The Mooney Flyer

The Official Online Magazine for the Mooney Community

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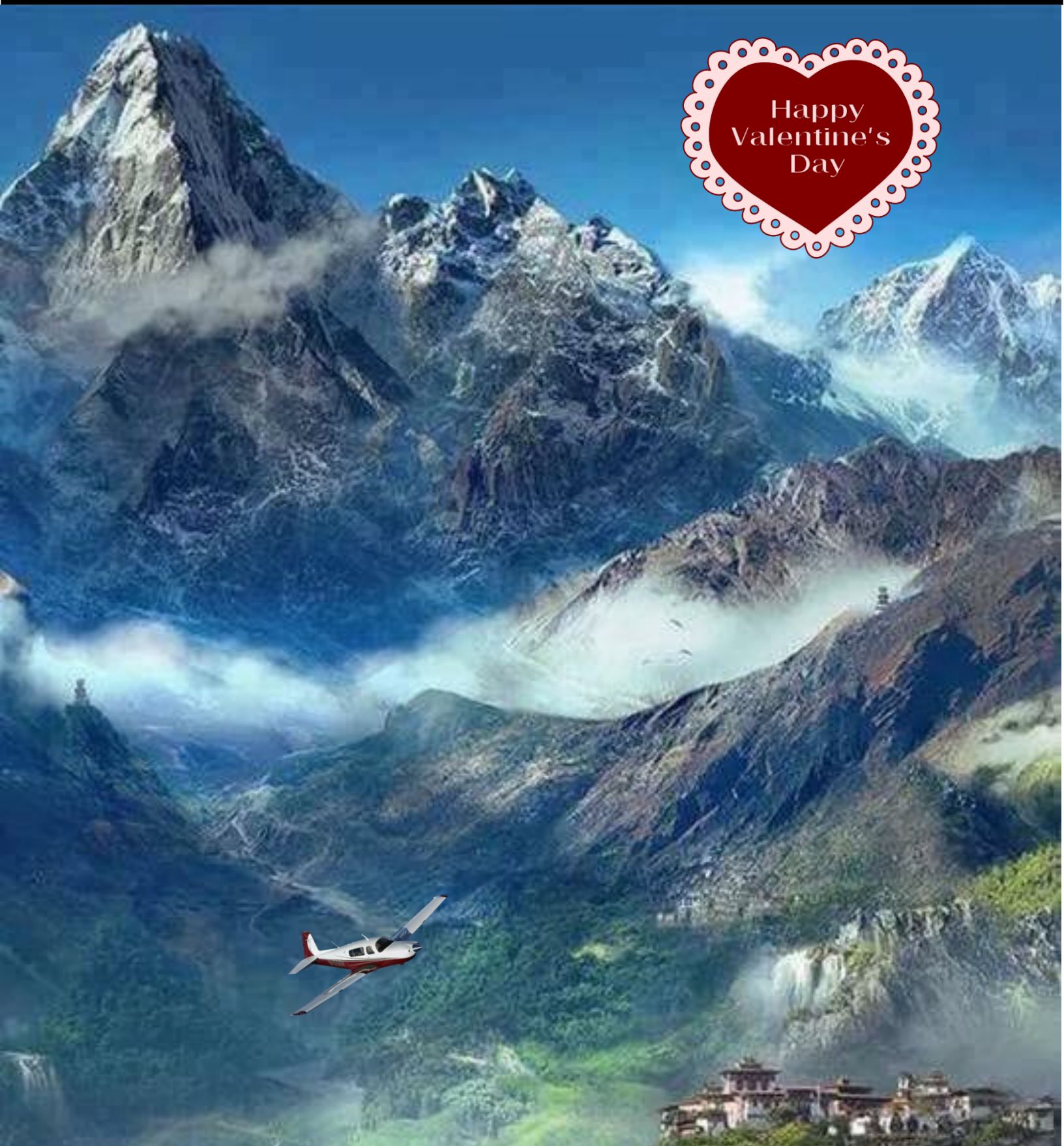
February 2020



Editors

Phil Corman & Jim Price

Contributors

Bruce Jaeger | Bob Kromer | Tom Rouch | Brian Lloyd | Linda Corman

Departments

Features

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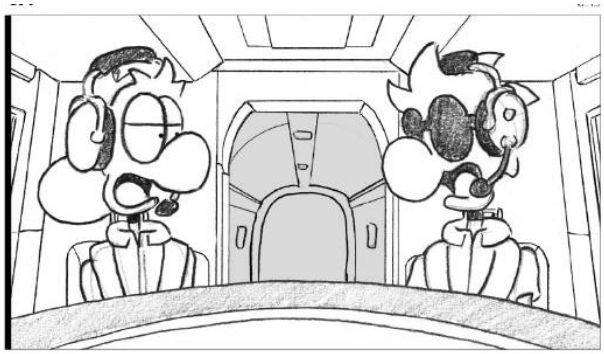
From the Editor

Phil Corman

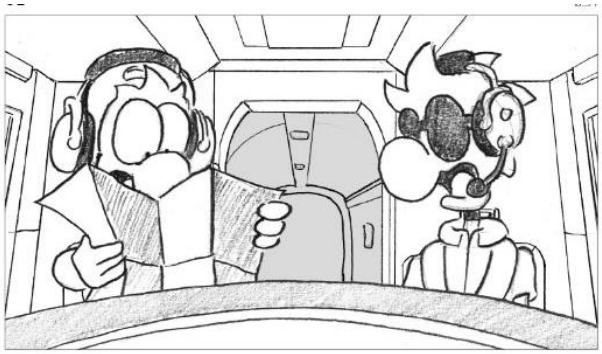
Many Mooney Accidents are AVOIDABLE

Let's look at four potential accidents and perhaps we can prevent them from ever happening again!

The first avoidable accident, Fuel Exhaustion, drives us nuts. That's because pilots can, with a little effort, prevent it. It is so easy to know how much fuel you have in each tank before starting your engine and ensure you have the proper reserve fuel. If, while enroute, you encounter higher than planned headwinds that may drive up your fuel consumption, then simply land and get more fuel. Pushing on into your reserves is insane. If a fuel leak were to occur during flight, that would be a completely understandable situation for which a pilot would have little to no control.



CHUCK
Looks like we need to make a fuel stop somewhere... That's gonna cost us so much time!
JULIO
Yeah but running out of gas and hiking is gonna cost us even more time!

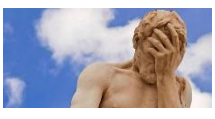


JULIO
(sigh) Let me check the map

JULIO grabs the map

The second easily avoidable incident, notwithstanding a gear failure/collapse, is a Gear Up Landing. Wally Moran's article last month, "GUMPS is not Enough", urges pilots to verbalize the Gear Check at least three times. When you are distracted, it's easy to forget to extend the gear. Even an improperly stowed Johnson Bar is avoidable. For goodness sake, after you think the gear is down and locked, just tug on it. Check the wear on the latch at least every annual.

The third type of accident, which is often fatal, is Flying into Weather. Avoidable? Almost always. A VFR pilot who flies into IMC simply must execute a standard rate 180° turn, which is taught before one soloes while training for the Private Certificate. An IFR rated pilot that flies into icing or a bad weather cell, only needs to make a similar decision. Sometimes the situation may be more complex, but there is usually an easy solution.

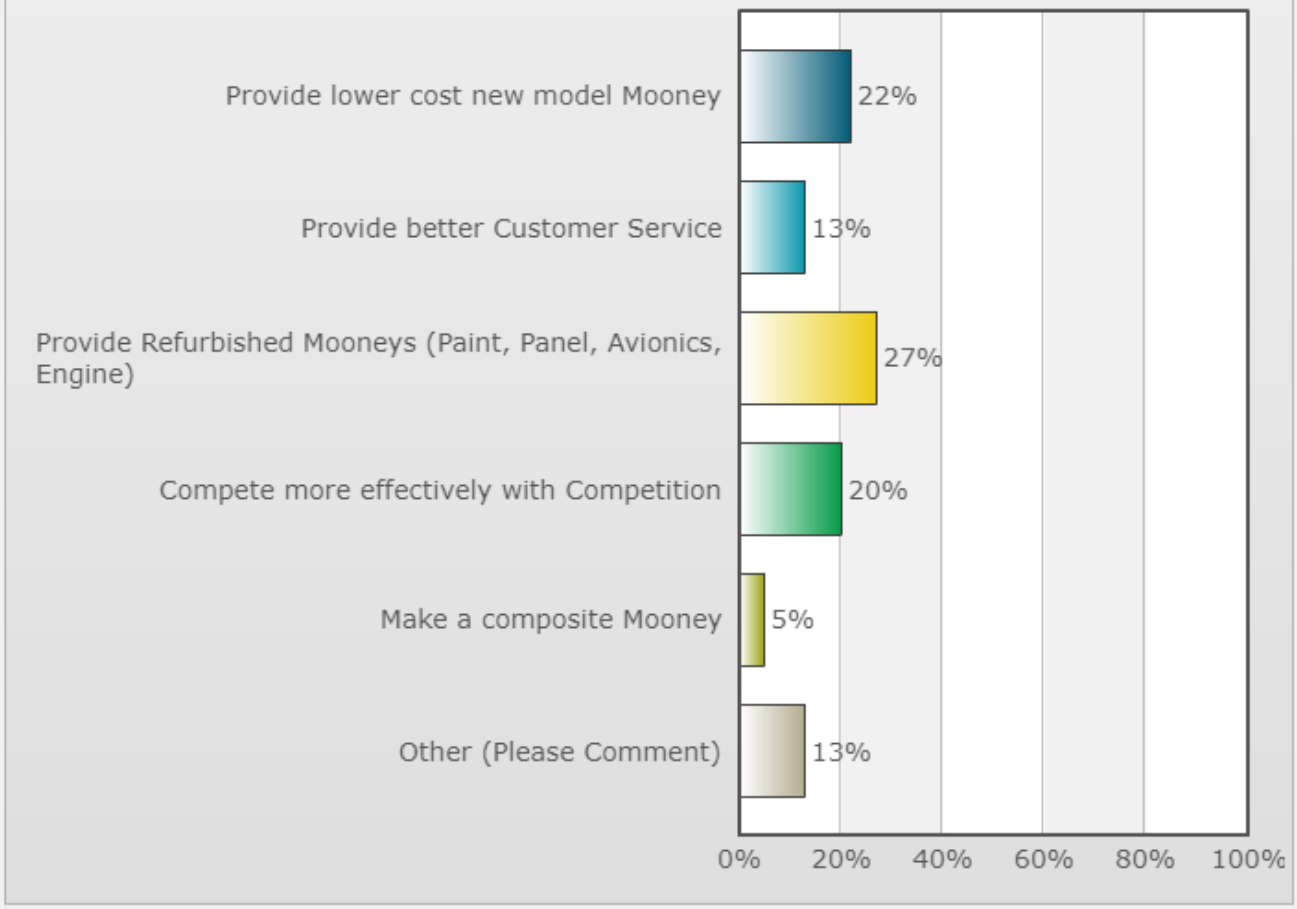


And lastly, the fourth type of avoidable accident involves terrible judgment and the "Hey, Watch This" pilot. These accidents typically occur at low altitude with a fair amount of maneuverable flight; intentionally flown with the intent to entertain passengers or people on the ground. It is never a good idea.

I wish Mooney would

Poll created by Phil Corman on 11/05/2019

Poll Results



Next month's poll: "Regarding ADS-B": **CLICK HERE** to vote.

Letters to the EDITOR

Editor@themooneyflyer.com

Happy New Years! Yes, I already downloaded the January issue. Great one as always, so again Thank You tremendously for all your efforts and also to your staff who contribute. Eventually, I shall write a quick little flying story and submit to you. But until then, Safe Flying.
Kurtis S

RE: Mooney Restarting an M20C product - Great question from a reader below regarding a "new" M20C type aircraft from Mooney. This would be a great fit for Mooney, unfortunately they probably won't do this. See my email to them below from 2011 and their response. They are trying to compete in the same target market as Cirrus, but that will not work anymore.
Raymond S

Mooney Response: *Mooney no longer has the tooling to build the M20C, and unfortunately $100-200K will not cover the labor to build airframes these days. Thank goodness there are so many wonderful vintage Mooneys flying, like your own.*

Best regards, ***Susan***

There have been 5 Gear Ups in 2020 already. Because of costs, a gear up could "total" a Mooney. I don't know what we are going to do for parts. Really scary for us. Can't find mechanics and now parts shortages, shaky future.

Keep at it
Tom R

RE: The Pulse Oximeter – Geez, this article was a wake-up call for me. I have relied on my Pulse Oximeter for years only to find that I understood very little of what it was actually informing me. This article was truly critical to my interpretation of results and as an indicator of hypoxia. Thank you Dr. Stretanski.
Bob P

What to Check After an Annual

Phil Corman

Co-Editor

What extra items do you after an Annual, or after any maintenance for that matter? What should you check on your Mooney after an Annual Inspection; actually, after any type of maintenance? Most Mooniacs would say that they do an extra thorough pre-flight inspection. That is good, but still vague. Here is a brief checklist of items you'll want to check.

- Before the mechanic puts the top cowl back on, check the following:
  - Look for any tools, rags, or parts that may be in the engine compartment. See Jim's article on the shop rag for an example.
  - Check that all hoses, vacuum lines, fuel lines, etc. are secured and safety wired, as appropriate
  - Check that all Spark Plugs are tight and that the electrical wire is firmly connected as well
  - Ensure propeller bolts are tightened and safety wired, as well as all spinner screws
  - Ensure oil filter is secure and safety wired
  - Check the Air Filter enclosure is secured and sealed

- Check the electrical connections on your alternator
- Check that battery connections are secure (In cowl or fuselage)
- Check all Camlocks on the cowl and elsewhere, including all belly screws
- Check all inspection plates secured

➢ In the Cockpit

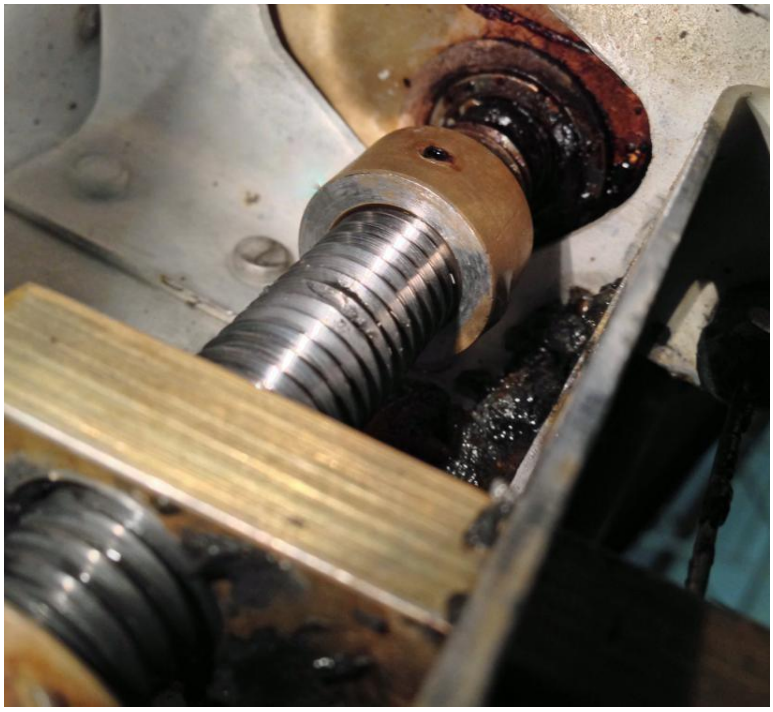
- Turn the yoke left, then right and ensure ailerons swing properly
- Rotate the trim wheel forward and aft (full deflection) to ensure free movement
- Check voltage on battery/batteries
- Check that radios are operable and that the avionics boot up properly
- Test the ELT, remembering that it was removed, and new batteries might have been added
- If applicable, check the oxygen level
- Check fire extinguisher present and charged
- Lower and raise the flaps full deflection
- Confirm Fuel levels
- Do a thorough testing of the fuel sump, especially if the annual took a while. It doesn't take much time to get condensation in your tanks.

Clearly, it makes sense to fly around your home airport and check all systems while within gliding distance of the runway. Check your Engine Monitor, ensuring that all EGTs and CHTs appear normal. Any roughness or abnormal readings warrant a landing and a call to your mechanic.

There are other things that you should check for your specific Mooney. In the event of flight control repair or inspections, double check these. This is not necessarily a complete list, but a starting point for you to make your own Post Annual Pre-Flight check.

You Don't Know Jack "Screw"

But You Should



A Mooniac friend of mine saw me lift the tail of my Eagle during a preflight and asked me what I was checking. I was surprised that he didn't know. It was obvious that he was not checking for this on his pre-flights. I told him that I was checking for the "free play" in my tail assembly, notably the jackscrew and the hinge in the tail.

To be sure, the jackscrew on our Mooneys seldom has issues, but if it fails, it tends to be catastrophic. It's easy to check, takes no time, and just makes sense.

The Mooney elevator trim system begins with a manual trim wheel located between the two front seats. Attached to this is a sprocket wheel which drives a bicycle-type chain down to another sprocket wheel located directly below the trim wheel, under the floor. When the pilot rotates the aircraft elevator trim wheel, the lower wheel turns a worm gear assembly. This is directly attached to a multi-piece shaft assembly which extends to the aft bulkhead in the aircraft tail cone. There are some universal joints along the shaft to allow for alignment concerns. This shaft is hooked up to a jack screw (Mooney refers to this as a trim screw) assembly that pushes or pulls on the lower portion of the vertical fin. The entire tail moves, trimming the aircraft nose up or down, respectively.

If the aircraft has an electric trim system, about midway along the shaft assembly, a sprocket wheel is attached to the shaft. Another bicycle chain runs to the sprocket wheel which is part of the integral electric clutch/trim motor assembly.

Moving the entire tail plane is more efficient than hanging a trim tab in the breeze and causing more drag on the aircraft. The entire horizontal stabilizer is utilized and when in trim, the elevator is very nearly faired. In the Mooney system the entire tail plane (horizontal and vertical

fin, rudder and elevators) is hinged to the aft tail cone bulkhead with two ¼" close tolerance (not the standard AN) bolts, each with a self-locking nut. This hinge point is located near the top of the aft bulkhead. Below that is the jack screw assembly and below that, at the bottom of this bulkhead, is a large multiple hinge assembly. This hinge assembly, along with the ¼" bolts, provide torsional stability between the tail section and the aft bulkhead.

It's not uncommon to lift or push down on the base of the rudder and feel a noticeable clunk or movement. There are two sources for this free play in the tail assembly. The first, at the ¼" bolt assembly, is addressed in your Mooney Service Manual. In summary, the horizontal stabilizer tip is moved horizontally and vertically, and the amount of movement is measured. These tolerances are very tight and typically are not more than .15". If you apply too much force, due to structural flexing, you can easily get a deflection of more than that. Don't force it, just measure the free play.

The second source of movement is in the jack screw assembly and is addressed in Mooney Service Bulletin M20-62, dated April 1960. Yes, a 1960 bulletin covers your 2000 model Ovation and TLS/BRAVO! This is amazing when you consider today's M20M TLS is at least 70 knots faster than a 1960 M20A or B.

Service bulletin M20-62 starts by immobilizing the tail of the aircraft at the rear tie down ring. No vertical movement must occur. Little or no wind should be present. The measurement taken is the relative distance from the ground (or other reference plane) to the root (bottom) rib at the trailing edge of the rudder. Using a step ladder, apply to the top of the vertical fin, by hand, about 40 pounds of force rearward. Slowly release the force and place a mark on the measuring stick at the root rib. Using the same amount of force, pull the vertical fin forward. Slowly release and place another mark on the measuring stick at the root rib. It is best to have two people accomplish this procedure. With one to apply the forces and one to do the measuring, it will only take a few minutes. If the distance between the marks is not more than 5/16", the aircraft is within tolerance.

We can all appreciate Mooney's straightforward engineering, circa 1960. A common area for excessive free play to occur is in the bushings and brackets that attach the aft jack screw to the tail plane. Additionally, the jack screw internally can become worn and sloppy. Mooney manufactured several different jack screws styles, so I won't go into the details of their disassembly and repair in this article.

September 16, 2017, NORTH BRANFORD, Connecticut

It was a clear 75-degree day just around 2:00 PM, when the Mooney crashed into a stand of trees on September 16, 2017. The crash killed veteran modified NASCAR driver Ted Christopher, 59, and the pilot, Charles Dundas, 81.

According to the NTSB documents, Dundas, who owned and maintained the Mooney M20C and Christopher, had flown together for more than a decade. The two had flown the route they flew that day many times before: departing from Robertson Field Airport in Plainville, Connecticut, bound for Francis S. Gabreski Airport in Westhampton Beach, New York. Christopher was driving in a NASCAR event at Riverhead Raceway in Long Island, New York that afternoon.

NTSB Probable Causes

Fuel Starvation

A total loss of engine power due to fuel starvation as the result of foreign object debris in the fuel selector valve. The foreign object was a piece of a red mechanic's shop towel.

Low Rider

When the plane lost power, the NTSB reasoned that pilot was likely "attempting to reach an open field that was about 1,500 ft beyond the accident site and had lowered the landing gear in preparation for landing, but due to the airplane's low altitude, [900 to 1,300 feet Above Ground Level], it was unable to reach the field and impacted trees."

Ted Christopher

The NTSB also criticized the pilot for selecting a low cruise altitude, which reduced the available time to troubleshoot the loss of engine power and limited his landing site options.

No Medical – No Problem – Let's Fly

Dundas was an experienced pilot (ATP) with over 31,000 hours. He held DC-9, B-757 and B-767 type ratings plus an A&P certificate. He suffered from severe cardiac disease, though that did not contribute to the crash. His last Class 2 FAA Medical which included a Special Issuance, was issued in 2006. When he declared that he had an internal defibrillator in 2007, his medical certificate was denied.

What they Found

100LL was found in the engine-driven fuel pump, the hose from the pump to the servo, in the servo and in the fuel selector. The fuel selector was removed from the airframe and air pressure applied to the valve fuel outlet port. Air did not pass through the selector valve when the handle was in the position marked "LEFT". The handle was moved to the "OFF" position, then back to the "LEFT" position, and it remained blocked. However, air passed freely when the handle was placed in the "**RIGHT**" position. The handle moved normally with no unusual resistance.

The valve was disassembled, and investigators found a spongy mass, of reddish fibers consistent in appearance with red cotton shop towel fibers. The mass was about 5/8 x 3/8 inches. Fibers also covered about 5% of the fuel drain screen.
The NTSB could not find the plane's maintenance logs.

Shop rag debris found in the Fuel Selector

Frank Setzler, owner of Chandler Aviation, a Mooney Service Center, commented:

"Believe it or not, I have found what is left of shop rags inside of gear struts and meshed into the oil pick-up screen of the engine driven oil pump. The latest find was inside the intake pipe of an Acclaim. (We remove these pipes to clean the Fuel Nozzles).
I have fixed holes in the engine cowling because a screwdriver had been left in the engine compartment. It made its way to the alternator pulley, which flung it into the cowling. I've found a large flashlight in a Mooney fuel cell under the fuel sending unit. Not surprisingly, the fuel gauge would never show less than ½ fuel. Go figure. We also repaired a prop because a mechanic left his pliers in the cowling. When they fell out, the pliers hit the prop."

Aircraft owners should thoroughly check out the shop and their mechanic.

Minimum Safe Altitudes (FAR 91.119)

Fly at an altitude that will allow a safe emergency landing without hazard to people or property on the surface.

Don't be a Low Rider

Fly as high as possible and in the event of a forced landing, this will give you a chance to make a safe off airport landing.

When the engine quits, the first three areas of concern are: 1. Attain Glide Airspeed and look for a suitable landing spot. 2. Switch the Fuel Selector to the other tank. 3. Verify Magneto at BOTH.
If that fails to restart the engine, Bob Hoover taught that you should

"Fly the thing as far into the crash as possible."

Accidents happen and yes, they are preventable. Hopefully we can learn from the mistakes of others.

Fly Safe, Jim

Installment #5

by Brian Lloyd, CSEL/CMEL, CFI/CFII

I just returned from the perfect Mooney flying holiday! I got 20 hours of what the Mooney is perfect for doing: traveling. A trip to Albuquerque morphed into a trip covering much of the Southwest in 8 days with stops at eight places in four states.

It started out as a trip to Albuquerque where I was to be the speaker at an Angel Flight fundraiser. The fundraiser, called Brews and Props, raises money by having local artists turn propellers into works of art which are then auctioned off to raise money for Angel flight. Some of the propellers are stellar and command high prices. At least one went for over $1,000. My girlfriend Faye bid on three and got two. We are looking forward to having them displayed in our home.

The interesting part of the story is how I came to be asked to talk about my flight around the world in my 231 “Spirit”. It started about a year ago when a friend, Doug “Opie” Dodson, with whom I regularly fly formation, called me and asked that I fly over to his place because he had something to show me. When I arrived, he had this sculpture of a pink flamingo, leaning against a propeller, wearing a leather helmet and goggles, with palm trees and an airplane on the base. The name of the sculpture was, “Flamilia Airheart”. Doug told me to look closely at the airplane on the base. The N-number was N916BL, my Mooney.

Being the curious type, I called Patti Farley, the coordinator of Brews and Props to ask how the sculpture came to have my N-number on it. Patti and I talked for a while and she promised she would ask the artist and then get back to me. She called back a few days later and said she couldn't find out where my N-number came from on the sculpture, but she thought that a lot of people would like to hear about my flight around the world and would I consider being the guest speaker? I said yes.

November rolled around and it was time to head off to Albuquerque for Brews and Props. I realized that I hadn't done much instrument flying recently, so I spent a couple of hours with my simulator, the FlyThisSim Touchtrainer, to make sure I was still proficient. This time of year, you just have to expect some IMC.

It was perfect 231 flying conditions. Legs were long enough to justify going up high. The days were cool enough that performance was good, even at max gross weight. My wings hold 115 gallons, enough for 11 hours of flying, so I tend to tanker fuel to be able to avoid expensive fuel stops. I almost always start a trip at max gross weight, with fuel taking up all my extra load capacity.

Up at 16,500' with the cannulas on, the flight was smooth and the increase in TAS offset the increase in headwinds, making it still faster to climb and cruise there. 14,000'-18,000' seems to be no-mans-land. Normally aspirated aircraft are flying at lower altitudes and the turbines are much higher. I normally have that airspace all to myself. Once I get above 16,000' the 231 gains most of its TAS advantage. 16,000' to 21,000' is the sweet spot for cruising.

On the way to Albuquerque, we stopped in Odessa for lunch with friends before continuing. Our arrival in Albuquerque was uneventful, other than the final approach. I was asked by approach control to maintain maximum forward speed on final because he had a couple of airliners sequenced behind me. This meant I was not going to be doing my approach at my usual 72 knots. Since I was going to be landing on a long runway and didn't need to turn off early, I opted for a no-flap approach at 120 knots. Yes, you can safely fly an approach at 120 knots in a Mooney 231, IF you keep the flaps retracted. Gear speed is 130 knots, so I was safe there. I stayed on the glide slope at 120 knots until just before crossing the runway threshold, at which point I pulled the power to idle and patiently rounded out into the flare. As you can imagine, the 231 floated about 2,000 feet down the runway before touchdown. With the flaps retracted the nose was high enough that touchdown was nicely on the mains. Light braking made for a turn off at the high-speed taxiway about 5,000 feet down the runway.

Parking at Cutter in ABQ is sort of like coming home. I have been coming there for 50 years. I mentioned that fact and the FBO manager waived the ramp and parking fees and gave me a substantial break on the fuel price. Clearly, it pays to be a good and faithful

customer, at least at Cutter. I really didn't need fuel (I still had over 70 gal in the tanks) but it seemed prudent to have more. After all, I believe the only time I have too much fuel is when the runway is too short, or the airplane is on fire. (I am taking a bit of a liberty to make a point. Don't operate over the certified max gross weight for your aircraft.)

Brews and Props was fun, and Faye bid successfully on two of the props. After my talk, they presented me with a miniature version of Flamilia Airheart, which will have a place of honor in my office.

The Southwest was dominated by high pressure behind a cold front, so the days were cool, skies were clear, and upper-level winds mild. Sunday morning, we were off to Santa Fe, just because. We stayed in a nice little cottage hotel downtown. We had dinner with friends at a brewpub. Monday we were off to the Grand Canyon.

I love the Grand Canyon. I think it may be my favorite place in the world. Usually, when I make the trip to the West Coast, I find a reason to stop at the Grand Canyon ... just because. I parked the Mooney, caught a cab out to the rim, and we spent two days walking our legs off. We managed to rack up about 15 miles of walking in two days. It is slow going because about every 200', the view changes and I must stop in wonder.

My first memorable trip to the Grand Canyon was in 1974 and it also involved a Mooney. (Prior to that I was a young child with my parents.) I knew I was going to be entering the USAF Academy in a month, so I took the club's M20C, my girlfriend, my best friend, and did a tour of the Southwest which included a stop at the Grand Canyon. The three of us hiked down the Bright Angel trail to

the overlook and back up in one day. Oh, what we can do when we are kids!

Funny thing, that same M20C popped up in my life again when I was asked to provide transition training to a new Mooney owner. There is a warm feeling when a Mooney from 40 years in your past comes back again.

There is a warm feeling when a Mooney from 40 years in your past comes back again.

After the Grand Canyon, we stopped in Prescott to see Faye's sister. We stayed at the Hassayampa Inn; a 100-year-old hotel that still has its original manually operated elevator. The rooms are nicely modernized, but the hotel retains its hundred-year-old charm. I recommend it if you are passing through Prescott.

The next day we were off to Ridgecrest, California to meet my new granddaughter. We traversed the MOAs and restricted areas, coming from the East over Trona. Most pilots don't know that there is a VFR corridor that gets you to Inyokern without having to go the long way around Edwards AFB to the South. LA Center will check with Joshua Approach to confirm that the Trona Transition is available. It cuts over half an hour off the trip.

Yes, as a new grandfather, I am now officially old. She is, of course, the most beautiful baby in the world, an opinion I don't expect anyone else to share. We stayed on-base at China Lake NAWS where my son, Seth, is stationed. He flies F18s and is a project manager for various weapons testing projects. Yeah, I am proud of him, his lovely wife, AND of my new granddaughter.

At that point, Faye and I had no more plans for the trip. I wanted to head up to see my cousins in Eastern Washington (landed in Lewiston, Idaho). Faye's niece trains cutting horses and does an amazing job and Faye wanted to see her compete in Phoenix. My cousins were heading out to Spokane so they wouldn't be around. That set the schedule. We were going to Phoenix, back across the military airspace toward Las Vegas and then angling down past Prescott to Phoenix and Chandler Municipal.

I did run into a problem going into the Phoenix Class-B. Foreflight does bring up the VFR TAC when you zoom in, but I couldn't get the legends up, so I didn't have the correct verbiage to ask for the normal N/S VFR transition. So, as it says (with the route verbiage in front of me now) I asked for vectors. The controller was not amused. I was told to look it up and then get back to him. I could see all the fixes on the map and hear what was being assigned to other aircraft. It seemed really straight forward. I am an experienced instrument pilot and can copy an IFR clearance no matter how long it is. In this case I totally botched copying my VFR clearance into the Phoenix class-B. I had to ask for a repeat.

That does bring up a point with Foreflight. It is so comprehensive that some things are just not where you expect to find them. I knew about layers and have layer switching turned on, but not for the legends. The time to figure out some strange feature of Foreflight is NOT when you are getting ready to blast VFR into class-B airspace. IFR flight really is easier than VFR in many cases. Going into a class-B is one of them. I pulled it off and then spent some time with Foreflight to chase down the requisite feature. I know where it is now. Hopefully I will remember it later.

Not all Class B airspaces are created equal

As long as we are on the subject of class-B airspace, I have found that different class-B airspaces have different personalities. Some are laid back, some are aggressive, some are purely professional, and some are openly hostile. In this case Phoenix was no-nonsense and wasn't going to cut me any slack despite the notation that, upon telling ATC that you are not familiar, ATC will provide vectors. SoCal and San Francisco are quite easy to deal with. In LA, you had better be familiar with the VFR corridors on the TAC chart before calling SoCal. New York is … well, New York.

We made it to Chandler, unscathed. Apparently, I did get the clearance correct. We landed, parked the plane, got an Uber to the hotel, then we were off to dinner with Faye's niece and her family.

You can navigate by Dead Reckoning, by I Follow Roads, GPS, VFR and IFR, but I navigate by Fuel Price

The next morning, it was out to the airport for breakfast with Mike, a long-time pilot friend who lives in Phoenix. We then headed back to Texas. I do navigate by fuel price and I was finally down to needing to add fuel. Chandler was expensive, but just a little South, about a 10-minute flight, was Ak-Chin Regional with a fuel price more than a dollar-per-gallon less. Because of their reasonable fuel prices, I have been into Ak-Chin several times while ferrying airplanes.

We landed at Ak-Chin and took on enough fuel to make it all the way home with comfortable reserves, even though I had decided we were going to land near El Paso for lunch and to recheck weather. A cold front was moving through Texas, making ice and low ceilings likely. I don't fly in ice and my home field has no instrument approach, so stopping near El Paso and possibly seeing friends there, seemed like a good idea. With the decisions made, we went back out to the plane to head East.

We taxied out and waited for a landing aircraft. There, we had a Mooney Moment, and not a particularly good one. I had finished my run-up, radios were programmed, and we were sitting at the hold short line

waiting for the Skyhawk, when another Mooney announced that he was on right base for runway 04. This got my attention because this guy had just busted the only FAR associated with traffic patterns at non-towered fields. That is, all turns must be in the published direction for the runway, left turns by default. So, I thought, what else might he do? The Skyhawk announced that this landing would be a full stop. The Mooney announced he was on final. I could see that it was a very pretty J model… and he was going like a bat-out-of-hell, probably 90 knots on final, rapidly closing the gap with the Cessna which was still on the runway. As he blazed past us, I told Faye that there was a very good chance she would get to see the infamous Mooney Bounce.

As the J screamed toward the Cessna that was just exiting the runway, the pilot tried to force it on the ground … right on the nosewheel. Bounce. Down it came on the nosewheel again. BOUNCE! You could see the elevator flailing up and down. I had visions of a nose gear collapse and us getting stuck at Ak-Chin until the J could be scraped off the runway. Fortunately, he managed to get it to slam down on all three, so the third bounce didn't really develop. The J exited the runway at the end, right behind the Skyhawk. I breathed a sigh of relief and resisted the urge to say something on the radio. If this had been my home airport and I had the time, I probably would have introduced myself to the pilot and tactfully asked if he would like to fly with me at some point. I have had good luck with that approach and been able to help several pilots improve their landing technique.

With the Oxygen back on, we are quickly up to 15,500'. As we approached El Paso from the West, we could see the higher clouds and weather to the Southeast. It was looking pretty good in the direction we wanted to go. It was quickly clearing to the North, so I figured that after the stop for lunch, we should be able to continue home. We landed at Doña Ana in Santa Teresa, New Mexico, borrowed the courtesy car, and headed over to the diner for lunch. I watched the weather lifting and clearing out, so I decided we could head home after all. We headed to Llano, Texas, which has the least expensive fuel I have seen, at $3.75/gallon. I decided to stop there and refuel before the last 25-minute leg home. The weather was cold, but crystal-clear; no problem making it home. It was a long day with 4 hops; two long and two short. I was glad to be heading for my own bed.

In eight days and 20 hours of flying, we covered most of the Southwest in my 231. We couldn't have done it any other way. Isn't this why we own our Mooneys?

I don't really have a sacred cow to kill today, but I do have a common sense admonition that, as my J friend at Ak-Chin demonstrated, needs to be said. I think I can state it as a sacred-cow statement.

Five extra knots for your wife and one extra knot for each of your kids is not safer. You must fly your Mooney on final at the proper speed for your gross weight.

Faster is not better or safer. Check your POH. Most of the Mooney POH's have recommended approach speeds for different gross weights.

Five extra knots for your wife and one extra knot for each of your kids is not safer. You must fly your Mooney on final at the proper speed for your gross weight.

Here is the one for my K:

Landing Weight (lbs)	Approach Speed (mph)	Approach Speed (KIAS)
2900	87	75
2800	85	74
2700	83	72
2600	82	71
2500	80	69
2400	78	68
2300	76	66

The fact that Mooney puts that into the POH means that you really should heed their data. When coming in fast with the flaps extended and then trying to force the airplane onto the ground before it is ready to quit flying, you are setting yourself up for the Mooney Bounce. Just go-around. Go-arounds are free. On the first bounce, cob the power, stabilize the pitch, clean up, and go-around. Don't even think about it. Scraping pieces of your airplane off the runway is a LOT more embarrassing than a bounce followed by a go-around. Trust me, breaking your beloved airplane is a LOT harder on the ego than having to go-around.

Happy Holidays to all my fellow Mooney pilots!

Fly safely. Fly better. Have fun!

Exploring ways to Fix the Pilot's Mind

Gear ..... Down

Fuel ..... Fullest Tank

Mixture/Prop .... Forward

In our December 2019 issue, contributor Wally Moran wrote an article called "GUMPS is Not Enough". Since GUMPS alone is not working, we should make a placard with a list of about three or four items and put it in a spot where it's easy to see when looking forward. In addition, Wally physically touches his list/placard and says the items out loud. Now, if you like to do the GUMPS check, feel free to do that as many times as you like, but complete your **WRITTEN** list/placard before landing.

I agree with Wally and I'm all for trying anything that will prevent me and others from experiencing a Gear Up Landing. In fact, I am passionate about preventing Gear Up landings throughout the world.

I added a placard in my Mooney, and I thought, "Halleluiah! We have finally found the universal solution that will prevent pilots from being human, at least while landing."

A few days later, I read about a Mooney that recently landed with the gear up in Winslow, Arizona. Someone took a picture of the instrument panel and the ironic photo found its way into the safety section of the December Arizona Pilots Association newsletter.

The Winslow pilot was obviously concerned about missing the landing gear, because he or she had installed a homemade GUMPS placard on the instrument panel. I'm not sure if the pilot physically touched the list/placard and said the items out loud (per Co-Editor Phil Corman's article last month). Both actions are important if one wants to avoid a gear up landing. Fortunately, the only injury was to the pilot's ego.

As for me, prior to landing, I'll continue to touch my new list and say out loud, "Gear – down, Fuel – fullest tank, Prop and Mixture – full forward". However, if I should find myself screeching to a halt without the benefit of tires, you can bet that before I exit the cockpit, my short checklist is coming with me. Dang photographers!

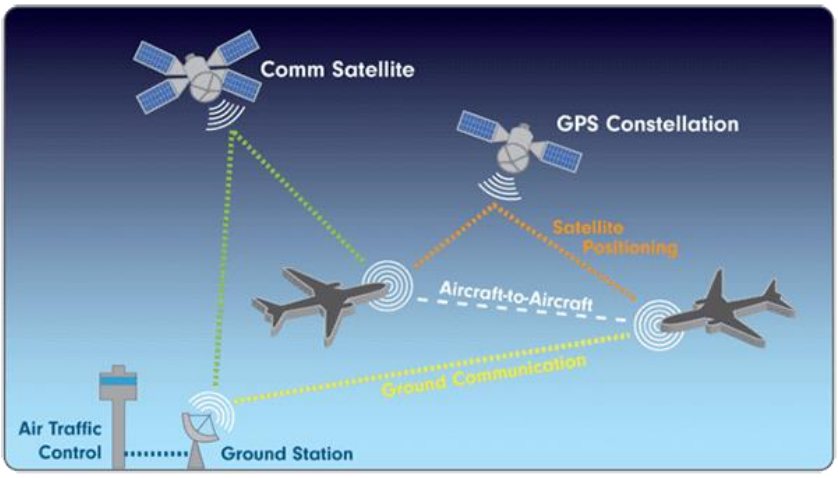
Fly Safe, Jim Price

How much do you know about ADS-B weather?

1. What is the update interval for ADS-B regional radar imagery?

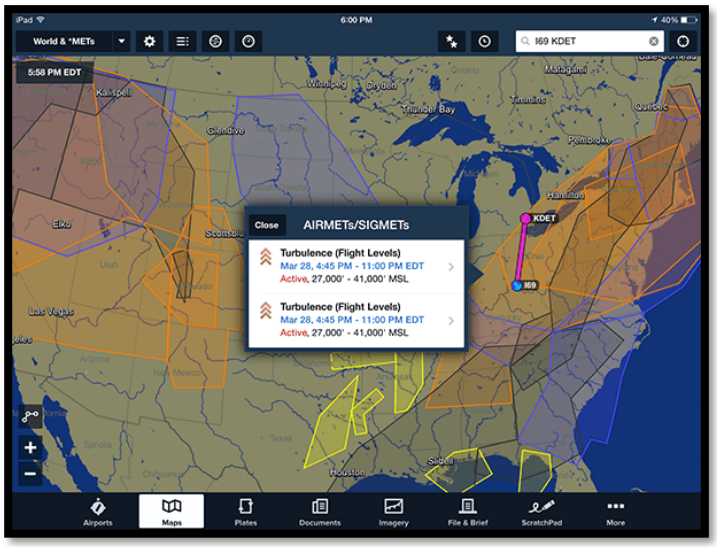
FAA guidance in the A.I.M. and the latest update to the FIS-B Advisory Circular state that the ADS-B network transmits the regional radar data every 2.5 minutes and **updates the actual imagery in 5-minute intervals.**

The initial processing and transmission of next generation weather radar (NEXRAD) data can take several minutes. This means that pilots should assume that data link weather information will always be a minimum of 7 to 8 minutes older than what is shown on the timestamp on the display.



2. ADS-B weather is broadcast over which frequency band?

There are 2 frequency band components of the ADS-B system, 978 MHz and 1090 MHz. While traffic data can be broadcast on both frequencies, the weather component is only available on the 978 MHz frequency. That's because 978 MHz is a broader band.



3. Is satellite imagery available over the ADS-B weather datalink?

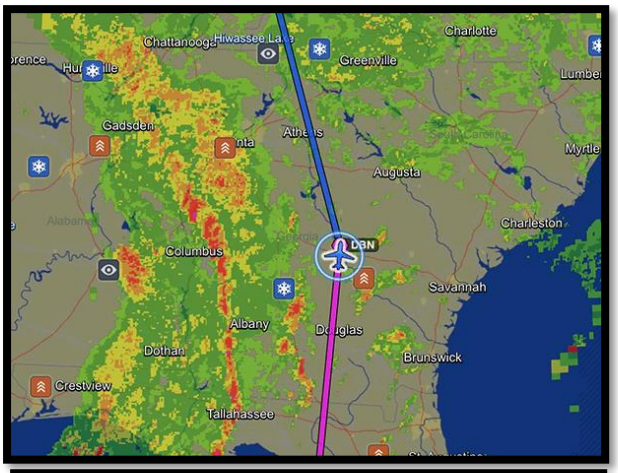
No. However, the following products are available over the ADS-B weather system: radar imagery, lightning, METARs, TAFs, PIREPs, NOTAMs, AIRMETs/SIGMETs, Cloud Tops, Turbulence, Winds Aloft, Freezing Level, and Special-use airspace status. Satellite imagery is currently not displayed.

4. Must you be equipped with an ADS-B OUT transponder in order to receive ADS-B weather.

Nope. Unlike ADS-B traffic, ADS-B weather is continuously broadcast from the ground stations across the U.S. You can receive the ADS-B broadcast with a portable receiver and mobile tablet, like an iPad– no panel mount equipment is required.

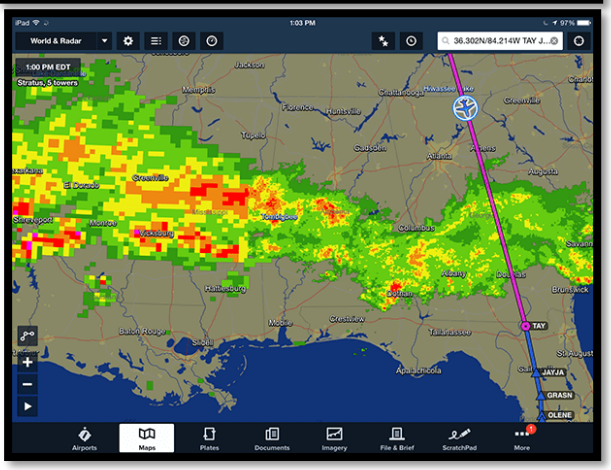
5. What is the coverage area for ADS-B weather reception?

ADS-B weather is broadcast from ground towers and requires you to be within line of sight of the towers. The system currently provides coverage for the most of the lower 48 states, the Gulf of Mexico, Puerto Rico and the Virgin Islands, and partial coverage in Hawaii and Alaska.



6. What is the official term for ADS-B's Datalink weather?

The weather component of ADS-B is called Flight Information Service - Broadcast, or FIS-B for short. TIS-B (Traffic Information Service - Broadcast) is the name of the traffic service.



7. How far out in front of your present position will you see the high-resolution regional radar imagery?

There are different service tiers for ADS-B towers. The "look-ahead" range of regional radar is 150NM for low-altitude towers, 200NM for medium-altitude towers, and 250NM when receiving from high-altitude towers. The lower-resolution national radar imagery will be displayed for the area outside this radius.

8. Are you required to have ADS-B IN weather reception capability when in the National Airspace System?

Nope!!
You are required to have an ADS-B OUT transponder when flying in certain types of controlled airspace. ADS-B IN weather capability, however, is completely optional.

There is a big inventory of serviceable airframe parts, including wings for M20C, E, F, G, J, K & R models, empennage assemblies, fuselages, rebuilt controls, rudders, elevators, ailerons, flaps, cowls, engine mounts, landing gear and small parts.

Paul Loewen is offering them online, or by phone. The website is www.LoewensMooneySalvage.com, and he can be contacted in Lakeport, California at **707 263-0462** or by cell at **707 272-8638.** Email is PaulLoewen98@gmail.com. The used inventory is also still available through LASAR Parts at 707. 263-0581

Click Here to Test/Verify Your ADS-B Out

The Mooney Maintenance Puzzle

Click here

Download Mooney's 100 Hour Inspection Guide

Search Mooney's Service area for Service Bulletins (SBs) and Service Instructions (SIs) applicable to your model

Click here

Search the FAA database for Air Worthiness Directives (ADs) applicable to your model

Click here

Click here

Download and search LASAR's Airworthiness Directive (AD) Log – all models

LASAR

Fanatically Mooney. Exceptionally Fast.

Ask the Top Gun

Tom Rouch
Founder of Top Gun Aviation, Stockton, California

Send your questions for Tom to TheMooneyFlyer@gmail.com

Question: With Mooney closing down for a second time in a month, I am concerned about replacement parts for my Mooney.

As an MSC, what parts would become difficult and/or very expensive to get without the Mooney factory in business?

Answer: The question about parts with Mooney closed is going to be really tough. It will be especially hard on us as a business that is based on Mooney parts. We are talking about many airframe parts that are made by Mooney. I would hope that someone would take up aftermarket parts, but because of the small market, I think it's doubtful.

Owners will be directly affected when something breaks on their plane and it's not available. Salvage yards will be a source, and of course, that cost will really go up. You asked what parts. Just look at your plane and eliminate everything made by another manufacturer and the rest is "Mooney parts".

My question is, will there be such a thing as a "Mooney Service Center"????

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★ High Performance Cross Country
★ Go Anywhere - Go Any Place - Go Any Time
★ Popular Rental Aircraft

1. Retractable gear (electric standard)
2. High performance (top speed 172 mph)
3. Comfortable (4 people and baggage)
4. Lowest initial cost
5. Lowest operating cost (less than any other high performance retractable geared aircraft on the market)
6. Easy to fly (touches down at 57 mph)
7. Positive Control flight stability
8. IFR planned panel

For complete information on performance, operating costs, and specifications write

MOONEY

MOONEY CORPORATION KERRVILLE, TEXAS

Flight Service's new mobile-friendly site for iPhone and Android

You've likely seen the headlines that HIWAS broadcasts are shutting down in January, in part because pilots now have free access to near real-time text and graphical weather updates over the ADS-B system. HIWAS is an antiquated service and its termination will have a greater effect on student pilots studying for the Private Pilot knowledge test compared to how it impacts our everyday flying, but it is good to see FAA removing unused services in addition to adding new ones as part of the NextGen transition.

What has been overlooked though are recent improvements coming from Leidos, the FAA contractor responsible for running Flight Service. They recently released a new mobile-friendly version of the 1800wxbrief website, making it much easier to use on iPhone and Android devices. The site loads remarkably fast and is very easy to use. Grab your phone and head over to 1800wxbrief.com. You can access some of the basic features right away from the menu at the top left of the screen without needing to log in first. To get the most out of the site though, you'll want to sign in with your Flight Service account (registration is completely free if you don't have one).

It then takes just one tap of the Map button from the redesigned dashboard and you'll be looking at an interactive display depicting text weather reports, radar imagery and PIREPs. Just like with aviation mobile apps, a Layers menu is accessible from the top right of the screen. It allows you to customize the map and view additional overlays like AIRMETs, satellite imagery, TFRs, icing probability/severity forecasts and much more.

You can enter a basic flight plan and then send the preliminary flight plan data right over to the ICAO flight plan filing feature to continue that process.

The Weather Charts section provides a comprehensive listing of just about every basic and advanced weather graphic available, including surface analysis, low and high-level progs, cloud top/bases and thunderstorm forecasts.

There's a full airport directory here too, with more information than you ever wanted to know about every airport in the U.S.

There are several other features on the mobile site too, including quick access to METARs/TAFs/NOTAMs for favorite airports, standard and area weather briefings and flight planning. After first launching the site, we'd recommend saving a shortcut to your home screen, which will place a unique app icon for quick access. To do this, tap the center arrow at the bottom of the Safari menu bar, scroll down the list of options and select "Add to Home Screen." You'll then see the Mobile Flight Service icon right on your home screen, as if it were an app.

Garmin's Fourth Generation GPS/NAV/COMM $12,500 & $18,00

Garmin has introduced the GTN 650Xi and GTN 750Xi, the next generation of in-flight navigation technology.

Designed as a direct slide-in upgrade to the previous generation GTN 650/750, the all-in-one GPS/NAV/COMM can integrate with new or existing remote-mount equipment, such as a transponder or audio panel.

The GTN 650Xi and GTN 750Xi have received FAA approval and are available immediately for fixed-wing, single-engine and multi-engine piston, turbine and experimental aircraft, with helicopter and business aircraft approvals soon to follow, company officials added.

Modern processing power and state-of-the-art hardware within the GTN 650Xi/750Xi supports faster map rendering and smoother panning throughout the touchscreen navigator.

Preserving the same form factor as the previous generation GTN 650/750, the 6" tall GTN 750Xi and the 2.65" tall GTN 650Xi offer a touchscreen design with a dedicated direct-to button.

The GTN 650Xi/750Xi offer advanced navigation functions, including ILS and LPV instrument approach procedures, as well as visual approach guidance.

Based on a published glide path angle or a 3° glideslope from the threshold of the runway, visual approaches also take into account terrain and obstacle clearance to assist pilots in flying a

stabilized approach to the runway in visual flight conditions. Approach types that incorporate radius-to-fix (RF) leg types are also supported by the GTN Xi series.

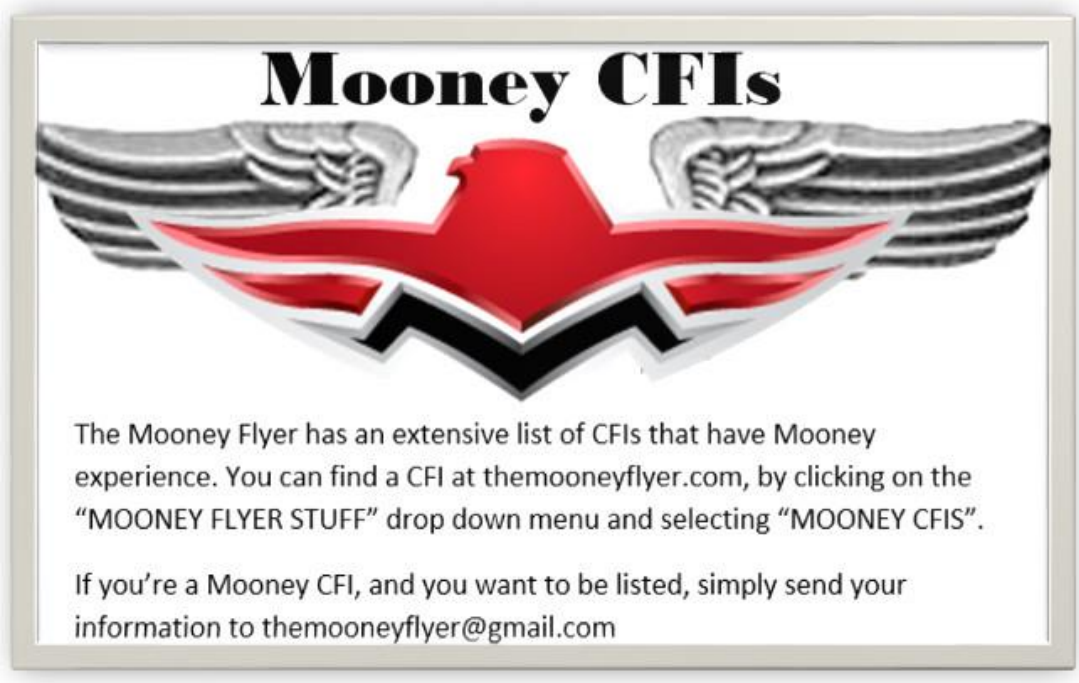
Additional capabilities include the option to add a published or custom holding procedure, vertical navigation (VNAV), graphical flight plan editing on the moving map and more.

Geo-referenced instrument approach procedures can be overlaid on the map page, offering situational awareness when transitioning from the enroute to approach phase of flight.

Terrain alerting is included within the GTN Xi series and further enhances situational awareness by using its internal terrain and obstacle database to provide audible and visual terrain proximity alerts, including, “terrain ahead, pull up” and “obstacle ahead, pull up.” Helicopter Terrain Awareness and Warning System (HTAWS), TAWS-A and TAWS-B are available as options.

Wireless connectivity is available with the optional Flight Stream 510, allowing pilots to connect their mobile devices running the Garmin Pilot and FltPlan Go applications to the GTN 650Xi/750Xi. When connected to the navigator, pilots can save time in the cockpit by wirelessly transferring aviation databases and flight plans from their mobile device to the navigator. Flight Stream 510 also supports the sharing of traffic, weather, GPS position information and more. The GTN Xi series is also compatible with the Garmin navigation database.

The GTN 650Xi and GTN 750Xi have received FAA Supplemental Type Certification (STC) and are available immediately through Garmin Authorized Dealers for a suggested retail price **of $12,495 and $17,995 respectively.**



New Features for Aspen's Evolution E5

Starting at $4,995

Aspen Avionics has unveiled new features and functions for its Evolution E5 Electronic Flight Instrument (EFI), including traditional horizontal situation indicator (HSI), outside air temperature, true air speed, wind direction and speed, and WAAS GPS mode annunciations.

The Evolution E5 EFI is approved for both IFR and VFR flight.

When introduced in 2018, the Evolution E5 EFI combined an attitude indicator plus DG/CDI into a single display. After receiving feedback from pilots and installers, Aspen responded with this new software release for those who prefer a more traditional HSI.

Aircraft owners who already own Aspen's Evolution E5 can update their current display through an Aspen authorized dealer who will enter the change with a logbook entry.

New E5 displays will begin shipping immediately with the HSI feature.

Aspen also has developed optional software features which are available for $495, including:

- True Air Speed (TAS)
- Outside Air Temperature (OAT)
- Wind direction and speed
- WAAS GPS mode annunciations

The STC'd non-TSO baseline Evolution E5 consolidates attitude indicator plus HSI into a single display with a rechargeable backup battery. It also includes Global Positioning System Steering (GPSS), air data computer and Attitude Heading Reference System (ADAHRS). Additionally, the Evolution E5 enables owners to remove their vacuum system and other back up indicators, according to company officials.

Like all Aspen displays, the Evolution E5 EFI is configurable and upgradeable, company officials note. As a pilot's needs grow, the E5 can also be converted to the Evolution Pro MAX, which enables owners to add software options like Synthetic Vision and Angle of Attack.

The Evolution E5 EFI is approved for IFR flight when installed with a panel mounted IFR GPS. When installed without a panel mount GPS, the E5 EFI is approved for VFR flight only.

New Garmin GI 275 replaces several Legacy “Steam Gauge” Flight Instruments

Garmin has introduced the GI 275, an electronic flight instrument that directly replaces the common 3.125” legacy primary flight instruments in the cockpit.

These include the attitude indicator, attitude directional indicator (ADI), course deviation indicator (CDI), horizontal situation indicator (HSI), and engine indication system (EIS).

The GI 275, which can also be installed as a standby to a number of glass flight displays, is available with a 60-minute back-up battery.

It’s also compatible with a variety of third-party autopilots and does not require a separate interface adapter, further reducing installation labor.

The GI 275 has received FAA approval and is available immediately for installation in more than 1,000 single-engine and multi-engine aircraft models.

Options include the ability to display CDI, HSI, and engine information. The GI 275 is also capable of displaying multifunction display-like features, such as traffic, weather, terrain, SafeTaxi airport diagrams, optional Synthetic Vision Technology, and more.

Prices:

- Attitude Indicator: $3,995
- HSI: $4,295
- CDI: $3,195
- MFD: $3,195
- EIS: $5,295

Taplock One+ Protects Your Assets with Your Fingerprint $99

This padlock allows users to access their items in 0.8 seconds and has an adaptive algorithm that allows the lock to become faster and more accurate with each use.

The Tapplock one+ can store up to 500 fingerprints, allowing allow multiple users to access the lock without having to pass along a combination or key.

The Tapplock app allows you to track who opened the lock and when, or to grant mobile access via a remote unlock feature.

The lock's battery lasts up to a year off a single charge, which equates to around 3,500 unlocks per charge, and users can check the remaining power using the Tapplock app. The lock also blinks red when the power is below 10%, indicating it is time for a recharge. Learn more at https://tapplock.com/

Jim Ruttler: On a mission

It started four years ago when Jim, his wife, and two kids were flying home from Oshkosh. They were breathing from a portable oxygen tank that was strapped to the back of one of the front seats. Jim knew they were low on oxygen, but it was difficult to manage, with a tiny gauge hidden by the storage bag and cannulas.

Over the middle of Washington State at 14,500 feet, the tank finally ran out. As Jim says, though, "you really don't notice because there is no practical difference in the feel of the breathing. We probably were out 15-20 minutes and I noticed that our younger son was sleeping. This worried me a little, so I passed around the finger pulse oximeter and both kids were very low, with the younger boy in the 70% range. We immediately wrestled the oxygen tank and saw that it was empty."

Jim immediately descended and landed at the Ellensburg airport to check on everyone. Fortunately, there was and have been no health impacts from this incident, but it concerned him deeply.

Because of this experience, Jim wanted more than luck to keep his family safe, so he and his wife Zu, started researching and developing technology to monitor health in flight. He believes that "Health monitoring . . . is as important, if not more important, than monitoring the temperature of your oil." Today, their company, Aithre, has a suite of Bluetooth Low Energy and iOS-enabled, always-on monitors.

Aithre Shield Carbon Monoxide Detector

$130.00

This easy-to-use app allows for precise monitoring without having to stare at a sensor.

Features:

- The free iOS app automatically connects to sensor – no pairing
- Monitor current CO ppm levels and 15-minute history
- The app provides pop-up messages and Siri voice alerts
- Works without the app - visual and audio warnings from Aithre Shield
- The rechargeable battery can be charged in flight
- 10-year sensor lifespan, with no calibration required
- Pressure and altitude insensitive

Includes mounting clips and USB charging cable.

Available at [MyPilotStore](#) **&** [Sporty's Pilot Shop](#)

Aithre Illyrian Smart Oximeter

$130.00

The Illyrian smart oximeter from Aithre obtains SPO2 readings using a thin sensor pad worn near the ear or on the forehead and then broadcast wirelessly using Bluetooth Low Energy to your Apple phone, tablet, or watch using the free Aithre Connect app. Illyrian provides continuous monitoring throughout the flight, and pop-up alerts let you know when to check the app; you can even get Siri notifications. Just place the Illyrian in between your face and your headset's ear seal, then plug it into the long-lasting portable power bank (included). As many as six Illyrian oximeters can be connected to the app at a time, so it's easy to monitor passengers as well as crew.

Features:

- Continuous monitoring of SPO2 and BPM, with 12 hours of trends
- Popup notifications and Siri alerts when SPO2 drops below 85% and 92%
- Customize notification levels to suit your preferences
- View SPO2 graphed against pressure altitude
- The app includes regular hypoxia risk testing with custom interval quizzes
- Connect up to 6 Illyrian oximeters to the app at a time
- Also compatible with Aithre Shield CO detectors
- Also compatible with Aithre Altus portable oxygen tank monitor
- Designed and made in Ketchum, Idaho, by pilots.

Includes:

- Oximeter sensor with BLE for data and USB for power
- Cable wrap for headset placement
- Sport headband for forehead placement
- USB power bank with small flashlight for many days of use
- Aithre Connect iOS app
- Aithre Connect WatchOS companion app

Available at [Sporty's Pilot Shop](#)

Aithre Altus Oxygen Tank Monitor

$350.00

Altus is the first monitor that wirelessly pairs to your iOS device to display pressure, flow rate, and time remaining. Just strap Altus to the outside of your oxygen bottle and plugin with the included high-pressure T-fitting. Your smartphone is now your convenient oxygen display.

Features:

- Siri voice notifications via a paired headset
- Detects pressure changes with a resolution of 10psi
- Updated pressure readings are sampled every 6 seconds
- Flow rate and time remaining are continuously calculated
- Pressure altitude sensor included to determine altitudes for oxygen use
- Receive reminders when you cross FAA levels that require oxygen (pilot, passenger levels)
- Set your own personal levels to trigger reminders
- Low oxygen warning provided when you drop below 500psi
- Long battery life with 4 AA batteries, monitored via the iOS app
- Includes high-pressure T-fitting so you can keep your manual pressure gauge as a backup

Works with Aithre Connect App
This free app, available for iOS devices, provides 15-minute history trend data plus pop-up and Siri notifications to your headset (if paired) when threshold pressure levels are crossed. You can even use the app to monitor carbon monoxide levels when paired to an Aithre Shield CO Detector (sold separately, product 6184A). Can also be paired with the Aithre Shield EX 3.0, to display information on experimental panels like the Garmin G3X and SkyView.

Includes: Altus with Velcro band, high-pressure quick-disconnect sensor, and high pressure-rated T-fitting expansion for 1/8" size ports (typical on SkyOx systems).

Available at Sporty's Pilot Shop

2020 SUMMER CONFERENCE & RETREAT

June 11th - June 14th, 2020
Sunriver Resort, Sunriver Oregon

Fly-In to Sunriver Resort Airport (S21)

✓ Fuel Discounts ✓ Low Tie Down Fees ✓ Hotel Room Discounts

Learn from some of the best Mooney and aviation experts in the country and enjoy a relaxing time with family and friends in one of the most beautiful resort locations in America.

Special Presentation By:
Don Maxwell

Don is regarded as one of the finest Mooney service providers in the country. This is a rare opportunity to hear from him in this type of setting so don't miss it!

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Companion Class for Non-Flying Passengers
Presented By: Jan Maxwell & Jolie Lucas
Get your flying partners "Right Seat Ready" with this fun & informative class

Win a brand-new Zulu 3 headset valued at $850

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Meet Other Pilots and Make New Friends!!

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Spatial Interior for your vintage Mooney

Simple, quick and effective repair methods add new life to cracked and discolored plastics. Optional STC approved lower side panels add space and elegance. Installed without screws will please any mechanic.

For details, visit:

www.jaegeraviation.com

Jaeger Aviation

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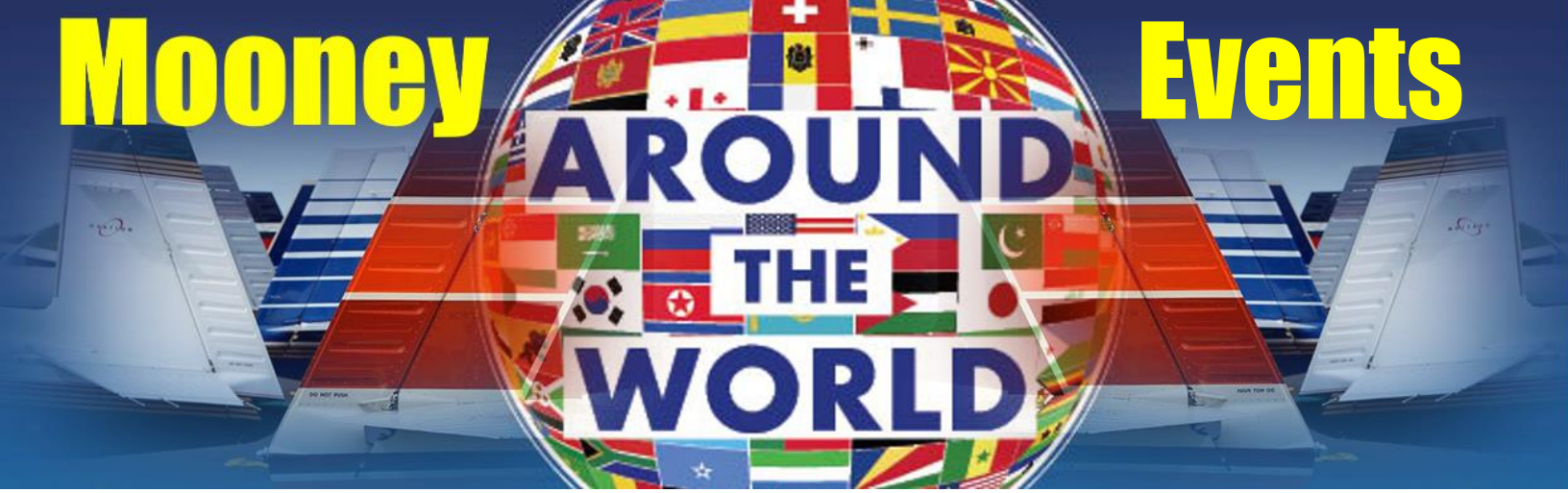
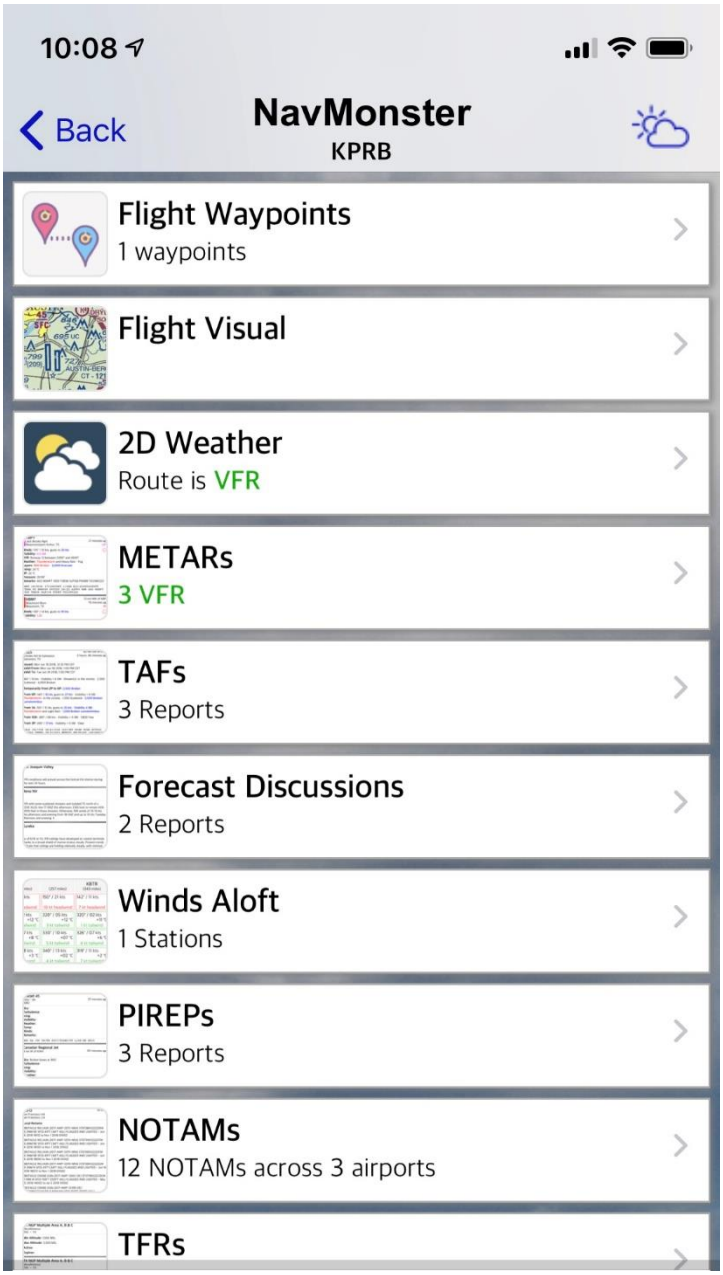


Florida Mooney Lunch Group	*Contact Dave at daveanruth@aol.com or (352) 343-3196, before coming to the restaurant, so we can have an accurate count. Events begin at 11:30* *February 9: Fort Pierce (FPR)* *March 14: Winter Haven (GIF)* *April 11: Flagler (FIN)* *May 9: Sebring (SEF)*
Mooney Caravan	March 27-29: San Marcos (KHYI) Mooney Caravan Formation Flying Clinic July 20: Formation Flight to AirVenture **For more info, see:** http://www.mooneycaravan.com/
MooneySafety.com MAPA Safety Foundation Pilot Proficiency Programs	Feb 7-9, 2020: Lakeland, FL Apr 17-19, 2020: Santa Fe, NM Jun 12-14, 2020: Ft Worth, TX Sep 11-13, 2020: Springfield/Chicopee, MA Oct 2-4: Wichita, KS **Sign Up at** https://www.mooneysafety.com/ppp-registration/
MOONEYSUMMIT	October 16-18: Tampa O'Knight (KTPF) CLICK HERE for details
Australian Mooney Pilots Association	March 2020: Annual General Meeting at Coffs Harbour. CLICK HERE for details
EMPOA	CLICK HERE for details
WEST COAST MOONEY CLUB FAST FLYING - FUN TIMES	June 11-14: West Coast Mooney Club Summer Fly-In, Sunriver (S21). CLICK HERE for details

TMF PRODUCT REVIEW

NavMonster App



A few weeks ago we stumbled upon the NavMonster App. Do you remember NavMonster.com from years ago? Well, the App runs on iPhone and iPad. It is an incredibly useful Weather App for pilots.

The main menu is depicted on the left. You can enter an airport or a flight plan and then peruse these selections.

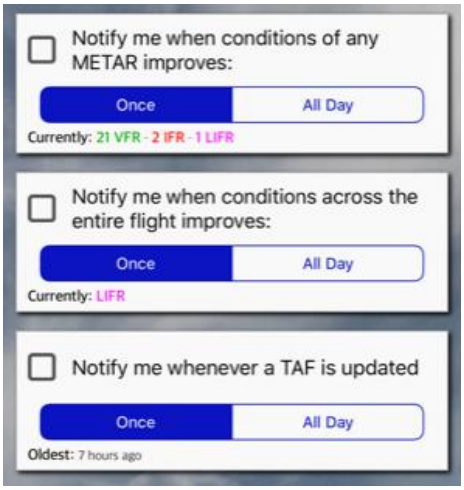
The FLIGHT VISUAL simply gives you a map depiction with color coded Wx that's similar to the colored dots in ForeFlight.

The Winds Aloft feature is very useful as it gives winds at all the interesting enroute altitudes and over varying time periods. This is useful when you're trying to select an optimal departure time.

PIREPS and NOTAMs that are on your route are easily listed for your review without having to search for them.

You can download NavMonster App on the Apple App Store or Google Play.

In the illustration to the left, you can see the cloud layers on your route, spaced out evenly so you can get a good picture of what you'll encounter. RED is IFR and BLUE is marginal clouds.



Here you can see all the METARS enroute with quick color coding for VFR, MFVR and IFR. But my favorite feature is that little cloud in the upper right-hand corner. Click on that and you will be notified when conditions change. Notification options are depicted in the illustration on the left.

FOR SALE Mooney Stuff

Parts for Sale

This Cowling was removed from a M20E and replaced with a M20J (201) cowling. The cowling is located at Fullerton Airport (KFUL) and is in excellent condition. Offers accepted

Contact: Bernard Lee – leebern@msn.com (562-865-2547)

P/N 310309-501
P/N 310309-502

These fairings are new and priced @ $280.00 each or $525.00 for both. Priced elsewhere @ $362.69 each.

Contact: Bernard Lee – leebern@msn.com (562-865-2547)

Bushing P/N 914007-003 - 2- Bushings in the original package @ $35.00 each. Priced elsewhere @ $45.00 each.

Bushing P/N 914007-005
1-Bushing in the original package @ $59.00
1-Bushing loose @ $50.00
Priced elsewhere @ $69.00 each

Contact: Bernard Lee – leebern@msn.com (562-865-2547)

Access Covers P/N 3000-901 (2-available) - 1-without nuts attached.
Make offer

Contact: Bernard Lee – leebern@msn.com (562-865-2547)

Parts for Sale

I have several Mooney parts for sale from a 1969 G model. Brand new voltage regulator (never used). Instrument light rheostat controller, cowling plugs and like new fuselage/cockpit and tail feather covers. G model POH. Contact me at Wilson Brown, located in Georgia, 678-469-6182.

1 Piece Belly Pan for M20J

I purchased this from Don Maxwell about 7/19/2017. I haven't got time to install it. Circumstances have changed and I would like to sell it for any reasonable offer. The belly pan is at the Cortez, CO airport (KCEZ). John Hutchison 47hutch@gmail.com

NEW Hangar For Sale (Camarillo KCMA) - $99,000

42'x36' in Great Condition

$218 a month covers electricity, etc.

Contact: Julie Ryan, 360.281.3488, Julierryan@comcast.net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