The Mooney Flyer

The Official Online Magazine for the Mooney Community

www.TheMooneyFlyer.com

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Editors

Phil Corman & Jim Price

Contributors

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

Departments

Features

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From the Editor

Phil Corman

Nine Years

With this issue, ***The Mooney Flyer*** enters its ninth year of publication. Back in 2012, Jim and I wondered if an electronic magazine would succeed. Eventually, we decided not to pursue a paper medium because of the cost and distribution. We just wanted to produce a quality magazine for Mooniacs with an online format that would provide a modern, dynamic, link-based magazine that could be read on a smart phone, tablet, PC or Mac.

Wow! We had no idea that our humble publication would last this long. But, thanks to the generous donations from our readers and amazing articles contributed by outstanding writers, it has endured. In this issue alone, we have excellent articles contributed by Michael Stretanski and Wally Moran, both experts in their writing and experience. Over the years we have had several articles from Bob Kromer, Bruce Jaegar, Brian Lloyd, Geoff Lee, and countless others. We are grateful for their contributions that have added to our collective knowledge and wisdom, helping us fly the most amazing airplanes in the world!

During the past decade, Mooney was purchased by the Meijing Group, with Jerry Chen as the CEO. New ideas were hatched for composite M10s, and upgrading the factory/ In November 2019, we had a scare that the factory was closing, only to find out that it was simply a furlough. The Mooney Flyer hosted a Mooney Roundup in Paso Robles with a full three days of informative seminars and lots of fun. Then we hosted a huge Fly-In with a free Tri-Tip and Chili that drew 55 Mooneys. Oakland Center asked one Mooney pilot, “What the heck is going on in Paso Robles?” That same controller asked that all those Mooney NOT depart at the same time (Ha!). We had awards and prizes with a good time for all. We plan to do more in 2020.

Looking back, we also added our web site, www.TheMooneyFlyer.com, which, in addition to an archive with all of our past issues, has an amazing inventory of useful stuff including a Mooney Evaluator, a List of all Mooney CFIs that have provided their contact information, Mooney Service Bulletins and Airworthiness Directives, Parts and Maintenance Resources, Countless Templates that can be downloaded and customized for your Mooney and your type of flying, an Up to date list of all Mooney Events that we know about, and a page to Order The Mooney Flyer apparel.

Our mission is to improve Mooney safety, increase the joy of flying a Mooney, provide valuable information, and entertain our readers. Only your feedback, articles and donations fuel the effort. A huge **Thank You** as we enter a New Year!

It’s been a fun flight for Jim and me for most of the 2010s. We have made countless friendships from Australia (AMPA) to Europe (EMPOA).

ADS-B

We have written several articles to help everyone decide on the ADS-B solution that will suit their needs.

ADS-B OUT is "the stick" (mandatory in certain airspace), but "the carrot" is ADS-B IN and with free weather and free traffic, it's hard to beat.

For some of our readers who fly out of Class E or G airports and don't fly into the mandate airspace, ADS-B Out is not required.

2020

We would like to provide more information to readers this year on fun places to fly with your Mooney. Think of it as "***Mooney GetAways***". Please consider writing up your Mooney Adventure and include pictures. Don't worry if you can't spell or write, we have professional copy editors standing by to make your tale a true gem.

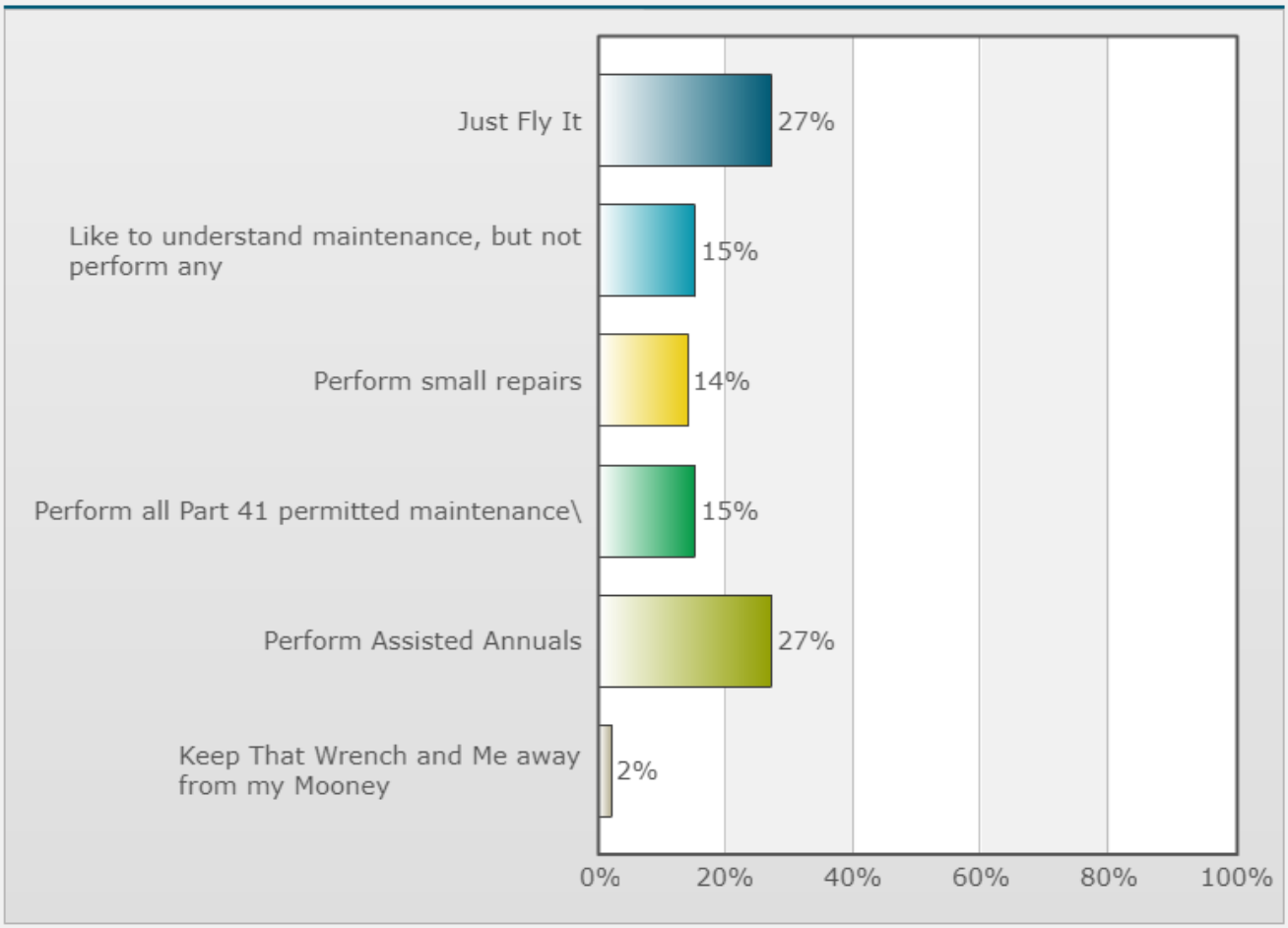
Also, if you have information or knowledge that you think might be useful to your fellow Mooniacs, send us your ideas. These articles can be on Flying, Safety, Mechanical, Experience(s) you've had, and more.

LOOKING BACK, WE STILL CAN'T BELIEVE IT. IT'S BEEN QUITE A RIDE. WE HAVE A LOT OF PEOPLE TO THANK FOR HELPING US CHASE THIS CRAZY IDEA!

I like to do the following on my Mooney

Poll created by Phil Corman on 09/27/2019

Poll Results



Next month's poll: "I wish Mooney would": **CLICK HERE** to vote.

Letters to the EDITOR

Editor@themooneyflyer.com

N597ND is a beautiful 1967 Super 21 and belongs to my honey & me. Home is a hangar at Cable Airport, Upland, CA. Former owners, Brian & Rebecca, changed the registration number when having it repainted around 2010 to reflect the date she graduated from Notre Dame, May 1997. Try saying that tail number quickly. Before that, one of our US Astronauts, Mark (call-sign "Roman"), flew it around. Recognition was slow, but it's cool seeing your airplane in print.

Thanks, **Joe & Laura H**, KCCB

RE: Personal Minimums: In the December issue, Brian Lloyd took issue with 'personal minimums' in his article. He said if our personal minimums are higher than approach minimums, then we need to practice until they are the same. I disagree with the first part (about higher personal minimums), but I agree with the second part (more practice). First, just because we have an instrument rating doesn't mean we are proficient. In that case, higher minimums are appropriate. Second, just because we CAN fly to minimums doesn't mean we all want to or should. Each of us may have more than one set of personal minimums. I have a 'launch minimums' of approach minimums + 200' & 1/2 mile. So, for an ILS with 200 & 1/2 minimums, I'm not going to launch until the current and forecast weather is at or above 400 & 1. Once I'm at the destination, I'll fly to minimums if need be, in order to get on the ground. Others might also have a 'start the approach' minimums. That is, they may want the weather better than approach minimums to start the approach or they will divert to their alternate. I have no problem with that. Others may never intend to fly a full approach. Instead, they are simply looking for a way to get up and down through a relatively high overcast and plan accordingly. I have no problem with that either. Not everybody feels the need to push the envelope as far as they can.
Bob P

In 2017 Barbara and I attended the Mooney Summit in Florida. One of the presenters was Jonathan Bass, the pilot featured in Jim Price's article in the December Flier. We would just like to add a couple of comments about that excellent article. First, Jonathan mentioned that the fact he had engaged his autopilot probably saved his life. It caused the autopilot to trim the aircraft into a controlled descent after it ran out of fuel, resulting in a flat, controlled crash landing rather than nosing over as it might otherwise have done.

Next, he mentioned how lucky he was to survive the crash. Right next to the crash was a line of trees and a ditch and he landed parallel to the trees and not into them. After the crash and when he regained consciousness, he thought to himself that he had never seen his windshield so clean, then realized it was actually gone. He then crawled from the plane but decided to go back to retrieve a new Carhart jacket his wife had just given him. That's when he spotted the glow of the TV set than led him to the Crabtree residence.
Dave and Barb B

Good day Phil & Jim,

Of my 3,350 hours, 2,400 have been in my beloved 1963 Mooney "D" that was immediately converted by its initial owner to "C" specs. I've flown with her on business* into 16 states, from crop-duster strips to international airports.

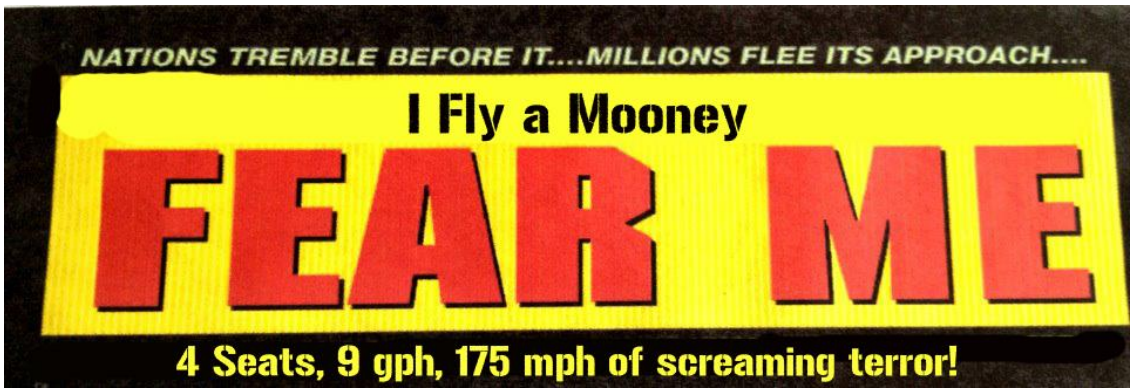
She's given excellent speed with 8.5 to 9.6 GPH depending on whether 65% or 75% power, and 484 pounds for passengers and/or baggage with full fuel, my equipment, lots of emergency gear in the back, and me. As such, she was a more efficient and flexible "tool" that made me money. Plus, she's a delight to fly for strict pleasure.

As time ran on, the Mooney evolved. The fuselage got stretched and the horsepower increased again and again. Turbocharging became an engine option. Interiors went to fine fabric and leather. Expensive glass cockpits replaced the steam gauges. The result: A beautiful inside and out A/C that led in speed.

However, the price rose up, too. Way up, and out of reach of so many potential owners.

So, my question is: Wouldn't there be a market today for a Mooney "C" priced in the C-172 or C-182 levels, but with more speed and efficiency, not to mention sex appeal? Does Mooney still have the tools somewhere that were used to produce the "C" and the next couple of models? If not, what would it cost to start them from scratch again? O. K., even put in a parachute?

Chester Peterson Jr.
Writer, photographer, editor. Articles in 170 different magazines, more than 1,000 articles over several decades in one of them (including feature articles in every major aviation magazine), 11 non-fiction books (including "Chet Peterson's Spreadsheet Programs for Aviation") that have sold 121,249 copies, department editor with a 1,340,000 circulation magazine and in all aspects starting and editing a national magazine for Caterpillar/AGCO....



RCAM

Runway Condition Assessment Matrix

Jim Price
Co-Editor

Assessing the condition of a runway covered with water, snow, slush, or ice has been a difficult issue for airport operators since the first runway was built. Braking action reports from pilots were suspect because there were questions, such as: Was the pilot under-skilled? Was it reported by a Citation or a Mooney pilot?

The Cocker Spaniel Test

Airport operators initially had few choices when determining how to advise arriving pilots about braking action. One early test involved a good-natured Cocker Spaniel. The airport operator would put the dog in the passenger seat of a truck, drive down the runway, then hit the brakes. The Spaniel Braking Test chart is shown on here on the right.

Cocker Spaniel Braking Test	
The Dog:	**Braking Action:**
Remains on the seat	**NIL**
Stumbles, but remains on the seat	**Fair**
Falls on the floor	**Good**

The Mu Meter

Over time, the Cocker Spaniel test was replaced by the Mu meter, located in a small trailer that was attached to an airport vehicle. It was driven down the runway to objectively measure braking ability. Braking action was reported in terms of "Mu" value—the co-efficient of friction between the runway and an aircraft tire. However, there wasn't a direct correlation between Mu values and airplane runway performance on the runway. Data created by airplane manufacturers to calculate braking performance was remarkably varied and often not representative of real-world practices and conditions.

Takeoff and Landing Performance Assessment initiative (TALPA) is born

In 2006, there was a two-day summit in Washington, D.C. to discuss the matter of takeoff and landing performance. After the first day's meeting, three of the attendees continued their deliberations in a hotel bar. On a cocktail napkin, they developed the first draft of the Runway Condition Assessment Matrix or RCAM. TALPA kept at it, and over the next several years, braking action readings became more realistic. The way manufacturers calculated air distance over the landing threshold was changed to make it more applicable to the way airline pilots fly. They also found that the average pilot would take about seven seconds from the threshold to touchdown. So, those seven seconds were figured into the plan.

The Runway Condition Assessment Matrix (RCAM)

Finally, ten years after the matrix was drawn on a cocktail napkin, the FAA implemented the use of the Runway Condition Assessment Matrix (RCAM) in 2016. This is what Airport operators use to perform assessments of runway conditions. It's also what pilots use so they can interpret reported runway conditions.

Runway Condition Codes (RwyCC)

The airport operator uses the RCAM to assess paved runway surfaces, and report contaminants that may be present. Through the assistance of the Federal NOTAM System, he or she determines the numerical Runway Condition Codes (RwyCC) based on the RCAM. The RwyCCs apply to paved runways and may be the same or vary for each third of the runway depending on the type(s) of contaminants present.

Contaminant coverage is expressed in percentage terms for each third of the runway, beginning at the Runway end from which it was assessed. This is typically the runway end primarily in use.

Pilot braking action reports are always welcome so that braking performance can be assessed and refined.

Runway Condition Assessment Matrix (RCAM)

How Airport Operators assess the runway condition	How Pilots assess the runway condition

Assessment Criteria		Control/Braking Assessment Criteria	
Runway Condition Description	**RwyCC**	**Deceleration or Directional Control Observation**	**Pilot Reported Braking Action**
• Dry	6	---	---
• Frost • Wet (Includes damp and 1/8 inch depth or less of water) ***1/8 inch (3mm) depth or less of:*** • Slush • Dry Snow • Wet Snow	5	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	Good
-15°C and Colder outside air temperature: • Compacted Snow	4	Braking deceleration OR directional control is between Good and Medium.	Good to Medium
• Slippery When Wet (wet runway) • Dry Snow or Wet Snow (any depth) over Compacted Snow ***Greater than 1/8 inch (3 mm) depth of:*** • Dry Snow • Wet Snow ***Warmer than -15°C outside air temperature:*** • Compacted Snow	3	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	Medium
Greater than 1/8 inch(3 mm) depth of: • Water • Slush	2	Braking deceleration OR directional control is between Medium and Poor.	Medium to Poor
• Ice	1	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	Poor
• Wet Ice • Slush over Ice • Water over Compacted Snow • Dry Snow or Wet Snow over Ice	0	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	Nil

Pilot braking action reports describe conditions as Good, Good to Medium, Medium, (which replaced the old assessment of “Fair”), Medium to Poor, Poor, and NIL.

NIL is a no-no, unless it's a closed runway

A federally obligated airport cannot report braking action as "NIL". In fact, NIL conditions on any surface require the closure of that surface. These surfaces will not be opened until the airport operator is satisfied that the NIL braking condition no longer exists.

Less than Dry (6)

What if the RCAM is rated at less than 6 (Dry)? Airport operators will issue NOTAMs.

Runway, Taxiway and Ramp FICON NOTAMs

FICON NOTAMs, also known as Field Condition NOTAMs, are easy to understand, if you are familiar with the matrix. Here are a few examples, thanks to Traverse City and Escanaba, MI. I knew I could count on those airports to have snowy conditions.

1st 3rd 2nd 3rd Last 3rd

RUNWAY 10 FICON 5/5/5 70 PCT WET AND 20 PCT 1/8IN WET SN OVER ICE 3FT SNOWBANKS OBS AT 1903021546. O2 MAR 14:46 2019 UNTL 03 MAR 15:46 2019. CREATED: 02 MAR 15:47 2019.

TAXIWAY ALL FICON 1/8IN DRY SN OVER COMPACTED SN OBS AT 1903021440. 02 MAR 14:40 2019 UNTIL 03 MAR 14:40 2019. CREATED: 02 MAR 14:40 2019

AIRPORT TERMINAL RAMP FICON 1/8IN DRY SN OVER COMPACTED SN OBS AT 1903021156. 02 MAR 11:56 2019 UNTIL 03 MAR 11:56 2019. CREATED: 02 MAR 11:56 2019

CLICK HERE to learn more about Field Condition Reporting (FICON)

The Single Most Important Thing to do to Avoid Gear Up Landings

Phil Corman
Co-Editor

The vast majority of gear up landings do not happen due to mechanical failure. Johnson Bar owners know one way that a gear up can happen, and that is when the Johnson Bar slips out of the lock. This can happen for one of two reasons; 1) The PIC did not secure the Johnson Bar into the latch, or 2) The latch has worn and the Johnson Bar slips out. There are two ways to prevent this from happening; 1) Tug on the Johnson Bar after securing it, and/or 2) Try to slide your fingernail between the Johnson Bar and the latch.

Another mechanical failure can happen when the PIC relies on the Gear Up indicator light. To avoid this, the PIC should rely on the mechanical indicator on the floor for indications of Gear Up or Down.

But, as we stated in the opening paragraph, most gear ups occur with the mechanical mechanism is working just fine. The main reason for a gear up landing is simply that the PIC is taken out of his/her routine and/or landing checklist. This can be caused by a multitude of reasons, such as:

- Another plane in the pattern causes a distraction, such as cutting you off, entering the pattern from a non-standard entry, etc.
- A busy pattern
- A passenger's needs or conversation distracts the PIC.
- Challenging weather on the approach or in the pattern

Most PICs have a landing checklist that includes at least a **GUMPS** check. **GUMPS** stands for:

- Gas
- Undercarriage
- Mixture
- Propeller
- Seat Belts

Whether you use GUMPS or a more extensive landing checklist, if you are distracted, what can you do to get "un-distracted"?

- ✓ Always try to extend the gear at approximately the same time or place
- ✓ When you extend the gear, check the mechanical indicator that the gear is down and locked, and speak out loud, "Gear is Down and Locked"
- ✓ When turning on your Base Leg or 3 miles out on Final, check the mechanical indicator again and speak out loud AGAIN, "Gear is Down and Locked"
- ✓ On short final, check the mechanical indicator again and speak out loud AGAIN, "Gear is Down and Locked".

The act of vocalizing that the Gear is Down and Locked is a psychological event that will ring bells in your head if you don't hear those magical words.

A true story. My first Mooney was a C and when I sold it, it was to a pilot with no retractable gear experience. I told him as he was about to fly my first Mooney love off into the sunset, about how to avoid gear ups. Subsequently, he landed gear up twice. The first time, it was while trying to land at a relatively short strip in the foothills of the Sierras. It was turbulent and he initiated a go-around. Go-Arounds are always a good idea when you are not stabilized in the pattern. He chose to leave the gear down as he circled to land. This time, a crosswind prevented him from a good approach to landing and he wisely chose to go-around a second time and retracted the gear. Well, you guessed it, he landed gear up on the third attempt. He thought he had left the gear down the second go-around as he had on the first. Ouch!

Summary

There are two steps to avoiding gear up landings. The first is to monitor the status of your gear regularly. Check those Johnson Bar latches and check the adjustment of your gear, at least every annual for proper adjustment. Also, equally important, add the vocalization to your landing routine. It's free and just might save you a new prop, an engine teardown, and new belly skins.

The Pulse Oximeter

by Michael Francis Stretanski, D.O.

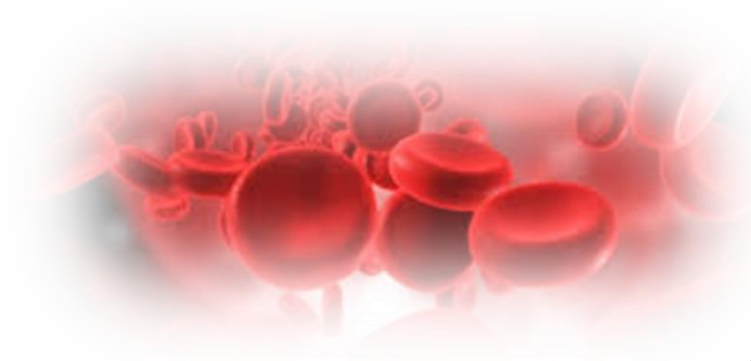
Blank stares. That's what I usually get when I ask a pilot when they last calibrated it. After nearly three decades in healthcare, spanning the gamut from teenage first responder to the tenured medical director, the evolution of the PPO (Peripheral Pulse Oximeter) has gone from something locked inside the anesthesia cart – restricted from even the ER, to a $15 item you can buy at Amazon.com. However, the comprehension of this misunderstood device, even among doctors, does not seem to have progressed with its availability.

This article should not be confused with emergent decompression and time of useful consciousness.

Pilots talk about common pitfalls while shooting approaches and interpreting GPS, VOR and other signals. However, understanding those pitfalls comes only after fully comprehending the basics to the advanced, not just passing a multiple-choice exam. Much like a printed screenshot of a 6-pack on a written test – you need to know what you need to know before you know what you are looking at. We can't do that without reviewing some basic anatomy and physiology and we really need to shatter some myths and misunderstandings. Fortunately, pilots are some of the most intelligent, diligent and receptive people on the planet, and it is this professor's confident intent that if you finish this article, you will be able to reasonably process the information the device is giving you.

So, here we go

PPO absolutely, positively does NOT measure oxygen in your blood and does NOT indicate if you are hypoxic. Please read that sentence twice. The O_2 (Oxygen) dissolved in your blood does nothing for you directly, but it is where the oxygen comes from that's important. (More on this later). Oxygen is CARRIED in a 4-seat taxicab called hemoglobin and the hemoglobin taxi is inside a ferry called a red blood cell. The ferries go through arteries, then smaller and smaller vessels until they line up single file in the smallest branches of the river – the capillaries. The people get out of the taxi as the hemoglobin "hands-off" the O_2 and it goes to work in the cells where they ultimately become CO_2 (carbon dioxide). The CO_2 diffuses passively in the blood, like carbonated soda, and makes its way to the lungs where it is rinsed out on exhalation. The CO_2 doesn't get back in the taxi to go home to the lungs. No, CO_2 walks home. This happens in all mammals.



So, what exactly are we measuring? It's fascinating that the shape of the hemoglobin changes with the 4 oxygen places filled and then folds back in on itself when they depart. The two forms of hemoglobin – saturated and unsaturated – have different shapes, sizes and weights. The light sent into the skin by the pulse oximeter, can easily tell whether the hemoglobin is saturated or unsaturated, by sensing the percentage of spaces filled. This percentage of filled spaces is known as the SaO_2. It is technically a "saturation percentage" of the hemoglobin.

It's an understatement to say there are a few problems that can distort this measurement. Every driver's silent enemy, CO (Carbon Monoxide), can jump into a seat in the taxi and refuse to leave for the 90-day life of the red blood cell. But guess what? It still gets measured as saturation. So, you can get an SaO_2 of 100%, but 10-20 % of that 100% might be CO and there is no way for you to know until the medical examiner performs the autopsy. 50% of our blood volume is supposed to be red blood cells (RBC). If we are anemic, (such as low-grade kidney disease, low grade GI bleed or a heavy menses), we might only have 30% red blood cells. So, there are ultimately fewer taxis and ferries. This means fewer oxygen molecules get moved. 100% of 30 is 20% less than 100% of 50. But, that pulse oximeter on your finger still reads 100%. Yes, you have 100% saturation of the four spots in all the hemoglobin in all the RBC's, but guess what? You're still hypoxic! Also, the water in the river upon which the ferries ride, needs to move. The heart and lungs need to be working well, which drives blood pressure and circulation. If the river is slow and shallow, the taxis are full, the pulse oximeter reading is 100%, but the oxygen isn't getting anywhere. The average healthy human heart only ejects about 55% of the blood in the heart with each beat. There's a lot of give and take, even in a healthy, strong human circulatory system.

The first "P" in PPO stands for "peripheral" (usually a finger). In surgery, we use the earlobe because it is closer to the central circulation. As you fly higher, there is less oxygen and it's colder. Cold fingertips might have low circulation and low cellular metabolism. They don't need much O_2, and from a cardiovascular standpoint, life is not physically demanding when you're sitting in a cockpit at a high altitude. Your blood pressure and heart rate might be up, but you're not exactly on a treadmill. So, you can have false low or high SaO_2 in your fingertip; a fingertip that isn't using much oxygen. Therefore, there's a lot that's left over in the taxi. No one gets out to do the work because there is no job to do. This number does not necessarily reflect the saturation and the amount of oxygen in the four big arteries to the brain. With such a wide range of Pulse Oximeter manufacturers, there doesn't seem to be a consensus. Have you ever borrowed all the PPO's at the airport and sat quietly with one on each finger? Even if they are all within 3% of each other, who knows what they would be if you were honestly in the 80's?

You don't absorb all the oxygen you breathe in, and you don't breathe out every bit of CO_2 that you have in your lungs. It's a rinse and repeat process. Think about this: You can perform rescue breathing (mouth to mouth) on someone who is not breathing and for a while, the oxygen that is left over in your exhaled breath is enough to keep someone alive. When the person passively exhales, he or she gets rid of some carbon dioxide. Blood is heavy and when it gets pumped to the

lungs in an upright person, it usually only circulates the bottom portion. Therefore, shallow breathing, even at sea level, can cause hypoxia.

Analogy

I want to get 1,000 people downtown, but there are only a few taxi cabs. Each cab has four seats filled, but not a lot of those people are getting downtown because of the number of cabs, and some of those cabs have a carjacker (carbon monoxide) sitting in a seat just going back and forth and never getting out. Some cabs are stuck in traffic and hardly moving. So, the seats are 100% saturated, which seems to be a good number on the surface, but the bad news is no one is getting to work.

Every pilot accepts the responsibility for every soul on board their aircraft. SaO_2 seems like a great quantitative way to make sure no one is hypoxic. But, with no apology for sounding like an arrogant doctor, the PPO is ultimately a medical monitoring device designed and intended for use by healthcare professionals in a controlled setting. Like an EKG machine, someone without extensive training/testing wouldn't be expected to read and interpret and make quick life and death decisions based on an EKG. Yet, a few keystrokes will bring a PPO to your door, which is why our culture needs to take a step back and understand what we just got in the mail. While it is true that in the practice of medicine, a low and/or dropping SaO_2 means something bad, it's meant to be used in a controlled environment. It's meant to be used with a patient in a hospital bed with steady temperature, metabolic demands, known pH and barometric pressure. We also know the medical issues, labs and imaging studies. That SaO_2 measurement goes along and is only a small part of a professional evaluation of the patient with the SaO_2 %, not the SaO_2% the patient has. This is hardly the situation when you're reaching in the back seats to "spot check" the kids' oxygen level.
What might be the difference in quality, reliability and accuracy in the PPO built into a $75,000 anesthesia machine that is checked and certified like a pitot-static system, compared to the one you got online for less than the price of a fast food meal?

Two simple exercises, if you are healthy:

1. The rods need O_2 for color vision more than the cones. That could be an article in and of itself. Take a safety pilot to 7,000 at night. Place your PPO on your finger and your O_2 mask on your face. With the O_2 off, pick a section of colors in the display and stare for one minute. Then, without taking your eyes off the colors, turn the O_2 on for a minute. Do you notice the colors jumping out? None of this should really surprise a trained pilot, but when you had a noted physiologic change in your vision and proved the O_2 sensitivity, did your PPO go up when the O_2 was turned on? There are implications for this when people can't see red warning lights, yet they are more likely to note motion and flashing. That's because the cones are more sensitive to the changes in the field, but not the colors.

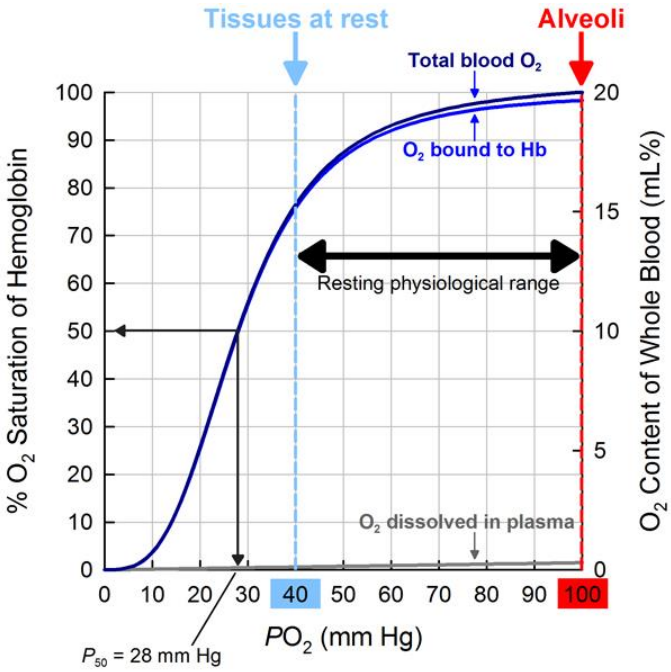
2. There is a lag in SaO_2 drop. This is a mandatory exercise for every medical student that helps me sedate patients. Find a quiet place and time. Place your PPO on your finger and sit peacefully for a few minutes until the number stops changing for at least two minutes. Hold your breath and wait as long as you can. Notice that the SaO_2 never really goes down, but after you

start breathing again, 30-60 seconds later, it might drop a few points. The O_2 that dissolved directly into the blood is jumping onto the hemoglobin, keeping the saturation percentage high, but the partial pressure of the actual O_2 gas that's dissolved in your blood is dropping. Think about how badly you needed to take a breath, but that $15 machine was telling you that you were fine. The point is that by the time the SaO_2 does legitimately drop, you are already way behind the Eight Ball. Whether you are a pilot, passenger or a patient under sedation, if you are waiting for the SaO_2 to drop, you are waiting too long.

Note that the SaO_2 is reading 84%, this corresponds to being on the steep part of the curve with a partial pressure of oxygen in the blood around 50 mmHg. Anyone would have long been unconscious.

We all experience hypoxia a little differently. The FAA notes some 35+ symptoms of hypoxia, but a person's hypoxia symptoms may be different on different days.

Let's move on to the dissolved oxygen in your blood. The reader needs to know the difference between SaO_2 and partial pressure of O_2 gas dissolved in the blood to understand the non-linear nature alluded to in the graph. This graph might seem a bit intimidating at first glance, but it's got a lot less information than an approach plate. Notice if the partial pressure of the O_2 gas dissolved in your blood (bottom left to right) can drop all the way from 100 to 55 mmHg, but the SaO_2 only drops from 100 to 90% Yet, on the steep part of the curve (where we don't want to be) a drop of only 40 to 30 mm Hg brings SaO_2 from 76 to 55% For a point of reference when we are doing CPR in an ER and a blood gas comes back at this level, we know they are dead and there is no point to continue the resuscitation efforts. The slippery slope part starts around 89%, and this is one sled ride you don't want to take. Patients in this early high 80's range can get irritable, aggressive, confused and often don't remember the episode. It goes without saying that ADM will suffer and no one is going to make good decisions, let alone fly an approach in that SaO_2 range. And if you do end up safely at a lower altitude and/or oxygenated, you are not likely to remember the episode. If someone really wants a breakdown on the graph, there is one good article on the curve at https://www.americannursetoday.com/decoding-oxyhemoglobin-dissociation-curve/



This is a non-linear response curve. The difference between 88-90 is huge, but the difference between 100-93 is minor. Here's where my explanation gets dicey, can be confusing and not everyone agrees. The World Health Organization notes that below 95% is low, but Advanced Cardiac Life Support guidelines are aiming for 94-100%. Yet, you can find a dozen articles in the medical literature in disagreement.

As a flight instructor, I compare hypoxia to marginal IFR conditions or an emergency. If you can't quite tell if it's IFR or VFR, and you're not entirely sure, you should "act as if" you are hard IMC. In the same school of thought, if you think you might be hypoxic you can't quite tell, regardless of what the PPO is telling you. Assume you are hypoxic and take command of the situation. Put O_2 on and descend if possible. Don't wait for more sinister evidence to appear. If you are in early hypoxia, you cannot waste time any more than you can "philosophically ponder" an uncontrolled spin.

Yes, it should be noted that high-flow oxygen can be toxic and can potentially suppress respiration, but for the time frames we need at the flow rates we use in general aviation, this is not usually an issue.

The reader might conclude that there is almost no point in carrying a PPO in their aircraft. They are perfectly legal. It's a matter of personal preference. PPOs can be a distraction, or they can be misleading and lethal.

Pilots far wiser than I, who have flown high altitudes safely for half a century, will point out they also flew safely in GA, without this little gizmo, simply by using common sense.

Things All Mooney Pilots Know or Should Know

Compared to most General Aviation aircraft, a Mooney is way different. As such, they also require different judgements and skills when flying them. Here are some top items that every Mooney pilot knows or should know.

Landings Require Precision

Mooneys are fast and slippery and that's one of the many reasons we love them. But on landing, they demand a precise airspeed and descent. If you are only 2-3 knots fast in the flare, plan on landing in the next county. It will float… float… float and then float some more. You can ease a Cessna or Piper onto the runway, but do not try that with your Mooney. If you do, you can expect a sizable bump/bounce and become airborne again. The harder the bump, the higher the bounce. Why does a Mooney bounce? That's easy. It's either too much airspeed or too rapid a descent. Excess airspeed is the primary cause of a bounce. Remember that our Mooneys don't have effective shock absorbers and those hockey puck biscuits will propel you back into the air. If your approach was a little too steep, then you should attempt to perfect 3^{o} stabilized approaches.

There are two types of recoveries. The first is to perform a go-around. For newer Mooney pilots, this is by far the best option. The second option is to maintain the nose attitude, add a little power (it doesn't take that much), and let her settle back down to the runway. Never push the yoke unless you risk a stall too far above the runway.

Don't Let a Mooney Porpoise

Should you bounce your Mooney on touchdown, and then bounce a second time, your priority is not to bounce a third time. The third bounce will be the worst and you risk a prop strike or worse. The best option is to initiate a go-around.

Use a Little Back Pressure on the Yoke for Takeoff

As I've stated above, a Mooney won't land until you have the correct airspeed and attitude. At rotation speed, find a trim setting that keeps the nose light. Keep a little back pressure on the yoke because if you don't, your Mooney may tend to "Wheelbarrow" at rotation speed. That is, the mains become airborne, but the nose gear remains on the runway briefly. This is a situation you want to avoid.

Slip Short and Medium Bodies on Final, but not Long Bodies

If you are high on final in any model between M20A and M20K, performing a Forward Slip on final will lose that altitude without gaining airspeed. Gaining airspeed in a Mooney on short final is not very useful or helpful. If you have not slipped your Mooney, we recommend practicing with a CFI and/or trying them at altitude first before attempting them on short final. In all Long Body Mooneys, a slip with flaps down is prohibited, mostly because they interrupt the airflow to the elevator which is also not helpful on short final. Air Brakes are your best bet in that situation.

Center that Ball for Stalls (The No Spin Zone)

Most Mooney stalls are gentle, but if the ball is not centered, you are more apt to enter a Spin; nastier than those in a Cessna or Piper. Spins are prohibited in a Mooney and the reason is that the normal spin recovery, *opposite rudder, neutral ailerons and gently recover from the ensuing dive*, doesn't always work.

They're Made of Corrodible Metals

Stay on top of the inside of your fuselage and wings. Our Mooneys corrode in all sorts of weather. It doesn't have to be near the ocean or in a humid climate to corrode. Check for corrosion, at least annually in the wings and fuselage and treat it before it begins. Also, ensure that you have complied with SB 208.

How Do You Know a Mooniac is Lying?

A fellow Mooniac is the most wonderful friend on this Earth. But almost all of them are lying, or at least exaggerating when they speak about how "Fast" or how "Fuel Efficient" their Mooney is. The "Mooniac Cult" requires that we fly at excessive airspeeds and only burn 100LL vapor. You will never get book airspeeds out of your Mooney, and you'll never go as fast as the other Mooniacs at the fly-in!

All Mods are not Created Equal

Here's another place we tend to exaggerate, or at least the Mod Supplier does. Not all mods are created equal in terms of improving a Mooney's speed. Some engine cowlings increase airspeed; on older models for sure. Flap gap seals also improve airspeed. But the best way to go faster is to increase horsepower. It's that simple. Proper rigging can increase your airspeed as well. And finally, reducing the negative lift on your tail can increase your speed, but this will reduce your longitudinal stability, as well.

The sexiest Mooney mods are 3-Bladed Props and newer wingtips (on older Mooneys). They just make a sweet/beautiful Mooney even more beautiful. This is a fact. Three-bladed props slow your Mooney down in cruise (or at least don't increase it), but shorten your takeoff run and increase your climb.

Happy New Year, Fly Fast & Fly Safe!

GUMPS IS NOT ENOUGH

BY Wally Moran

On a regular basis I hear about yet another inadvertent gear up landing. When this happens, I can only assume that the, now very embarrassed pilot, did not use a **WRITTEN LANDING CHECKLIST**. Because if he had, I bet it would have reminded him to lower the landing gear prior to landing.

While doing training in complex aircraft, I often see pilots religiously use the printed checklist for preflight, starting and run up. Then off we go and after completing the air work we return to the airport for some pattern work and what do you know, the pilot now decides to use a memory checklist for one of the most important phases of flight, the landing!

When I question why they did not use a written checklist for landing, I am often told that their instructor taught them to use GUMPS. Some tell me this is so important that they do GUMPS on downwind, base and final. I agree that this is an important phase of flight, maybe important enough to actually use a printed checklist, just like professional pilots do.

In discussing this with instructors, they tell me that there is just too much going on in the pattern and it's simply too distracting to actually complete a written checklist. That's a good point. Many of the landing check lists I have seen include everything from soup to nuts and yes, that sure can be overly distracting at a busy time.

For example, a look at the before landing checklist in the POH for an M20K lists 9 items on the before landing checklist. Who has time to check nine items while in the pattern? No wonder pilots have figured out a better way. Better, that is, until a distraction at a bad time leads to that short step down off the wing.

Sadly, depending on the value of the plane, a gear up landing often results in a total loss. Even though airframe damage may be minor, the cost of the engine and propeller repairs may well exceed the value of the plane. When this occurs, another one of our great planes is suddenly turned into a pile of spare parts.

According to one insurance company, inadvertent gear up landings account for a significant portion of the hull premium for a retractable gear airplane. An inadvertent gear up landing can be far more serious than simply fixing the airplane and the pilot's ego – but that's bad enough. Gear up landings have resulted in fatal accidents.

Here is one example, as quoted in part from the NTSB report. “According to witnesses, the airplane touched down on runway 06 with the gear retracted. The airplane was observed exiting a cloud of dust and climbing to about 500 feet. Witnesses said the airplane circled the runway to the left twice, and the pilot lowered the landing gear for an approach to runway 24. During the descent the airplane went into the trees and collided with the ground 500 yards from the threshold of runway 24.” The aircraft, a Mooney M20M, burst into flames. The pilot escaped, but the passenger did not. The report goes on to say, “Examination of the approach end of runway 24, found scrape marks and slashes in the runway surface similar in appearance to marks that would have been made by a rotating propeller.” You can find further details of this accident at the NTSB web site ID: ATL06LA014.

I hope I have convinced you that a memory checklist is not a satisfactory solution to inadvertent gear up landings. Here is what I suggest. Select those items on your landing check list that are really critical and make a very short list. It should be only about three or four items. Take the items left over and make a “top of descent” checklist so you can get those out of the way before the busy time. The 3 items I have on my list are: Gear Down, Fuel selector (not moving it, but simply insuring it is on a tank that has enough fuel for the approach and missed approach) and mixture/prop forward.

Put your short list in a spot where you can easily see it while you are looking out forward. It should be somewhere in your line of sight like a window post or a blank spot on the panel. This makes it easy to review these few items while still looking for traffic, etc. I physically touch the list and say the items out loud. Now, if you like to do GUMPS, feel free to do that as many times as you like, but complete your **WRITTEN** list before landing. If you do, I am quite sure that you will put the landing gear down before you land.

I think it’s fair to say that those that have had an inadvertent gear up landing must not have used a written checklist. So, in my view, using a memory checklist sets you up for a distraction at a bad time and puts you in the group that is most likely to forget the landing gear.

If you choose to use a written checklist for landing, as you do for other phases of flight, and as the professionals do, you have put yourself in a different group.

I hope I am not the next guy to forget my landing gear, but if I am, it will have to be because I also forgot to use my written checklist.

Selling your Mooney

Change in Registration

When the time comes to part with your precious Mooney, there are two things that you'll need to do to satisfy the FARs.

Per **FAR 47.41**, an aircraft's registration becomes ineffective upon the transfer of ownership of the aircraft. It is then the seller's responsibility to

- Remove the registration certificate from the aircraft
- Complete the reverse side
- Mail it back to the FAA within the prescribed time period (typically 21 days).

REGISTRATION NOT TRANSFERABLE

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION
CERTIFICATE OF AIRCRAFT REGISTRATION

This certificate must be in aircraft when operated.

NATIONALITY AND REGISTRATION MARKS	N 12345	AIRCRAFT SERIAL NO.	6969

MANUFACTURER AND MANUFACTURER'S DESIGNATION OF AIRCRAFT
CESSNA C-150L
ICAO Aircraft Address Code:

ISSUED TO
ROBERT E. BARO
300 MOERKLE ST
ANYTOWN, OHIO
12345

This certificate is issued for registration purposes only and is not a certificate of title. The Federal Aviation Administration does not determine rights of ownership as between private persons.

It is certified that the above described aircraft has been entered on the register of the Federal Aviation Administration, United States of America, in accordance with the Convention on International Civil Aviation dated December 7, 1944, and with the Federal Aviation Act of 1958, and regulations issued thereunder.

U.S. Department of Transportation
Federal Aviation Administration

DATE OF ISSUE
February 16, 1996

David Hinson ADMINISTRATOR

AC Form 8050-3(11/93) Supersedes previous editions

The buyer is responsible for applying for a new registration.

Got a 406?

If you are selling a Mooney that is equipped with a 406 MHz ELT, you have some more important work to do. You must notify the National Oceanic and Atmospheric Administration (NOAA) **Search and Rescue Satellite Aided Tracking** (**SARSAT**).

Not Selling your Mooney, but Changing Registration Information

If you remain the owner of a Mooney, but change your physical address or location, per FAR 47.45, you will need to you need to notify the FAA within 30 days.

In addition, if you have a 406 MHz ELT and change your physical address or location, you'll need to notify NOAA. Both notifications must be in writing.

Just keep them involved when there is any change in registration information. (see **47 CFR § 87.199(f)**) for procedures when changing 406 MHz ELT ownership or owner address.

Is your ADS-B Equipment DO-260B Standard?

If you equipped with ADS-B **before 2015**, you should test your equipment to ensure it is in compliance. Why? Because it's likely the early ADS-B transponders were manufactured to the DO-260/260A standard, which was an earlier requirement for flying in Australia and other parts of the world.
However, the version the FAA adopted for the flying in United States airspace is **DO-260B**. This standard was adopted because it eliminates latency and adds annunciation requirements. Later, the DO-260B standard was accepted as the worldwide standard by all civil air authorities.

Many Aircraft are Sadly, "Non-Performing"

The FAA issued a report earlier this year warning that there was a high rate of non-performing emitters (NPEs). Many of the aircraft with NPEs were probably installed more than four years ago or prior to changes made in the mandate and implemented over the years after its initial announcement.
Some, however, may be a result of an improper installation or equipment configuration.

Common reasons the emitter may not be transmitting include:

1. Incorrect software version or improper configuration. Either issue can reduce the accuracy of the aircraft's position
2. Incorrect emitter category. This happens when the ADS-B system transmits the wrong emitter category based on its maximum take-off weight
3. Incorrect Flight ID. This happens when the aircraft's registration for Mode S doesn't match the Flight ID
4. Transmitting airborne data. An error when the signal is transmitted, but the aircraft is on the ground

How to test if your ADS-B Transponder or UAT are Compliant

About one hour after a flight, go to the FAA's website or
https://adsbperformance.faa.gov/paprrequest.aspx and request a Public ADS-B Performance Report (PAPR). The PAPR helps you verify that your ADS-B equipment is functioning properly.

ForeFlight Continues to Prove their Commitment to GA

With the news of ForeFlight joining the Boeing company in March 2019, many pilots expressed concern about the future of the app and if the attention would shift away from its core base of general aviation pilots.

Among the scoffers was the CEO of competing aviation app. He predicted that ForeFlight would have a slower pace of innovation, higher prices, and would now focus on commercial aviation.

While there have been new services added for professional pilots since the acquisition, most of the 2019 updates have focused on improving the quality and usefulness of the app for pilots of all experience levels. This includes a major expansion of the Performance Plus subscription level, a new Passenger app, and even an airline app in partnership with Jeppesen.

Here's a recap of ForeFlight's 2019 releases:

How to use pre-departure clearances and digital ATIS in ForeFlight **(Jan 9, 2019)**

Using ForeFlight's new 3D view **(Feb 5, 2019)**

A look inside the new Jeppesen FlightDeck Pro X app **(Feb 25, 2019)**

How to use ForeFlight's new Passenger app **(Mar 26, 2019, post-merger)**

How to calculate takeoff and landing distance with ForeFlight 11.4 **(May 29, 2019)**

How to use visual track log reviews and alternate airport planning in ForeFlight 11.5 **(June 26, 2019)**

3D Review comes to ForeFlight, plus Map Annotations and Audio Checklists **(July 11, 2019)**

ForeFlight introduces multi-user tools, enhanced map options at NBAA 2019 **(Oct 22, 2019)**

The latest update, version 11.11, includes new Weather Imagery, Cloud Top Forecasts, NOTAM alerts in the route editor, migrating data from static paper charts to interactive data-driven representations throughout the app. Also, after loading an approach from the Procedure Advisor in the Route Editor, you'll see the familiar approach waypoints shown on the moving map. 11.11 now includes the Jeppesen-sourced speed, altitude, and IAF/FAF information for each waypoint marker in the procedure, even when the procedure plate isn't displayed. *(Dec 2019)*

ForeFlight is definitely focused on the GA pilot. I serve with a FAASTeam crew that teaches Mobile app seminars in Arizona. I specialize in ForeFlight, which is what 98 - 99% of our seminar members are using. We also have one FlyQ and one Garmin Pilot teacher, just in case one of those users might attend. I continue to be amazed at what I am learning about the features. I am grateful for my ForeFlight app, because at my fingertips are every chart in my chosen area of flight. Plus, when I turn on my Stratus 3 receiver, I have constant, amazing ADS-B weather advice. It's like having a personal flight dispatcher.

Since the merger with Boeing, ForeFlight has continued to demonstrate their commitment to General Aviation. Their passion really shines as version after version is released.

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

Need to request an authorization to deviate from the ADS-B rule? Go to

https://www.faa.gov/nextgen/equipadsb/adapt/

The Mooney Maintenance Puzzle

Click here

Download Mooney's 100 Hour Inspection Guide

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

Click here

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

Click here

Click here

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

LASAR

Fanatically Mooney. Exceptionally Fast.

Ask the Top Gun

Tom Rouch

Founder of Top Gun Aviation, Stockton, California

Send your questions for Tom to TheMooneyFlyer@gmail.com

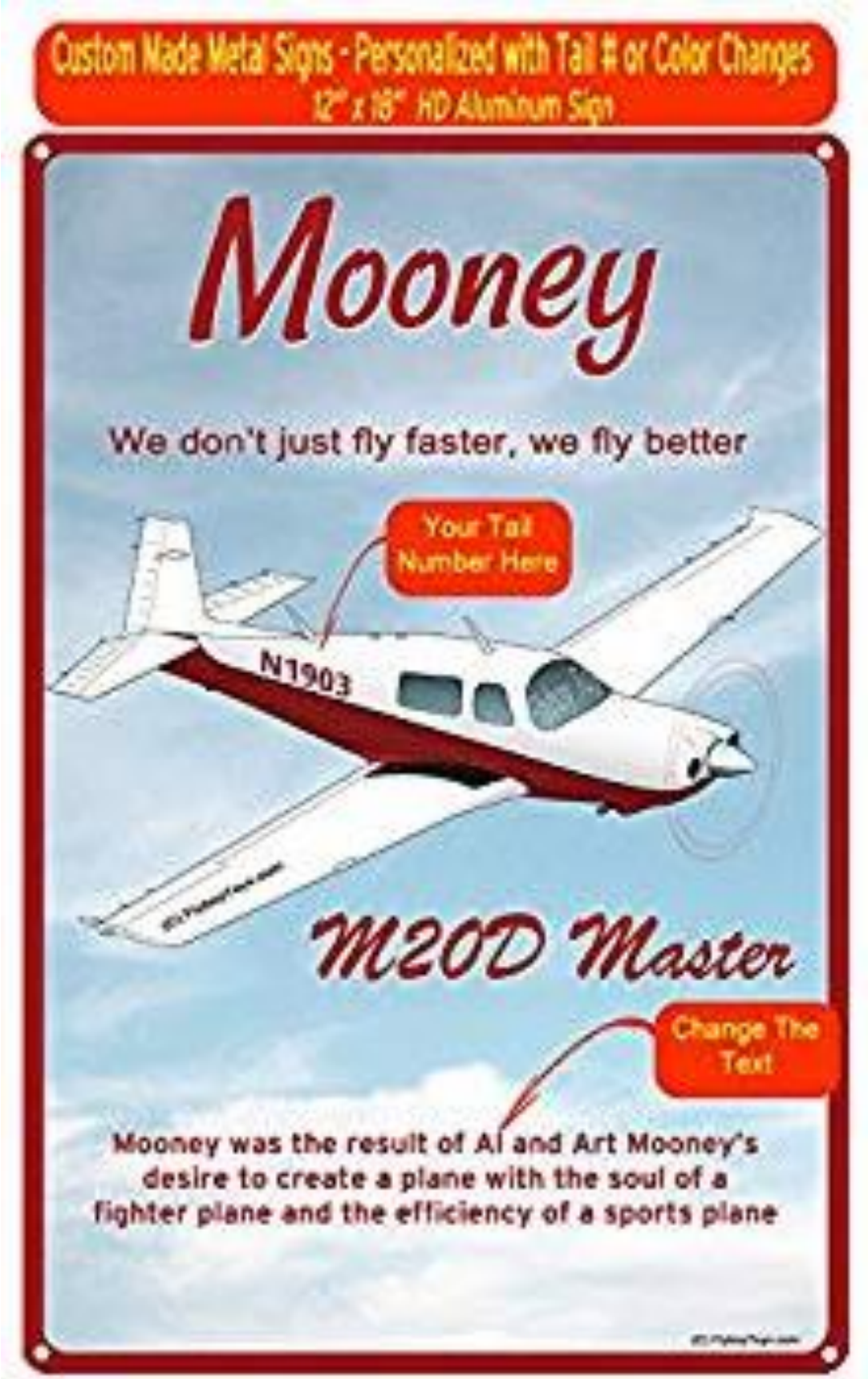
Question: You always seem to have the experience to know off the top of your head the answers to everyone's questions. I hope you can answer mine.

I own a 1965 M20E, but with an updated Lycoming Model: IO360A1B6 SN: L7829-51A-C engine. I have been using massive spark plugs in the engine, but do get some lead fowling on the plugs, especially after long idle times. The plugs always clean up with a short high-power run, and the mag checks are always clean after that.

I have been told that I should install a set of fine wire plugs, and that will eliminate that issue. I would like your opinion on that suggestion. I would also like your suggestion on what spark plug number (heat range) I should be using? I replaced the plugs at overhaul, but the mechanic used the same number plug that was in the engine before overhaul.

Please let me know if you need more information to give me a suggestion. Many, many, thanks for your help with this. One day I would love to get to meet you.

Answer: I suggest you use Iridium plugs. They are fine wire, and since you have a low time engine, this will justify the increased cost. They should last at least 1,000 hours, improve performance and greatly reduce fouling. The Champion plug is either a RHM 38S or a REM 38S. The difference is the size of the spark plug lead nut. It depends on what magnetos you have. The RHM is a 3/4" and the REM is a 5/8-inch nut. Hope this helps. These are outstanding spark plugs.


Custom Made Metal Signs - Personalized with Tail # or Color Changes
12" x 18" HD Aluminum Sign
Mooney
We don't just fly faster, we fly better
Your Tail Number Here
N1903
M20D Master
Change The Text
Mooney was the result of Al and Art Mooney's desire to create a plane with the soul of a fighter plane and the efficiency of a sports plane

FARO Stealth Audio Link

$139.95

Upgrade your aviation headset with the FARO Audio Link. Get alerts from your favorite aviation app, listen to music on long cross countries, or even make a phone call to get clearance while on the ground. The Audio Link uses Bluetooth to connect to enabled devices and has a 3.5mm aux-in jack for hard wiring.

Features:

- Dual headset volume knobs
- Audio priority
- Bluetooth volume control
- Mono/stereo switch
- USB Type C power input

Uses 2 AA batteries (not included) but can also be powered via the USB type C port on the side of the unit. Includes 3.5mm aux cable and USB type C power cable.

[Available at Sporty's]

FAA To End HIWAS

On Jan. 8, the FAA will discontinue the Hazardous Inflight Weather Advisory Service (HIWAS) after discussions with industry going back a year and a half. Ending HIWAS is "part of FAA efforts to modernize and streamline service delivery."

Citing new weather-dissemination technologies, the FAA stated that "the demand for inflight services from Flight Service specialists has declined. Staffing was 3,000+ specialists in more than 300 facilities during the early 1980s and now consists of three hub facilities. In 2018, radio contacts

dropped to less than 900 per day from an average of 10,000 radio contacts per day."
The FAA says that multiple sources are available to pilots "that provide access to weather and aeronautical information to pilots in the cockpit, often presented in a graphical format, making it easier to visualize what is going on along the route of flight."
The FAA instituted FIS-B as a replacement for this legacy system that provides a range of aeronautical information products and often in a graphical format, which is not available via HIWAS. For pilots who choose not to equip their aircraft with this new technology, a Flight Service Specialist is still available over a radio outlet. ATC will continue to offer advisories to pilots who do not have Datalink weather.

New Mobile Website and Voice Applications

The Flight Service website (1800wxbrief.com) now has a mobile-friendly version that supports ICAO flight planning, access to weather, and more. The recently deployed Mobile Web provides many of the same capabilities as the website but optimized for mobile devices, such as an iPhone, iPad, or Android.

In addition, Flight Service has deployed new capabilities available for use on Alexa and Google Assistant. Download the ***Leidos Flight Service*** voice application to see how it works.

Today there are multiple sources available to pilots that provide weather and aeronautical information, often presented in an easier to understand graphical format. Pilots no longer need to call Flight Service to adhere to 14 CFR 91.103 and maintain awareness of weather and aeronautical information. You can learn more about these automated flight services at 1800wxbrief.com.

Flight Service to discontinue TWEB and TIBS in Alaska

As part of the FAA's efforts to modernize and streamline service delivery, Flight Service will discontinue the Transcribed Weather Broadcast (TWEB) and Telephone Information Briefing Service (TIBS) in Alaska, effective Jan. 1, 2020.

The TWEB is a continuous broadcast of aeronautical and meteorological information over a limited network of Very High Frequency Omni-Directional Range (VORs) and Non-Directional Beacons (NDBs) across Alaska.

A similar broadcast service, the Hazardous Inflight Weather Advisory Service, known as HIWAS, is being discontinued in the lower 48 states.

PIVOT introduces new cases for iPad Mini and iPad Pro 11

The new iPad Mini X Case This fits both the iPad Mini 4 and the new iPad Mini 5. If you've purchased an iPad Mini in the last four years, this case will fit it.

Like all PIVOT cases, the new ones are rugged and offer excellent protection. Originally designed for airline pilots, it's not too bulky and it can tolerate daily use. The back features rubber feet to stabilize the case and an ID window.

The top pick for a tablet is the new iPad Pro 11". It is surprisingly thin, so it doesn't add much bulk, but it still adds a lot of protection – you can drop it right on the corners and your iPad will survive. There's also a handy kickstand on the back, so when it's removed from the suction cup mount this case is ideal for everyday use. The new PIVOT case will not work with the new Apple smart keyboard.

The new iPad Pro 11" model includes a sturdy kickstand

These PIVOT cases are available as complete kits that include a suction cup mount. Just slide the screen cover out and slide the suction cup arm in. It will lock in place and they it's easy to mount your iPad on a side window.
The PIVOT iPad Mini X Case is available for $149.95 and the complete iPad Mini Kit is available for $174.95.
The PIVOT iPad Pro 11" Case is also available for $149.95 and the complete iPad Pro 11" Kit is available for $174.95.

All cases are available at Sporty's via the above links.

Opposing the Aviation Noise Bill

A broad spectrum of aviation groups is opposing a congressional bill that would allow local authorities to set noise standards at general aviation airports. In a letter to House leaders, nine groups representing operators that use municipal, regional and major airports say H.R. 5423, the Aircraft Noise Reduction Act, would undermine the federal authority that governs aviation policy. "This legislation seeks to impose restrictions at the local level, thereby undercutting the utility and safety of thousands of airports across our nation and reversing course on the need to regulate aviation matters at the federal level, which Congress has recognized since the 1920s," the letter reads. It was sent to leaders of the House Committee on Transportation and Infrastructure and its aviation subcommittee.

The Department of Transportation, through the FAA, has full authority over aviation facilities and policy and the letter says the bill will compromise that authority. The Airport Noise and Capacity Act (ANCA), enacted in 1990, governs noise levels at airports and the groups say it "provides an effective process" for assessing and adjudicating those issues. The bill, they say, would allow local authorities to restrict access by commercial aircraft and imperil a host of vital services and businesses. It would also force commercial operators to use large airports, adding to the already significant congestion at many of them. "Uniform federal authority is an essential predicate to the safe and efficient administration of the National Airspace System," the letter reads. "Any changes to this well-established process will open the door to a tangle of conflicting local regulations, encouraging inefficiencies and jeopardizing safety."

Spatial Interior for your vintage Mooney

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

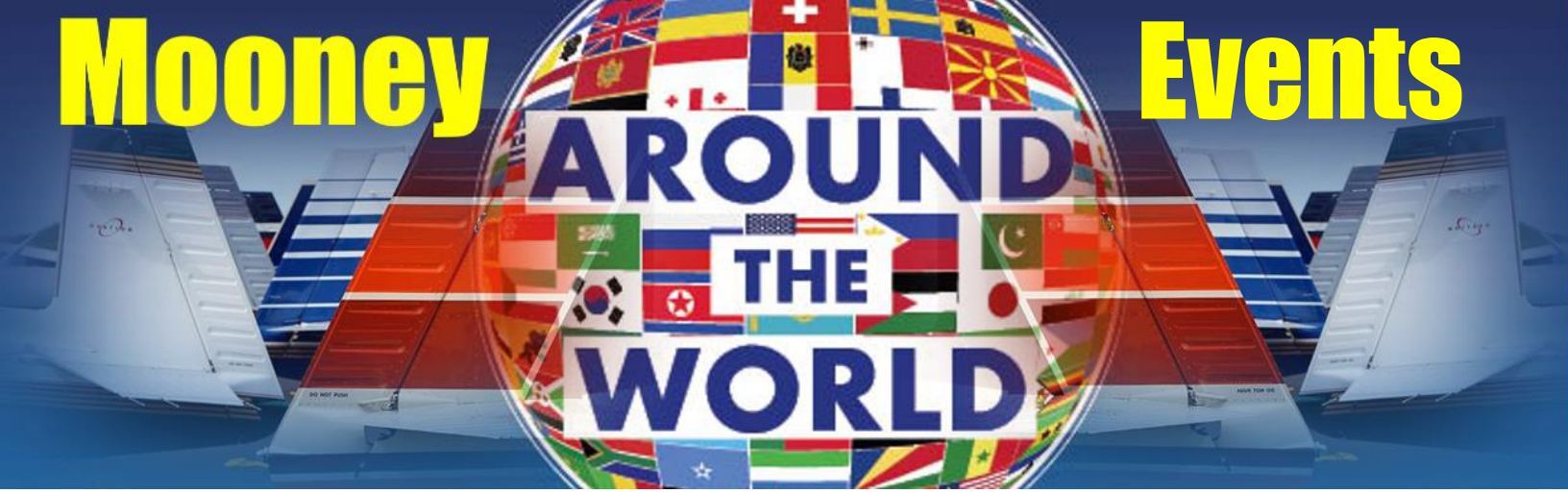
For details, visit:

www.jaegeraviation.com

Jaeger Aviation

Email: bruce@jaegeraviation.com

320-444-3042

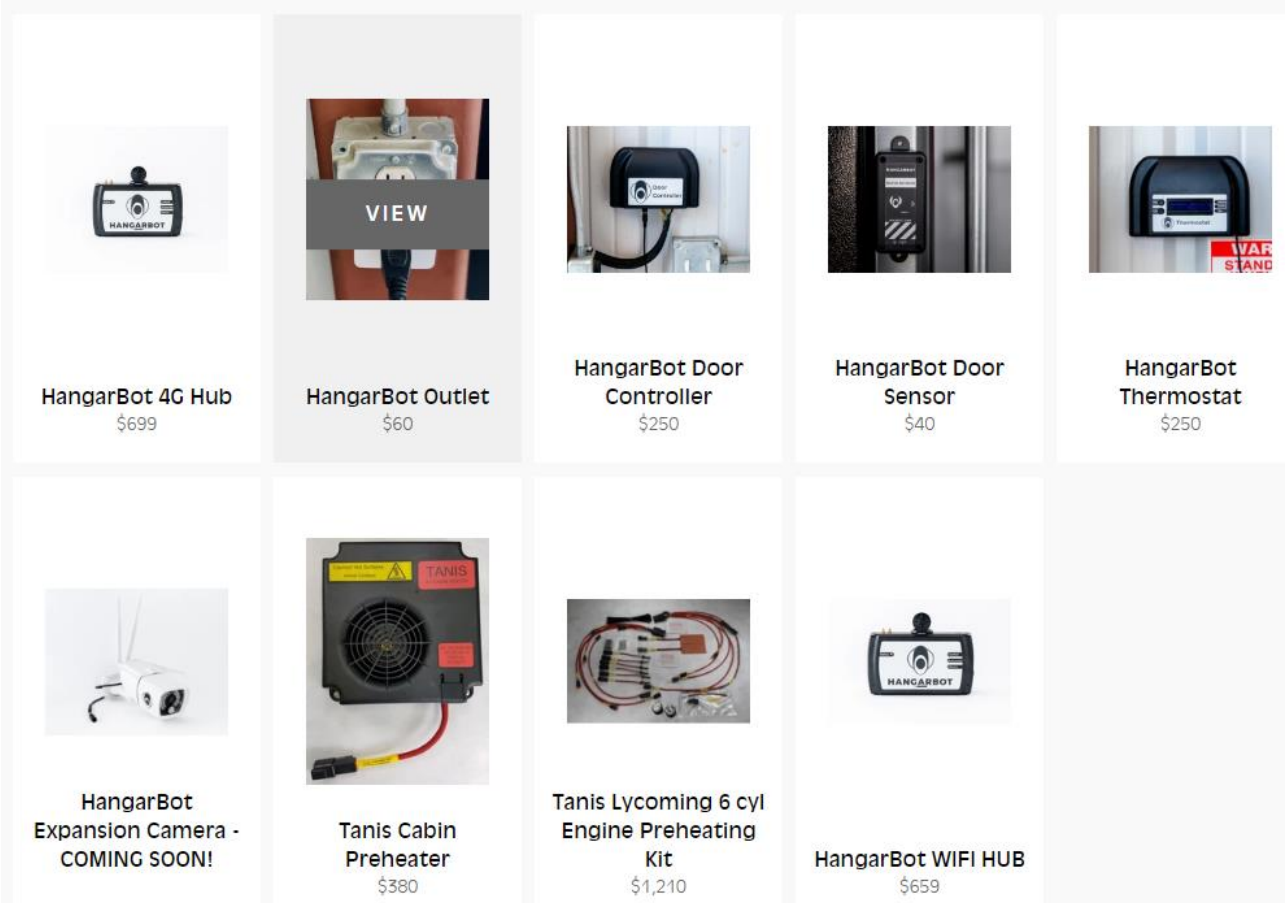


Florida Mooney Lunch Group	*Contact Dave at daveanruth@aol.com or (352) 343-3196, before coming to the restaurant, so we can have an accurate count. Events begin at 11:30* **January 11: Leesburg (LEE)** **February 9: Fort Pierce (FPR)**
Mooney Caravan	**March 27-29**: San Marcos (KHYI) Mooney Caravan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

Hangar Bot

Hangar Bot sells a collection of interesting products to remotely control and monitor your hangar and Mooney. They have products that utilize your Cellular Data plan to:

- Open/Close your hangar door
- Monitor the temperature in your hangar and then warm your cockpit
- 8mp camera for hangar security
- Preheat your engine remotely



Go to: https://shop.hangarbot.com/ and check them out.

FOR SALE Mooney Stuff

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.

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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


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