The Mooney Flyer

The Official Online Magazine for the Mooney Community

www.TheMooneyFlyer.com

August 2024

Editors

Phil Corman | Jim Price

Contributors

Jerry Proctor | Tom Rouch | Richard Brown | Parvez Dara | Terry Carraway

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The views expressed in each author's article are their own.
The Mooney Flyer's goal is to educate, inform, and entertain Mooniacs.

Judgement vs Skills

This is an age-old debate and still worthwhile to revisit.

Which one causes more accidents? It may surprise you, but the answer is lack of sound judgement.

You've heard the old adage that "Its better to be on the ground wishing you were in the air than in the air wishing you were on the ground. However, sound judgement in the air can also save your hide. Good judgement, if exercised properly, also can negate the need for your good skills. Therefore, sound judgement is the overwhelming priority for pilot safety.

Establishing "personal minimums" is a key step towards good judgement. Weather is a major killer, so establishing personal minimums for weather has a high rate of return for your safety. What are your visibility minimums, ceiling minimums, obscuration minimums, etc.? Another minimum is for each approach. The FAA establishes those, but they do not reflect you, your experience and your airplane. Fuel minimums are another gotcha. How many fuel starvation accidents do you read about? Too many for sure.

Good judgement also needs to be exercised in the air. If you are encountering stronger headwinds than expected which might be cutting your reserves tight, maybe sound judgement is required. Land and get fuel and live to fly another day.

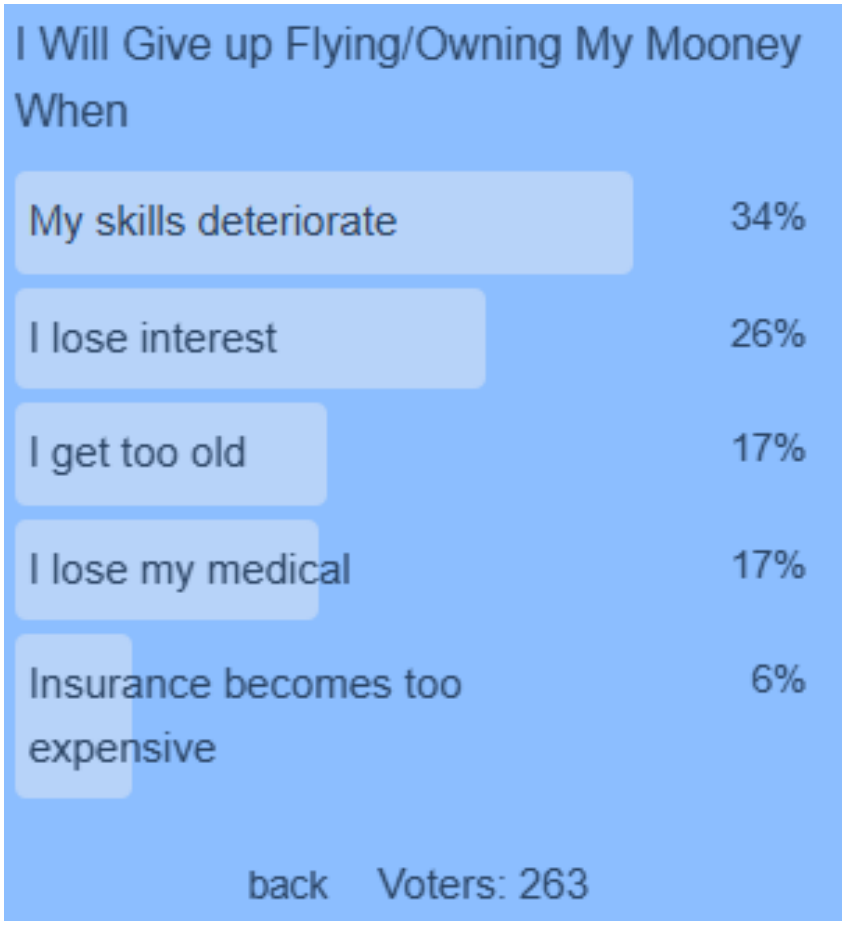
This is not to say that your skills are not as important. Say you have an engine failure inflight. Only your skills will deliver a good outcome, or at least improve the odds of a good outcome. Inadvertent entry into Instrument Meteorological Conditions (IMC) requires both sound judgement and good skills. NTSB data shows that inadvertent entry into IMC results in a crash in less than two minutes. Sound judgement instructs us to execute a 180° standard rate turn and our good skill ensures its safe execution.

Go-Arounds save more airplanes. Don't try to rescue a poor approach and/or poor flare. Most of the time, a go around is warranted from a bad final approach and/or forcing your Mooney onto the runway.

Finally, it is good practice to make your personal minimums/requirements "absolute." We have seen pilots push limits. The thought here is "I got away with it last time, so I can do it again, or even push it a little further." A good example is weight. Perhaps you once flew over gross and everything was fine. Oops. Not usually so.

Anyway, I hope this short segment gets you thinking about your judgement vs skill set.

Fly Fast, Fly Safe

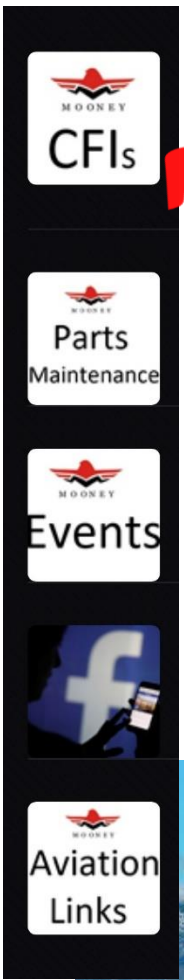


Next month's poll: "For an Annual, I pay"

CLICK HERE to vote

Need a Mooney CFI?

CLICK HERE to find one



You can also go to https://themooneyflyer.com/ and click on CFIS – (located in the top menu).

You can also click on the CFIs icon, found in the website's right column menu.

CFIs can list their name and contact information on our website. To modify your current CFI listing, send an email to TheMooneyFlyer@gmail.com

Be sure to include your home base and state.

Letters to the EDITOR

TheMooneyFlyer@gmail.com

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Are You Ready To Cast The First Stone?

Volume 13 Number 8 August 2024

JIM PRICE ATP, CFI-I, MEI

August 2024

When I was younger and had been home from Vietnam for a few months, I was visiting my parents in my hometown of Tooele, Utah. My friends told me about a group who had flown to Wendover, Utah for a good time in Wendover, Nevada. As they were flying home to Ogden, Utah, the clouds became lower and lower. They collided with a mountain south of the Great Salt Lake, and all were killed. I wasn't sure if my friends were upset that the pilot would do such a thing, or if those who were in the Tooele County Sherriff's Search and Rescue Posse, were upset because they had to look for the victims. I think my friends, knowing of my aviation experience, were hoping for a sense of outrage as they asked my opinion. As I thought about it, I said, "We all do crazy things while flying. I have done some things that when I recall the events, make me shiver. The only difference between that pilot who is no longer with us and me, is that I lived thought my mistakes."

My friends did not know what to say and the atmosphere became very quiet.

How many times have we assigned guilt to a pilot without knowing all the facts? I know that many of us have.

Instead of casting blame on the pilot, perhaps we should reflect on our own experiences wherein we nearly "bought the farm." Then, we could learn from our mistakes and the mistakes of others; thinking of ways that we could improve and move on.

As a FAASTeam member in Arizona, I serve as the Secretary of the Arizona Safety Advisory Group. This organization is dedicated to improving safety. Every month we are briefed on the Arizona accidents, incidents and Pilot Deviations. These deviations bogle the mind because it is difficult to understand why these mistakes happen. We have tools such as iPads and ForeFlight that show us where we are and help us navigate around Class Bravo, Class Charlie and Class Delta airspace. Yet these deviations happen several times a month. I wonder, with great dismay, how a Commercial Pilot, an Air Transport Pilot (ATPs), and those with CFI ratings, could turn the wrong way during a Departure Procedure or cross a runway's hold short line without clearance. Each month, I wonder what I could do to help them better understand the system. Then, each month, I determine that I could not find a better solution than studying the procedures and the airport diagrams well in advance.

When I was flying for Northwest Airlines, before we started the engines, we were required to study the airport diagram and devise a plan of how we would taxi to the runway(s). At first, I thought this requirement was stupid since ground control would most likely change my taxi route to suit their needs. Nevertheless, I complied and found that I was more aware of my route and familiar with the

route changes that ground control would inevitably produce. In addition, we were required to study the airport diagram prior to landing to become familiar with the taxiway exits that might be assigned and where the gates were located. Slowly, I became a believer in prior study, and each day, our chief pilots became smarter and smarter. It's amazing how that happens.

I have flown with pilots who don't have a taxi diagram on their knee or on their iPad as they start their engines or as they prepare for landing. As John and Martha King would say, "Fellow pilots," please study the airport diagram and prepare for the normal and odd things that might come your way.

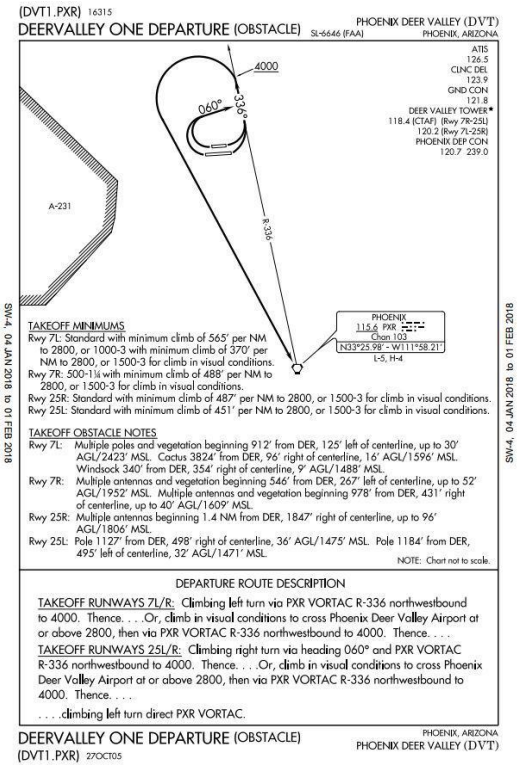
Professional pilots verbally study and brief the approach procedure or the departure procedure.

This knowledge focuses one's mind on the procedure and helps find the idiosyncrasies therein.

During my flying career, I was furloughed from the airline. A dear friend referred me to the Chief Pilot of Southwest Forest Industries. They flew a King Air 100 and since I had experience in the King Air, upon contacting the Chief Pilot, B. Y. "Pete" Peterson, he hired me in 30 seconds. During my association with Pete, he taught me many things. One Peterson lesson that I have never forgotten came from a question. A lady once asked Pete, "When did you learn to fly?"

Pete replied, "I soloed in St. Johns, Arizona in 1959 and I have been **learning ever since**."

You owe it to yourself and your family and friends to be a professional pilot; someone they can trust with their lives. They expect you to be someone who flies by the regulations and rules. You can be a resolute and dedicated pilot; one who is ahead of the aircraft and is always learning from the mistakes of others.


(DVT1.PXR) 16315
DEERVALLEY ONE DEPARTURE (OBSTACLE)
PHOENIX DEER VALLEY (DVT)
PHOENIX, ARIZONA
SL-6646 (FAA)
ATIS 126.5
CLNC DEL 123.9
GND CON 121.8
DEER VALLEY TOWER* 118.4 (CTAF) (Rwy 7R-25L) 120.2 (Rwy 7L-25R)
PHOENIX DEP CON 120.7 239.0
4000
060°
336°
R-336
A-231
PHOENIX 116.6 PXR Chan 103 N33°25.98' - W111°58.21' I-5, H-4
TAKEOFF MINIMUMS
Rwy 7L: Standard with minimum climb of 565' per NM to 2800, or 1000-3 with minimum climb of 370' per NM to 2800, or 1500-3 for climb in visual conditions.
Rwy 7R: 500-1¼ with minimum climb of 488' per NM to 2800, or 1500-3 for climb in visual conditions.
Rwy 25R: Standard with minimum climb of 487' per NM to 2800, or 1500-3 for climb in visual conditions.
Rwy 25L: Standard with minimum climb of 451' per NM to 2800, or 1500-3 for climb in visual conditions.
TAKEOFF OBSTACLE NOTES
Rwy 7L: Multiple poles and vegetation beginning 912' from DER, 125' left of centerline, up to 30' AGL/2423' MSL. Cactus 3824' from DER, 96' right of centerline, 16' AGL/1596' MSL. Windsock 340' from DER, 354' right of centerline, 9' AGL/1488' MSL.
Rwy 7R: Multiple antennas and vegetation beginning 546' from DER, 267' left of centerline, up to 52' AGL/1952' MSL. Multiple antennas and vegetation beginning 978' from DER, 431' right of centerline, up to 40' AGL/1609' MSL.
Rwy 25R: Multiple antennas beginning 1.4 NM from DER, 1847' right of centerline, up to 96' AGL/1806' MSL.
Rwy 25L: Pole 1127' from DER, 498' right of centerline, 36' AGL/1475' MSL. Pole 1184' from DER, 495' left of centerline, 32' AGL/1471' MSL.
NOTE: Chart not to scale.
DEPARTURE ROUTE DESCRIPTION
TAKEOFF RUNWAYS 7L/R: Climbing left turn via PXR VORTAC R-336 northwestbound to 4000. Thence. . . .Or, climb in visual conditions to cross Phoenix Deer Valley Airport at or above 2800, then via PXR VORTAC R-336 northwestbound to 4000. Thence. . . .
TAKEOFF RUNWAYS 25L/R: Climbing right turn via heading 060° and PXR VORTAC R-336 northwestbound to 4000. Thence. . . .Or, climb in visual conditions to cross Phoenix Deer Valley Airport at or above 2800, then via PXR VORTAC R-336 northwestbound to 4000. Thence. . . .
. . . .climbing left turn direct PXR VORTAC.
DEERVALLEY ONE DEPARTURE (OBSTACLE)
(DVT1.PXR) 27OCT05
PHOENIX, ARIZONA
PHOENIX DEER VALLEY (DVT)
SW-4, 04 JAN 2018 to 01 FEB 2018
SW-4, 04 JAN 2018 to 01 FEB 2018

An Extraordinary Airplane & an Extraordinary Man

The Mooney M22 Mustang was an exceptionally unique Mooney. It had a big engine and was pressurized. I often wonder how Mooney would be doing now if it had kept the line going with a pressurized aircraft.

A Mooniac, Kevin Knight introduced me to Kevin McKown who has a passion for Mooneys and aviation. McKown is a very interesting and unusual guy. He is a lifetime lover of unusual airplanes and I think that's how he got involved in the Serial #1 Mooney Mustang.

In his career, McKown flew chase planes, and that was probably for fun. He stumbled onto the Mustang in Trade-A-Plane. He tried to make a deal with the owner but was not successful. However, two years later he got a call from that owner who now seemed to be interested in making a deal. The owner probably realized that it might be a little challenging selling a vintage airplane that no longer was supported by the manufacturer. It's pretty clear that the new owner had to be willing and able to find and fabricate parts in order to keep the Mustang in the air, and Kevin was the right man for the job. He just storms his way across the country when he needs parts. BAS Parts is a favorite supplier and recently, BAS bought Paul Loewen's Salvage Company. With that, they acquired a lot of Mooney parts. One-time, McKown needed a fuel selector and found one that came from a Commanche 260. Who knew that part would work? Well, Kevin McKown did.

Believe it or not, Kevin has listed the Mustang for sale. He is asking $125,000 which sounds like a deal for someone interested in a classic vintage Mooney. The Mustang outclimbs a turbo Bonanza, but it needs an interior, has 1968 avionics and the pressurization seals need to be replaced.

Mooney Mustang For Sale or Trade N7722V

This is one of only 35/36 Pressurized Mooney M22 Aircraft Ever produced.
The Mustang's first flight was 1964 and it earned type certification two-years later.
The M22s are a very special aircraft and will require a special kind of owner.
Many non-owners have spread rumors that parts are hard to find.
I have not found that true.
I have been able to find everything that I needed. Yet, owning rare things have issues. In my experience the rewards always outweigh the discouraging moments.
This pressurized M-22 is Ser#-0001 and has only 1,100 Hours Total Time
It is corrosion free and has a 222/KT Max Speed, burning 15/16GPH at 24,000'
Stall speed is 58/kt
It has a range of 1493 miles with 92/gallons on board.
Empty weight is 2,440/lb.
Full Fuel Pay load
Max Take off 3,680 lb.
Takeoff Distance 1,142'
Landing 958'
Wingspan 35', Length 27', Height 9' 10"
Including Turbo Charged Lycoming TIO-541 310/HP Direct Drive,
Engine and Airframe time is 1100-S/New with "NO Damage History" and complete Logbooks.
This Mustang IS "Presently Flying" and in annual. Compressions are all in the High 70's.
We have replaced
Throttle body, Air Filter Fuel switching, diversion valve, ALL Fuel, Oil Lines, Fire sleeving, skeet/scat tubing and cooling baffling Fire wall Forward.
New tires and Tubes
Fresh oil and Filter.

I call this Mooney a "Flying Project" because, even though we fly her on a somewhat regular basis there are several things that need attention.

As a new owner purchases and personalizes this aircraft to their individual needs, it can be flown regularly!
The pressure system is not holding and is on my next fix list, as are the door seals.
Finally, I will replace the avionics. They are working but dated.

AVIONICS:

Interesting enough, all these pressurized Mooney M22s came without an intercom. Why? Pressurized aircraft are extremely quiet inside. Back then, Mooney's forward-thinking Engineers ducted the Turbo Exhaust through an Augmenter to further silence noise dB in the cockpit and improve Exhaust flow. "Wow!"
Avionics Master Switch
King, Audio Panel-KMA/20-TSO
2-King-KX170B Nav/ Com
GPS-Arnav, R-30A
King-RNAV
AUTO PILOT- Brittain/ B5
DME- King
Fuel Flow- Hoskins / CFS1000 SDI
Altitude preselect-Bonzi.

Glass:

All the Thickened plexiglass windshield and side glass are like new. No cracking, Crazing, smoking or sun burned plexiglass.

I liken this aircraft to finding a 56-year-old Ferrari or Aston Martin in your neighbor's garage. This Pressurized Cabin Class Mooney has Great Bones, and flies super quiet.
With a 25,000-foot ceiling plus Emergency Oxygen, she seats one pilot and four passengers.

Mooney M22's distinguishing features other than its large size, and commanding presence is the port side porthole window for the fifth seat passenger.

As we continue improving this classic, the price will reflect improvements.

I am asking $125,000 at this time.
Make me an offer or a Trade I can't refuse,
Kevin
505-450-4401

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The Stabilized Approach

Parvez Dara, MD, ATP, Master CFII, MEI.

When logic fails to corral the most intuitive of things, only one thing saves the day. It is Science. It does! Look at anything or everything in general and then wonder at what forces made its shape, or structure or any aspect of it. Take a bird for example. A marvel of biology like any other living creature, it is extraordinarily suited for its daily chore of living, and that's flying. The body is a fundamental of biological intricacies wrapped within the down feathers, while the wings are stiffer and colorful. Beneath all this color is the scaffolding of skeletal structures for the two limbs and the two wings, a spine, thorax, and the skull. What is extraordinary is the "design!" This design is the harbinger of flight. Man has copied this design to create some of the most intricate and marvelous machines. The Peregrine Falcon and the B-2 bomber have similar side profiles in flight, and the pointed wings of the hawk were the inspiration for the jet fighters. The winglets on the Boeing and Airbus aircraft are found in most of the aviary domain's large creatures. Going back a hundred plus years, Otto Lilienthal and his glider design was also an inspiration from nature.

The reason for delving into the bird anatomy and an aircraft came to me when I saw a hawk swoop down from above in a semicircular arc and grab a fish with its talons. It did not aim for it in a linear fashion but in a semi-circular arc, diving steeply towards its prey. When it was close to the surface of the water, its angle shallowed almost parallel to the surface and as it did so, it seemed to speed up towards the unsuspecting prey. The hawk's touchdown was its exposed talons clutching dinner that day and then off it flew, collecting its limbs underneath and opening its large wings that beat the air beneath to gain altitude, while carrying a larger useful load. It was a fascinating feat of flight, and reminded me of a missed approach, gear and flaps stowed, with increasing thrust from the groaning engine as the aircraft climbs up to its designated procedure.

That brings us to the purpose of a stabilized approach to landing. There is a plethora of information gathered if you watch a swan come in for a landing on the water. It slowly changes the shape of its wings, exposing more drag to the air, while maintaining the airflow over the wing with feathers splaying to prevent a stall. Then, just like our retractable gear, he or she extends the lower limbs and its webbed feet as she gently breaks the water's surface, creating resistance until there is no more lift remaining and the speed has decayed, and gently, she is quietly swimming with her flock. What is interesting about this swan's approach, is that it is very similar to that of an aircraft. There is a linear angled flight in pattern, and a straight line from altitude to the designated landing zone. Both slow down to achieve a progressively slower rate of descent as they near the landing zone, while maintaining a stable forward speed. We as pilots should fly our aircraft like swans.

In VFR flights, for aircraft 500 feet above the landing zone, the aircraft must be configured for landing. This means the rate of descent, the airspeed, and its configuration (gear and/or flaps) must be set. Any large fluctuations in speed or variations of altitude above and below the flight path are grounds for a "Go Around." The reason is simple. Any such deviations would lead to a myriad of problems for the pilot to maintain control of the aircraft. Take the Mooney aircraft for instance. A stabilized VFR

approach at 500 feet calls for a speed of 75-80 knots. Carrying just 10-15 knots more leads to a 51% increase of kinetic energy that must be dissipated over the runway. This can lead to floating and heavy braking with burnt rubber, and on occasion, a flat tire and closed runway. Worse, it could result in three touch and goes and a completed Flight Review in one landing! When departing the runway, if a crosswind would reveal its ugly head, this could complicate things.

The pilot is not the Peregrine falcon looking for prey in VFR conditions. The pilot does not have the falcon's insight, intuitive sense, keen vision, and physical interaction with nature. But what he/she does have is the knowledge and understanding of the hazards of not following the simple principles of a swan's coordinated flight. Thus, we have certain inviolable rules that must, for safety, govern our flights.

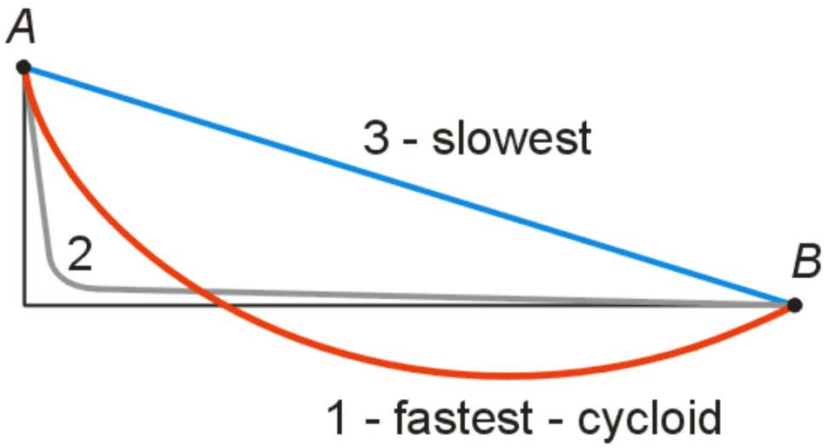
In IFR flight, the rules become a little less forgiving in terms of what a stabilized approach means. One needs to be, on speed, on stable descent rate and configured for landing at 1,000 feet. Any deviations below that altitude constitutes a missed approach. Forcing compliance during an un-stabilized approach is asking for grave consequences in IFR conditions.

In keeping with our thought here, I decided to do an experiment. On a VFR day when there was a lull over the airport, calm wind and a ceiling of 2,000 feet. (Those conditions rarely attract a lot of hamburger hungry pilots). I decided to commit to two approaches:

The first one was a standard VFR traffic pattern and a stabilized approach at 500 feet above the threshold on half-mile final. The aircraft just seemed to fly by itself, fully configured and on speed and rate of descent. So much so that it came to a stop with only minimal aerodynamic braking at around 1,900 feet. No thudding arrivals, just a nice clean gentle squeak and that was it.

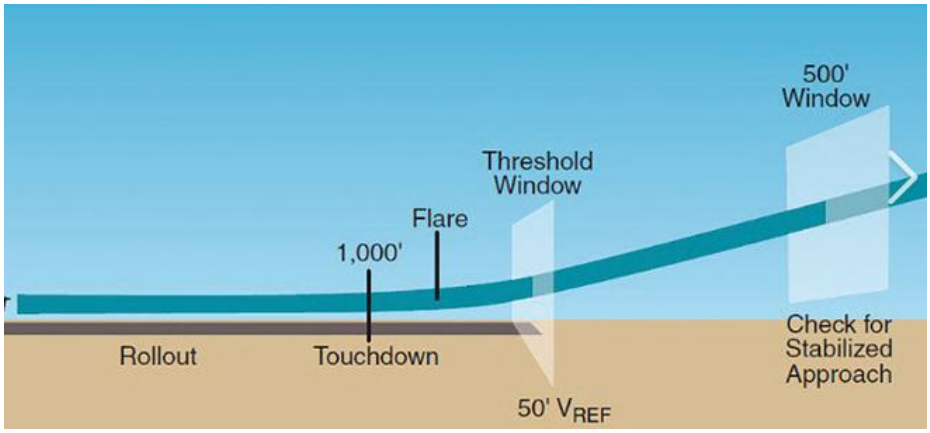
The second one was arriving on final at 750 feet and the aircraft was unconfigured for landing at a half mile final. I put the gear down and dumped the flaps and dove for the threshold with no power and thus limited idle thrust. The aircraft speed increased as the "dive-bombing kingfisher" attitude was initiated from 80 kts accelerating to 92 knots. I leveled out 100 feet before the threshold, (the aiming point), to dissipate the extra energy. The Mooney seemed to zip over the asphalt and then decided to wallow in the ground affect for a while, with a slight mush of the controls and holding it level, but close to the ground. The airspeed dissipated and finally the mains touched down followed by the nose wheel. It seemed to take an interminably long time to settle. The result was 3,200 feet of the runway behind me.

So how does all that relate to the physics of things in general?



As someone would say, “Elementary my dear Watson, elementary!” Jacob and Johan Bernoulli posed such a problem of an object riding a linear versus a curved path and which object would be faster? It turns out that the Hamiltonian representation of the summation of eigen values of the two energies involved, kinetic and potential, play a large part in the determination of speed in a curved vs. linear path. As logic would dictate, and our comprehension will agree with, a ball rolling down a linear but stable path would reach at the shortest time. It is well known that the shortest distance from point A to point B is a straight line. While that may be true, there is that Bernoulli problem which must be resolved. So, what if we were to construct a curved path from Point A as before, for the ball that dives down initially and then stabilizes at lower altitude, reaching the same distance at Point B? Now a curved path is naturally thus longer in distance. By now, you may not have guessed the answer. The curved path is much faster if both balls are rolled simultaneously. The one coursing the curved path gets to Point B faster. That also means it carries more energy and thus speed. The predator falcon, imitated in my second flight, brings the dive-bombing jet pilot to mind. This Problem is called the BRACHISTOCHRONE Problem. It is also a principle in curvilinear physics and is used for space flight for faster, more efficient flight to zero gravity. The Space shuttle would go up straight, then roll and follow a curvilinear path to space.

The birds of prey, with their keen sight and fast flight, have advantage of any exposed prey using the Brachistochrone curve principle, but pilots in aircraft may resolve to concentrate and practice and preach the lower energy state of the linear stabilized approach method to ward off becoming a prey to nature themselves.



The HILL

By Don Peterson

I had my behind handed to me today. It's a good bet that most pilots have watched videos of the occasional carnage at St. Barthes. Fatalities are rare, but the scrap aluminum accumulates. I earned my initial permit to land there in December 1986, and still have the antiquated green card taped inside my logbook. My father lived on Nevis, a 25-minute flight away, and for 20+ years, I made regular trips to the Leeward islands in my 1964 M20E. Impermanent candidates for permanency would occasionally join me on these trips, and going into Barthes was fun for a day trip. I experimented with overnight stays, but if you think operating an airplane is expensive, look at the hotel rates on St. Barthes. There was never a mention of the landing permit having an expiration date, so I came and went as I pleased. Recently I heard that a periodic renewal is now required, so for giggles, I decided to submit myself to the presumed cursory examination.

My initial check ride in 86 was something of a farce. I flew to Princess Juliana airport, the commercial air-carrier field for St. Martin, roamed the air-side unchallenged until I found a local pilot who was empowered to check me out, and off we went. St. Barthes can be landed either direction, on runway 10 or 28. Runway 28 is the approach most often found in videos, presenting an aircraft crossing low over a ridge top, sometimes bouncing a tire off a car or tourist's head, then descending steeply down the hill face, floating above the descending-sloped runway, a brief touchdown, smoking brakes, onto the beach, then tipping over, or going into the ocean. Even though the beach is a French clothes-optional zone, that doesn't make it a good reason to crash and stop.

For my first check ride, the wind favored runway 28, so we made three full stop landings on the unobstructed, upward-sloping runway; taking off in the opposite direction and called it a day. There was no check of my skills coming over the infamous ridgetop leading to runway 10, nor any discussion of it. Perhaps they trusted my survival instincts would teach the rest.

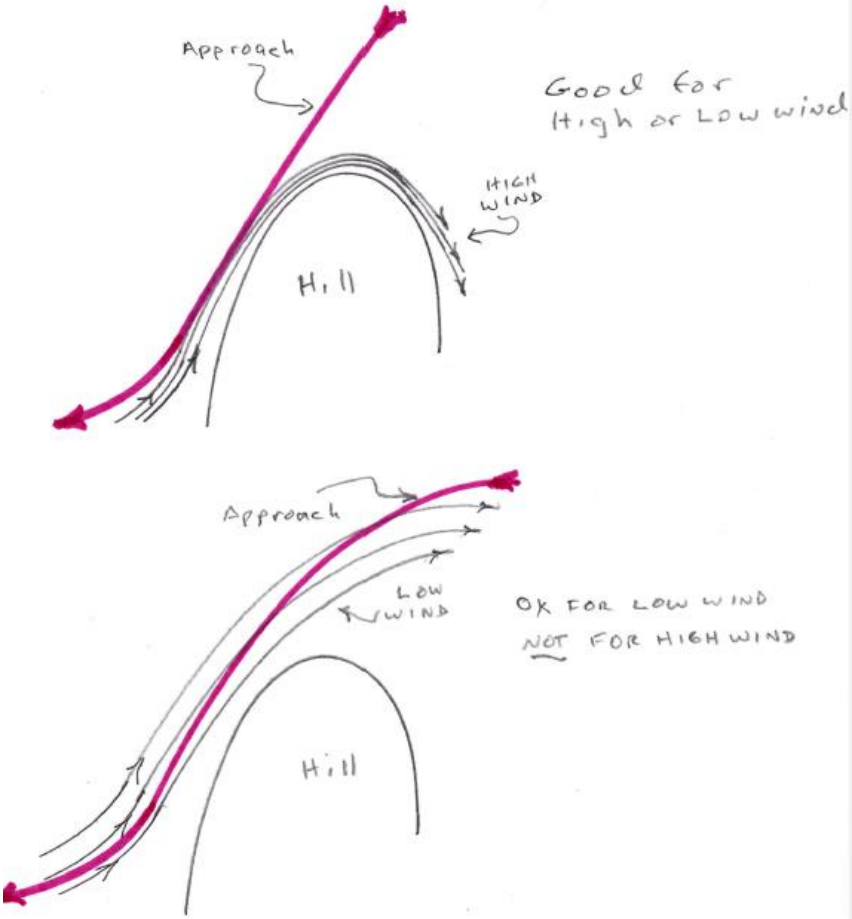
Runway 28 is not without risk, however. Newer charts note, "No go around after crossing runway threshold." Steeply rising terrain is everywhere, so if you want to wave off, do it before crossing the beach. Despite the less than strenuous checkout, all my subsequent arrivals were via The Hill with gawkers hoping to see something thrilling. While it was challenging, good airspeed control and a steady hand got the job done.

Before leaving the U.S. earlier this year, I noted that the "AOPA Guide to the Caribbean" offered a short list of approved St. Barthes check-pilots. I picked the first one, Maxime Desouches. We had a lively phone conversation and made an appointment for a coming Saturday in October. My first impression of Maxime was an enthusiastic young person eking out a living as an instructor. He explained that Barthes now requires a recheck every six months! That seemed a bit excessive, but the Island Nations often embrace policies that serve the exchequer rather than more utilitarian motives.

A couple of days before our arrival into the Grand Case airport, a small strip on the opposite end of St. Martin from Princess Juliana International, I touched base with Maxime. He gradually recalled that we had an appointment and used this last-minute conversation to brief me on the costs which included his shuttle flight from his home in St. Barthes, to Grand Case. The total in Euros was equal to $700.00 USD.

Gulp. Compare that to my recent Biannual and IPC that took the better part of five hours and only cost $300. I was having trouble buying into a $700 check ride which would be three quick landings. After all, I was an old pro at Barthes. Oh well.

After an amusing night in a local hotel, we met up at the Grand Case airport. Maxime was not the youth I was expecting. He worked as a pilot for a local commuter airline, did some charter work, and had an A&P+IA. We had a rapid but thorough briefing of what we were about to do. Maria would be in the back seat filming, and later she would be in the advisory-only tower, getting some different angles.



Maxime produced a small chart that displayed the recommended approaches and reporting points. Many times he expressed his doubt that a Mooney was a suitable plane for Barthes, but I oozed confidence, sure that my 30+ years here had prepared me for a little dusting-off ride.

There was only a slight wind at the early hour of our takeoff from Grand Case. Unlike the earlier years, St. Barthes now has three defined VFR-only approaches; one for Runway 10 and two for Runway 28. First we tackled 10; “The Hill.” The infamous ridge blocks the view of the runway until one is close, with the first appearance of the tarmac being the moment to commit to the final, steep-as-possible approach.

Remembering my previous arrivals, I had the plane well slowed to around 65-66 MPH, in a high-drag profile, with full flaps and foot-to-the wall slip while controlling the descent rate with throttle. Approaching the crest of the hill with a public road underneath which included cars, bicyclists, and hikers, I slowed further to about 63-64 MPH. At this point, my plane goes well behind the drag curve, the stall warning bleeps and splutters, and the descent rate becomes exciting. Maxime confirmed I was using the correct “parachuting” technique. We touched down in the first 200 feet of hard surface and were making a reversing turn when slightly beyond the halfway point. To be blunt, one aims to be as low over the hill crest as nerves can stand, while trusting that the humanity underneath will do their job; ducking. Two more approaches were roughly the same, but I was aware of my fading brake pads.

After the last takeoff from runway 10, we briefed the next job; the right-hand approach to 28. By this time there was an increased wind favoring 10, but Maxime explained that 28 is often used with a tailwind for reasons that would soon be explained. The westerly facing runway is uphill, which generally defeats a fair amount of tailwind. Small outlying islands are used as check points to announce when turning base and final, with the latter being at quite an angle to the runway. St. Barthes is a lumpy and curvaceous island, so a significant mass of outcropping rocks dictates the angled approach. The moment when one can turn to align with the runway is not long before decision time – our last-chance go-around point. I had not paid full attention to Maxime's guidance about countering the crosswind, so there were some last-minute corrections that seemed to make him fidget. Two more right-hand approaches while dialing in the required corrections, and we were off to learn the left-hand approaches. Regardless of the approach, departure is down-hill on runway 10.

The downwind for a left approach to 28 is made on the southeast side of the island. The spinal ridge prevents seeing the runway or its environment. My instructor walked me through the base turn, describing his mother's white house that would soon appear. Prior to mom's house, I was to hasten my descent and barely cross the roof. After buzzing his mom, at around 200 AGL, we turned hard left to enter the previously explored, angled final approach. The turn had my wingtip close to houses, rocks, and trees; rolling level to align with the centerline, just after making the quick correcting right turn at the massive boulder. As I was to eventually learn, the choice of right or left approach is based upon the amount and direction of the crosswind. If the wind is northerly, the left approach is preferred to take advantage of the crossing wind to keep a tight turn radius to final. If the wind is from the south, the right pattern gives us the same benefit. A wind from behind on either base can increase the turn-to-final radius, creating a challenge to align with the runway, or avoid the jagged rock wall intruding into the extended final. By this time, I was sweating.

After the last landing on 28, we dropped Maria off and took her up to the tower where she could take photos and videos of my rediscovered brilliant landing on 10. Maxime muttered something about the wind from the East picking up. "Good", I thought. Maxime's English is excellent, but it is inflected with his native French. Sometimes highly focused moments would interrupt my comprehension.

He made a remark on short final that I couldn't make out. I had things nailed with the horn chirping, but just as we approached the ridge crest above a taxi, and a young lady in a bikini, I entered an area of surprising sink, and did what any life-loving pilot would do and I added some power. As soon as the power got a grip, we transitioned to an area of strong lift. DANG! Four seconds later I declared a go-around and off we went. Years earlier I learned that one must come down the hill face as though it was just a steeply inclined extension of the runway. It's the gomers that float over that part that end up calling their insurance companies. After two more approaches, and two more go-arounds, we landed on 28, picked up Maria, and returned to Grand Case for signatures, taunts, reassurances, and bill paying. *I ….. was …. DONE!* Deep Fried.

The problem I just faced is that a gentle headwind to 10 helps. A bit more and the wind climbs up the eastern side of the hill facing the runway, then curves over the crest, and dives down attached to the surface of the opposite hillside, maybe dragging the plane down with it. I now understand that with a lot of wind, an approach to 10 must be steeper, trying to avoid the orthographic descending wind on the westerly face of the hill. Likewise, adding power when I did will generally result in a go-around. Most videos are of those that tried to save the landing at this point. The pilot must trust that the

descent approaching the hillcrest will be brief and replaced with rising air, and that the humanoids below know to bend over.

My “parachute” technique for Barthes requires an intimate familiarity with the plane and extensive practice at super-slow approaches. The Mooney handbook-recommended approach speed is 80 MPH. At wings level, a maximum gross stall is 57 MPH. The FAA standard 1.3 X 57 recommendation for a normal approach would be 74 MPH, while a short field 1.2 X 57 is 68.4 MPH. To get into a field like St. Barthes requires me to hold about 63 – 64 MPH on short final WITH a full slip. Once stable at this speed and slip, the descent rate can reach 1,000 FPM. In my plane, the stall warning will be voicing its outrage. These speeds also leave no energy reserve for a descent-stopping flare. So, as I reach the runway, I will either add just a touch of power, or preferably just lower the nose at about seven feet to borrow a little speed that I’ll use for rounding off in a brief flare. My Mooney also has hydraulic hand-pumped flaps, and a retraction toggle that allows me to smoothly dump them just before touchdown, while simultaneously raising the nose further, hopefully arriving at the runway without banging things. This requires a lot of practice.

While St. Barthes is fun and worth a visit, operating deep in the drag valley is not something to take lightly. I use variations of this technique on every approach when not interrupted by ATC or traffic, so this technique is second nature for me. Often, landing on 28 is just a better plan, even with a tailwind.

With humility restored, and at my advanced age, I was sure this would be my last visit to St. Barthes. However, I don’t like going out with three go-arounds as my final at-bat.

CLICK HERE for a video clip

CLICK HERE for another video clip

Cost of Engine Overhaul

By Richard Brown

Last month I said I would write about break-in flights, and they have been taking place. The first flight would last 30 minutes, as I turned laps, just north of the Fullerton airport (KFUL). I stayed on the tower's frequency, just in case anything went awry. When I pushed the throttle in, I was a little nervous. I was focused on anything that did not feel or sound right, and any blips on the engine monitor. However, all went well, and the flight was a success.

The second flight was more of the same, but for a longer duration. Clocking in just under 2 hours, I flew 275 miles, remaining never more than 7 miles from the airport. I could have almost flown to my parents in AZ in that distance. It was boring, which is great! The only excitement came from working on steep turns at the end of each leg to stay inside the airspace and stay out of the final approach.

Post-flight inspections showed everything looked great, so then the fun began. The next two flights were also about 2 hours each, but this time, I put on my life preserver and flew up and down the California coastline. At 1,000' above the ocean, I ripped along at full power. You may question the wisdom of a break-in flight over water, but here is my reasoning. Around here, unless you are staying near an airport, there aren't many options for putting the plane down. However, over the shore, you have a great option to ditch it in the gear up configuration. The survivability rate of a water ditching is about 95%. Yes, the plane is a total loss, but that is why I have insurance. Also, after 2 ½ hours of flying without any issues, it was time to start stretching the legs out.

In a nutshell, those are the first four flights. I have some great videos and pictures that I need to put together from them.

I am frequently asked, "Where are you flying?" For the past month I had to say, "Nowhere. The plane is having the engine replaced." Their next question would be, "How much does that cost?"

I have operated for the past 7 ½ years on the principle of not really keeping track of the cost of airplane ownership. Yes, I have a general idea, but I do not compile the receipts. I am like the ostrich with its head in the sand, and I think it makes the whole experience more enjoyable. You are thinking, "Well that isn't very financially responsible," and I agree. It also isn't financially responsible to own a plane, but I do it because I love flying.

Against my better judgement, I'll tell you about the overhaul cost, what I think I did right, and what I will do again in about 15 years if I keep flying at the current pace.

Overhauled O-360-A1D Engine	$30,600
Freight to/from	$2,580
Prop Overhaul	$3,873
Governor Overhaul	$880
Oil Cooler Overhaul	$554
Misc Parts	$1,683
Labor	$7,345
Total	$47,515

Consider that I did not replace the oil cooler lines and the scat hose. I had replaced those in the last few years, but if I hadn't previously replaced those, they would have been replaced with the overhaul, which would have driven the cost up a little more. The overhaul would have been $2,400 less, but I opted for factory new Lycoming cylinders. It was significantly less than the Air Power quote of $40,401 for a Factory Rebuilt. This quote came from Air Power, pushing my 2023 order out to a delivery of January 2025, which I wrote about last month.

There is also the $16,400 that since April, has been tied up in the core deposit. After they process the return, I should see that money sometime in August 2024.

What do I think I did right? Would I do it again the same way?

Purchasing an overhauled engine to swap, instead of sending mine out for overhaul, is the way to go. It was 5 ½ weeks between my last flight on the old engine and first flight on the new engine. Contributing to that was the 4th of July holiday and July 5th. One of the mechanics had a scheduled vacation and another missed a few days for some personal reasons. Courtesy of UPS, there was also a 1-week delay on the oil cooler. It should have taken a day to ship it from Fullerton to La Verne, but it was lost along the way. Total shop time was 4 ½ weeks, which in my book is pretty good. The down time would have been three weeks without the oil cooler shipping and staffing delays, which would have been exceptional.

The prop overhaul was done by Johnson Propellers in Shafter, CA. They did the reseal on my prop years back, and they do excellent work. They also send a truck to pick up and deliver, with the total time from pickup to delivery being under a week. Hopefully they are still around in 15 years.

I paid overnight shipping to get the governor to and from the overhaul shop in Seattle, and I will do that again. It likely saved me around 5-6 days of time that would have been lost in shipping.

Scheduling the time in the shop in advance is a must, but this falls into the "do-it-the-same-but-different" category. Due to work backup in the shop, they didn't start on it for almost four weeks after the initial scheduled date. That's the downside to using a great mechanic with a lot of aircraft in the

shop. Next time, I will get on the schedule in advance, but I will also plan flights and continue flying until my mechanic says, “It’s go time!”

There are only two things I will do differently next time.

Assuming this oil cooler makes it the next 2,000+ hours, I will probably just buy a new one instead of sending it for overhaul. It is currently five years and just over 600 hours old. The last one was replaced because, although the front looked good, the fins on the backside were corroded.

The Oil Cooler overhaul was $554, which was surprising when I bought it new $594 five years ago, but that’s inflation. A new one is $934 which, at almost $400 more than an overhaul, makes buying a new one sound like a silly decision. When the next overhaul comes along, it will be 20+ years and 2,600+ hours old and putting a new one in makes sense in my mind. In the grand scheme of airplane ownership, $400 is a drop in the bucket. This past weekend, I spent more than that in AvGas to visit my parents in Arizona.

THE LAST THING, I WILL DO THE SAME

I will not push too far past the 2,000 hours. I got 2,336 hours out of this engine, and it was still running well. I keep logs of every flight, and among the things I track is oil consumption. It wasn’t using any more oil at 2,300 hours than it was at 1,400 hours, (when I got the plane). The compressions were excellent; all at 79-80/80 during the last annual in February. I always cut all the oil filters looking for metal, and I have never found any. Every other oil change, I also check the screen for metal, and I have never found any. By all counts it probably could have gone another couple hundred hours. However, when I called the oil cooler shop they asked, “Did something happen to your engine?”

That’s a question you don’t want to hear.

I replied, “No, it was just getting up there in hours, so I am replacing it. Why?”

“Oh, we found a little metal in the cooler when we were flushing it out,” he said.

I don’t know what “a little” metal means, and I suppose maybe it started making some. Perhaps I would have seen metal at the next oil change. It had gone 41.8 hours since the last one, and maybe I would have seen it when I cut open that filter. But that went back to the overhaul shop with the engine. Either way, I feel good about the hours I got from that engine. At 2,000 hours, If everything is running well on this engine, I won’t stop flying, but I’ll start the search for the next one. As soon as I locate its replacement, I’ll get on my mechanic’s calendar.

As always, thank you for taking the time to read. If there are things you would like me to write about (or not write about), or if you just want to say hello, drop me an email at richard@intothesky.com. If you’re ever in Southern California and want to meet up let me know.

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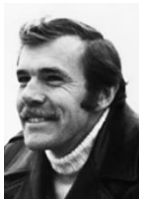


"The highest art form of all is a human being in control of himself and his airplane in flight, urging the spirit of a machine to match his own".
Richard Bach

To me, this quote from Bach is the single most important reason MOONEY AIRPLANES have such an amazing reputation!! It is because of the direct precision connection between the pilot of a MOONEY and all of the feathers on this airplane. It is like no other analogy in general aviation. I have flown 55 different types of airplanes and trust me when I tell you that the MOONEY is BY FAR the most precise, and delightfully balanced flight machine in the world. There is a reason a Mooniac is a Mooniac, and it is an extremely valid reason for sure!!!!

Garmin Instructor Lead Training

by Terry Carraway

Having just completed a major avionics upgrade, I decided to do some in depth training on the avionics package. There are many sources of training and I used most of them, (You Tube, reading the manuals, etc.). However, I decided to take a 2-day classroom course from Garmin.

I took the training at Garmin in Olathe, KS, but they do take the training on the road to various locations. The courses on the road cost more, so unless you are local to one of them, it may be best to go to Garmin. Plus, if you do the training at Garmin, you get a tour of the factory.

There are separate courses for the G3X Touch and the G500TXi displays. Both also cover the GTN navigators and GFC autopilot. I attended the G3X Touch version, which covered the GFC-500 autopilot and both the GTN-750Xi and GTM-650Xi. I am not sure if the G500TXi course covers the GFC-500 or GFC-600.

The classroom was set up with each student having a training kiosk that had a 10" G3X Touch display, a G-5 back-up attitude indicator, both a GTN-750Xi and a GTN-650Xi navigators and both a GFC-500 and GFC-600 control head. All components were functional and allowed the students to follow along and push the buttons as the information was presented. Later in the training, there were scenario-based exercises that had the students "fly" a cross county. Students used the kiosk to set up flight plans and respond to changes in routing, holds, etc.

The instructors were very knowledgeable and had a good classroom presence. If I am remembering correctly, they were all CFII qualified. Several are active instructors outside their job at Garmin. It seems Garmin is very generous in reimbursing for flying and additional ratings, so the instructors are currently flying.

Most of the students were aircraft owners. Most seemed to be in the phase of having their planes in the shop as they took the course. Two Garmin employees took the course. One pilot also flies helicopters commercially. At least two of the students were airline pilots who also own GA aircraft.

After the usual introductions, the class covered just about every screen and option of the systems. In many cases, there is more than one way to do something. In those cases, they presented the alternates and emphasized to use the one that works best for each student. There were a few questions that stumped the instructors, but they went to the engineers at break and shortly, they had an answer.

Once there was enough skill to start using the avionics, the training added scenarios. An early scenario was planning a trip from Airport 1 to Airport 2 via this route. The exercise starts with entering a flight plan, with some fixes and some airways. Then you would use the autopilot to "take off" and fly the route. Of course, the scenario would revise the route; give you a Direct to and finally assign an approach.

A later scenario had you deviate, then set up a hold, then direct to a STAR, then the approach.

These scenarios really enhanced the learning of the systems and brought the knowledge and skills together.

Warning: The class is a bit like drinking from a fire hose. The G3X Touch Pilot Guide is around 400 pages, and the GTN Pilot Guide is about the same. They both cover most of what is in the guides.

One thing that could have been better. The course covered weather options, using both FIS-B and SiriusXM, but the kiosks are not set up to actually do weather. So those options were greyed out.

We each got a bag of Garmin swag. This included a bag, a hat, a pen, a pad for notes, and a headband light. During the course there were some quiz questions. The person with the most correct answers got a Garmin insulated cup. The time to answer was the tie breaker, and the person with the fastest overall time was the winner. The picture below is of MY insulated cup.

Garmin also provided coffee and donuts each morning and a box lunch each day. They had very good rates at a couple of nearby hotels.

Overall, the course was well run and a very good idea for anyone doing a major panel upgrade.

One other resource for training that is becoming more available is your local FBO/Flight School. Many FBO/Flight Schools are putting one or two advanced avionics aircraft on their line to meet the Commercial Pilot requirements that allow 10 hours in a Technologically Advanced Aircraft instead of Complex Aircraft. My local flight school has a Cessna 172 equipped with a 10" G3X Touch, G-5, GTN-650Xi, GTX-345 transponder and GFC-500 autopilot. They have a defined training/checkout that consists of watching some YouTube training, an open book test and one hour of ground instruction discussing the systems and limitations. It also includes one hour of ground in the airplane with external power, so you can manipulate the avionics. Then, there are two flights.

NOTE: If you are looking at YouTube videos, many of the G3X Touch videos are for the Experimental market and will mention things that are not available in Certificated aircraft.

I Hear Voices, Too Many Voices

By Jerry Proctor, Mooney Safety Foundation

Most men can rightfully be accused of not listening intently to their beautiful partner. Well, if I am alone in this club, let me know. However, I doubt it. So, given we often have trouble processing one auditory input, I ask how well you can do when trying to process more than one flow of verbal soup?

In producing the idea for this article, I was flying as a co-pilot when I was attempting to listen to three verbal data inputs. On top of that, I had additional tasks to write some of the information down and then enter it into the G1000. Need I say, I was flailing at doing even one thing right. So, later I asked Ms. Google what she thought about too many inputs. Her answer is summarized below.

The brain is incapable of performing multiple tasks at one time, even after extensive training. This study further indicates that, while the brain can become adept at processing and responding to certain information, it cannot truly multitask.

Now this may have been written by a human of unknown name or shall I now say this was Ms. Google's AI? Who knows? While computer processers themselves can only process one task at a time, they have the benefit of having lots and lots of very fast processors. We only have one, and it is positioned between our ears.

While those who are under 40 claim they can multitask, that's not true. I liken it to a cross section of five-foot ocean waves. Me, I take one wave trough at a time. I wallow around in the bottom and then hopefully complete my mental task, thus moving to the next wave. Millennials, (sorry no ill intended), may think they are multitasking but really only cutting through the top of the wave, before quickly moving to the next wave cap. Now you are really wondering why I have gone to all this trouble to explain something you already knew.

Here is the punch line. Be judicious of how many auditory inputs you can capture their meaning effectively. Then properly process. If you, for instance, want to get ATIS/ASOS while coming into a busy destination, you may want to get permission from Center, to pop offline for 15 seconds and then listen to the ATIS uninterrupted. Make sure you report back. Also, tune ahead. Listening to something behind you is like worrying about the runway you chose not to use. Most planes have two channels and having both on can be a challenge. Only do that in limited form. Be like my Garmin G1000 with XM tunes. When bopping to Prime Country, the system knows me well enough and silences George Strait so I can hear ATC. Ahhh, she knows me well. When flying with passengers, I will brief that if I raise my hand, it means stop your motor mouth because I am trying to listen to and not upset ATC. So, don't be offended unless I continue to do this when we aren't flying.

Given I have multiple degrees in Psychology and having been taught hearing voices can be symptoms of psychosis, schizophrenia, bipolar disorder, schizoaffective disorder or severe depression, it really is okay to hear voices. But remember, not too many and also, don't start answering the ones in your head aloud.

One task at a time and fly safely.

Jerry Proctor, MAPA Safety Foundation Director Emeritus

Old Pilots

By: Don Peterson

"Sometimes, Old people just get notions"

My great grandmother Dovey Foshee made this remark, possibly while she was teaching this 4-year-old to play Scrabble. A patient woman, born in 1873, she took a covered wagon from Missouri to Texas as a pregnant 16-year-old; raised two kids, and provided a profound example to her many grand and great grandchildren. I was 15 when she died, and although my senior-citizen memory has an irregular miss, many of her lessons remain.

As I've grown older, my understanding of her remark has evolved. These days it is a useful response when someone asks me to explain a particularly subtle, complicated, or nonsensical decision I've made. It's more polite than, "none of your business."

When I earned my PPL in 1979 and promptly purchased my 1964 Mooney M20E, the explanation was "I want to fly." Simple enough. The impulse came from somewhere in my belly. It was all emotion, no brain. Any excuse was good enough. A month or so after buying the plane, I was transferred from central Indiana to Richmond, VA. The Atlantic coast offered lots of places for day trips, with enough good and bad weather to teach some manners. With a total of 150 hours in my logbook, I launched South to fly to the Caribbean Island of "Nevis", where my dad lived. There were plenty of older-wiser pilots suggesting I might not be experienced enough for that trip. Deafness kept me pointing where I wanted to go.

My dad had been in the Army Air Corps during WW2. I only recently learned the reason that he washed out and was put into service as a cook. It seems he got word that another young man was visiting his intended in eastern Tennessee, so he went AWOL to press his case with the lady that would become my mom. Although he never personally shared that story during his life, he passed on a love of aviation. I grew up watching U-control, Free flight, and RC models being constructed and flown, and regular attendance at the airshows around Fort Worth. My dad's cousin "Judy" in Amarillo had her own C-310, and she gave me a ride one day.

Although my dad's second, and last wife, did not like flying in small planes, she agreed to let him have one flight with me in the Mooney. It was five miles to the neighboring island. I went on to make the Caribbean a regular route over the years. I finally got serious about my instrument rating when I had to ask for a Special VFR approach into Ft. Lauderdale airport to arrive in time to ship my young son back to his mother in Houston. She was not known for her tolerance or flexibility when it came to dealing with me. I discovered that when it comes to going places, IFR is a LOT less difficult than VFR, and I was always going places.

In 1987, my new wife had her own airplane; a 1955 C-170B. She tried to teach me to fly tailwheel. After I exited both sides of the runway during each of the three hair-raising circuits at the Waterford, CT airport, she'd had all she could stand. We pulled off, she got out and walked around to the other side and climbed in. I pointed to a bench full of geezers holding their sides in full guffaw, and said,

"You know, those guys are laughing about how patient that instructor has been with the little lady trying to learn to fly." That was our second date. Yes, there was a third, and … we went on to own about a half-dozen, or more, airplanes over the years. Because Bonnie sometimes created repair opportunities, I earned my A&P and IA ratings in self-defense.

By this time, my Mooney flying was because we needed, or wanted, to be somewhere. It is a fine and economical way to travel, but the passion for flight was transferred to a French wood-framed biplane, a Czech built aerobatic single-seater, and briefly a Luscombe 8A. It was a good thing that our hangar could accommodate only three planes, as Bonnie brought home stray projects, as well as cats and dogs. Decades later, the biplanes and Titanium-spar acrobat were replaced by a PA-18 on amphibious floats. For a while, the simple joy of committing aviation returned, with no destination required.

Today, I'm reflecting on our coming flight from Uruguay back to Nevada. We leave for Montevideo on August 20, and after an oil change, in-depth preflight inspection, and a test flight or two, we'll head north. While I enjoy the sense of heading toward an intended destination, I'm not really looking forward to the flying part.

Uh oh.

This will be my fourth crossing through Brazil. I like Brazil. It is a lovely country, where beauties abound, and the people are joyous. After the United States, they have the second largest fleet of general aviation aircraft in the world. They also have a booming aircraft manufacturing industry. So, what's not to relish.?

Flight plans are required for all flights. I read yesterday that there is an 80% chance one's flight plan submission will be rejected without explanation. Our trip from north to south was quite an ordeal. We were never able to successfully get an electronically submitted flight plan approved, requiring the intervention of various controllers and managers to force one through. At one point, a very helpful young pilot called ATC on our behalf and was told by the controller, "I will speak only with the pilot, and he must speak Portuguese!" Huh? English is the international language of aviation. Flight plans are required, and we were headed toward an international airport.

Kinda takes the fun out of a good day flying. But anticipation is usually worse than reality.

I'm 73 years old, exercise regularly, and dance the tango with a young, beautiful woman. I've got a great-grandson "holding short on the exit ramp." Why spend a year or more flying around South America?

Sometimes, old people just get notions.

Oil, Oil, Everywhere …

by Terry Carraway

Oil leaks seem to be a way of life in aircraft engines.

Oil is the life blood of our engines. It not only supplies lubrication for all the moving parts, but it is also responsible for a large portion of cooling for our "air-cooled" engines. As long as it stays where it belongs, everyone is happy.

But oil likes to exploit the smallest hole to leak and cause a mess; especially since much of the system is under pressure. Due to its properties, it tends to spread out and cover everything nearby with a film of oil that collects dirt. As it spreads out, it becomes difficult to pinpoint the source of the leak.

A leak can also be dangerous. Oil is combustible, and with enough heat, it could catch fire and start burning. There are hot things in the engine compartment like the exhaust and possibly a turbocharger. A small leak could suddenly become larger and on a longer flight, you could lose oil to the point of engine failure. For this reason, I cringe when people say, "Don't worry, it's just a small leak." If you don't know where/what the leak is, you don't know if it can suddenly become a big leak and a BIG problem. Also, I have seen reports online of people that found that their oil leak was due to a cracked engine case. Small cracks tend to become big cracks, and sometimes that happens in an instant. A big hole in your engine is obviously a very bad thing.

Additionally, if you get a major oil leak, due to the spiral slipstream, it tends to cover the windshield. Therefore, even if you are right over an airport, it can be difficult to see to land. A recent mishap was reported online. It happened to a Grumman pilot, and he opened the canopy so he could stand up to see over the windshield. That is not an option in our Mooneys.

When my plane went in for the last annual, the mechanic found evidence of a leak. I had been seeing some oil on the nose gear doors, but not a lot. There was evidence of oil dripping onto the turbo charger, which is NOT good. When the engine compartment was cleaned up, they traced the leak to the number 1 cylinder (right rear) exhaust rocker cover gasket. The gasket was changed and it still leaked. They went through several gyrations and fixed the leak. I picked the plane up and flew it 0.7 hours to the avionics shop. When I arrived, the belly was coated with oil, and it was dripping off the tail. The turbocharger was also wet with oil. After the avionics work was done, the oil leak was attacked and a few more things were tried. Finally, it was found that the pushrod tube O-ring was leaking. When oil leaks there, it runs down to the low point, which is at the head, just below the rocker cover. With capillary action, the oil crept up the rocker cover gasket, It looked like the rocker cover was leaking. A new O-ring was installed and all was good. I have flown it six hours and no oil is appearing on the nose gear doors or the turbo.

Finding a leak can be a very arduous process. Because oil clings and spreads out, it quickly covers a large area. Due to the air blasting through the cowling, the oil is flung all over the place. The first thing to do is to clean the engine compartment. Then, do a short (1 – 2 minute) engine run and see if you can more closely pinpoint the source of the oil. Some people use dye penetrant developer to find the tiny amount of oil. The developer is basically a dry, white powder that clings and draws the oil out of a

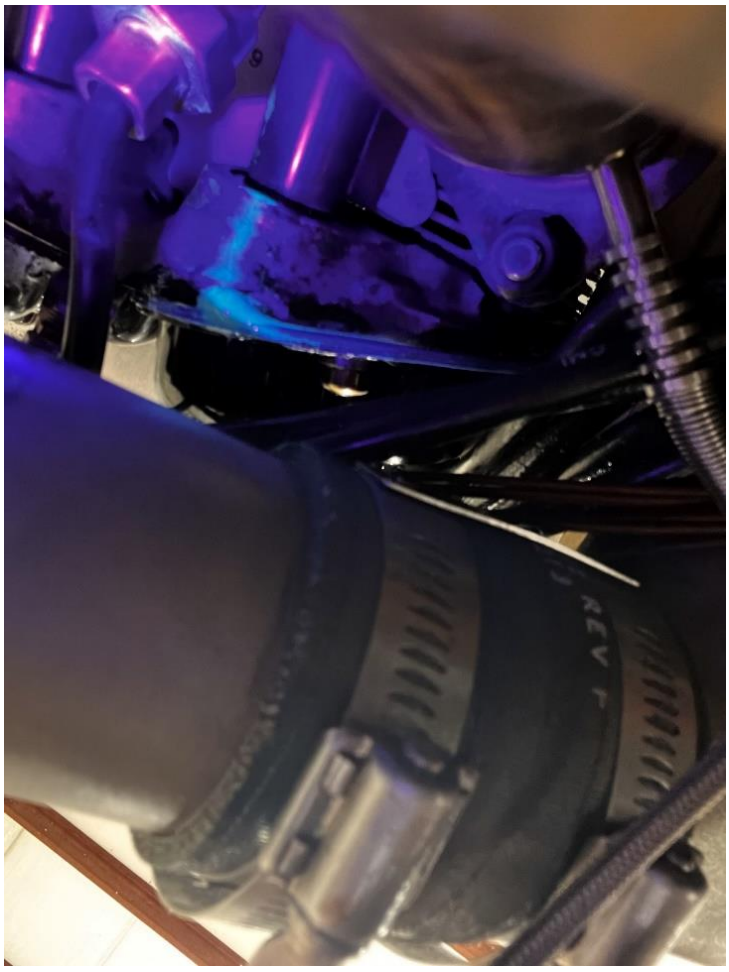
crack or other leak and shows up in the powder. Some people have used powder foot spray to do the same thing.

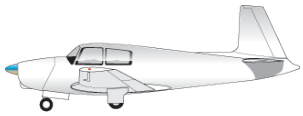
You must look all around the engine compartment, because where you think the leak is, may not be where it is actually leaking.

Now, here is the hot tip for finding oil leaks and how the leak in my plane was found. Use UV fluorescent dye. Add about ½ ounce of this dye to your crankcase. Then, starting with a clean engine compartment, do a 2-minute engine run. Start the search with a UV flashlight. You may need to put the airplane in a hangar and close the door to see the leak. Under the UV light, the dye lights up, making the oil easy to see.

The glowing dye was conclusive. The below photo is of the actual leak on my plane. This was taken from below, looking up. The crankcase is outside of view to the top. The pushrod tube is in the top center of the picture. You can see where the oil came out of the pushrod tube O-ring seal, then down to the bottom point of the head to the rocker cover. You see that even with that short run and a few minutes getting it into the hanger, the oil was creeping up the gasket/cover joint. When the pushrod tube was removed, there was a crease in the O-ring.

Oil leaks are not only annoying, but they can also be dangerous. Don't be complacent with the attitude of "it's only a small leak," especially if you don't know why or where it is leaking.





Mooney Maintenance

Visit our Website for all kinds of maintenance resources

Click here

Download Mooney's 100 Hour Inspection Guide

Search Mooney's new website for Service Bulletins (SBs) and Service Instructions applicable to your Mooney

Click here

[CLICK HERE](#) for the FAA's Airworthiness Directives (ADs) for all Mooneys.

Ask the Top Gun

Tom Rouch

Founder of Top Gun Aviation, Stockton, California

Send your questions for Tom to TheMooneyFlyer@gmail.com

QUESTION

Dear Mr. Rouch,
I always hear from mechanics how hard it is to work on Mooneys. In your experience, what are the two or three toughest Mooney repairs? Thank you for your regular column. I find it extremely useful for Mooney Owners.

Tom's Answer

When I first read this question, I had to think about it for a while. I have never really thought it was "hard" to work on a Mooney. As I thought about repairs that were difficult, I differentiated between hard and difficult. Once I did that, it was easy to answer. Fuel leaks were the most difficult and frustrating. The wet wing of the Mooney helped reduce weight but made it the worst job I ever dealt with. Especially, through the years, as we worked on thirty, then forty, then fifty-year-old aircraft and we tried to repair leaks through small access panels. We worked by hand, scraping the old sealant and hoping we got it right. I never really knew if we got all the old sealant out and most of the time, we spent a lot of time scraping sealant, not knowing for sure if we fixed the leak. We almost always underestimated how much time it would take to fix the leak and about half the time, we ended up redoing the work. It wasn't until they developed the sealant removal system" that I learned that we should "farm out" fuel leaks to the specialty shop.

Because of the single constructed wing, structural repairs could be a problem. Changing a wing is a big job. I remember changing one on an almost new TLS. It was difficult because of other damage to the plane. It was costly, with a bill of over $250,000 before I was done. Another tough structural repair involved the rear spar on a Florida based J Model wing that had severe corrosion. I have had a few occasions to repair/replace a Cessna wing. These jobs were pretty easy, and one side could be done in a few hours. The wing change or the spar change on the Mooney were jobs that we had no history to rely on to estimate time to repair. Therefore, it was hard to give a cost estimate. In the aircraft construction world, the Mooney is a piece of art. It is constructed with very close tolerances, so that makes it a little harder to work on. It is kinda like comparing a Ford to a Ferrari.

MOONEY SUPER 21 with altitude POWER BOOST

The Super 21 is Outselling Every Other Retractable

Total Sales*	Super 21	Bonanza	Debonair	180 Com.	250 Com.	Cessna 210
Oct. '63 thru May '64	211	198	94	13	113	178

*Sales figures as reported by A.I.A.

Since the introduction of the New Mooney Super 21 in October 1963, it has outsold every other retractable on the market.

Reasonably priced at $18,450.00, the new Mooney Super 21 is a superb combination of economy and speed—one of the most efficient four-place metal aircraft in production today.

AERODYNAMICALLY CLEAN, THE SUPER 21 CRUISES AT 187 mph AT 75% POWER

The Mooney Super 21 features a 200 hp Lycoming engine with Bendix fuel injection. For extra climb and extra cruise, a direct ram air power boost system adds 10-12 hp at altitude.

In the market for a high performance aircraft? Your Mooney dealer will welcome the opportunity to demonstrate this outstanding business plane. See him today!

The Mooney Super 21 combines speed and economy with roomy comfort and smart good looks.

Interested in a corporate twin? *Consider the new Mooney Mu-2. . . 325 mile per hour pressurized turbo twin!*

MOONEY

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Circle no. 57 on reader service card

103

Aspen Celebrates 20 Years With New Features And Discounts

While celebrating its 20th anniversary as an avionics provider specializing in general aviation applications, Aspen Avionics has announced a partnership with Electronics International that will configure engine monitoring software with Aspen's Evolution multifunction displays.

Expected to enter service in mid-2025, the system is designed to display precise engine data “in an intuitive format” on Aspen’s Evolution MFD500 MAX and MFD1000 MAX multifunction displays.

Aspen is offering 20% to 30% discounts on its Evolution display systems, including the single-unit EFD1000 Pro MAX PFD and Evolution 2500 three-display system.

There’s a new tab on SocialFlight, the free app and website that helps pilots find events, restaurants, and more.

A Destinations feature “is the result of a year-long team effort to painstakingly document some of the most fun and interesting places to fly in North America, including detailed information, photos, reviews, and even crew car and transportation data,” the company announced. It allows interactive searches specific to airports, events, and desired radius. In addition to that, SocialFlight members may receive a biweekly, personalized email dubbed the ***SocialFlight Destination Digest***.

Jeff Simon, founder and president of SocialFlight, describes it as a “personalized adventure guide,” tailored to the individual user, based on the user’s location and event history in their profile. The first thing the recipient sees is the image of a purely aspirational, national point of interest. “You may not do that, but it might inspire you,” Simon said.

After that, there are hand-picked, regional trip recommendations in a 500-mile radius from the recipient’s location. Other sections recommend more local attractions closer to home that can be covered with shorter trips.

Unleaded Fuel Debate Heats Up in Oshkosh

OSHKOSH, Wisconsin—Tensions flared briefly at a forum on progress toward an unleaded replacement for avgas Monday at EAA AirVenture.

During the public comment period after formal presentations, Tim Roehl, president of General Aviation Modifications Inc. (GAMI), challenged a couple of points made during the presentations of members and support staff from the End Aviation Gasoline Lead Emissions. He told the crowd—smaller than in previous years—that contrary to assertions made during the formal part of the forum, GAMI’s G100UL is indeed ready for distribution and sale.

“I totally disagree, but that’s a discussion for another day,” said Bunce.

Refiner Vitol Aviation has 1.3 million gallons of G100UL in tanks in Louisiana and says it has been completely vetted as ready for sale through its supplemental type certificate (STC). GAMI and Vitol have consistently said the FAA approval of an STC covering all gasoline engines on the agency's registry satisfies all the regulatory and safety requirements to begin retail distribution of the fuel, but there are critics who contend it needs a consensus standard determined by an independent organization like ASTM to satisfy concerns about materials compatibility.

Aircraft Owners and Pilots Association (AOPA) president Mark Baker said his organization is using G100UL in a Beech Baron it operates and, based on the 200 hours of experience with the fuel, “GAMI is as good or better” than 100LL. He also said the process has to “move forward” to get the correct fuel.

Eliminate Aviation Gasoline Lead Emissions (EAGLE) initiative member Pete Bunce, president of the General Aviation Manufacturers Association (GAMA), stood up and dismissed Roehl’s assertion.

Champion Aerospace Introduces Maintenance-Free Lightning Series Magneto

Champion Aerospace unveiled its Lightning Series Magneto (LSM), a new drop-in replacement for traditional magnetos, at EAA AirVenture. The LSM is the "only fully self-powered, direct replacement magneto utilizing electronic components." The magneto doesn't require any maintenance and lasts for the full Time Before Overhaul (TBO) of the engine—eliminating 500-hour inspections.

The company plans to obtain Parts Manufacturing Authority (PMA) approval for the product, making it available for all Continental and Lycoming applications.

Champion Aerospace is initially focusing on four-cylinder models and plan to introduce a six-cylinder version later, noting that the approval process will take roughly two years before the product receives market certification.

Events

FLORIDA MOONEY LUNCH GROUP	Contact Dave at daveanruth@aol.com or (352) 343-3196, before coming to the restaurant, to have an accurate count. Events begin at 11:30 August 10: Fort Pierce (**FPR**) September 14: Winter Haven (**GIF**)
MOONEY SAFETY.com	Sign Up at https://www.mooneysafety.com/ppp-registration/ **Remaining 2024 Event locations:** Burlington, VT, Sep 6-8 Dallas Ft Worth, TX, Oct 18-20
AUSTRALIAN Mooney PILOTS ASSOCIATION LTD	
EMPOA	**Learn more at** https://www.empoa.eu/index.php/en/
The Mooney Flyer	

Emergency Backup Battery

Sporty's has introduced its Flight Gear Emergency Backup Battery, designed to provide backup power for your electronic flight bag (iPad/iPhone) and other portable devices.

Features of the Flight Gear Emergency Backup Battery include:

- Dual Charging Cords: Both Type-C and Lightning charging cords are integrated into the battery
- Universal Compatibility: Whether you have a smartphone, tablet, Bluetooth headphones, or other USB-powered devices, the backup battery is compatible with it
- Compact Design: The backup battery can be attached to a key ring or slipped into a pocket for access whenever you need it
- LED Indicator: Monitor the backup battery level with a built-in LED indicator, so you always know when it is time to recharge
- Built-in Flashlight: A built-in flashlight also can be used as a strobe light with the click of a button.

Sporty's Flight Gear Emergency Backup Battery is available for $14.95 at **Sportys.com**.

Parts for Sale

1959 Mooney 20A - Seeking Mooney Purist * $17,000

Hangar stored for years, now ready for overhaul(s) and refurbish. * Airframe and engine 1439.1 TT. McAuley prop. O360 engine. Wood-wing.

* Would consider selling only the engine and prop. However, sentimentally prefer to find a Mooney Lover seeking a great project. * Telephone: 419 591 6477 for further information.

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)

For sale: Wing Covers (front & rear) for M20J. Great condition includes storage bag. Price (including shipping UPS ground, cont. US) only $279.00. Contact: Dwight Wilcox at: dw_ 1@verizon.net

Mooney gear actuator and parts FOR SALE

- Manual extension Spool and Cable for Plessey. Installed 2021, 206 hours.

Best offer.

Contact: CarolAnn Garratt, cagarratt@gmail.com or leave msg at 352-342-7182.

For Sale: Complete exhaust system from 1975 M20C. Excellent condition. Drilled for EGT sensors. Approximate 2,750 hours TT. Removed for Power Flow upgrade. $350. For information: 541-382-6752; 541-410-1121; jhl1csrs@yahoo.com

For Sale: Polished Hartzell 3 blade spinner P/N: A-2295-4P. Fits Mooney M20J and M20C with STC and other applications. Complete with bulkhead. $500. For information: 541-382-6752; 541-410-1121; jhl1csrs@yahoo.com

1993 M20J Mooney for sale, 7800 hrs total time, 2000 on engine with 2200 TBO. $110k.

Includes a Form 337 for installation of 66 gallon TurtlePac and 10% over gross. Has Monroy tanks, 98 gallons in the wings. Perfect for long-distance pilots. New starter, overhauled alternator in 2023. New donuts in September 2024 (scheduled installation). New main tires and tubes. Annual 8/1/2024.

Two G5s installed in 2018. Garmin 430 overhauled in 2018. Overhauled altimeter 2023.

Contact CarolAnn Garratt at cagarratt@gmail.com or 352-342-7182. Moriarty, New Mexico.


Rusty Pilot or Old Pro
INSTRUMENT PROFICIENCY CHECK
Study Guide
J D Price, CFII, MEI, ATP
FLIGHT REVIEW
Study Guide
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