The Mooney Flyer

The Official Online Magazine for the Mooney Community

www.TheMooneyFlyer.com

November 2019

Editors

Phil Corman & Jim Price

Contributors

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

Departments

Features

If you love ***The Mooney Flyer*** and want to keep it healthy, just click on **the "Donate" button**.

Subscribe and we'll email you when a new issue is published.

Find all the back issues (starting in 2012) or use our powerful search engine to find a past article.

From the Editor

Phil Corman

Musings on the Future of General Aviation

I have been flying since 1978 and during that time, I have seen significant evolutions:

- Electronic/Glass Avionics
- Composite Airframes
- Explosion of Kit Planes
- Electronic Flight Bags

For me, since I am a solid Mooniac, converting to glass panels has had the most profound impact on my flying. We now take graphical GPS for granted. In fact, try selling your Mooney without one. Another is ADS-B. I personally think ADS-B is one of the best innovations from the government in my flying career. I have free weather and free traffic in my cockpit. It's another "try selling your Mooney without ADS-B". It has added significantly to the safety of flight. PFDs and MFDs have spurred on the elimination of ancient vacuum systems.

Another innovation is the Electronic Flight Bag (EFB), such as ForeFlight, WingX, etc. TheseEFBs have made GA flying safer by providing amazing tools, both during flight planning and in flight. The amount of excellent weather graphics, AIRMETS/SIGMETs, and Airport Information is a boon. It surely trumps calling FSS. Additional tools such as fuel consumption, engine out glide diagrams, and the like are also invaluable.

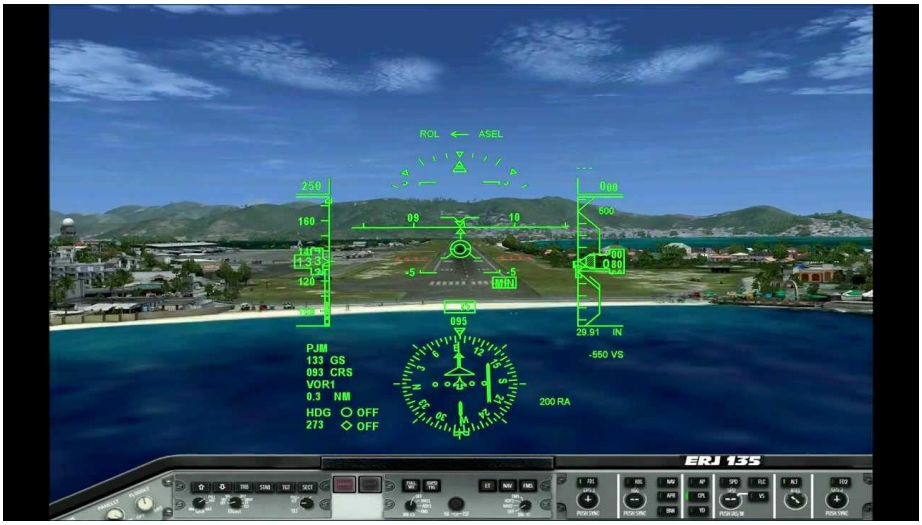
But all of this got me thinking about what's coming in the near future for GA. Here are some of my thoughts:

- Electric Airplanes
- Head-Up Displays
- Complete Autopilots, from takeoff to landing
- Artificial Intelligence

Electric airplanes are already almost upon us. The first uses may very well be for instruction, since training tends to be shorter in duration and relatively localized. Electric motors are coming down in cost and simply by comparing them to piston engines, they seem safer. Electric motors have no valves, fuel lines, pistons, internal pressures, etc. A main stumbling block is battery power and battery life, but there is an extreme amount of innovation taking

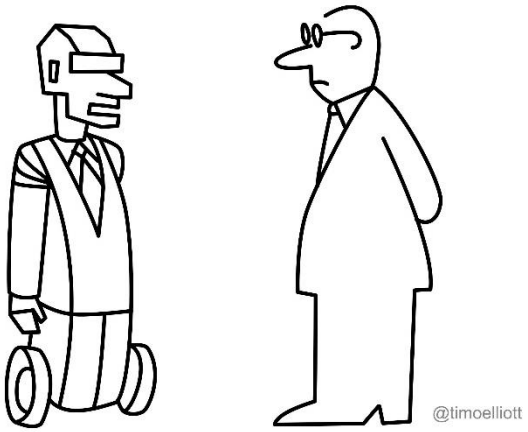
place, since the world is enamored with electric vehicles to reduce carbon emissions. Batteries will probably not see a Moore's law of improvements each year, but they are steadily improving.

Drones are leading the way, in a certain sense. They are electric and do not have a resident pilot. As they scale up, they start to look like full scale GA airplanes.



Head-Up Displays are another innovation that is already used in the military. As the costs come down, it will certainly show up in GA aircraft.

Artificial Intelligence (AI) will take the form of seeing issues in your airplane or its attitude before you do. Monitoring all your engine data in real-time, comparing the data with recent trends and then predicting a problem before it occurs. Imagine AI that recognizes your Mooney's key flight information, including angle of attack, brake horsepower, lift, skids, slips, etc., and then taking, or recommending action, before the situation becomes critical. When traffic is a conflict, the autopilot could take action, or the pilot could receive heading and/or altitude suggestions in order to maintain separation. There are a lot of items that we cannot process very well, that AI can monitor, detect, and resolve/recommend.



"The good news is I have discovered inefficiencies. The bad news is that you're one of them."

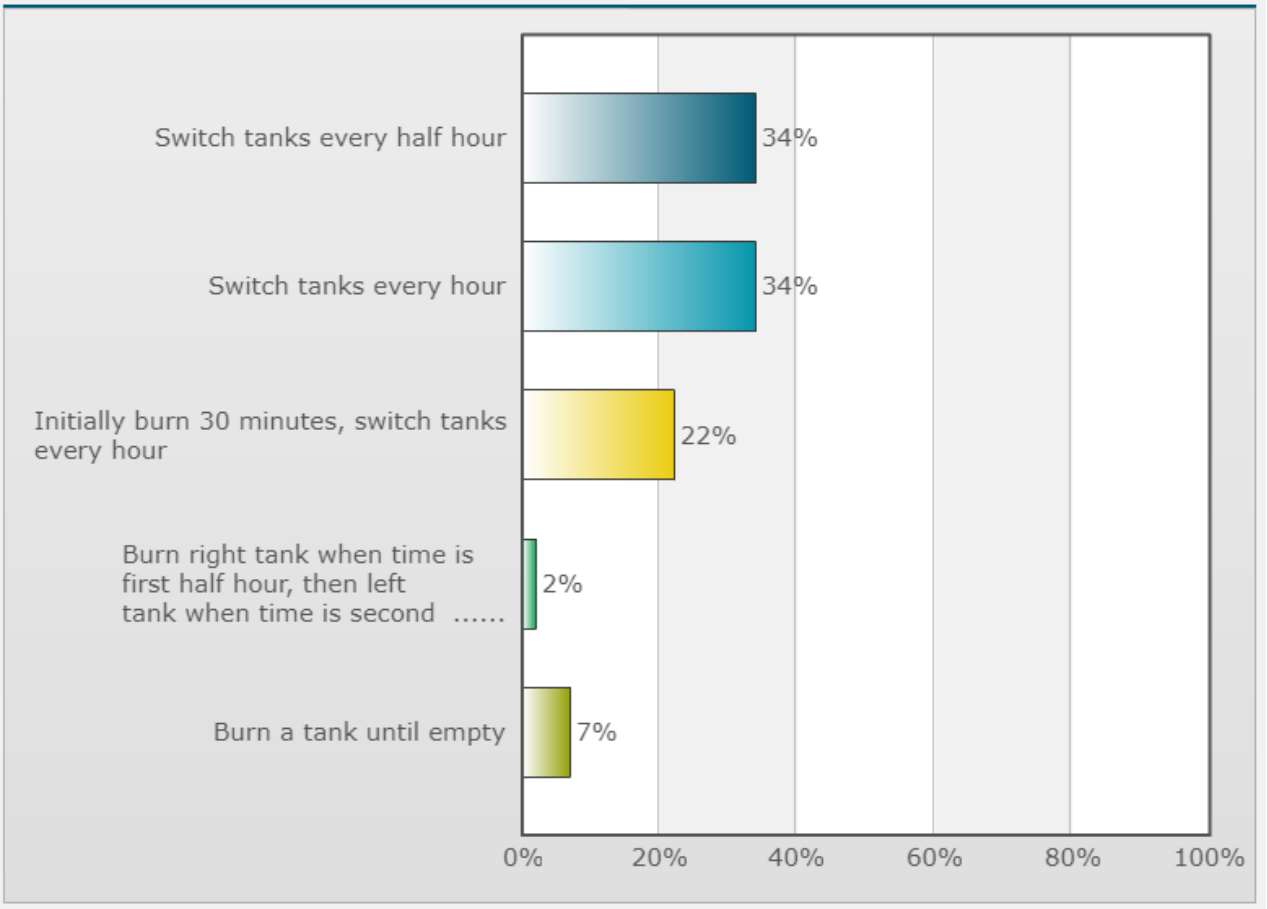
Of course, the biggest innovation may be the elimination of the need for a PIC at all. We recently flew commercially to Houston International and the aircraft landed in what seemed like 0-0 weather conditions. Systems can often fly better than people. It may very well turn out that piloting becomes more of a hobby than a necessity. I'm personally glad I will miss this innovation.

Send us your thoughts on the next bits of innovation in GA that we might have missed.

My Fuel Tank Policy is:

Poll created by Phil Corman on 08/14/2019

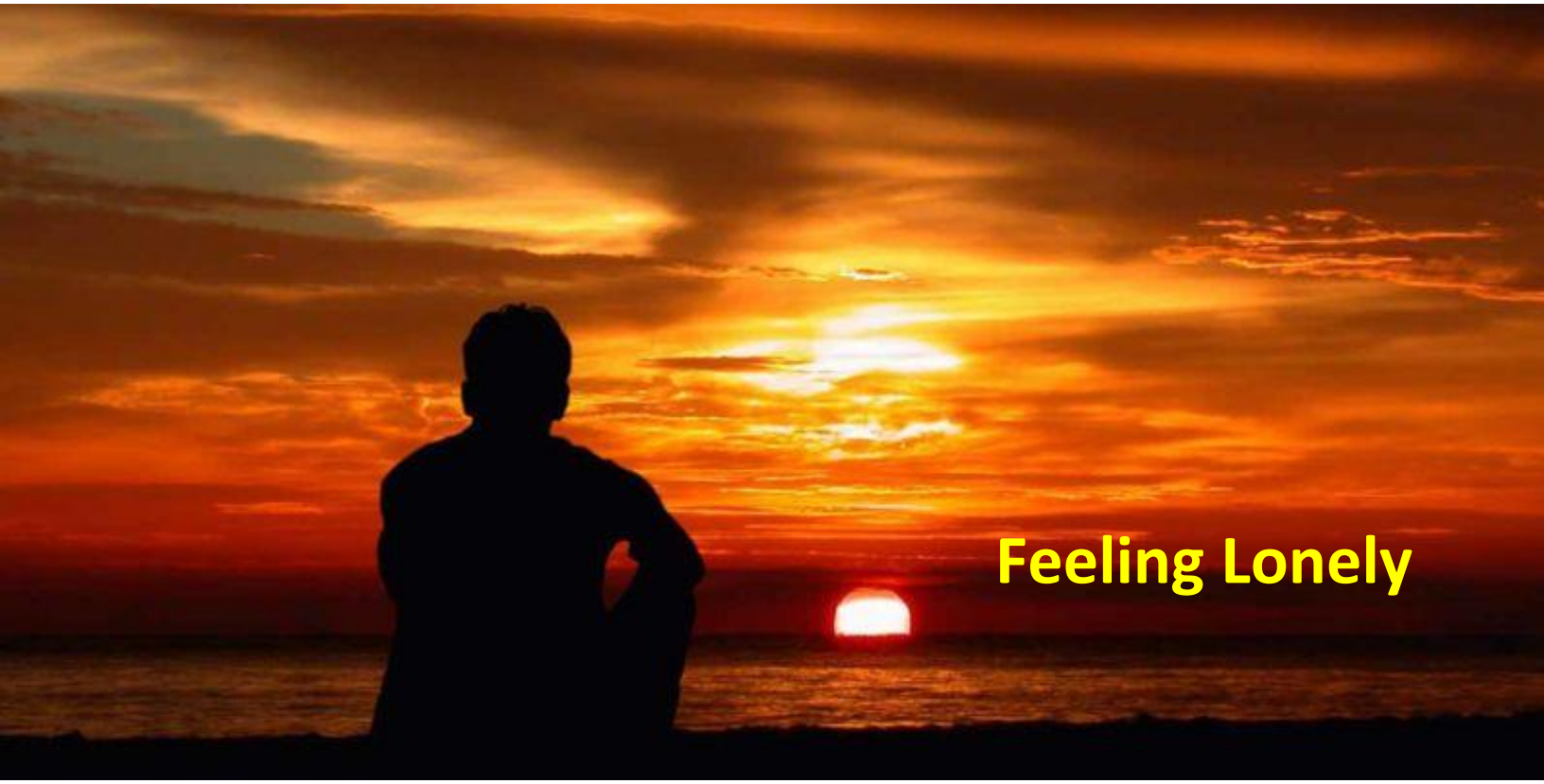
Poll Results



Next month's poll: "I Like to do the Following on my Mooney": **CLICK HERE** to vote.

Send your comments to editor@themooneyflyer.com

No Mail This Month



Mooney Insurance Rates Update

by Parker Woodruff

Most of you are aware (by word or by experience at this point) of widespread aviation insurance rate increases across almost all lines of business. I've compiled a list of trends I'm noticing in the market:

Light Personal Aircraft:

- Rates on retractable gear aircraft have gone up. Look for increases in the 5%-15% range if you are renewing with the same carrier. If you are renewing with a different carrier due to one leaving the aviation market, expect a 20-25% increase.
- Rates on Fixed Gear, 4-place aircraft have lagged on rate increases. I'm seeing 5% or so most of the time.

- Commercially operated piston aircraft (flight schools, charter operations, etc.)
- Most policyholders with good loss experience are experiencing rate increases in the 10-25% range.
- Operators with high loss ratios are experiencing increases greater than 25% if renewing with the same carrier. Operations renewing with a different carrier due to their expiring company leaving the aviation market, are sometimes seeing rates double. One carrier has elected to non-renew all flight schools.

- Pro-flown turbine aircraft
- 10% rate increase for underwriter-deemed "desirable" risks.
- More than 10% for older turbine aircraft.

- Workers' Compensation Insurance
- Rates for businesses with favorable loss experience are going down. There is greater competition in this segment and some state work comp funds have decreased their rates.

- Repair and Service Operations
- Large increases in insurance rates (10-25% or more)

- Avionics shops
- Small increases in rates (about 10%)

The insurance payout related to Boeing 737 MAX losses will far exceed the global aviation insurance premium written. This is hitting the reinsurance companies. Most aviation insurance companies will be seeing premium increases for their reinsurance in 2020. Look for a sustained "hard market" through 2020 and then some level-off in 2021. The standard Property and Casualty markets are also seeing widespread increases and have been for quite some time.

As always, please reach out if you'd like a quote for your aircraft or aviation business. Airspeed Insurance has some great developments coming in 2020. As part of a major agency management system upgrade, we'll be introducing a mobile app that will contain all your policy documents and include other great functionality.

November 2019

Time Flies

by Bruce Jaegar

February 8, 2020, marks 50 years since my first solo in a nearly new Mooney M10 Cadet. Narco tube radios were state of the art. Loran, GPS and digital displays were nowhere to be found. The oldest Mooney Executive was nearly new and the 201 was still seven years away. Owning a Mooney was within reach of many and general aviation was booming.

Since that memorable day in 1970, the mechanics of taking off and landing in a crosswind has not changed. Engine monitors have added reliability and comfort to managing our piston engines. Accurate fuel flow gauges and balanced fuel nozzles have improved efficiencies. Yet too many owners continue to be disappointed with low compression cylinders. All this new technology has not changed the fact that engines still have their limits.

The most significant and most recent changes may be GPS, glass panels and sophisticated autopilots. Of course, this new equipment adds margins of safety but does not replace the skills needed to fly our Mooneys.

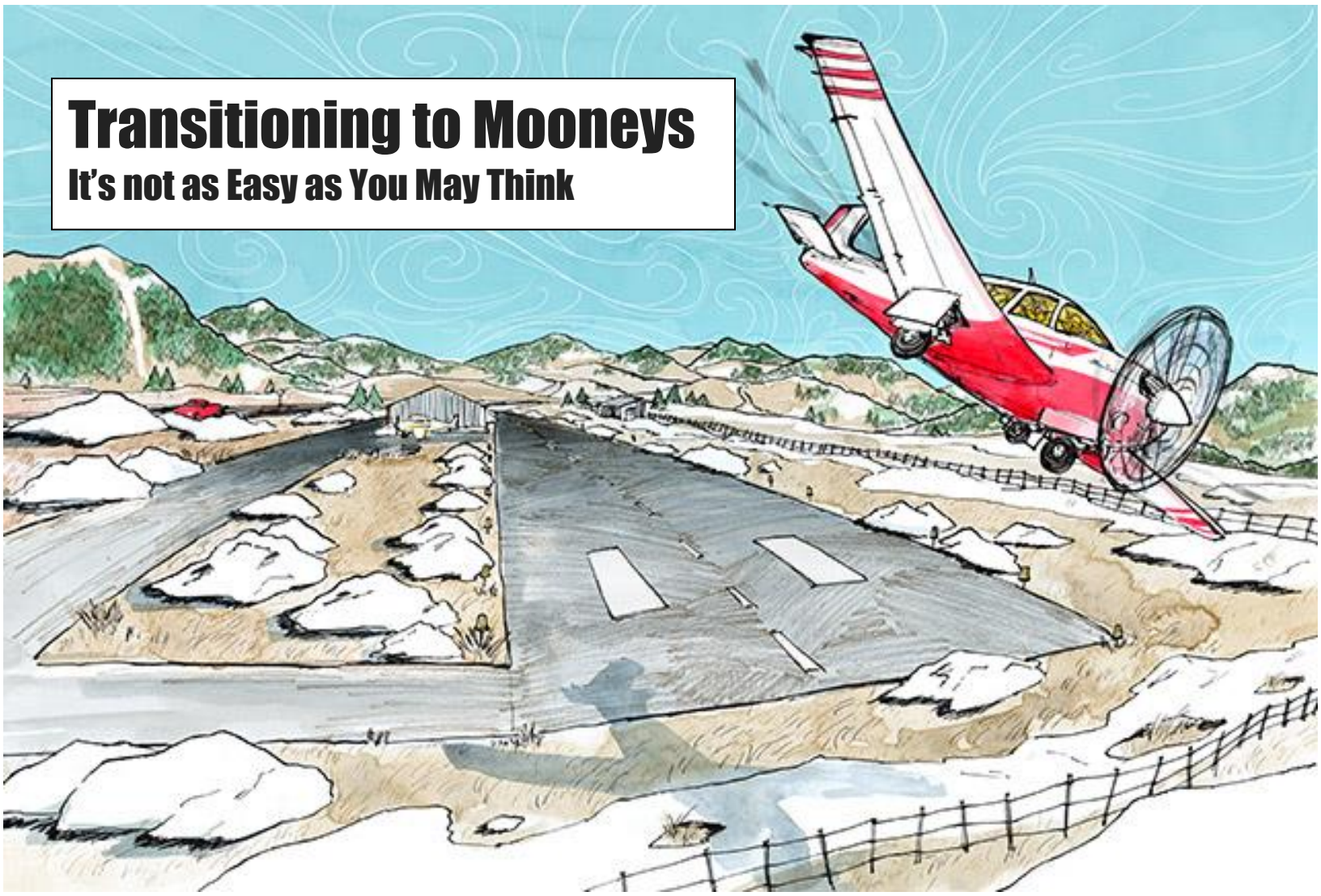
So why write this article? As an instructor for over 40 years, I may not know everything about the latest technology; however, after fifty years as a pilot, landing or taking off in a crosswind, departing into significant weather or the decision to stay on the ground is now easier than ever. Could be age, or not flying regularly, or maybe it is just common sense, but becoming more conservative seems right.

Many pilots have shown why the design of a Mooney is so important. The built-in strength of the wing, landing gear, trim and tail are tremendous, but demonstrating it is not necessary. Recognizing our limitations cannot be overemphasized. Even as we rely on technology, GPS and autopilot, stick and rudder skills remain as critical today as they were 50 years ago.

If there is anything about flying or maintaining your Mooney that raises a question, your mechanic or preferred flight instructor can help. Do what it takes to truly enjoy your Mooney. You and your passengers deserve the very best.

Transitioning to Mooneys

It's not as Easy as You May Think



Phil Corman

Co-Editor

We are frequently asked by new readers about transitioning to a Mooney. True, Mooneys are "complex" (retractable landing gear) aircraft and some are "high performance", meaning they have greater than 200 HP. Therefore, it would seem that most of the issues are from pilots without a complex or high-performance endorsement, or those with little PIC time in complex/high performance aircraft. It makes sense that fixed gear Cessna and Piper pilots would have more to learn. Those aircraft have forgiving landing gear, such as oleo struts, that cushion harder touchdowns. The flaps on those aircraft are often more effective than those on a Mooney. Cessnas and Pipers are easier to slow down, and more; essentially more forgiving.

However, that's not the total picture. Recently we had two pilots from the US military indicate that it took them 25-40 hours to "truly feel 'one' with their Mooneys. It wasn't that they weren't flying it wonderfully, but rather some phases of flight, mostly approaches and landings, were requiring more than usual eye-hand coordination.

Things Happen Faster in a Mooney

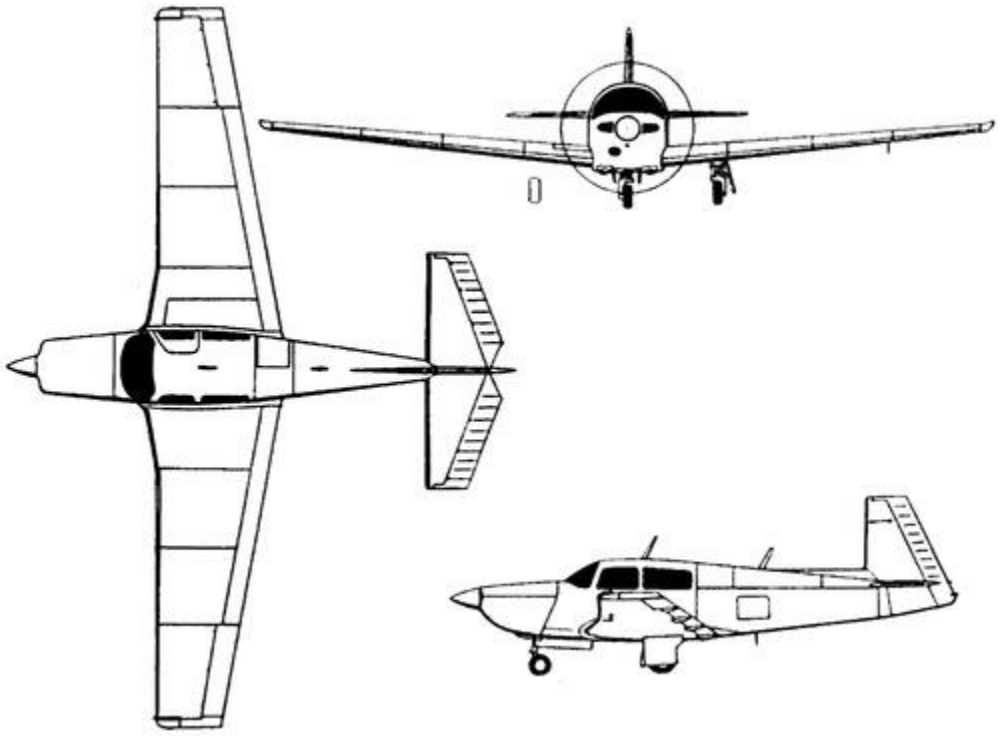
Everything happens faster in a Mooney. You depart faster… approach an airport faster… descend at a faster airspeed… and are over the numbers faster. My primary CFI once told me after only a

few hours of instruction, that I need not worry about crashing. I asked him, "Huh?" He replied, "Because you're about a mile behind this airplane". This can happen to new Mooney pilots during the transition.

Here are a few very key things to internalize during your transition:

1. A Mooney will not fly before the proper airspeed… Period
2. A Mooney will not touchdown before you reach the proper airspeed… Period
3. If you break Rule #2, you will bounce and more than likely porpoise
4. If you bounce during transitioning to your Mooney, go-around, unless you want a new propeller and a possible engine teardown and inspection.
5. Learn how to slow your Mooney down from cruise and descend early

Note: Mooneys require precision while flying



Taking Off

This phase of transition training is pretty easy and straightforward. Most of our Mooneys want flaps at takeoff setting. No problem. When you retract them on departure, expect a nose up tendency, (that pitch up is not often felt on lesser airplanes).

Cruise

This is another relatively straightforward part of your transition training. A key thing here is that Mooneys were built to fly fast, so, unless you have a turbocharged Mooney, leave your throttle in full, Wide Open Throttle (WOT). The Lycomings and Continentals were built to run WOT.

Once you reach your cruising altitude, give your engine 3 to 5 minutes to settle. Let the CHTs and EGTs also settle in. After that, you can fly ROP or LOP, but stay out of the Red Box where Internal Cylinder Pressure is highest and hardest on your engine.

I fly an M20S Eagle now, but my first Mooney was an M20C and it routinely cruised in the Yellow range. This is not uncommon. Enjoy the speed. After all, it's why you got a Mooney. Just be prepared to slow down if you hit noticeable turbulence.

Descent

During the transition, descent seems to be easy. You have two choices here: 1) descend at an Indicated airspeed that's faster than cruise speed, or 2) descend at the cruise airspeed. For the first one, simply point your nose down and trim for that desired descent rate. For option 2, simply pull back on the throttle until your Mooney is descending at the desired descent rate. In this option, you will descend at the same airspeed as you had at cruise, if you kept your hands off the trim.

Approaching the Traffic Pattern

Here's where most transitioning pilots have things to learn. The most important task is slowing the beast! Mooneys like to fly fast. They are stallions and resist slowing down. You are unable to deploy flaps or drop your gear until you have slowed down. Remember that shock cooling is way overstated, so I wouldn't recommend pulling the power from WOT to idle. Except for extremes, it's not an issue. Just use common sense.

To slow down, reduce power and add nose up trim. If you ride horses, it's akin to pulling on the reins to slow your horse. Your Mooney will slow down… trust me. Then, when in range, drop your gear and/or your flaps and Voila! You're good for your approach to landing.

If you have Speed Brakes, learn how to slow your Mooney so that you don't have to rely on them.

Landing

After learning how to slow your Mooney, the next most enjoyable thing to learn is landing her. There's only one way to land a Mooney properly and that is with a stable approach. Good landings always start with good approaches. Configure your Mooney (throttle, trim, flaps, gear) for a stable approach, usually 3^o glide slope with a 500'/min descent. On final, you are usually at $1.3V_{so.}$ Over the numbers, $1.2V_{so.}$ You will find that Mooney controls may be heavier than you are used to, especially long body Mooneys, (R, S, M and Acclaims), and sometimes, medium body Mooneys, (F, G, J and K). Trimming your Mooney is essential to ease of landing. 'If you trim properly, you'll need very little elevator until you round out and flare. In my M20S, I am usually full nose up trim when flaring.

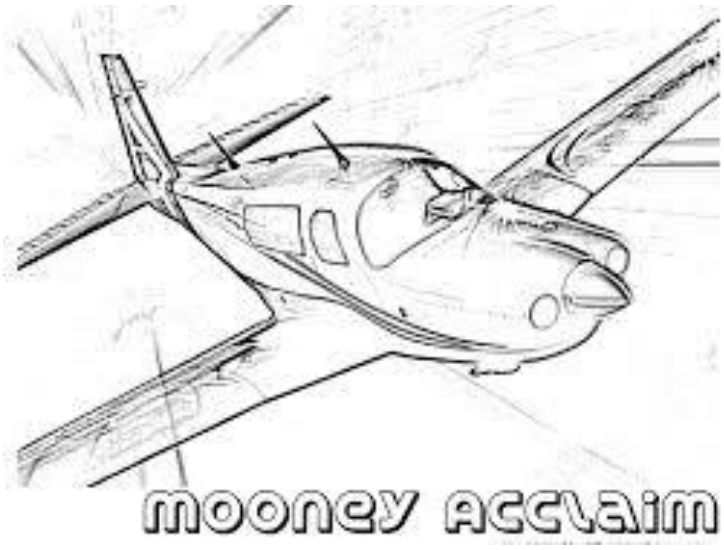
Deploying your flaps for the first 10-20 times will awaken you. As you deploy your flaps, the nose of your Mooney will pitch down. It's more than a little drop, so be ready to trim the nose up to get your desired approach speed. This nose drop is more pronounced than your garden variety Cessna or Piper.

Also, the sight picture will be different in a Mooney. You are coming in a little flatter and with more airspeed. Grind that stable approach sight picture into your brain. In the flare, the nose will also rise a little less.

On the subject of Touch and Go, I strongly recommend that you do NOT perform a T&G during your transition training. There is too much going on and a runway loss of control is at risk. Your flaps are probably full, your trim is way up and your gear is down. There is too much going on during training. Imagine if you retracted your gear thinking it was the flaps, or you added full power while the trim is full up. That would require a lot of nose down push to keep the nose correct. Please do a full stop and taxi back to the threshold or do a Stop and Go if the runway is long enough and traffic permits.

All Mooneys (except unmodified D models) are Complex

More than 90% of all gear up landings are not caused by mechanical issues. They are caused by the PIC. Most of the time, the PIC is taken out of his/her routine landing checklist. All types of events cause this, such as the tower giving you last minute changes, another aircraft misbehaving near you, a passenger making noise, etc. There is only one tried and true technique that is based on human psychology. When you put the gear down, confirm it's down and say aloud, "Gear is Down and Locked". When you turn to your base leg, confirm again that it's down and say aloud "Gear is Down and Locked". And, when on short final, confirm again that it's down and say aloud "Gear is Down and Locked". The act of verbalizing three times builds the gear down check into your psyche in such a way that if you don't hear your personal annunciation, you will be reminded. It works. And it's cheaper than a new prop, engine teardown, and new belly skins.



Do Not Pass GO. Do not Collect $200

NEVER force your Mooney onto the runway. It never works out, especially during transition training. In the beginning, you are most likely to be a little fast in airspeed near the flare. Expect to float, then float some more, then float again, and so on. If you are more than 2-3 kts above the proper airspeed, you may float into the next county.

So Why Does Competency Take So Long

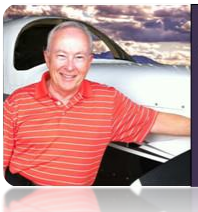
We have spoken to pilots who have transitioned to Mooneys from Cessnas/Pipers, other complex and/or high-performance airplanes, and military hardware (with thousands of hours in jets). The majority of these pilots indicate that they don't feel 100% comfortable, or at ease, until 25-40 hours. Therefore, the typical 5-20 hours required by an Insurance company may be the bare minimum that you should get. Many pilots feel competent before 20 hours, but they are not yet at the "Zen level of 'One with the Mooney'".

So, be patient with yourself. Get more instruction than the minimum required by the insurance company. Err on the side of more training than less. Maybe go back for an hour or two after 6 months with a CFI. Just like a Go-Around is always the right choice on a bad approach or landing attempt, so too is receiving more training the right choice.

Mooneys are fast, but your transition training should be slow and methodical. There are some excellent Mooney CFIs out there. CLICK HERE to check out the list, sorted by state.

Mooneys are amazing! They demand you to be precise! And if you are, they will open the world to you.

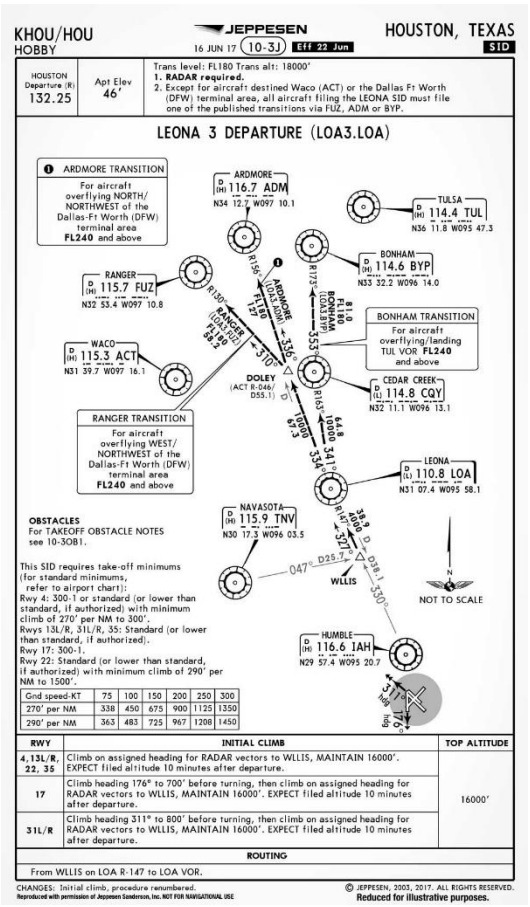
IFR Pilot Corner



Jim Price
Co-Editor

Preparing for the Approach

A	**ATIS**
B	Brief the approach.
C	Checklist.
M	Marker Beacon Audio ON.
A	Altimeter SET (Also, set the bug to the MDA/DH).
I	Indicators (Set frequencies, courses, etc.).
D	DG SET, unless you are fortunate enough to have an HSI.



A Quick SID / Departure Procedure Quiz

1) You're flying an obstacle departure procedure that requires a minimum climb gradient of 400 FPNM. If your ground speed in the climb is 150 knots, what climb rate (FPM) do you need to maintain?

a) 400 b) 500 c) 600 d) 700 e) 1000

Answer: 150 knots ground speed means that you're covering 2.5 miles per minute. If you multiply 400 FPNM x 2.5, you get a climb rate of 1000 FPM. If your GS is 120 knots, you'll need 800 FPM.

2) Required obstacle clearance for all departures is based on you crossing the departure end of the runway at least ____ feet above the departure end of the runway.

a) 35 b) 45 c) 65 d) 85 e) 100

Answer: 35 feet. 35 feet isn't very high if you're at the departure end of the runway.

3) For all departures (unless otherwise specified), you need to climb to ____ feet above the departure end of the runway before making a turn.

a) 100 b) 200 c) 300 d) 400 e) 500 f) 600

Answer: 400 feet. You need to climb to at least 400 feet before you turn in any direction, unless a DP says otherwise.

iOS and iPadOS 13 for Pilots

Apple released the next major software update for the iPhone and iPad, bringing many new features and capabilities to both devices. There are now enough differences that the iPad has its own operating system, called iPadOS. When you go to the Settings > General > Software Update, you'll see the update listed as iPadOS 13 on iPad, and iOS 13 on iPhone.

Has my flying app given the "all clear" to update to iOS 13 or iPadOS?

Sporty's iPad Pilot News offers a web page called the iOS Green Light Program. Visit this page to see if your app or device has been cleared for the latest iOS release from Apple. The iOS Green Light page is updated regularly, so make sure to check back often to see when you're safe to update.

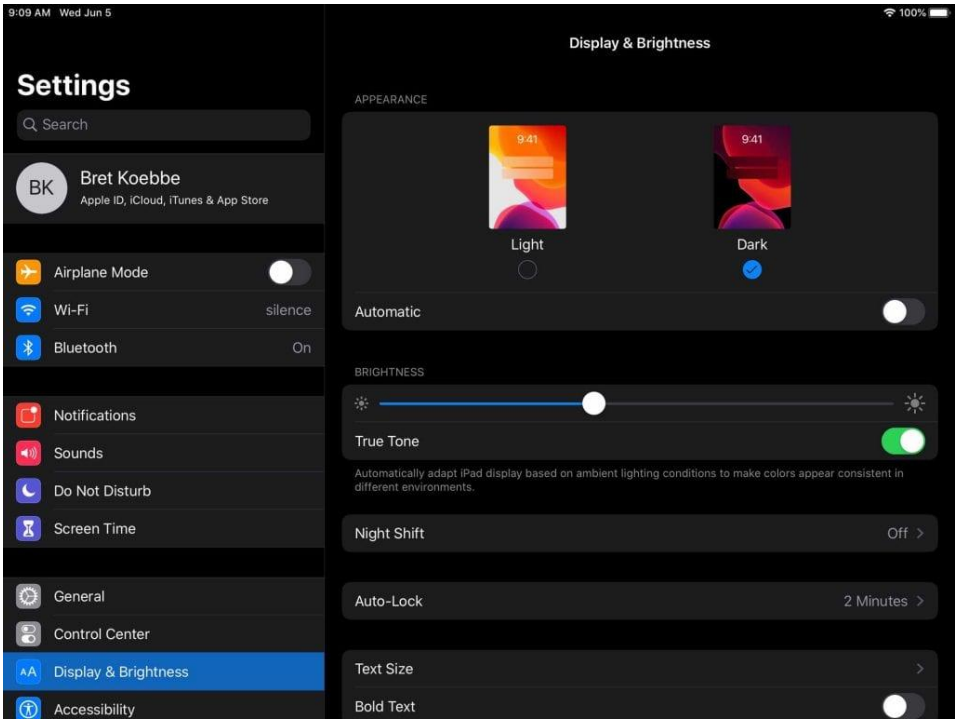
iOS 13 Highlights

iOS 13 is designed to be faster and more efficient. FaceID unlock time is 30% faster and apps will launch twice as fast on iOS 13. Apps are packaged more efficiently in the App Store (up to 50%) and updates are 60% smaller.

Dark Mode

There is a new Dark theme appearance option available, that intelligently inverts the colors of the native Apple iOS apps and compatible third-party apps.

Why should I care? Aviation apps like ForeFlight have offered dark themes, while other apps like Garmin Pilot rely on a dark theme by default. Many prefer this view since it's easier on the eyes in low light conditions and it allows you to view your non-aviation apps with a similar style in the cockpit. It should improve battery life as well due to the lower level of brightness required by the display.



Maximum Download Restrictions when using Cellular Data - Removed

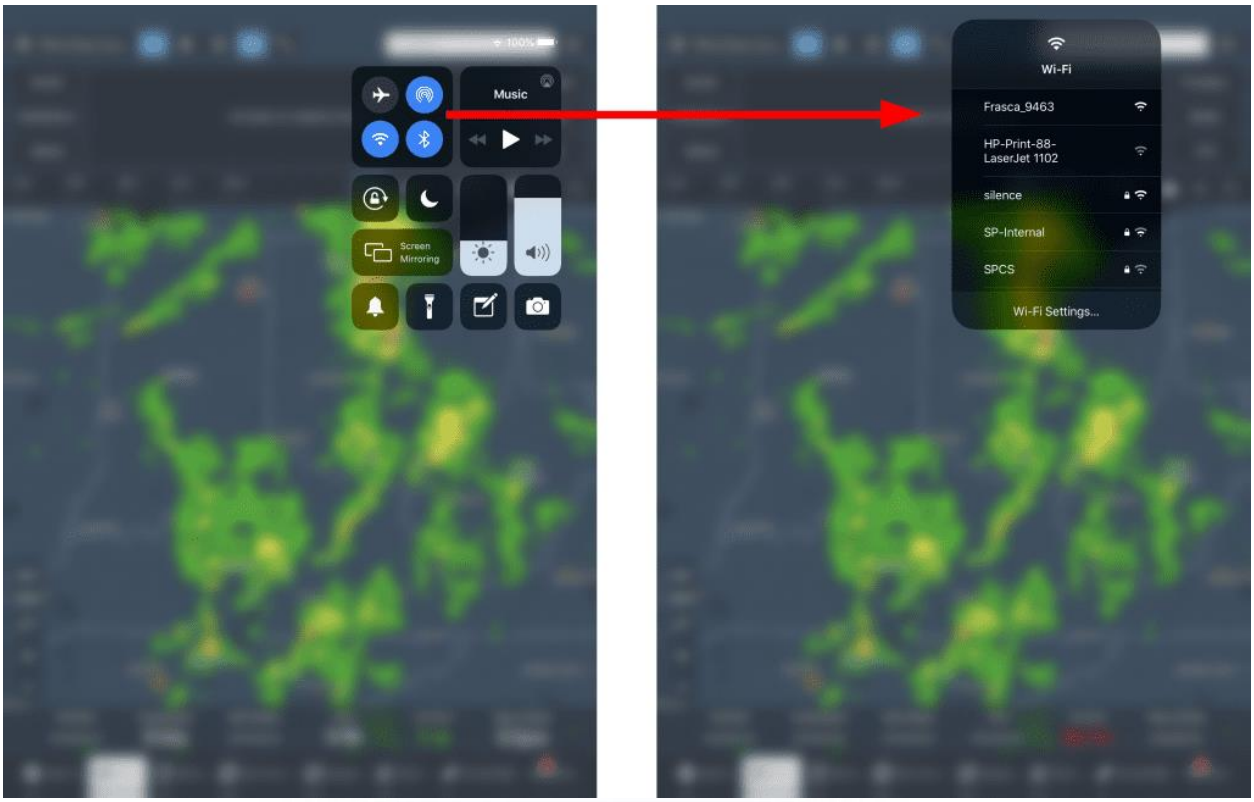
iOS and iPadOS 13 allow you to use cellular data to download apps and app updates that are larger than 200MB. Previously, that was a no-no.

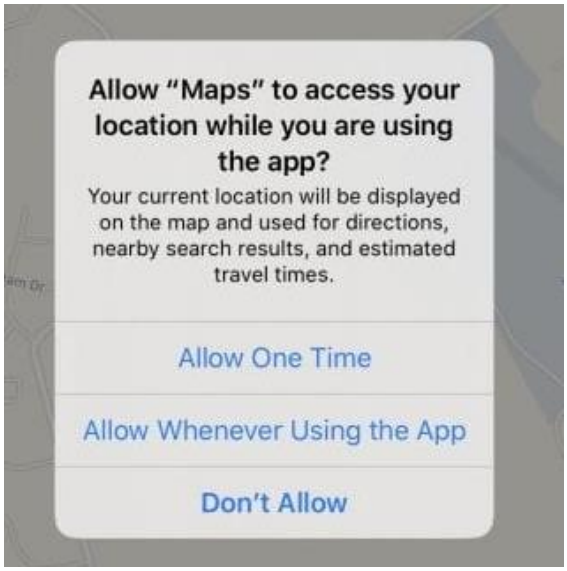
Why should I care? You might want to download when the WiFi is down.

WiFi and Bluetooth Menus in Control Center

You can select a different WiFi network or Bluetooth device right from the Control Center. Swipe down from the upper right corner of the screen to make the Control Center appear. Now, "*long-press"* (tapping and holding down) on the WiFi and or Bluetooth buttons.

Why should I care? Now, if a device like the Stratus is having a hard time connecting to you iPad, you can connect the device, without closing your EFB in order to click on the Settings app.





Chose Location Sharing Control when you open an App

When opening an app that wants to use your location, you now have the option to allow the app to use your location only once or just when you're using the App. You should again receive a prompt with the same set of options the next time you launch the app

Why should I care? Apps using your location while running in the background can shorten battery life for functions you may not need, in addition to privacy concerns. This is helpful when using your device outside of aviation and opening infrequently used apps.

Optimized Battery Charging

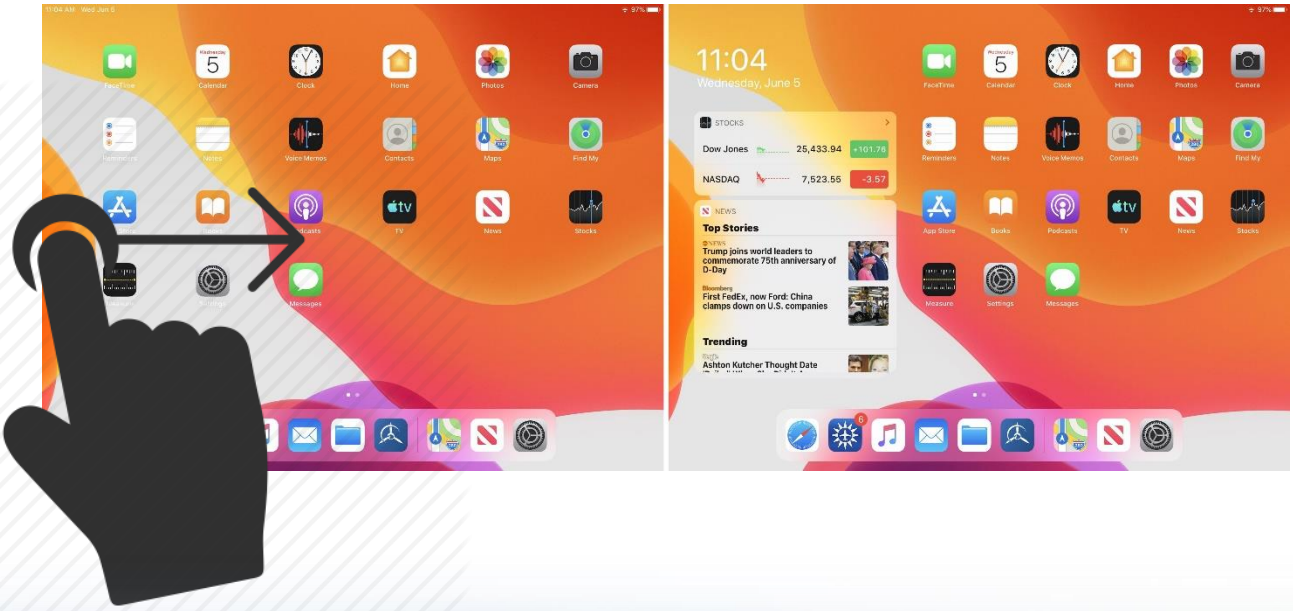
Go to Settings > Battery > Battery Health and you'll find a new Optimized Battery Charging option.

Why should I care? This feature reduces battery aging as your iOS device will now learn your charging routine and finish charging beyond 80 percent only when you need it.

Widgets

When you are in the landscape orientation, you can show the *Today View* (app widgets on the home screen). Just swipe your finger from left to right.

Why should I care? Future App developers might take advantage of these widgets, making your destination's latest METAR/TAF available with the swipe of a finger.



Killing Sacred Cows 3

by Brian Lloyd, CSEL/CMEL, CFI/CFII

I keep hoping that summer will be over. Here we are at the end of September and temperatures are still in the 90's in South Central Texas. I got up before sunrise and the temperature was still in the upper 70's. Still, this is the time to go flying for the sake of flying. The sun has been down all night and the air is still and smooth. Almost nothing beats that perfectly smooth landing that comes under those conditions.

But what airplane to fly? Yes, I have an M20K which is a wonderful cross-country airplane. When I have to go somewhere my first choice is the Mooney. Efficiency, stability, strength – it is perfect for going places. It's just not … fun.

Let me see if I can explain. When I want to go out and get the rest of the world out of my head, I pull out my ***Mudry CAP10B*** aerobatic trainer and do about 20 minutes of "yank 'n bank". Nothing separates me from my worries like aerobatics. There is always something I can add or work on to get better. Right now, for me it is vertical rolls and inverted turns. The Mooney doesn't do this for me. It is a comfortable, enclosed, cocoon of ATC, avionics, and engine management. The Mooney is a BMW 7-series on the highway. The CAP10B is a race-prepped Miata on the track.

But is that all there is to flying? Sometimes I feel a need to get back to the roots. It is about the perfect immersive dawn flight. I think I found the formula – a de Havilland DH82A Tiger Moth. The Tiger Moth is the quintessential open-cockpit biplane. Flying a Moth is a truly immersive experience. There's nothing between me and the air. There's no cabin, no avionics, no ATC. It's just the earth, the air, the airplane, and me.

The Moth is new to me, but not at all new. When it was designed in 1925 it represented a radical change from the aircraft of WW-I. In many ways the Moth was the first modern airplane. It flew nicely. It had plenty of power. It had good control harmony. It flew the way pilots today expect airplanes to fly. That was a huge change.

These things I knew in my head, but not with my heart.

So how did I come by N8224, a 1940 DH82A sn: 83856, RAF number T7452? It was certainly a circuitous route. I have been telling people about wanting a Moth for years. Every year or so I half-heartedly looked for one, but there are not many around and certainly not a lot that are in beautiful condition. Odds are, if you can find one, it is going to show its age.

Then a couple months back a non-pilot friend sent me an email with a link. All he put with the link were the words, "Like this one?" The link led me to a gentleman in the Netherlands advertising a restored Tiger Moth for sale. He led me back to N8224 and Jim and Rosie Stark in Wisconsin. Jim and Rosie have been movers and shakers in the EAA Antique/Classic community since the beginning of the EAA. Jim is 92 now and N8224 is their last restoration. They completed it in 2008. Jim put 20 hours on her in 4 years, then lost his medical. N8224 had her engine pickled, was pushed to the back of the hangar, and covered up for 7 years. This year they decided that someone should be flying her, so they advertised her in Europe where Moths are still revered.

She sounded too good to be true, but since she was only 15 minutes west of Oshkosh, I decided to make a side jaunt on the way home from AirVenture to meet Jim and Rosie, and to see N8224. She was based at Wild Rose Idlewild airport, a throwback to the classic days of flying with wide, manicured grass strips and wooden hangars. I entered the semi-dark hangar and there she was, looking brand-new in her yellow and silver paint. I poked around and took pictures. I couldn't find any obvious flaws. The restoration was first-rate. In that moment I decided this was the airplane.

After years of talking I had convinced some of my hard-core airplane-nut neighbors that we really needed a Tiger Moth. They finally decided that, if we found an airplane that measured up, we would acquire her for our little museum of flying aircraft. When I returned from OSH with pictures of N8224, they agreed with me that this was the one. We transferred the money to Jim and Rosie, and they sent us the bill-of-sale. We now owned a piece of history.

About that history; N8224 started out life as RAF T7452 in October of 1940. She trained RAF pilots to fight the Luftwaffe until March of 1944, when she moved to the glider training school in Shobden to train glider pilots for the D-Day invasion of Normandy. She is one of relatively few RAF aircraft to end up in private hands.

A lot of people were surprised when I said I was going to fly her from Wisconsin to Texas. I guess most people thought we would fold the wings, put her on a trailer, and truck her down. That just seemed wrong to me. I think airplanes should fly. I had never flown a Moth before, so the insurance company insisted that I had to get a checkout in a Moth with a CFI prior to flying ours. Do you know how hard it is to find a CFI with Moth experience AND a Moth to fly in? Luckily, I found someone. Rob Wiggins, here in South Texas, could give me a checkout. Rob is a South

African ex-pat and a third-generation Moth owner. His father and grandfather owned and flew Tiger Moths. His Moth is almost a twin for N8224. Rob graciously showed me the ins and outs of flying the Moth, and the care and feeding of its Gipsy Major engine. (Yes, 'Gipsy' is spelled correctly.)

Rob is not a CFI but the insurance company waived the “with a CFI” part of the checkout, having been convinced by my insurance broker that, as a CFI, I would ensure that I got the training that I needed to be safe and that Rob had the necessary knowledge. They accepted the argument and I was set to check out in a Tiger Moth before going to Wisconsin to pick up N8224.

The upside-down, in-line, 4-cylinder Gipsy Major engine designed in 1933 is a bit different from our Lycomings and Continentals. I love the starting procedure. You turn off the magnetos with the toggle switches on the outside of the fuselage. There is a set for each cockpit. You open the right-side cowling to gain access to the carburetor. You press down on a button on top of the carburetor to intentionally flood the engine. There is a gurgling of fuel and fuel starts to run out of a drain in the intake manifold onto the ground. You pull the propeller through 6 blades to get the rich mixture into the cylinders. Close up the cowl, walk around the left side of the airplane, flip on the mag switches by the front cockpit, climb into the rear cockpit, strap in, turn on the right mag, and hit the starter switch. The engine fires first or second blade. Once it fires you turn on the left mag and the engine settles down to a nice smooth idle.

So, getting back to flying home, that is what I did. With a 7gph fuel burn and only 19 gallons of fuel, hops are short. After two hours you had better be planning to be on the ground. At 85 mph you aren't going to get too far in two hours, so the trip was a lot of hops, eleven, and a lot of hours of flying, seventeen, to get from Wild Rose, Wisconsin, to Spring Branch, Texas. This is the antithesis of flying a Mooney.

There is a Mooney in this story. One of my Mooney transition students had just acquired a Mooney Rocket. He needed 10 hours of transition training for his insurance. We had done a couple of hops, but he still needed about five hours of dual. I asked him if he might be willing to fly me to Wisconsin. He would get his 5 hours and I would get myself to the Moth. He liked that idea and so got his first opportunity to fly a long cross-country, one that left the state of Texas. He dropped me off at Wautoma, Wisconsin, and headed back to Texas via Chicago, once again demonstrating just how good the Mooney is for getting from one place to another.

So, I flew the Moth back to Texas. The Moth has a battery to start the engine, but no generator or alternator to charge the battery. It has a finite number of starts before it has to be recharged. It does not have a radio or transponder. Instruments are rudimentary, consisting of a magnetic compass, airspeed, altimeter, tach, oil pressure and temperature, and a Venturi-powered turn-and-slip gyro. I took my handheld Comm radio, but the ignition noise was so strong that the radio was useless. So I flew home, navigating by roads and identifying towns by the names painted on their water towers. I didn't talk to anyone along the way. I skirted class-B, C, and D airspace. Silently entering the patterns of all the different airports, I watched carefully for traffic, and hoped pilots of other aircraft would look outside to see the silver and yellow biplane that didn't show up on their iPads.

I sat on the ground a lot. A cold-front weather system had blown through the Midwest and brought low-clouds, rain, and then clear days with gusty winds behind it. I didn't assume my skill was that great, so I was conservative about what constituted acceptable conditions. I expected my trip to take 4 days total and it ended up taking 8 days. I hung out at airports and stayed in seedy

motels. I fixed things that broke. I made a precautionary landing when the engine started running poorly (fouled plugs). In the end it was just the earth, the sky, the airplane, and me. I barnstormed my way across the US. Flying cross-country in a 1920's vintage aircraft reconfirmed my respect for the pioneering aviators and aircraft designers who took us from the Wright Brothers' toy to the aircraft we have come to take for granted.

I am really looking forward to doing some aerobatics and spins when the annual inspection of the Moth is complete.

And speaking of spins, it is time to kill a sacred cow.

Loss-of-control (LOC) accidents are the #1 killer of pilots, right after doing stupid stuff like running out of gas. So the big question is, should we be teaching stall avoidance or spins to primary students in order to end stall/spin LOC accidents?

Preventing Loss-of-control accidents is not about recovering from spins or adding extra airspeed to avoid stalls.

What? It is not about spins? What about the classical stall/spin accident on the base-to-final turn? Yes, that does happen, but the spin entry isn't the cause of the problem and knowing how to recover from a spin is not going to help you in that situation. You just don't have time. You have to have recovered control long before it even starts looking like a spin. So, the real problem is a lack of proper automatic response when the aircraft begins to depart from controlled flight.

I teach spins, basic aerobatics, and upset prevention and recovery training (UPRT) in addition to all the usual stuff CFIs teach. It is the result of that extra training that led me to realize that LOC is a real stick-and-rudder problem that won't be cured by avoiding stalls, teaching, or not teaching, spins. Once you get to the point where the airplane is spinning, it is too late. What is needed is immediate, automatic, unconscious recovery from the incipient upset.

The way we get to an automatic response is through repetition. The FAA says, “stay away from stalls.” They want us to recover before the stall actually happens. Good idea … until you get surprised and the aircraft DOES stall and start to depart from controlled flight. At that point the correct reflex has to kick in as there is no time to think about what you should do. Spin training won't help you here either because spin training is about intentionally entering a spin and recovering from the developed spin, not instinctively responding to the upset to prevent the spin from ever developing. Yes, I am saying that both sides of that argument have it wrong.

In Avweb this morning there was an article about how a master CFI (or maybe someone who plays one on YouTube) is going to solve the LOC problem by having you mark your airspeed indicator with a “don't drop below this” speed, well above the normally marked “stall speed”. The only problem is, stall speed changes with load factor. If you are pulling on the yoke, stall speed has increased, and no fixed marking is going to help you. You need to be aware of how far you are from a stall, to instantly recognize a stall when it happens, and react instinctively.

In my humble opinion, our civilian training is deficient. If you look at military flight training, you see that they include aerobatics and upset recovery as part of primary training. They want students to think of airplanes as operating in three dimensions right from the beginning, with the understanding that airplanes can stall and LOC can occur at any attitude. Civilian training focuses on two-dimensional flying, with the aircraft being mostly straight and level, or making level turns. Climbs and descents are shallow, unaccelerated events. We generally don't deal with vertical

maneuvering. So when vertical maneuvering is required, civilian pilots have zero experience. Is it any wonder that we do the wrong thing when surprised?

So we don't need to be avoiding stalls or practicing spins. We need to develop that ingrained response to an upset that gets the airplane back to level, controlled flight as quickly as possible. We need experience recovering an upset aircraft long before it gets around to developing a spin. We need repeated experience upsetting and recovering. We need to do this at regular intervals, not once and then never again. We need aerobatic maneuvering so that when we see only blue or brown in the windscreen, we still do the right thing.

Yes, this is a departure from accepted dogma. Like most of you, I am a civilian-trained pilot. I had the same reflexes most of you do. It took me several decades of flying and then looking back over my flying career to figure out I needed more training and understanding. I realize now that I was not a proficient pilot until I started doing aerobatics and upset recovery. Now when something bad happens, I do the right thing instinctively.

In the last couple of years, I have needed that instinctive response a couple of times. The most memorable was when my Mooney was upset in an embedded thunderstorm over Myanmar during my circumnavigation. The plane rolled 120 degrees. I just reacted. It was like I was a spectator and my hands and feet acted by themselves. There wasn't even time for an adrenaline rush. It happened and I responded. In that moment I realized that I had reached the point of learning that I call unconscious competence. What could have been a disaster became a non-event as a result of proper training and recurring practice.

It happened again the other day when I botched connecting two aerobatic maneuvers together. I linked a hammerhead with a loop. I didn't hold the down-line on the hammerhead long enough and started the loop with too little energy (airspeed). The aircraft stalled on the upline (accelerated stall as we were pulling about 4G). Once again, automatic reaction set in and I executed my upset recovery. The USAF pilot with me thought we had hit our own wake. The time between onset of stall buffet and execution of upset recovery was so short, he didn't realize the aircraft had stalled.

This stuff works.

It is time to change our thinking about loss-of-control. It is not about airspeed and not about spin training. If anything, it is about angle-of-attack awareness. Stick force is part of that awareness, especially if you do not have an AoA indicator. But more importantly, it is about instantaneous reaction to the realization that the aircraft is going to depart from controlled flight and responding accordingly.

Here's hoping that the crisp, cool, fall weather has come your way briniging that time of perfect conditions. Fly safely. Fly better. Have fun.

On October 10, 2019, a Piper Aerostar 602P piloted by Dr. Daniel Greenwald, crashed shortly he took off from the Kokomo Municipal Airport. Greenwald flew into Indiana that morning from the Peter O Knight Airport in Tampa to provide training to a customer based at the Kokomo Airport.

NTSB officials say jet fuel was put into the plane Greenwald was flying instead of the regular aviation gasoline that should have been used.

According to the NTSB report, the airport employee who fueled the plane said that "the airplane looked like a jet airplane", so he asked Greenwald twice if he wanted jet fuel. That employee claims Greenwald said "yes" both times. The Fueler put about 163 gallons of Jet A in the Aerostar. He says he heard the engines start up shortly after and claims they sounded "typical."

Greenwald crashed just after 4:30 p.m., about 3.6 miles away from the airport.

"The NTSB examination revealed the presence of a clear liquid consistent in color and odor with that of Jet A in a fuselage tank and in the fuel lines which lead to the fuel manifolds of both engines."

Isn't there a border line, like the line between 100LL and water?

Specific Gravities at 60°F		
Water	**Jet A**	**100LL**
0.999	0.82	0.68 - 0.74

You'd think that the straw color of Jet A and the blue color of 100LL, plus their different specific gravities, would create a clear border line when the

two are mixed. However, as you can see in this photo of a bottle containing a mixture of 50% 100LL and 50% Jet A, there's no border. 100LL and Jet A, are miscible. That is, they form a homogeneous mixture when added together

A Different Shade of Blue

When Jet A is added to 100LL, there's a slight lightening of the blue color. You'd need to have an acute awareness of color hues to be able to discern 100LL mixed with Jet A.

The Smell is Different

The smell of Jet A when mixed with 100LL may be subdued, but it's there. Take a whiff of your fuel sample. If it doesn't smell right, double check.

Evaporation Rates are Different

If you have 100LL on your hand, it will evaporate within 30 seconds. Jet A, even Jet A mixed with 100LL, will still be there in 30 seconds. **NOTE: When testing fuel, you might want to wear a rubber or Nitrile glove. Exposure to the lead in 100LL can, in some people, result in lead poisoning.**

Is that the 100LL Truck?

Whenever possible, be alert and try to be there when you're fueled.

Do it Yourself

DIY is the best solution, unless of course, both 100LL and Jet A are available, and you start the fueling process with a ginormous brain bubble and choose Jet A.

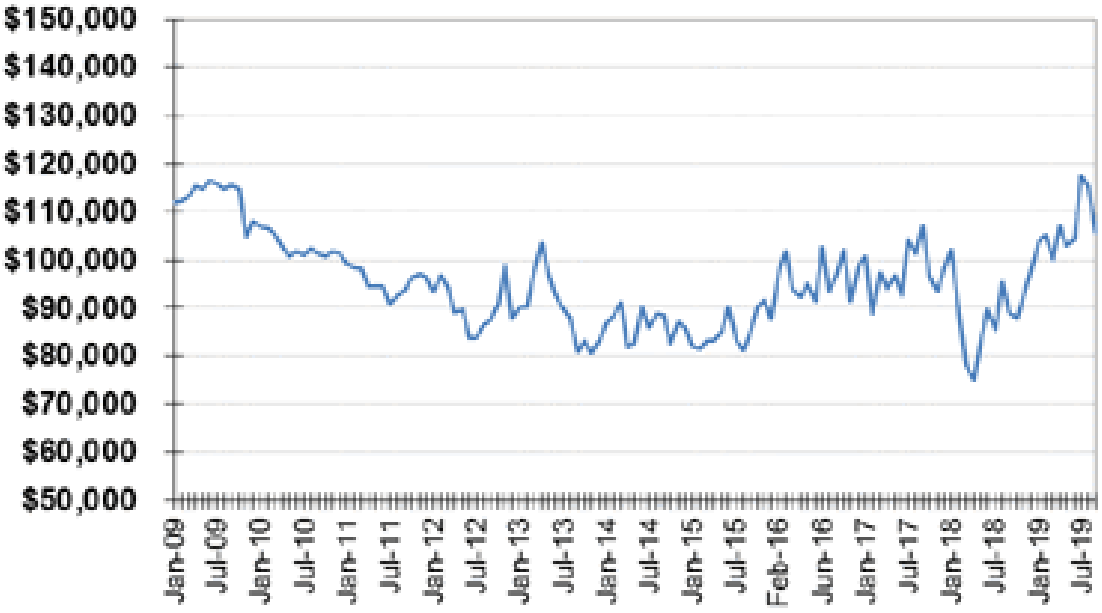
See the study and discussion at Pilots of America

Aircraft Shopper Online
The Aircraft Market in Real Time®

The M20J 201 Market

On 1 October 2019, there were 10 Pre-Owned M20Js for sale at ASO (Aircraft Shopper Online)
The high asking price was $144,995 (a 1990 with 1,050 hours total time on the aircraft and engine).
The low asking price was $25,000 (a 1983 – TT and Engine time was not included the listing).

5 Year Asking Price



How Mooney Smart Are You?

Q1: What was the first plane that Al Mooney built?

Q2: Al's first production plane was the M18. What is it named?

Q3: Al Mooney designed the adjustable tail, but what was the other production plane with a similar tail?

Q4: Mooneys are famous for their rubber biscuits. What was the first plane to use biscuits?

Q5: What engine did the original M20 Mooney have?

Q6: With what engine was the M20 certified?

Q7: What is the most common Mooney engine?

Q8: What is the unusable fuel quantity in M20 through M20 E and G models?

Q9: What is the unusable fuel in F and J models?

Q10: What is different about the 1965 E models cowlings, when compared to other years and models?

Q11: What is different about the ailerons on 1964 and earlier models, compared to 1965 models?

Q12: What is the difference between the approved nose tire for a C or E model, vs an F or J model?

Q13: What year and model was an Owners Manual “required” by the type certificate?

Q14: What year was the Positive Control wing leveler introduced as standard equipment?

Q15: What models and years have a "twisted" wing?

Q16: Under what regulation was the Mooney M20 type certificate issued?

Q17: How much did the original Prestolite starter used on early Mooneys weigh and how much weight was saved when a new "flyweight starter" was introduced?

Q18: What is unique about Aerostar Mooneys?

Q19: What is the purpose of the "flag holder" (the vertical tube) on the rear of the rudder on early Mooneys?

Q20: What is the difference between the 200 HP IO-360 used on the E and F models and the various 200 HP engines used on the J model?

Q21: How many engine models are approved for the J model type certificate?

Q22: How many 1966 F models were produced?

Q23: When did electric gear first become available on the M20?

Q24: How many different types of flap actuating systems were used between 1960 and 1970?

Answers:

A1: A BiPlane called Eaglerock

A2: The Mite

A3: Lockheed Jetstar (For a while, Al worked for Lockheed)

A4: The Monocoupe

A5: Continental C-145/O-300

A6: Lycoming O-320

A7: Lycoming O-360

A8: 4 lbs

A9: 15 lbs

A10: There are eyebrows at the front corners for clearance with the front cylinders

A11: Curvature to the underside, which requires more force, limiting the number of autopilots approved for the early models.

A12: Short bodies require a 4-ply rating. Intermediate bodies require 6 ply rating. 4 ply tires take 30 psi, 6 ply takes 49 psi.

A13: 1966 F model. All others, 1967

A14: 1965

A15: 1966-68 F model, 1968-69 G model, and I think, all M22 Mustangs

A16: CAR 3

A17: 17.8 lbs, 10 lbs

A18: They had a "stinger" on the top of the vertical stabilizer and at the back of the rudder

A19: To dampen vibration/flutter

A20: Dynamic counterweights on the crankshaft. Dual Mag on some models

A21: 3. IO-360-A1B6D, IO-360-A3B6D, IO-360-A3B6

A22: 3, 66002-66004 serial numbers

A23: 1965

A24: 3, hand crank, hydraulic, and electric

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

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

Ask the Top Gun

Tom Rouch

TG

Founder of Top Gun Aviation, Stockton, CA

Send your questions for Tom to TheMooneyFlyer@gmail.com

Question: You've seen a lot of "evolution" in your career from the M20A to the Acclaim. In your opinion, what were the best (or most interesting) improvements that Mooney made over the years.

Answer: The Evolution of Mooney Aircraft

When asked this question, I really had to think what approach to take. When you talk about the evolution of an aircraft that has been in production for over 60+ years, you can list thousands of changes. But, let's narrow it down a bit and discuss the major improvements.

First, we need to look at the early A model and look at what it did. It's a four place, retractable, small engine about 180 horsepower; very economical and easy to fly. Move to 2019 and you have a four place, retractable, with a bigger engine and it's still easy to fly. That was easy, but the biggest change was when Mooney kept adding to the length of the cabin; about three feet. This has greatly reduced drag with very smart aerodynamic changes to the airframe. Mooney increased horsepower by going from the small four cylinder to larger six-cylinder engines. Those changes necessitated an increase in fuel capacity and gross weight. The result is the Acclaim, fastest piston production aircraft ever made.

I think the most notable comment about Mooney is if you are on an aircraft ramp, you can always tell the Mooney by the distinctive backward tail. It doesn't matter if it's a 1960 model or a 2019, at a distance, they look exactly alike. Another unique, but hardly noticeable feature is the adjustable empennage. Only the later Lockheed Jetstar has the same feature. Al Mooney designed the first adjustable empennage. It is a great contributor to the Mooney's speed and that, I think, is the most outstanding legacy of the Mooney, M20 series.

I have been around since the first M20 was developed and I wonder if there can be more improvements to this outstanding aircraft. My first ever flight was in a Culver Cadet, which is much like the first wooden Mooney. I need to stop writing now. It's all too nostalgic for me.

Top Gun Aviation

Specializing in Mooney and Cirrus

(209) 983-8082

For Service and Maintenance, ask for Mark or Tom

FAX: (209) 983-8084

6100 S. Lindbergh St., Stockton, CA 95206

or visit our website at www.topgunaviation.net

Avionics Repair and Installation Services now available on site thru J&R Electronics

Why doesn't Mooney have a

fat wing?

It's a matter of principle — an aerodynamic principle. The laminar flow wing, pioneered by Mooney in light planes for general aviation, is a low-drag airfoil section. It is the key to Mooney's unusual high speed to horsepower ratio. The laminar-flow airfoil, in non-technical language, means there is less aerodynamic drag than on standard high lift "fat" wings. The Mooney wing, together with a long flap section and 33 degrees of deflection permits a slow landing speed with excellent control and yet, in cruise, affords high speed with little drag. This same basic principle is utilized on all modern military and airline jets for high speed performance. As strange as it seems the reason this type wing is not used on more light planes is simply because some of the popular models today still are built on a design so old they would have to start from scratch with a new design to employ many of the modern aerodynamic improvements that have come along in recent years.

Mooney's efficient laminar flow wing is just one more of the aerodynamic advantages you'll discover in Mooney. See the modern ones — Call your Mooney dealer today for a demonstration ride — the beginning of a long friendship with Mooney.

MOONEY MOONEY AIRCRAFT, INC. • KERRVILLE, TEXAS

SEE YOUR DEALER ABOUT MOONEY'S FLY & WIN PRIZE-O-RAMA!

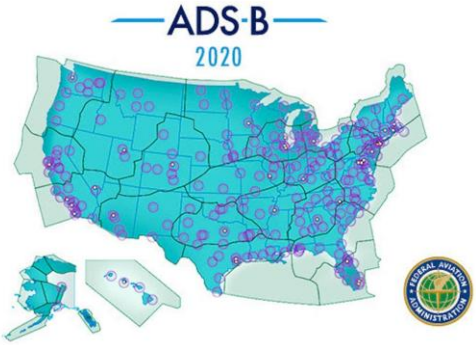
FLYING—August 1967

iPad Pilot News has helped pilots discover over 100 quality aviation apps since the invention of the iPad in 2010. Here we've assembled a basic directory to help you locate and download them in the App Store. This certainly doesn't represent every aviation app ever created, but it highlights some of the most useful and most popular ones. You can find the link at www.themooneyflyer.com and clicking on Aviation Links. Or, you can find it now by clicking here

FAA completes final ADS-B milestone

When Akron-Canton Airport and Mansfield Lahm Regional Airport, both in Ohio, became ADS-B operational in September, 2019, the FAA completed its final implementation milestone with Automatic Dependent Surveillance–Broadcast (ADS-B). They were the last two of the 155 airports to have received ADS-B.

"This brings the operational rollout of ADS-B baseline services to a successful conclusion, on schedule and within budget, well in advance of January 1, 2020, the date by which aircraft flying in certain, controlled airspace must be equipped with the technology," FAA officials said in a prepared release.



In the summer, are you miserable and hot inside your cockpit? Here's the solution!

The **Aeroconditioner** is the most affordable alternative to keeping cool in your plane, instead of spending thousands on installed air conditioning units.

- USB powered, into a cigarette lighter, or portable charger.
- Efficient and effective cooling power,
- 3 Power Mode Cooling
- Simple and Easy to use
- Small and Compact
- Add Water or Ice water
- Comparable to a swamp cooler, just very compact.

For more information, click HERE

NALL Report: GA Fatal Accidents continue to Decline

The general aviation fatal accident rate for 2016 continued the previous year's decline even as total hours flown marked three years of steady growth, according to the Twenty-eighth *Joseph T. Nall Report* released October 11 by the AOPA Air Safety Institute.

The 1,214 total accidents for the year rose from the previous annual figure of 1,173, while flight hours grew to 24.64 million from the previous year's estimate of 23.98 million hours flown.

Significantly, the 195 fatal accidents in 2016 were down from 221 in 2015, an 11.7-percent decrease. Preliminary figures for 2017 suggest another annual decline.

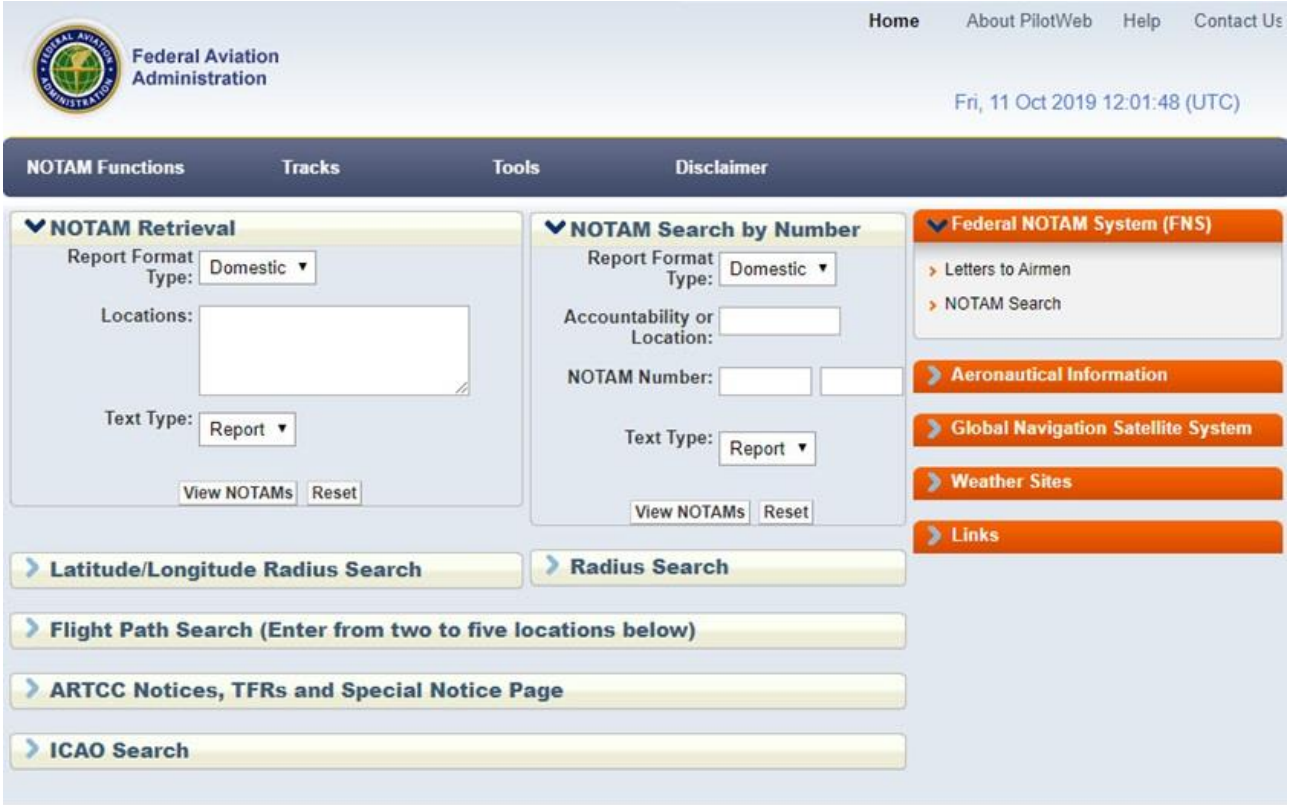
Once again, the fatal-accident reduction for GA appeared to lend support to the effectiveness of numerous industry initiatives whose goal is to reduce those mishaps. As measured by the decline in fatal crashes, the results suggest that 2016 was one of the safest years for general aviation on record, said AOPA Air Safety Institute Executive Director Richard McSpadden. Also, McSpadden said, "These numbers continue to demonstrate historic performance in aviation safety."

For more information, CLICK HERE

Mexico Joins The Bahamas as a BasicMed-friendly Destination

BasicMed pilots will be able to travel to Mexico in their aircraft starting December 10 under a policy letter signed by Mexico's Directorate General of Civil Aeronautics on October 11.

PilotWeb portal will “go dark” in February



If you’re still in the PilotWeb habit, it really is time to embrace the new delivery system. Once you try it, you’ll never go back. (Especially after February). The FAA’s new improved **NOTAM Search** website offers improved sorting and filtering of NOTAMs, capabilities required by the Pilot’s Bill of Rights. The website was created in collaboration with industry and is getting further updated this fall to improve a user’s ability to get the right NOTAMs and avoid being overwhelmed by the ever-growing number of NOTAMs a pilot has to read through. This website also offers graphical construction notices and letters to airmen; it will eventually have graphical depictions of temporary flight restrictions.

New Robust Mount Options (Sporty's)

These mounts are of excellent quality at affordable prices. The cradles are also universal, so they accommodate different size iPads and even most cases.

The **Sticky Suction Base** is a slightly stickier version of the popular suction cup mount. The advantage of the sticky version is that it works on surfaces other than windows. Sporty's staff flew with the Sticky Suction Base and it worked great on smooth glare shields, car dashes and other porous surfaces. It includes a standard 1" (25mm) ball so it's compatible with all Robust and RAM arms. The Sticky Suction Base is available for $9.95.

The **Double Suction Cup Base** might be a popular option for pilots of pressurized and high-performance airplanes. Many airline pilots use a double suction cup mount because it is more reliable during pressure changes – whereas a single cup might fall off as you climb through 12,000 feet, a second cup reduces the chance of a falling iPad. They are also a good option for heavier devices like large iPads. The two suction cups take up more room on the window than a traditional single cup model, so it may not be a great fit in smaller airplanes, but the cups individually pivot and have locking levers to hold firm. The Double Suction Cup Base is available for $19.95.

The **C-Clamp Base** is the best option for mounting a device to the front edge of the glare shield. It features an adjustable screw that can open to 1.6" wide, which is enough for most newer airplane dashes. Simply tighten the screw then add an arm and a cradle. This allows the iPad to hang down below the glare shield, which is a good alternative to a yoke mount if that option isn't available. The clamp can also attach to other hard surfaces, so it's a fairly versatile base. The C-Clamp Base is available for $14.95.

All three of the new bases are compatible with both Robust and RAM mount systems, using the standard 1" ball. Of course the complete Robust Mounts yoke and suction cup kits are still available. These includes all three parts: base, arm, and cradle. With prices under $50, they are a great value.

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*** November 9: Sebring (SEF) December 14, Bartow (BOW) January 11, Leesburg (LEE)
Mooney Caravan	
MooneySafety.com **MAPA Safety Foundation Pilot Proficiency Programs**	Feb 6-9, 2020, Lakeland, FL Apr 17-18, 2020, Santa Fe, NM Jun 12-14, 2020, Ft Worth, TX Sep 11-13, 2020, Springfield/Chicopee, MA Oct (dates TBD), Wichita, KS CLICK HERE to Sign Up
MOONEYSUMMIT	
Australian Mooney Pilots Association	March 2020: Annual General Meeting at Coffs Harbour
EMPOA	
Other Mooney Fly-Ins	

Garmin Autonomi

Garmin has launched an amazing new system for General Aviation called Garmin Autoland. In the event of an emergency, Autoland will control and land the aircraft without human intervention1. The Autoland system determines the most optimal airport and runway, taking into account factors such as weather, terrain, obstacles and aircraft performance statistics. Autoland brings peace of mind to air travel and will soon be available on select general aviation aircraft with the Garmin G3000® integrated flight deck.

In the event of an emergency, this system can be activated with a simple press of a dedicated button. Autoland can also activate automatically if the system determines it's necessary. Once activated, the system calculates a flight plan to the most suitable airport, initiates an approach to the runway and automatically lands the aircraft – without pilot or passenger intervention. The system engages automatically if Hypoxia is detected. If above 14,500', it will initiate a descent to that altitude, and then to 12,500', and if still no pilot response, it will engage Autoland.

During an Autoland activation, the system takes into account a breadth of information and criteria. Factors taken into consideration when identifying the most suitable airport include weather, fuel on board, runway surface and length, terrain, obstacles and more. The availability of a GPS approach with lateral and vertical guidance to the runway is also required when the system is considering various airports and runways. Even further, the system will automatically communicate with air traffic control (ATC), advising controllers and pilots operating near the aircraft of its location and its intentions.

Garmin Autonomí™, a family of automated flight technologies, encompasses Autoland, Emergency Descent Mode (EDM) and Electronic Stability and Protection (ESP). These technologies add to the safety enhancing tools and capabilities of a Garmin-equipped flight deck. For example, in the event an aircraft loses pressurization, EDM is capable of automatically descending the aircraft to a preset altitude without pilot intervention to help avert hypoxic situations.

At this time, Autoland is only available on the Cirrus Vision Jet and Piper M600. Autoland will soon be available as part of the G3000 integrated flight deck, pending Federal Aviation Administration (FAA) certification. For additional information regarding the Garmin Autonomí family of autonomously activated flight technologies, visit https://www.garmin.com/en-US/autonomi/.

1979 M20K For Sale ($88,000)

Call Tom at: 925-595-8969

Engine 1262 TSIO360 LB1B	King HSI
McCauley prop 152 hours	3M WX10A Stormscope
Airframe 3215	Hoskins Fuel computer
Turboplus intercooler	All King radios (KNS80 KY197)
Merlyn automatic wastegate (deck pressure controller)	Built in SKY-OX oxygen system
GAMI fuel injectors	Mods by Lake Aero Styling and Repair
Insight Graphic engine monitor	Including fiberglass belly panel and fiberglass gear doors with brake rotation
TKS inadvertent icing protection	Inflatable Door Seals
Precise Flight Speed Brakes	Rosen Sunvisors
Precise flight Pulselite	Exterior paint is good
KFC200 autopilot slaved with altitude hold	Interior leather worn but presentable
Electric standby vacuum	**Annual: 5/31/2019**
King Attitude indicator with flight director	

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


The Mooney Flyer
The Official Online Magazine
of the Mooney Community
Like us on
facebook
For the latest Mooney and Aviation News


Whether you're a Rusty pilot, dreaming of becoming active again . . .
. . . or you're a proficient, veteran
Master of
The Flight Review
J D PRICE
Prepare online
Free!
Master of
The Instrument Proficiency Check
J D PRICE
N257KW
JDPriceCFI.com