Summer 2019

WINGS OF CAROLINA FLYING CLUB

Wings Newsletter

Inside:

Train Like You'll Fight

Lessons from a bird strike at Mach 0.7

By Thomas Donaldson

Having spent over half of my adult life as a fighter pilot, there are a few things that have stuck with me as guideposts to navigate through the inevitable challenges that pilots face in the world of aviation. Perhaps the most meaningful was the expression that emerged from the air war in Vietnam: "Train like you'll fight, because you will surely fight as you have trained."

As many students of air warfare history may know, American fighter pilots were woefully unprepared for the type of aerial combat that they would face against a North Vietnamese Air Force that flew smaller, less sophisticated, but more maneuverable fighters. Through the hard lessons of combat, Air Force and Navy training schools recognized the need to modify training to realistic scenarios and continuously incorporate that philosophy into every training mission. This approach to training permeates every aircraft and mission type and fosters an ingrained sense of risk evaluation that shapes and focuses a pilot's actions. To train realistically is to constantly prepare for threats that could adversely affect the missions and/or the pilots life. As I entered the later part of my USAF flying career, the true meaning of realistic training would be evident.

In the late 1990s, I received an assignment to train to missions ready status in the F-16 fighter at Luke Air Force Base in Arizona. Having flown two engine fighters for the majority of my career (F-4, F-15), I was keenly aware of the unique vulnerabilities of a single-engine jet. The F-16 had an unenviable safety record in the 1980s with a high aircraft loss rate due to engine failures. Though technological improvements had reduced the accident rate

Continued page 2

About the photo:

"I had flown in to Ft. Wayne, Ind., to be part of an airshow weekend and met with the pilot/ owner of the Mustang. He admired the F-15 and after some conversation, he asked if I would like to go up in the Mustang with him. Of course, I was thrilled! We flew for about 45 minutes and did some Acrobatics, chased a train and hedge-hopped across the Indiana countryside. He asked if we could close out the airshow with some formation flying and (since I was the Squadron commander at the time) I made a command decision on the spot. He had a professional photographer take the pics and on the last pass he broke left and I plugged in the afterburners to climb straight up to 30,000 feet. That moment will always be special."

Spins and Stalls

By George Scheer

The AOPA Air Safety Foundation recently posted an interview with a pilot who suffered a gruesome stall and spin accident at Dewey Moore, a well-known, if daunting, Idaho backcountry airstrip. (see: Real Pilot Story: No Go Around.) The pilot was experienced and familiar with backcountry and mountain flying and yet induced – and survived -- an accident of the sort that is usually fatal. His is a cautionary tale in many ways, particularly for those of us who cannot imagine that such a thing could happen to us. In the post-mortem discussion, the suggestion of spin and upset training for such events arose. I submit that in this instance, spin training per se would have made no difference to the outcome.

The question of spin training comes up in the club fairly often. Until 1949 spin training was a required element of primary flight training. In that year, the CAA, precursor to the FAA, eliminated spin training from the primary flight training requirements to the consternation of some veteran instructors and pilots who believed that real pilots should be conversant in spins. The CAA at that time was beginning to understand that spin training, which usually meant simply teaching students to spin an airplane, harmed more people in training than it saved from its performance. It simply did not prepare pilots for the ways in which spins occur and are often fatal. Knowing

Continued page 8

Continued from page 1

significantly, I did not slight my engine failure procedures in simulator missions and tried to save a little fuel to practice a SFO (Simulated Flame Out) pattern and landing on every mission.

After completing the air combat training portion of the syllabus, I had accumulated 28 hours of time in the "viper" (as the F-16 Fighting Falcon is known by its pilots) and looked forward to my first flight in the air to surface phase of training that would include low altitude (300 feet) and high speed (500 knots) flight over the desert en route to the gunnery range. As an F-15 pilot, it was not normally part of the mission to fly low and fast. We typically flew at higher altitudes to better detect and shoot low flying enemy aircraft. As usual for Arizona, visibility for the surface attack missions was great (better than 20 miles) and my four aircraft flight dropped down to 300 feet and pushed up the speed to start the low level route.

At that altitude and speed, your attention must move continuously from flying formation (1 mile spread between aircraft), avoiding rising terrain and scanning the radar for threats. Focusing on one thing for too long can spell disaster when you're moving at over 800 feet per second, or about Mach 0.7.

I had just checked my position to my wingman when the blur of an object filled the windscreen. As it sped by, I realized it was a large buzzard that narrowly missed hitting the canopy—and taking my head off. In the few seconds of comprehending this close call and allowing myself to feel quite lucky, I saw the same dark shape come into view dead ahead. Too late to do anything but instinctively duck, I felt the jet shudder from the hit and knew I had not been lucky a second time.

Training took over and I started climbing away from the desert to more safely evaluate the situation. Communicating with my wingman, I started to turn to a heading back to Luke Air Force Base, over 100 miles away.

As my wingie closed for an inspection, everything seemed OK. His visual inspection reported no signs of impact and once again I allowed myself to feel a sense of relief. Unfortunately, the small gauge that registered oil pressure was not cooperating. As the needle continued to drop, a disconcerting smell of acrid smoke filled the cockpit and gave way to an ever-thickening haze that diminished visibility to the instruments and the outside world. As engine vibrations began to rapidly increase, it was now obvious that the buzzard had gone straight down the intake and smashed into the engine compressor face with catastrophic effect.

It was clear that I no longer had the time to continue back to home base, so a divert course was set for the emergency landing field at Gila Bend, about 40 miles away.

Of course, several other actions needed to be taken quickly to have a reasonable chance of a safe recovery. I needed to gain altitude quickly to set up a flame out approach based on best glide speed (yes, the F-16 could glide if you traded 1000 feet for each one nautical mile of horizontal travel).

In order to continue climbing with a sick engine, I would have to jettison the external fuel tanks and bomb racks/bombs, which is done with explosive cartridges. I'd never had to do it, but now I needed to press the emergency stores jettison button. When I did, the jet felt like it was leaping upward, magnifying my hope that I would not have to eject.

But my worries weren't over. The smoke was a real threat and I switched to 100-percent oxygen to stay conscious while I depressurized the jet to vent the smoke overboard. As oil pressure dropped to zero, it was clear that it was only a matter of minutes before the electric generators and hydraulic pumps it powered would soon fail, thus depriving me of working flight controls (fly by wire jet). As simulator procedures kicked in, I activated the EPU (emergency power unit) to start a small hydrazine rocket fuel engine to give me electrics and hydraulics.

I had done everything required to provide the opportunity for a successful flame out pattern/landing if the jet could just make it to 20,000 feet by 20 miles out from Gila Bend.

Luck was with me, and I had reached 22,000 feet MSL when the DME window showed 20 nm from the emergency runway. With the field in sight, I focused on maintaining the best glide speed of 235 knots, securing the engine to prevent further damage, and hitting my key points at the correct altitudes as

Donaldson cont.

I had practiced just the day before.

It's amazing how practice takes the tension out of having to do the real thing. As altitudes at the key points were hit, my focus changed to ensuring runway aimpoint (1⁄3 of the runway length) was maintained with glide speed. As I closed the last 0.5 miles on final, it was clear I had it made and I executed an S-turn to land closer to the approach end. With touchdown, a brief touch of the brakes confirmed they functioned with an emergency power source and I was attentive to decelerating from a higher landing speed than normal without the anti-skid system.

After the fire department secured the EPU (because hydrazine is extremely toxic), I egressed the jet and marveled at my good luck. The force of the 15-pound bird hitting the engine at 500 knots caused massive damage throughout the engine. If it had impacted the canopy, I would not be writing this story.

Realistic training on a regular basis had prepared me well for a catastrophic event, especially with minimum time in type. Think about the moral to this story the next time you're up in the air. Practicing the skills necessary to safely recover your aircraft from an emergency is time well spent.

Tom Donaldson served in the USAF from 1972-2004, culminating in 28 active duty years and 4 years as a reservist. He flew 4 different fighters(F-15, F-16, F-4,F-100) compiling near 5,000 hours in over 3,000 missions worldwide. After Air Force retirement, Tom flew as a Captain for Continental/United Airlines in the 757/767 for 10 years ,retiring in 2014. He has been a club member since 2016.

Club trips: Zack Bowen experiences Oshkosh; Michael Hamlett reports on Martinsville (KMTV)

"Great landing, welcome to Oshkosh" are the best words someone can hear after flying the FISK. It was wonderful to hear after Jon Brockhoff touched down in his Turbo V-Tail Bonanza N6264V. After being marshalled for what seemed to be a millennium and waving at all the onlookers as if I was a war hero who returned triumphantly from battle, we were finally assigned our parking spot in the grass and killed the engine.

"We made it," I said to myself, and it was surreal. We set up camp next to the plane and went on to find two things, a restroom and a celebratory glass of beer. We found both at Friar Tucks (a restaurant reachable without leaving the premises of the field and highly recommended). The next few days were some of the greatest I could ask for as a young mechanic and a young pilot. A place where you have 20 different questions for each one hundred different topics and it seemed every corner we turned, every tent we walked into, we met a master of each topic who had been performing this skill for decades. From the classes on MIG, TIG, and stick welding to the classes on fabric covering of aircraft and how to paint fabric, these were exactly what every curious aviation enthusiast seeks, regardless of being a mechanic or pilot.

A fly-by at Oshkosh. Photo by Kate Scheer

DPE Corner

By Jay Nabors

Aviation trivia time - Do you know these (not so) common aviation terms?
SODA VIRGA MEL LOA
TODA/TORA VLOC
(see end of article for the definitions)

FAA Changes coming or already here
Changes to the ACSs
The new ATP ACS is out for those who are thinking about or are in the planning for the ATP. In a nutshell the new ATP ACS has more emphasis on :

- Conducting the practical in a simulator
- Air Carrier Operations
- Additional emphasis on part 135 and 121 operations
- Circling approach to a landing (vs instrument which has either straight in or circle to land)
- Defined tolerances for landings which include -250' v. commercial -0'.

New Commercial, Private and Instrument ACSs are out.
There are several changes some minor, other changes that could change the results of a checkride. If you'd like to see a complete list of changes send me an email and I will forward.
The biggest changes are in addon ratings requirements (AMEL to ASEL, ASEL to AMEL) and the instrument ACS.
If you are working on a new certificate or rating check with your instructor to ensure you're training is updatied to address these new changes.

VOR Checks at TTA
V3 (RDU Radial 234) over the Lake Jordan Dam has moved and is no longer a designated VOR airborne checkpoint.
Wonder Why? In short VORs are oriented magnetic north. Mag north moves over time. Eventually the associated Victor Airway Radial will need to be "redesignted" and/or "rotated" to align with mag north within the prescribed tolerances. That's the simple answer. A more detailed answer can be found in **FAA 160422 PARC**

MagVar Letter dated April 22, 2016 pursuant to FAA order 8260.19
"FAA Order 8260.19, Flight Procedures and Airspace, defines how magnetic variation is maintained and used. The Order states VORs must be maintained to a tolerance within plus or minus 3 degrees magnetic variation. The Very High Frequency Omni-Directional Range (VOR) is a ground-based electronic system that provides azimuth information for high and low altitude routes and airport approaches. Magnetic variation at its most basic is simply the difference between true North and magnetic North. Variations for NAVAIDs are "assigned" and not the actual variation for the geographic area. For VORs, it means a physical "rotation" of the VOR ra-

dials to correspond to the actual variation. When the VOR exceeds the MV tolerance, the applicable Air Traffic Service Area Office initiates a revision to published air traffic procedures; the Technical Operations Service (AJW-0) conducts a facility rotation which requires proper coordination and subsequently, the facility will require flight inspection. Additionally, the charting of the product impacts both Aeronautical Information Services and other chart makers. All magnetic tracks defined by a VOR conventional navigation aids are determined by the application of the station."

New TRACON numbers for Clearance are now out. – well – yes and no. Review of the new CS's suggests that if there is a GCO (RCO, or Clnd Dev) on field (whether it works or not) it will be listed as the way to get a clearance as well as the old -888 FSS clearance number. Those airports that do not have an RCO or GCO will have a direct clearance number. Example Siler City below. Note that this presents a dilemma in that the 888-766-8267 clearance number no longer is being used for clearance relays. So if you were trying to get a clearance out of TTA and did not have the local tracon # - you'd not be able to pick up a clearance on the ground. (I do have a "crowd-sourced" list of tracon #s collected over the years for North and South Carolina and southern Virginia available on request).

Siler City before
WEATHER DATA SOURCES: AWOS–3 125.775 (919) 663–1252.COMMUNICATIONS: CTAF/ UNICOM122.7®GREENSBOROAPP/DEP CON 126.6RADIO AIDS TO NAVIGATION: NOTAM FILE RD
(no Clearance number listed)
After
WEATHER DATA SOURCES: AWOS–3 125.775 (919) 663–1252.COMMUNICATIONS: CTAF/ UNICOM122.7®GREENSBOROAPP/DEP CON 126.6RADIO AIDS TO NAVIGATION: NOTAM FILE RD **CLEARANCE DELIVERY PHONE: For CD ctc Washington ARTCC at 703-771-3587**

Mandatory ICAO flight plan filing back on track
Two years after the Federal Aviation Administration placed a hold on plans to require all domestic and international flight plan filers to use the International Flight Plan form, the policy has been revived with a start date of Aug. 27.

IFR Folks

Differences in DTK on approaches vs. what's published on the IAP.
Have you noticed the difference between what the GPS DTK displays on

Continued next page

approach segments? Examples are RNAV 21 GPS shows DTK 149 but the IAP shows 148 from OZOPE to Yuxsi. VOR A at SCR IAP shows outbound PT at LIB is 324 but the GPS says 330. Here's the why:

Per FAA 160422 PARC MagVar Letter dated April 22, 2016 pursuant to FAA order 8260.19

"…Some pilots have reported noticeable differences between their RNAV system's displayed magnetic course and the magnetic course as depicted on the corresponding chart. Each leg of an instrument procedure, regardless of type, is first charted along a desired ground track with reference to true north. The resulting true course is then corrected for magnetic variation in order to determine the magnetic course to be depicted on the IFP plate. The magnetic variation used for this correction, however, may vary somewhat depending on whether the procedure is a "conventional" Navaid-based IFP or a RNAV IFP. As a result, there will often be slight variances in magnetic course between Navaid-based and RNAV IFP legs. RNAV systems are not constrained by charting conventions. Rather, many of these systems will rely on their navigational database for magnetic variation or will calculate it dynamically based on aircraft position. For this reason, it is possible that the magnetic variation applied by the RNAV system will be marginally different than the magnetic variation used by the procedure designer when the IFP chart was created, or last updated. Thus, the magnetic course displayed by the RNAV system for a particular IFP leg may also slightly vary from the magnetic course charted on the IFP plate.

And the follow on question is "so which do I fly? The published IAP DTK or the GPS DTK? Send your comments and answers and I will tabulate the votes (and provide the answer in the next edition) Oh yeah – what does "PARC" mean? "Performance-based Operations Aviation Rulemaking Committee"

Cruise Clearance vs. a Block Altitude Clearance

Most folks who have flown with me have experienced a block altitude clearance. It's simple enough. We want to get into clouds (for IFR training) or get out of clouds (to avoid the bumps).We just ask ATC for a block altitude between let's say 5000' and 6000'. If it doesn't create an issue for ATC. Once given we can bounce around between 5k' and 6k' and when you are finished let ATC know and they will assign you your original or a revised altitude.

On a cruise clearance its very similar to a block but is more flexible. Per Boldmethod "When given a cruise clearance, you're automatically given a clearance to execute an instrument approach at your destination airport. You don't have to request an approach and you won't hear the words "cleared for the approach."

Descent planning, all the way down from en-route altitude, is all up to you. Use your knowledge of minimum instrument altitudes to determine how low you can go en-route, on an approach transition, and during the approach itself. Depending on which type of instrument approach you fly, you may need to execute a procedure turn to re-align yourself with the final approach course.

While ATC can issue a cruise clearance, you can also request one. You'll find cruise clearances most commonly being issued by controllers in sparsely populated areas with little air traffic. Don't try requesting a cruise clearance through Chicago, because you're probably not going to get it.

A good example would be a late-night regional cargo delivery flight operating under IFR in the midwestern United States. These cargo contractors might be flying freight for UPS or FedEx, but operate using Metroliners or Cessna Caravans. They're flying at low altitude, often at night, to cities around the country without major airline service."

VFR Folks

You are flying into an unfamiliar airport at night. You know the airport has a PAPI and you plan on using it to ensure obstacle clearance. You enter into the pattern downwind a little farther out than normal due to not having as many visual clues. But you are ok with that as you are far enough downwind that you can see the PAPI. You start a wide left base turn and start your descent all the while keeping your PAPI in sight and noting you are right on the glide path. Then you hear a bushing sound under the aircraft. You power up and pull up in complete bewilderment. What in the world? How could the PAPI be wrong?! It's supposed to provide obstacle clearance! YES…BUT… VASI/PAPI have limitations

Tolerances of PAPI/VASI is ±10 degrees of the extended runway centerline and to 4 nm from the runway threshold for PAPI, (4SM for VASI) . Reference AIM section 2-1-4 (and per the AIM "Decent, using the PAPI, should not be initiated until the aircraft is visually aligned with the runway..").

Definitions of terms

SODA - Statement of Demonstrated Ability
VIRGA - Water or ice particles falling from a cloud, usually in wisps or streaks, and evaporating before reaching the ground
MEL – Minimum Equipment List (to be valid must be accompanied with a LOA)
LOA – Letter of Authorization issued by the FAA authorizing the MEL
TODA/TORA TORA as the length of runway declared available and suitable for the ground run of an airplane takeoff
TODA - the length of the takeoff runway available plus the length of the clearway, if provided
VLOC – stands for *Vor/Localizer*

That's it from the DPE corner.
Until then – Squawk VFR, Frequency change approved.

Do you know your ADS-Bs?

By David Fellerath

The FAA deadline for compliance with the ADS-B mandate has been set for the better part of a decade. The rule was published in May 2010, and the once far-off deadline of Jan 1, 2020 is finally speeding into view.

However, there's no anxiety at the south ramp at Raleigh Executive Jetport, because this summer, the last of the 12 Wings of Carolina Flying Club planes was equipped with ADS-B, according to board member-at-large Will Warren.

ADS-B stands for Auto Dependent Surveillance-Broadcast. All planes that fly in or above Class A, B (including the 30-nm Mode C veil), and C airspace, as well as above 10,000 feet MSL (excluding operations below 2,500 feet AGL), must be equipped with ADS-B "out". In a nutshell, anywhere a Mode C transponder is required, all aircraft must broadcast their position via ADS-B. (The finer points of the rules can be found in FAR 91.225, 91.226, and 91.227, as well as Appendix D to Part 91.)

While ADS-B "out" is mandatory for operation in controlled airspace, the "in" is optional. However, all 12 Club planes are equipped for ADS-B "in". This means that club pilots can see nearby traffic, and they can also access FIS-B weather information, including TFRs, NOTAMs, radar imagery, and current METARs while airborne.

Warren is the club expert on the topic--he works for MAG Aerospace, a military contractor that specializes in intelligence, reconnaissance, and surveillance technologies. While the benefits of ADS-B are enormous, Warren reminded me that we shouldn't develop a false sense of security. There will still be planes in the air that are exempt from the ADS-B mandate--perhaps light sport aircraft, or Piper Cubs that lack on-board electrical systems, or simply pilots who've decided that they will stay out of controlled airspace under the new rules. As always, we must continue to scan for traffic, and practice "see and avoid." And we should always call for flight following when we are flying cross-country.

I spoke to Warren recently about the ADS-B capabilities of the Club fleet. My chief concern was learning how the ADS-B "in" capabilities differ from plane to plane, and what hardware and software we should bring to them.

The short answer is that for pilots with iPads and Foreflight subscriptions, 11 of the club's 12 planes require no personal receiver like the Stratus 3, Garmin GDL, DUAL, Scout, or Stratux. Instead, we can access ADS-B information, including traffic and weather, on our iPads with only a WiFi or Bluetooth connection. (More details below.)

Although Foreflight is the most popular EFB, there are a dozen or more paid and free alternatives in the marketplace. I asked Warren if the club's ADS-B systems would work with Foreflight's main competitor, Garmin Pilot, or with open source EFBs like Avare, which can be downloaded for free on Android devices.

For the 152 fleet, the answer is no, Garmin Pilot users will have to bring their own compatible receiver. However, Garmin Pilot users are in more luck when it comes to the bigger planes.

If you are using the open source EFB Avare, you will have to bring their own receiver to pull in ADS-B information--although there are low-cost receiver options such as the home-built Stratux and the Scout.

Let's take a closer look at the club's ADS-B equipment. The following information assumes that pilots have active subscriptions to Foreflight or one of the compatible ones listed below.

C152

The 152s are equipped with Stratus Appareo ADS-B transceivers. They are on secure WiFi networks, so to take advantage of ADS-B "in" data, all you need to do is open your iPad and join the correct network, usually named "stratus." You'll then configure your traffic and weather settings within the app, from both the layers tab at the top of the main map and from the "Settings" that you access from the "More" tab at the bottom of the main map.

In addition to Foreflight, compatible EFBs include WingX, FltPlan Go, FlyQ, iFly GPS, Airmate, AvPlan EFB, Aerovie, Xavion, Stratus Horizon Pro, SkyDemon, OzRunways, NAVIATOR.

C172

The 172s are a little more complicated, Warren says. The 172s are equipped with Garmin GTX 345 ADS-B in-out transponders. To use your tablet, you will need a Bluetooth connection. The pairing is managed within the Garmin GTN 650 GPS nav/comm. From the Garmin 650 home screen, go to Settings and select "Connext." This is where you will pair your personal device with the GTX 345. You may also need to go into your own device's Bluetooth settings.

Compatible EFBs: Foreflight, Garmin Pilot, FltPlan Go.

P28A

Two of the three Piper Warriors, N8080A and N8116J, also have Garmin GTX 345s and they work similarly to the 172s, Warren said.

However, N64TZ is a little more complicated. It has a GTX 327 Mode C transponder and a Garmin GDL 88 for ADS-B. These are displayed within the settings of the Garmin GTN 650 nav/comm. Within the settings of the Garmin 650, go to Connext and select Flight Stream 210. This will provide the Bluetooth pairing to your tablet.

Compatible EFBs: Foreflight, Garmin Pilot, FltPlan Go.

M20P

Finally, both of the club's Mooneys have Garmin GDL 88 ADS-B transponders that are paired with Garmin GTN 750 nav/comms. However, only N5760R permits pilots to receive ADS-B information on their devices without a receiver. Similar to N64TZ, pilots flying N5760R will use Flightstream 210 to pair the devices via Bluetooth.

That leave N1068X as the only plane in the club fleet without a built-in means of receiving ADS-B "in" on your personal tablet. In order to have ADS-B on your personal tablet when flying N1068X, you should use a portable receiver like Stratus. **[At press time, the Club Board was considering purchasing a Flight Stream for the N1068X.]**

Compatible EFBs:

N5760R: Foreflight, Garmin Pilot, FltPlan Go.

N1068X: Receiver/EFB combination of your choice.

Club trips, cont.

The tents filled with experts extended further than the eye could see. Looking over signs that say things like FAA, NASA, and EAA, as well as recruiting tents like PSA, or Liberty University. There were also big-name vendors that I deal with day-to-day at the club like Spruce Aircraft, ATS (tooling vendor), and Champion. The list is truly overwhelming in regards to the amount of experience that was all concentrated in one spot. Every minute I wasn't listening to an expert speak about their field of expertise I felt I was wasting time! Lycoming had an excellent repertoire of classes led by Michael Damiani (an excellent instructor), involving engine disassembly and reassembly.

Besides the excellent vendors, agencies, and associations there to sell their product as well as answer any questions, there was also time for friends to break bread together. Dwight Frye and his wife Theresa on more than one occasion took me and Jon Brockhoff out for an evening meal where we were joined by Adam Broome, Dan VanderMeer, and Sarina Houston, a former CFI at the club. I am very appreciative that Dwight and Theresa extended the offer because while Oshkosh had food vendors it was more carnival food than Wisconsin food. At these restaurants, they had awesome cheese curds and Guinness on tap (my weakness).

Three pints and a pound of cheese later it was easy to say this was the best experience of Oshkosh, a whole bunch of friends traveling to a different place in America and enjoying each other's company all in the name of aviation! To any and all readers out there if you get the chance to go do not say "maybe next year," really do it next year, because even tomorrow is not guaranteed.
—Zack Bowen

On Saturday, June 29, 2019, we took our first club trip of the year to KMTV Blue Ridge Airport in Martinsville, VA. We'd planned a trip earlier this year, but it was cancelled due to weather, high-gust winds to be exact.

But this day would be better. Why Martinsville? To fly and eat of course! Six planes and 10 people departed KTTA and the Wings of Carolina ramp about 10:00 am for our lunch at Simply Suzanne's.

After our departure, I'm sure Raleigh ATC was happy to get six flight following requests in a row. I believe they asked what was going on! The skies were blue with high clouds, and the chop was at a minimum. The beauty of a flight to KMTV is that it's close enough to the mountains to be hilly and you can see the Appalachians about 30 miles to the west, but you don't get the weather or the uncertainty associated with mountain flying. Also, KMTV is situated at 941 MSL, so you do get some density altitude considerations on hot, humid summer days. Our time enroute for most of us was about one hour. We did have a C152 straggler get in a little behind the rest of us.

Simply Suzanne's was informed earlier of our arrival and a table was already setup. The group got to enjoy each other's company and share--what else--flying stories and speak of our extraordinary feats of pilotage that never happened. We also got to enjoy other planes coming in for lunch and even had an ex club member that just happened to fly in and have lunch with us.

The time passed and we watched clouds build in the distance to the west and the ceilings to the east dropping and darkening. So we decided it was time to head to our rides and point our way back southeast. The ride home for everyone was uneventful and a full pattern of trip planes is always fun to experience. Building club memories and enjoying time with other pilots is always one of the best ways to enjoy aviation.

Our next club trip is to Ocean Isle Beach 60J on Saturday August 24, 2019. We look forward to as many as possible coming. *--Michael Hamlett*

Above: The gang at Simply Suzanne's. Photo by Michael Hrivniak

Screaming Eagle (cont…)

how to spin an airplane simply had very little to do with avoiding the situations where spins developed -- situations from which any pilot would be unlikely to recover. And yet the debate still reignites now and then.

Stall-spin accidents have declined sharply since 1949 and yet they still stubbornly constitute perhaps 10 percent of aircraft accidents and are a higher percentage of fatal accidents. Interestingly, from a statistical standpoint, these accidents less often befall student pilots and ATP pilots, which is to say the least and most experienced pilots. Private and commercial pilots are represented more often in the statistics. This might suggest that the supervision and scrutiny under which student pilots operate and the experience gained by high-time pilots each tend to mitigate risk, while certificated pilots with less experience tend to find trouble of this nature. (This could be seen to correlate with what we sometimes call the "Killing Zone," that period of several hundred hours logged flight time when eager pilots begin to spread their wings, sometimes too far, into flight regimes where their daring and relative inexperience combine to ill effect.)

In fact, in the early 1980s, Congress held conferences on the question of whether spin training should be reinstituted in the Private syllabus. The FAA defended the elimination of spin training so persuasively, with statistics that had accrued over thirty years, that the movement to reinstate spin training was unpersuasive and unsuccessful. The FAA pointed out that most of the stall spin accidents that spin training was intended to prevent occurred at such a low altitude, such as a base-to-final turn or in low-level maneuvering, that even a trained aerobatic pilot would have little chance of recovery. Spin training, so the argument went, would not prevent stall-spin accidents and might well induce a false sense of confidence, because spins could not be safely practiced at the altitudes where they were likely to occur and from which they would likely be unrecoverable. Studies of many hundreds or thousands of accidents in recent decades conclude that 80 or 90 percent of stall-spin accidents begin at or below pattern altitude. In the 1970s, NASA conducted spin recovery trials with two popular single-engine light piston airplane types and learned that recognition and recovery from a spin in each type required approximately 1200 feet of altitude – altitude unavailable in a base-to-final turn situation or an initial climb on take-off. While stall recoveries in light airplanes seldom require more than a few hundred feet, my experience has been that spin recoveries in an airplane as benign as a J3 Piper Cub usually require at least 500 feet and many training airplanes require closer to a thousand feet. A spin recovery in a C152 will typically require a quarter to half-turn and close to a thousand feet. A Mooney may require two thousand. And an unintended, unexpected spin might require much more altitude when we include time for recognition.

I am not in favor of reinstating spin training for the private and commercial certificates. I am persuaded by the statistics that it would do little to improve safety for a variety of reasons. The stats bear this out.

The Flight Safety Foundation summarized these findings in ***Stall / Spin: Entry Point for Crash and Burn***. This article states well many of the reasons I am not in favor of required spin training for primary students. Furthermore, most instructors working today do not have the experience to do the training well. It's easy to spin an airplane; it's harder to be able to teach the aerodynamics in the process. Actually, while it is easy to spin an airplane, it is difficult to keep the sort of benign training airplanes we fly today in a fully developed spin -- and inexperienced pilots and instructors will fail to note the transition and allow a damaging spiral to develop. They will relax the controls unconsciously just enough to allow the airplane to recover from the stall and begin flying again in the rotation and thus enter into a spiral, which is stressful for the airplane. While a spin is harmless for the airplane -- although not necessarily for the instruments -- the spiral that most pilots will allow to develop is hazardous for the airplane, the engine and, potentially, the pilot.

Please note that I do believe in fully exploring stalls, including uncoordinated stalls, in the course of primary training. I want students to experience stalls in all of their variety and in the ways in which they might most likely encounter an unexpected departure from flight. I am not much interested in whether we call a stall that results in a dropped wing and a partial turn in the recovery an uncoordinated stall, an incipient spin, a spin entry, or a spin. There is much to be learned therein -- much more than by riding through a ten-turn spin.

As you probably know, spin training is still required for CFI applicants, on the theory that teaching stalls inherently creates a situation where spins might occur and instructors, responsible for safety of flight, should be competent in spin recovery. I have, not infrequently, had primary students spin me when demonstrating stalls on stage checks and I am glad to be accustomed to the situation and comfortable with the phenomenon. And yet I agree with the FAA that stall awareness is the critical training goal and the most effective way to reduce the number of stall-spin accidents. An airplane cannot spin unless it is first stalled. I routinely do spin training for CFI candidates, but it is far more than a few spins and recoveries. In keeping with the belief that stall avoidance is the key to avoiding spins, we look at the entire phenomenon: a full exploration of stalls in various regimes, including secondary stalls, trim stalls, and accelerated stalls; how spins develop and how to recognize spins; the sensory and instrument indications of a spin; improper recoveries, including the instinctive reactions which are in fact counterproduc-

Stalls and Spins (cont…)

tive; the characteristics of the airplane in the spin entry and the fully developed spin; how to distinguish a spin from a spiral and how to recognize when the stall is relieved in the rotation and the spin becomes a spiral; the reasons why the spiral is potentially more dangerous than the spin; and how long it will take our training airplanes to recover from a spin unaided. We demonstrate and practice all of the ways in which a spin develops in practice -- base-to-final uncoordinated stall-spin accidents (the classic), accelerated stalls at higher speeds and different attitudes, and secondary stalls.

If you have a genuine curiosity about how airplanes fly, perhaps you might benefit from the spin training, or some portion thereof, that we provide to CFI candidates. Perhaps you might be interested in someday becoming an instructor. I am always noting pilots, even at the student pilot level, who seem to have the attitude and the curiosity that might someday create a gifted instructor.

I discourage cavalier conversation about spins around the club, in the concern that it might entice club pilots to try spins either solo or with an inexperienced instructor or perhaps in an inappropriate airplane not approved for spins, which includes much of our fleet. That said, if you are really interested in learning more about spins, I would be glad to explore with you the phenomenon much as I do with CFI candidates, to whatever level you find comfortable. But please don't go out and randomly try a few spins for a thrill. It will not make you a safer pilot. If you are seriously interested, let's talk about it.

From the Board President: Why you should fly a Mooney

By Paul Wilder

Someone asked the other day, "Why would a club member fly the Mooney when they could get to their destination almost as fast, for a lower cost in one of the other models in the club fleet?"

Their suggestion was that if we lower the rates people might fly it more. At some point in my history with the club, I probably thought the same thing (even though back when I started with the club, the Mooneys were around $100/hr).

But shortly after checking out in the Mooney with club instructor Stan Munsat, I knew why I would probably fly it even when other planes are less expensive. Mooneys are really fun to fly.

Yes, there are quite a few things going on in that cockpit and it takes a bit of work to stay ahead of it. But with a few lessons from our excellent instructors and bit of practice on your own, you too will learn that the complexity is quite manageable (fun even), especially using the operational flow that I call the "Dick Kenney 7 count" (landing gear, boast pump, mixture, prop, throttle, cowl flaps, flaps).

As the club's best-performing aircraft, the Mooney has some advantages over our other planes. Obviously, it goes faster. But this speed does more than saving enroute minutes with a higher cruise. Getting around cells more quickly or climbing and cruising a little higher above the clouds and, if needed, out running storms are all more easily done in this plane. However, the biggest advantage is the Mooney's efficiency. Someone recently did an MPG calculation for the Warrior versus the Mooney and the difference is dramatic. By dialing back the mixture lean of peak you can do about 140kts and burn less than 9 gallons per hour. Meaning it can fly for 5 hours / ~700nm and still have about 20 gallons left in the 64 gallon tanks (this is something I have done many times). It has been said that someone dialed it way back and flew it 1000 miles without violating reserves (this was not me).

Anyhow, before the end of the year, we hope to provide brief get to know Mooney class and perhaps an initial checkout incentive of some sort. But when it is on the ramp, check out the Mooney and consider checking out in it.

Al Mooney spent many years designing aircraft but departed the company that bears his name just as his most successful design, the M20, began production.

Around the South Ramp

Ryan Evans and Zack Bowen, our maintenance staff gurus, and Ron Bickers, our long-time mx key volunteer, were in the midst of another successful Maintenance Night on Thursday, Aug. 15, when a ripping thunderstorm took out the power for a swath of Lee County, including the club.

After a few flickerings, the power shut down entirely. It's dark in the hangar. Rather than throw up their hands and call it a night, they broke out flashlights and kept on working.

A 152 was scheduled the next morning and they wanted to get it out on the ramp for the student who planned to fly early Saturday morning. Piper 64TZ needed a new cylinder and they wanted to get the offending cylinder removed so a new cylinder could be secured and installed as early as possible next week. And they wanted to upgrade the interior of 80A before finishing the annual inspection. So, along with a cadre of volunteers, they just kept working by flashlight until well after midnight. This is dedication. Commitment. And the selflessness that distinguishes the club at its best.

And two days later, on a Saturday, Zack and Ryan were back, determined to finish the interior upgrade on 80A. When I left about 8 p.m., the interior was still completely removed. They finished the job after 10 p.m..

Read the Flight Hour Reports or attend the board meetings and you learn that the club is on schedule to fly more than 6,000 hours this year, probably our most active year ever -- and in no small measure it is because Ryan and Zack go above and beyond to get the airplanes repaired and back on the flight line. The airplanes don't languish in the hangar. They fly. Which increases availability and utilization and keeps costs down for all of us.

General aviation maintenance is hard. Ryan, Zack, and Ron. These guys have your back . —*George Scheer*

Have you been to a **Second Saturday Monthly Cookout** yet? Sometimes we get so focused on our own flying goals—and struggling to find the time and money to achieve them—that we can lose sight of the fact that WCFC is also a social experience, and a volunteer-run one at that. .

Take Barbara Eldredge, who coordinates the monthly plane wash. It's not always easy to rally the troops but on a hot, sunny summer day in August, no problem! On Saturday, Aug. 10, a dozen or so volunteers rinsed, degreased, debugged, wiped, and waxed Cessnas N4640B and N972WW. Given the time of the year, there were a prodigious number of bugs. As Eldridge put it, "Judging by the amount of grease removed from the bottoms, and the amount of bugs removed from leading edges,

each would have been noticeably lighter by the time we got done .

Barbara's cleaning team gears up by 9 a.m., and they are usually done by the time Bill Sawyer fires up the grill. Burgers, dogs, brats, he'll grill 'em. This is a great time to chat with fellow pilots, people you met in ground school, and ask your instructors those burning questions that are nagging at you.

This is also when new members encounter the club. Around 1 p.m. on this day, board members Michael Hrivniak and George Scheer greeted this month's new crop of members.

The club is more than just a place to rent planes. There are fabulous people who make the place hum. Second Saturdays are a great opportunity to commingle with fellow aviators and treasure the wonderful community we've built.
—*David Fellerath*

Barbara (on dolly) and other volunteers hard at work on N4640B.

Postcard from Jackson County Airport (24A)

Elevation 2,857 MSL. Three miles SE of Sylva, NC. Photo submitted by Daniel Reynolds, taken Jan. 6, 2019.

Ground School

Private Pilot Ground School
August 21 through December 11
(Wednesdays 7-10pm)

Commercial Pilot Ground School
August 26 through November 18
(Mondays 7-10pm)

Events Calendar

Keep up with club events by integrating the WCFC Google calendars into your personal calendar if you use a Google account. If you don't have a Google account, you can save it as a bookmark.

Here is a shortcut link:
http://tinyurl.com/wingscalendar

Thanks to all who submitted articles and photos this summer.

Send your story ideas for the winter issue to: david.fellerath@gmail.com

Certifications and Solos

Where available, instructors listed in parentheses.

1/15 Joe Hudson - Instrument
1/15 Ward Sax - CFI
1/21 Deepak Kongath - Instrument
2/26 Jan Squillace - CFI
3/27 Steele S. Scott - CFII (reinstated, McArthur)
3/27 Joe Hudson - Commercial
4/11 Dawn Hamel - Instrument
4/16 Joe Hudson - Multi-Comm (Nabors)
4/17 Luke Sain - Commercial (McArthur)
4/30 Mike Gee - Private (Taylor)
5/6 George Haire - Private (Schwartzmier)
5/8 Jeff Kaiser - Solo (Train)
5/15 Michael Hrivniak - Instrument (McArthur)
5/18 Patrick Desiato - Solo
5/19 Adam Dolde - Solo (Frye)
5/23 Ryan Evans - Solo (Frye)
5/28 Devin Bedotto - Solo (Train)
5/30 Hatum Abuahmad - Solo (Frye)
6/11 Georgia Martin - Commercial
6/12 Zack Bowen - Solo (Frye)
6/12 Todd Bridges - Instrument (McArthur)
6/12 Randall Cleven - Private (Schwartzmier)
6/18 Rajan Farmah - Private (Schwartzmier, Lord)
6/20 Blanton Everette - Commercial
7/2 Evan Waldron - Instrument
7/20 Sean Tarlton - Commercial (Schwartzmier)
7/26 Philip Beal - First Solo (Schwartzmier)
7/17 Will Warren - Instrument
8/6 Shannon Harris - Private (Taylor)

MAIL
ADDRESS LABEL
GOES HERE

Wings of Carolina Flying Club,
702 Rod Sullivan Rd, Sanford,
NC 27330