled to find all this on my enroute chart, then concocted a way to navigate myself along the prescribed route. Feeling pretty good about my ability to make this all up and fly it, I completed my trip and was home for dinner.

I was talking to one of my flying mentors about this afterward. He showed me his book of SIDs and STARs for the Dallas area. Basically, the arrival controller made me fly a STAR and the departure controller made me fly a SID. The level of difficulty was not in the procedures themselves but in my lack of preparation. It would have been far easier for me to have the charts available and to have included them in my IFR flight plan, instead of trying to figure them out in the air. Now it's far simpler with SIDs and STARs available

STAR into Addison, TX. It's undoubtedly different from when I flew the trip described in the mid-1990s, but I flew something akin to MONTE – ROPSS – FINGR and then vectors to KADS.



T-213 and T-215 provide non-vector guidance around the west side of the Cincinnati Class B airspace.

in most GPS databases. Yet pilots often still file "direct" into busy airspace, adding to their workload later on.

That experience and a few others have taught me there are a number of "IFR oddities" that nonetheless we may be asked to perform with little notice at any time. Sometimes it's easier to accept the greater responsibility, such as filing a SID or STAR, because it helps you better prepare and therefore reduces your inflight workload. What for one pilot is an oddity may be a Standard Operating Procedure for another. The trick is to reduce the number of your oddities. Here are a few more I've experienced.

T Routes

Do you remember Victor airways? I'm joking, because for pilots in many areas, for example, the northeastern U.S., flying along airways defined by ground-based VORs is still the norm (even if we fly them using space-based GPS). However, if you earned your Instrument rating more than a decade or so ago, and have not taken an up-to-date Instrument Proficiency Check in that time, the introduction of T routes may have slipped by you. Yet, if you file using an IFR-approved GPS you may be assigned one at any time.

A Tango, or "T," route is an enroute airway defined by GPS waypoints instead of ground-based navigation. Just like Victor airways, if you have a GPS that has an airways database, then you can load T routes into your flight plan and include them in your filed flight plan if they make sense. T routes are low altitude airways (from 1,200 AGL to 18,000 feet, just like Victor airways) often used in the busy airspace around major airports, but are also established in locations where VOR stations have been decommissioned. They are depicted in blue on Low Altitude Enroutes. T routes have minimum altitudes similar to a Minimum Obstacle Clearance Altitude (MOCA) since there is no concern about signal reception that is part of the calculation of a Minimum Enroute Altitude (MEA). T routes sometimes have a maximum authorized altitude MAA) also, to deconflict them from arrival and departure pathways into nearby commercial airports.

T routes are very easy to fly as long as you know they exist. Look for them as you plan flights that get close to Class B and busier Class C airports, and include them in your flight plan to avoid having to make an inflight adjustment.

Unexpected Holds

When was the last time you were unexpectedly assigned a holding pattern outside of a training environment? I've been instrument rated for over 30 years, and as best I can recall the answer for me is "three." Once was an IFR arrival into Tullahoma, Tennessee for a fly-in and I had to wait my turn for the approach at the nontowered airport. Another was also a hold for traffic ahead of me for an approach. The third time was a radar outage, and the controller was shunting me and a bunch of others into holds until they could re-clear us all onto airways.

I've also done dozens of holds after instrument approaches that resulted in missed approaches because of real-world below minimums weather. But I don't consider those holds to be "unexpected" because I reviewed them beforehand as part of my instrument approach brief.

Yet, you can be assigned a hold at any time and be expected to carry it out flawlessly. It's recommended that ATC provide at least three minutes notice of a hold based on your current ground speed, but even that is not absolute. If you're assigned a published hold, that is, a holding pattern depicted on an instrument publication, it's easy to visualize the pattern and from there how you will enter – if you know where to look. The hold may be "published" on a Low Altitude Enroute chart, or an approach chart, or a SID or STAR…but not necessarily on all of them.

If you can't find the depiction right away, treat it like an unpublished hold. In that event I recommend a simple technique: draw the picture. On your kneeboard, electronic tablet or whatever you use for notes and clearances in the cockpit, draw a little triangle or dot representing the holding fix. Then draw the hold's racetrack pattern remembering that you hold inbound on the direction you're told to hold (i.e., if told to "hold southeast," you'll be heading northwest as you approach the holding fix). Remember also that standard holding patterns have right-hand turns unless you are told otherwise (backward from traffic patterns and circling to land).

Find or draw the picture, then visualize (or draw) a line that represents the direction you're headed toward the fix before holding. Then figure out your holding pattern entry. Of course, some GPS units give you the ability to draw an unpublished hold electronically and even let the autopilot fly your newly defined hold. No matter what technology you use, practice it a few times under the hood because you never know when you might be tasked to do this in actual IMC with little warning.

Filed vs. Expected

The last IFR oddity I'll cover is not one of the basics you may have forgotten or even a new rule that has changed

IFR operations. It's an artifact of the great capabilities provided by modern Electronic Flight Bag (EFB) flight planning software in common use all the way down to basic training airplanes. It's called an "expected route."

When you file an IFR flight plan, some EFB software compares your route to previous clearances issued to aircraft flying the same approximate route in the altitude range you'll fly. If the ATC record suggests your route will be different from what you filed, the EFB software notifies you. The idea is for you to find out, in advance, if there's an IFR Preferred Route (remember those?) or other preference for routing that may result in getting something other than "cleared as filed" when you call for your clearance. Most EFB software will let you accept this new route with a single acknowledgment, and replaces your filed route with this new information.

What happens if you receive an expected route, tap the screen to accept it, then ATC tells you "cleared as file" when you obtain your clearance? You are not cleared via the expected route. As filed means as filed. If you've already loaded the expected route into your panel you'll need to re-load the original. Here's what I learned to do when I get an expected route notification: I load it into a new flight plan alongside the one I'd filed. I do not upload anything to the airplane's panel until after I received my clearance. If I'm cleared as filed, then I upload my original filed flight plan. If I'm given anything else, including the expected route, ATC will have to give me a full route clearance. Once I've copied it and confirmed it matches the "expected" route, I'll make that route active on my iPad and then sync it to my panel.

I've heard of pilots loading the expected route prematurely and assuming it was what ATC meant by "as filed" because the new route came from Air Traffic Control. Flying the expected route under those circumstances would result in a deviation from your clearance – at best.

There are a great many IFR oddities, and what's odd to me might not be odd to you. Some come from failing to learn something new that ultimately reduces workload tremendously. Some arise from rules that didn't exist when you earned your instrument rating. Some are the result of the cockpit technology we use to fly more efficiently in the IFR system. All are potential traps if you're not prepared. And you may be called upon to fly an IFR oddity at any time. T&T

Thomas P. Turner *is an ATP CFII/MEI, holds a master's 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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Relocating an R44 to the cherry orchards.


Retired Delta captain, Mark Zahrt joins me in the Cessna 340.

Over the past several months, the COVID-19 problem dramatically reduced the number of executives flying business jets around the country to meet with customers. But, that doesn't mean all flying has come to a standstill. Much of the piston and propeller fleet has been flying just fine, and quite fortunately, so have I – though in slightly different equipment.

One of the first trips over the past month was in our R44 helicopter. The cherry drying season had arrived and the helicopter needed to be flown to the east side of the Cascade Mountain Range in Washington State for staging near the orchards. I had not flown through the Cascades at low altitude for years, but at one time, used to instruct students in how to do it in single-engine piston aircraft. I still somewhat remembered the routes and procedures we used to teach pilots new to the area.

I recalled three ways to transit through the Cascades eastbound out of the Seattle area at non-turbocharged altitudes: Stevens Pass, Snoqualmie Pass and Columbia River Gorge. The topography and weather systems have not changed over the years, so my memory was still valid and I could easily recall the advantages and disadvantages of each route. Stevens Pass is closer to where we are based on the west side, but narrower with only a two-lane highway to follow. It also has no aviation weather reporting station. Snoqualmie Pass is the route both the railroad track and the interstate highway use, which tells you something about gradient. It also has a dedicated weather reporting station at Stampede Pass just to the south and near the only one truly narrow point near the summit. The Columbia River Gorge (or just the "gorge" as it is known to local pilots) is basically near sea level the entire way and wide open by comparison to the others. It almost always has better weather than the other two, and an interstate highway runs all along the south side. However, the entrance is 100 miles south by Portland, which is nearly an hour out of the way in a slow airplane or helicopter.

With those memories fresh in my mind, I look over the weather for the helicopter trip and decide that Stevens Pass might be a bit of a push and opt for Snoqualmie. Once airborne it was somewhat of a déjà vu experience as years ago when doing instruction out of Boeing Field (KBFI), Snoqualmie was the pass we most often used for training. Back in the 1960s, West Coast Airlines was also based out of BFI and used to fly DC3's through that route. The State of Washington also installed several "emergency airstrips" along the way just in case the weather unexpectedly closed in. The first of these airstrips is called Bandera. When eastbound, it is about 20 miles inside the pass with mountains sloping up on either side to about 5,000 feet. It has a couple thousand feet of usually wet grass and is quite near the highway, which was handy in the event you had to land there and hitchhike out. I pass over Bandera at around 400 feet above the runway in the helicopter and start having flashbacks about teaching students how to get in there with a 500-foot ceiling in a Cessna 206. From Bandera, the valley east follows the highway, which shortly thereafter makes a nearly 90-degree turn to the north as it passes through a narrow canyon just before reaching the 3,500-foot summit.

Because the weather in Western Washington generally comes in from the Pacific Ocean, it carries a lot of

moisture that tends to get stuck at the highest point on its way eastbound. This phenomenon is what made Snoqualmie somewhat tricky and a particularly good place for student training. The problem is you cannot see the summit until you are nearly on top of it because it lies around another 90-degree bend in the pass. The drill for students was figuring out how to turn the airplane around in a narrow pass when at the last minute, you discover it is completely blocked by clouds and precipitation. The required maneuver called for starting very near the right side of the pass, slowing down to 80 knots, lowering flaps about 10 degrees, and rolling into a 30-degree banked turn toward the rapidly approaching opposite mountainside. The turn itself was quite a safe maneuver once you had been taught how to do it, and most students were amazed the airplane could make a 180-degree turn in such tight quarters.

Now decades later, flying through in the R44, I tried it again and was surprised how tight it seemed to be, even in a helicopter. No wonder the company I was working for required a "mountain checkout" for new pilots. A couple of days later, I am back at KBVS looking into some airport business when there is a need to do a test flight in an amphibious Carbon Cub. I have about 1,500 hours of seaplane time in all kinds of equipment, from a Grumman Goose to a Beaver to a Cessna 185 and a Lake, but it had been several years since I had flown one. So, when my fellow corporate pilot doing the test flight invited me along, I gladly accepted. The first thing that came back to mind as I approached the airplane was how high these amphibious single-engine airplanes sit above the ground. Even a Cub is sitting way up there and requires conveniently placed ladder rungs to reach the bi-fold door. Climbing in the narrow cockpit was somewhat challenging, all the while pushing the control stick out of the way. Funny, but I don't remember it being that difficult when doing floatplane instruction in similar Cubs all those years ago.

The Cub's 180 HP Lycoming lit up without a problem, and we taxied out using differential braking for steering as float-based amphibious airplanes do not have steerable nose wheels. I was a little jerky with it but not enough to make the line guy run for safety at the hangar. A runway takeoff in a float-based amphib usually requires a fair amount of back pressure once flying speed is reached because the main gear is aft compared to its ground-based brethren. But even knowing that from distant memory, the amount of back-pressure on the stick in the Cub caught me by surprise. Turning out of the pattern, I noticed the ball way out on one side, simply because I had forgotten how much extra rudder is required when turning the airplane with those long floats under it. Once in cruise, we did the required maintenance testing, then flew up to one of the local lakes to refresh those memories.

Landing a floatplane on the water is a completely different experience than on land. For one thing, you have the entire lake before you on which to put the thing down. Another is you absolutely must make sure the gear is up (if amphibious) or it will cause the airplane to flip inverted right at touch down. As this puts the cabin underwater, a number of floatplane pilots and passengers have drowned as a result of the gear down oversight. Another thing you have to figure out once you are sure the gear is up is which way the wind is blowing as float operations are very wind sensitive. The best way to do that is to look at the wave patterns down below and which shoreline is in the lee with no waves at all.

Having worked my way through that little exercise in memory retention, I get the thing lined up to the northwest. I stay way out in the middle of the lake not wanting to bother the residents along the shoreline. But then it becomes apparent that out there, you really have no ground references like trees or houses by which to judge your altitude. Remembering this, and not knowing exactly how high above the lake the floats were, I pitched the airplane for about 65 knots and carried enough power to produce a very gradual descent, then just waited for the touchdown to occur. You can cover a lot of water doing this, but luckily the lake had plenty of room. We touched down rather nicely way out at the north end.

Then came the memory phase of what to do after touchdown. There is

a huge amount of drag when all that float surface contacts the water, making a floatplane want to pitch forward. If allowed to happen this can be a very bad thing because the tip of the floats can dig in (we called it "stubbing their toes" during my instruction days) and given enough momentum can pitch the airplane up on its nose. The required pilot maneuver is to gently reduce power while applying just enough backpressure on the stick to keep the pitch positive.

I taxi heading downwind on the lake, carefully go around some fishermen in a small aluminum skiff, then start a takeoff run with the stick full aft and a gradual application of power to prevent the propeller from getting too much splash back from the tips of the floats. In this little airplane with all that power, it gets up on the step right away. I lift off, just in time to wave at some curious bikini-clad boaters. I had almost forgotten just how much fun float flying is.

A couple of days go by and it turns out I need to take some helicopter parts out to the R44. It has been flying every day, blasting air down on a phenomenal crop of cherries in order to shake off the water deposited there by recent local thunderstorms. For this trip I use the Cessna 340 and ask a neighbor, a retired airline captain, if he would like to ride along. The 340 is pressurized and turbocharged so it could easily cross the Cascades in the flight levels well above the terrain. But it is an absolutely clear and calm day, so we decide to take the scenic route and make the crossing at about 9,500 feet.

The Cascades are a series of mostly sharp rocky 7,000 to 8,000 foot elevations in the terrain caused by tectonic shift of the earth's crust. But spaced up and down the range at about every 50 to 100-mile intervals are tall peaks that go up to 14,000 feet, which were created by volcanic action. If you fly in the area much you learn the names of these peaks by heart, starting with Mount Baker near the Canadian border, the Glacier Peak a bit further south, then Mount Rainier and so forth all the way down to Mount Shasta which is near the California/Oregon border. At 9,500 feet, our route passes over Glacier Peak, which is at 10,500 feet, and we needed to make a dogleg to fly around it if staying at that altitude. My neighbor, with more than 20,000 hours of high flight level airline time, mentions this is the first time he can remember seeing the Cascades from that perspective – and it was a beautiful sight indeed.

Flights such as these are a reminder that we pilots are lucky people. Viral pandemics notwithstanding, we still get to see and do things most other people can only dream of. T&T

Kevin Ware *is an ATP who also holds CFI, MEII and helicopter ratings, has more than 10,000 hours and is typed in several different business jets. He has been flying for a living on and off since he was 20, and currently works as a contract pilot for various corporations in the Seattle area. When not working as a pilot he is employed part time as an emergency and urgent care physician. He can be reached at* **kevin.ware2@aol.com**.

by **Kevin R. Dingman**

Cabin Class Fever

After the Great Lockdown: The Great Lakes = Great Flying

cab·in fe·ver
noun

The distressing, claustrophobic irritability

or restlessness experienced when a person

or group is stuck at an isolated location or

in confined quarters for an extended period.

Lately, we have all had cabin fever. And our restlessness, frustration and irritability became privately and publicly evident – but no more. Now that we can resume flying, eating out and buying toilet paper, a once-in-a-lifetime opportunity exists to see nature as it was in years past. While we've been in lockdown and not driving, flying or kicking up dust, a planet-wide reduction in air, water and particulate pollution has occurred. Nitrogen dioxide pollution from vehicles, power plants and industrial activities decreased by as much as 60 percent. And particulate matter pollution has also decreased by 35 percent in parts of the world.

This reduction has allowed wildlife and vegetation (and our lungs) to flourish. Since we're all looking forward to getting out of town to regain our social decorum, piloting proficiency and sanity, once we clear the cobwebs from our piloting skills and the airplane's crevices, The Great Lakes can be a great, nature-as-it-was, cross-country destination.

Drain Your Sumps

We all went through our springtime, back-to-flying rituals after last winter just in time to enter the COVID lockdown. So, here we are again, non-proficient. Remember that there's a big difference between current vs. proficient, and we need to carefully climb back into the saddle. We are rusty pilots, flying figuratively rusty airplanes. Our planes may have sat for two or three months. Complete the preflight slowly and completely making sure to look for nests from some of that flourishing wildlife mentioned above. If you don't always drain your fuel sumps, don't skip it this time. Check the battery of both your aircraft and EFB. Make sure you have all switches set, pen and notepad where you expect them to be and follow all checklists.

The Drummond Island Airport splits the golf course.

The basic skills of takeoff and landing, as well as advanced maneuvers such as RNAV SIDS, STARS and approaches, can be chair flown first. Next, be prepared for the direst emergency on your very first takeoff or approach. In Part 121 we consider engine fires, engine failures, a stall (misconfigurations, loss of correct airspeed indications, microbursts, etc.), controllability (rudder hard-over, runaway trim) and wind shear as a few of the real attention-getters. Think back to the times in which your skills as a pilot were tested and be prepared for a similar problem right out of the gate. Remember to fly the airplane first above all else. After an hour or two in the local area, make some contrails and head for the Great Lakes.

Michigan Hand Geography

Michigan is called the Wolverine State, Great Lakes State or the Winter Wonderland. The state's name originates from the Ojibwa Indian word mishigamaa, meaning "large water." The Upper and Lower Peninsulas were connected in 1957 with the construction of Big Mac, the Mackinac (Mack-in-awe) Bridge. The mitten-shaped state of Michigan is instantly recognizable on any globe, sectional chart or first-graders crayon-drawn map and its shape is visible from space. A pilot would be hard-pressed to get lost while flying over the Wolverine State – even from lower-than-orbit altitudes. The acronym B-R-A-S-H is used to remember the major mountain peaks in the Cascade Range: Baker, Rainier, Adams, St. Helen and Hood. Similarly, H-O-L-S-E-M can be used for the Great Lakes: Huron, Ontario, Lake Superior, Erie and Michigan.

If you ask someone where they live in the state, expect an immediate and casual demonstration of the Michigander hand-pointing ritual. And they will tell you that only residents are permitted to use their hand as a geographic reference by pointing to cities, lakes, islands and airports. It's a state ordinance, edict, superstition or something. Advanced hand-geography includes using the palm of the left hand, held with the thumb up, as the U.P.

(The Upper Peninsula). You're doing the hand thing right now, aren't you? Those that live north of The Bridge in the U.P. are called Yooper's (You-purr's), and those from south of the bridge are called Trolls – because they live "under" the bridge.

Lose the Crowd to Join the Crowd

Today there are almost 700 aerospace-related companies in Michigan. The state has 7,649 registered aircraft, 240 public airports, 30 EAA chapters, 35 Civil Air Patrol Squadrons, 15,267 pilots and one of the largest collegiate aviation programs in the country. With 9.9 million folks, some great artists, inventors, writers and pilots (including Santa himself, Tim Allen) found inspiration and serenity in Michigan: Jim Harrison (Legends of the Fall), Chris Van Allsburg (Polar Express and Jumanji), Michael Moore (filmmaker and writer), Madonna, Ted Nugent, Charles Lindbergh, William Boing, Roger Chaffee, Jack Lousma, Robert Jarvik, Daniel Gerber (baby food), Will Keith Kellogg, C.W. Post.

And, of course, the families of Henry Ford, John and Horace Dodge, David Buick and Louis Chevrolet, are all Michiganders that found adventure, professional inspiration and success in the state. Famous for Vernors Ginger Ale, Faygo soda, Mackinac Island fudge, cherries, blueberries, Christmas Trees and growing potatoes for chips, the state was also inspiring to writers like Mark Twain, John Voelker and Ernest Hemingway – also several brilliant, but lesser-known aviation writers.

Wine, Golf and The Air Zoo

When you say Michigan, most think of Detroit, the Great Lakes, thousands of small fishing lakes, fall hunting, or wintertime activities like sledding, skiing, and snowmobiling, all accompanied by a remote cabin with a crackling fireplace. This is a reasonable portrayal of the state's persona, but incomplete. Previously an FBO (which yours truly helped to build in the 70s), The Air Zoo Aerospace & Science Museum in Kalamazoo is a popular fly-in destination (see "Air-Zoology," T&T March 2011). And the Gold Coast or pinky finger of the Michigan mitten around Grand Traverse Bay has prospered and grown exponentially, yet retained its northern beauty and a feeling of remoteness.

In addition to a plethora of giant lakeside sand dunes, state-wide golf and snow skiing venues, several areas from Paw Paw to Traverse City have vineyards, wine tasting chateaus and both rustic and contemporary B&Bs. Examples are the Leelanau Peninsula Wine Trail near Traverse City, and just across Grand Traverse Bay to the East is the Old Mission Peninsula. There is also the Thumbs Up Wine Trail in southeast Michigan and the Lake Michigan Shore Wine Trail. Most of these venues are on or near an airport with fuel and an RNAV approach, many to LPV minimums. If golf is your bag (pun intended), Michigan has 650 courses with Mackinac Island, Frankford, Manistee, Harbor Springs, Boyne Mountain, Petoskey, Drummond Island, Bellaire and Mt Pleasant all within driving range (another pun) of the airport.

Island Hopping

Michigan has numerous islands, including Bois Blanc, Drummond, Grand, Isle Royale, Mackinac, Sugar, the Manitou Islands and the Beaver Island archipelago. I can attest from personal experience that it's possible to get temporarily "disoriented" (the airline pilots' version of temporarily lost) while flying over the mitten, especially if you go offshore at night (aka JFK Junior, 1999). But an aviation tour of Michigan would be incomplete without visiting at least a couple of the islands by air. I recommend Mackinac (MCD – see "MCD; No Fries," T&T June 2011), Drummond (DRM) and Beaver (SJX) islands; all three have RNAV approaches. Make sure that you have a gas to get back to a mainland airport with reserves as some of the islands have no fuel.

If you are going island hopping for the first time, do it in the daytime, and because of large wooded areas and a large deer population, watch for "deer on and in the vicinity of the airfield" in the AFD or NOTAM's. And trust me, they mean it. Plus or minus an hour of sunset and sunrise is the danger zone for deer. Bring a camera, golf clubs, a swimming suit, binoculars and a couple of good books. Once on the island, you can rent a car, borrow the airport courtesy car, be transported by horse-drawn carriage or walk depending on which isle you visit and your level of ambition.

Wolverine Food

Whether you want to mix and mingle, regenerate and recuperate or simply become an honorary user of Michigan hand geography, log some flight time in the state that's visible from space. While on your proficiency pilgrimage, find some Mackinac Island fudge and Vernors Ginger Ale. Hit some golf balls, breathe in some of that clean air and sample some wine. If you hurry, the Traverse City Cherry Festival is from July 4 to 11. Remember H-O-L-S-E-M for the names of the lakes and don't wear your Ohio State hat. In fact, don't even think about Ohio State – the locals will sense it and feed you to a wolverine.

Marriages, friendships, child-rearing and our flying skills have all gone through a lockdown- induced stress test. But I'm confident that the smell of our hangar and airplane, the sound of our engines and radio, the majestic views of nature-as-it-was and the feel of a well-flown approach will go far towards curing our cabin-class, cabin-fever. T&T

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Surviving COVID-19

No, not the disease. I have been lucky there. But our esteemed Twin & Turbine contributor, Rich Pickett, did just that and has eloquently written about his scary ordeal (see this month's Editor's Briefing). Welcome back, Rich!

All I had to do is survive living cooped up at home for months. It was truly a struggle. A few observations along the way.

Evidently, we have something called a washer and dryer in a place called the utility room somewhere near the garage. I have attempted to stay away from that area for 48 years with great success. I wasn't exactly sure how my clean clothes wound up in my dressing area, but I wasn't going to ask any questions. Once our housekeeper abandoned ship, I was "introduced" to this area by Patty.

Terrible things happen in that room. It is steamy hot, noisy and the dog eats there. Mounds of dirty clothes pile up there and need to be sorted in some mysterious way. And heaven forbid if a black sock ends up in a load of white underwear.

I hate Covid-19.

We have one of those battery-powered vacuum cleaners with a canister you can see through. One day, I volunteered to run the contraption through the house where only the two of us live with our dog, Peaches. I found out that we are filthy people. That clear canister filled up with stuff I can't even talk about.

I hate Covid-19.

With seemingly no previous experience, your wife can cut your hair. She will sit you outside in a lawn chair with extremely sharp scissors, and converse just like the expensive stylists do.

"Do you remember when you embarrassed me in front of your pilot friends," she asked.

Snip. Snip.

"Honey, I was just kidding!" I yelled.

Snip. Snip. Snip. Ouch. I now have what I call a unique "custom haircut."

I hate Covid-19.

My awesome grandkids were told by their parents not to touch me because I am part of the at-risk age group. After weeks of this nonsense, I figured out a workaround to the dilemma.

"Lie down on the grass and I will, too," I told Hayden and Evelyn. "Put your feet together and my feet can touch the bottoms of your feet. If we keep our shoes on, the virus can't get through."

It worked.

Before the virus, my relatives would gather at our home for a weekly meal referred to by my sister Linda, as "forced family dinners." Linda then decided that the group needed to do a weekly Zoom video meeting. So, every Friday night, we called into this chat room for a compulsory update on all the exciting things going on.

They hung up on me.

Fly safe.

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

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