The Mooney Flyer

The Official Online Magazine for the Mooney Community

October 2012

Mooney Adventure From the Right Seat

Your Engine and the Myths of TBO

Good Maintenance… Pay me now, or Pay me later

Landing Your Mooney– What's all the "Flaps" About?

Product Review for the Stratus – ADS-B

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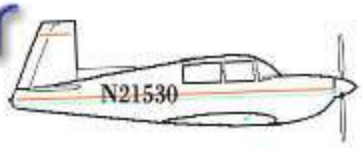
From the Editor

Phil Corman



Here's our first Mooney Flyer Contest. We are trying to get to 3000 subscribers. We need your help to push us over that limit. So here are the rules. Suggest that your friends subscribe. When they do, have them add "YOURNAME recommended me to subscribe to The Mooney Flyer. The person with the most recommendations will receive a prize.

Click Here to Subscribe.

I had my FAA physical recently and my AME put me on a Special Issuance after X-rays on my head. I told him that I thought this condition might be unique to Mooney Owners. After all, we are a fervent airplane owner group, and this explains a lot.

Another Mooney Fly-In - My wife and I had the opportunity to join a Mooney fly-in to Methow Valley (S52) on the eastern slopes of the Cascades in north central Washington, hosted by Jeff Mirsepasy. It was a 4 ½ hour flight and simply beautiful. We passed Mount Shasta, Mount Hood, Mount Adams, Mount St.

Helens, and even Mount Rainier enroute. Fellow Mooney pilot, Greg Jacobs and his friend Bob flew in loose formation to Methow Valley. We stayed at the Sun Mountain Lodge who rolled out the Red Carpet for all the Mooneys and provided free transportation to/from the airport and lodge. I'm always struck by the camaraderie of other Mooney pilots. We ate, drank, sailed, mountain biked, rode horses,

went to a cowboy BBQ up in the mountains, shopped in downtown Winthrop, and had wine socials in the room each night. Because we have our travelling Mooney machines, we had planes from Washington, Oregon, California, and Idaho.

On Sunday morning, two of our Mooneys took the flight from Methow Valley to Glacier Park in Montana. Heck, it is only about 235 nm, barely wheels up in a Mooney. It was a challenging flight since it seemed like the entire northwest was on fire. The smoke was thick up to 16,000 MSL, so we chugged along at 9500'. The forward visibility was pretty bad, but we never lost sight of the ground. At Glacier Park, we did several hikes, ate well, and saw 2 large Grizzlies, then a mother Grizzly and two cubs, and a mother Grizzly and 3 cubs.

On the ride home, we swung by Sunriver, Oregon to have lunch. While eating lunch, we decided to see if the 4-star resort would give us a pilot rate for the night. They did, so we spontaneously stayed for the day and returned home the following afternoon.

Mooneys open up a lot of options that earthbound or slower planes just cannot take advantage of.

SkyVector Aeronautical Charts

I'd like to give a huge Thank You to Skyvector.Com for underwriting part of our Cowboy Dinner at Methow Valley. We are not used to this kind of generosity and our only regret is that Skyvector personnel could not join us on such a great fly-in.

Send us a photo of your Mooney and tell us why you love and appreciate it. Send to themooneyflyer@gmail.com Thanks. ***The Mooney Flyer*** really appreciates YOU!

In February, I purchased a M20K that had been painted in 2004 by *Arizona Aeropainting* in Eloy, AZ (E60). My recent right fuel tank repair left the wing walk in a sad state and some wing paint near the tank access panel had been significantly chipped. I called *Arizona Aeropainting* owner, Don Copeland, and he agreed to repair it. He's such a perfectionist, matching the blue wing paint perfectly. The repair turned out beautifully and the total cost for labor and materials was a mere pittance. (I thought there had been a mistake). By the way, Don paints a Mooney for $16,000. It might be more than the discount shops, but the attention to detail is exquisite! You won't be disappointed. I highly recommend Arizona Aeropainting, (520) 466-4336, Eloy, AZ (E60).

Jim Price, Chandler, AZ

Has a professional or Service Center brightened your day? Email your great repair experience(s) to philcorman@hotmail.com
SUBJECT: "The Mooney Consumer".

Appraise Your Mooney's Value

Don't forget about our cool new **Appraise your Mooney's Value** using Jimmy Garrision's valuation. Jimmy is from All American Aircraft, the country's largest Mooney reseller. We have implemented the models for M20C, M20E, M20G, M20F & M20J. Click on your model to simply complete the valuation. You no longer need paper and pencil. This is just another benefit to our subscribers. These forms are currently Beta test quality. Please send errors to us. Updated on September 2012.

M20C M20E M20G M20F M20J

Happy Halloween
From all of us at
The Mooney Flyer

Mooney Mail

Enjoy your magazine and thanks. Hot Starts issue. I have had my Ovation for ten years and hot starts are not a problem if you do the following, very simple: Brakes on, Open throttle 1", Mixture full rich, Low Boost pump on and crank, pump off after 10 to 15 seconds, most importantly, DON'T STOP CRANKING, KEEP CRANKING AND ENGINE WILL START EVERY TIME.

Good luck,
Lloyd Babcock, N2157L

Another great edition, thanks for the hard work on it! I received the Mooney Flyer and my weekly AOPA ePilot both today in my email. I cracked open the MF immediately and have yet to make it to the ePilot. Looking forward to next month....
Happy flying,
Bodie Bell, 201PX- M20J

Another great issue. Lots of time and effort went into this professional product! I will try to send an article for the next edition. I am flying my 3rd Mooney. I started with an M20E, then M20K, now M20M, for a total of 21 years of flying Mooneys.
Dr. "BOB" Achtel (MD), N9148D

FANTASTIC! I'm still reading all of it. As an aside- you might consider doing a story on the iFLY 700 and 720. I just recently picked up a 700 and I am very impressed with its abilities and the cost is very low. Check it out. Even all geo-sync charts work great including approaches.
Cliff Biggs

Good Evening, there's real gold in your ***FLYER***! How does one subscribe?
Cordell Bahn, N252PB

Congratulations to Colette Eneboe who soloed this month! Next step, your pilot certificate, and then a Mooney type endorsement!

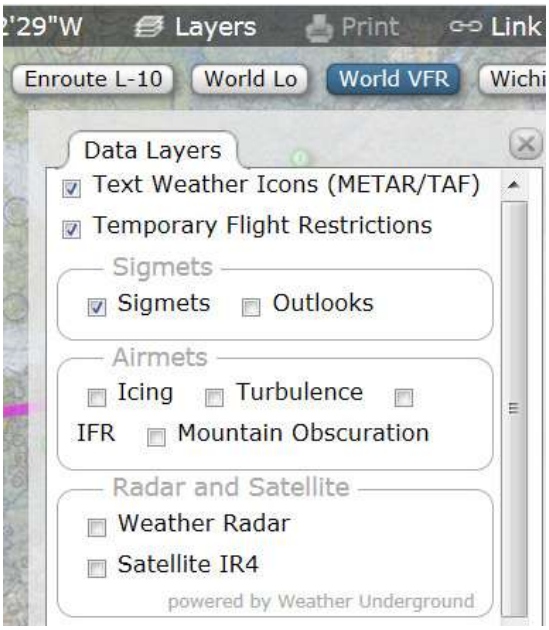
Skyvector http://skyvector.com/ has gone global and that's great news if you're planning a trip to Canada, the Caribbean, or south of our border.

Because the worldwide charts are far from perfect, they're currently in the Beta phase. SkyVector needs your help to find and fix all the little things. Not flying your Mooney to Moscow? Well, this site is wonderful for domestic planning, too.

Click on 

and a short video will show you the power of the site.

A feature that's really important is "Layers", shown below:

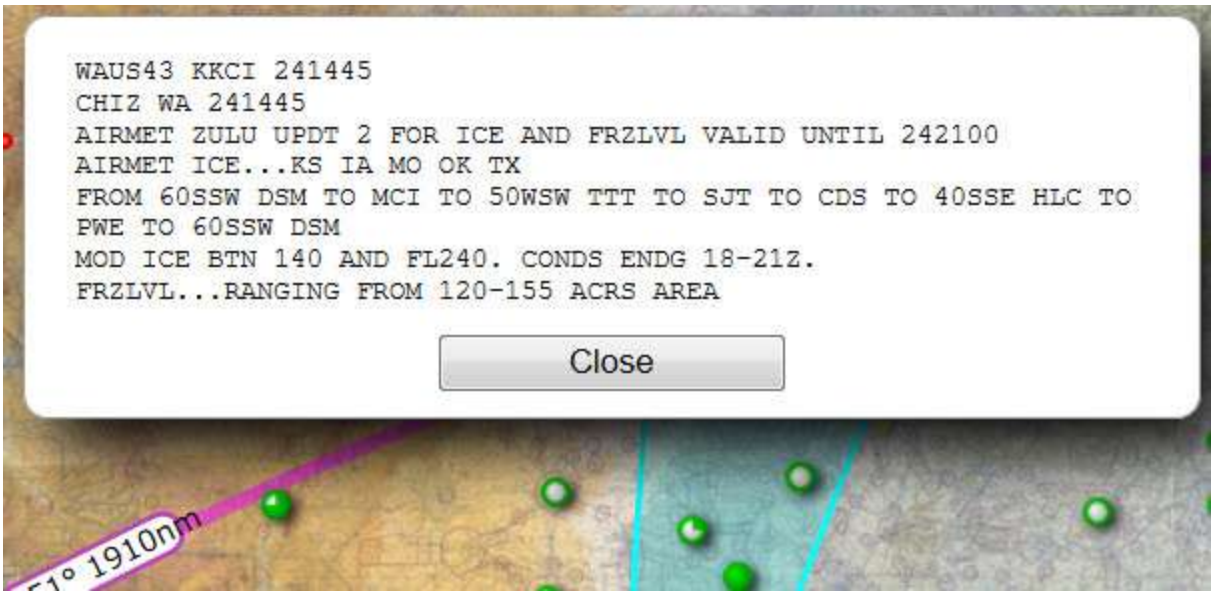


Click on "Layers" in the upper right corner of the site to add TFRs and the weather features you want to see on the map.

You can add a flight plan, using any airport, fix or NAVAID, or simply use their rubber band feature to use your own fix.

The *Airport Information* feature doesn't forget anything. It includes the A/FD, plus all the IFR approach, departure and arrival charts.

You can hover over a TFR or AIRMET/SIGMENT to find out what it is. To learn more, just click on the area.



If you click on a colored weather dot, you'll get the current METAR and TAF, if available.

Chart side panels are also available. I don't think I have ever seen this feature on any other site. Just pull the desired chart to over to the left, and there it is.

More Changes Coming at SkyVector

1. Airport Pages for all International Airports
2. FBO listings, comments, reviews
3. Fuel Prices on the map
4. Much better flight planning and Filing

It is rare to see so many robust features included in a FREE site.

The "Could'a Been" Mooney, Flight Testing the Model 301

Bob Kromer
Former Executive VP and General Manager, Mooney Aircraft Corporation
former Mooney Engineering Test Pilot 1983-1986

In 1983, I was hired as Mooney's Engineering Test Pilot at the factory in Kerrville, Texas. That year, we were flight testing the TSIO-360-LB engine upgrade for the upcoming 1984 model M20K, replacing the original –GB version of that engine. We were also doing some minor work with the M20J, primarily involved with a NASA contract investigating laminar flow characteristics of the Mooney airfoil section on that airplane. During this time, over in the corner of our flight test hangar set a lonely and rather abandoned

prototype for an airplane that looked very exciting. I asked what it was and heard that it was supposed to be the first of a new generation of Mooney airplanes. The airplane was dubbed the Model 301. I was intrigued why it wasn't flying more. The answer was that "it has some kind of quirky issue with pitch controllability" and that the flight test program was "probably not going to continue". Mooney was right in the middle of a change of ownership at the time (from Republic Steel to a new French investor group) and the Model 301 project was not one the new French owners desired to continue.
I asked Roy Lopresti, Mooney's VP Engineering at the time, if he would fly with me in the 301, check me out, and then allow us to do some basic controllability and performance tests with the airplane. He did so and we did.

What we discovered was, for the most part, a wonderful airplane with real potential. The photo I included with this article best shows the airplane's configuration and design. The 301 had everything the next generation Mooney needed – a powerful Lycoming TIO-540 engine capable of 360 takeoff horsepower, a pressurized cabin, high cruise speeds, six (but really four comfortable) seats, an air-stair entry door, a center cabin aisle and superb crew visibility thru a wraparound windshield. It exhibited excellent roll control with the use of spoilers and "feeler" ailerons and large, trailing edge Fowler flaps for low stall speeds. We discovered the airplane could be flown under control at 56 knots calibrated

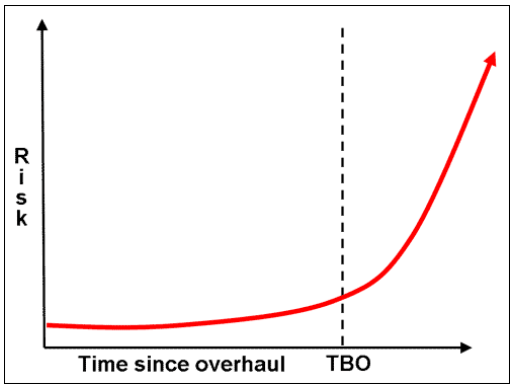
airspeed, slower than the M20K we used as a chase airplane. We also found the airplane was going to be fast. What we termed "speed/power" tests indicated the airplane was probably a 235-240 KTAS airplane at 75% power at 15,000-20,000 feet, using 18 gallons per hour of fuel to do these speeds.
But we also discovered the pitch control problem. It was a strange one. When I flew the airplane normally, all was fine in pitch. But when attempting to make an approach in gusty air, pitch authority became almost non-existent. Smooth pitch inputs were fine, but more rapid control wheel inputs in pitch resulted in very little airplane response. It was as if the horizontal tail was operating in dead air when applying rapid pitch control inputs. Very unsettling and perplexing, and certainly not certifiable. We looked at all kinds of flight test data, but in the end Flight Test always felt the problem was due to the design concept of the horizontal tail. If you look closely at the photo, you can see the horizontal tail was an inverted airfoil section, basically an upside-down wing. The horizontal tail was also a one-piece stabilator, not a fixed horizontal tail with moveable elevators. The aerodynamicists thought this tail design would provide the necessary negative lift force with reduced trim drag. But flight testing suggested this horizontal tail concept was a bad idea. I still believe the most simple and straightforward solution to the problem was to admit the design was wrong, remove the inverted-wing stabilator and install a conventional fixed horizontal tail with moveable elevators for pitch control. Chances are good this would have solved the problem and we could have then moved on without delaying further flight testing.

Unfortunately, this was not be. As time went by, Mooney's new French owners came up with another idea for the Model 301 concept. They had a grander goal – partnering with Socata in France on an all-new design that utilized some of the 301's technology into a larger airframe along with a turboprop engine. The result – the TBM 700. I remember checking out the flight test guys from Socata in the Model 301 in late 1984. After that checkout, they flew a lot of flights collecting performance, drag and aerodynamic data. I never flew the airplane again, but I like to think some of the data we obtained lives on today in the TBM700/850.
Mooney could have really used that Model 301. It would have resulted in a Lycoming-powered competitor to the Piper Malibu (which was plagued early with Continental engine problems). It could have given Mooney a completely new airframe, a pressurized cabin and higher cruise speeds. And it would have been an excellent airframe for the eventual installation of a turboprop engine of about 500 horsepower. Mooney might have actually been the first to market with a high-performance single-engine turboprop, rather than those from Socata, Pilatus and Piper. What a game changer that would have been for the Mooney factory and everyone who worked there.

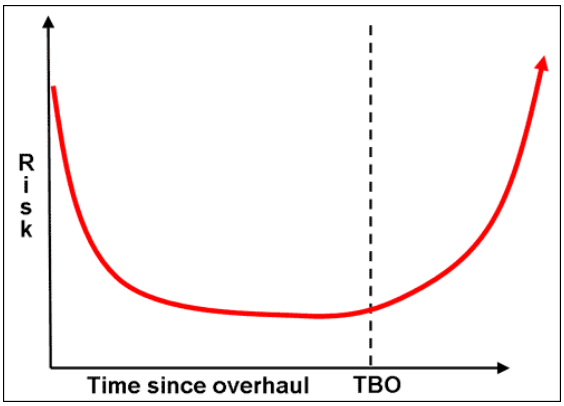
Interestingly, Mooney faces a similar situation today. Jet A-burning piston engines are just now coming to market with the potential to be game changers. Mooney is perfectly poised to take advantage of this new technology. The shorter-body M20K airframe is perfect for the first Jet A piston engines to market, the 230 horsepower, turbocharged versions currently being installed in the Cessna 182. Same with follow-on engines of higher horsepower – the longer body Mooney airframes are just right for these upcoming engines of 300-350 horsepower. But it won't happen overnight and it will take an investor with a long term vision for the future of Mooney, not someone looking to make a quick buck. Let's all hope that type of investor still exists somewhere.

Love Your engine, But Why Leave Her at TBO?

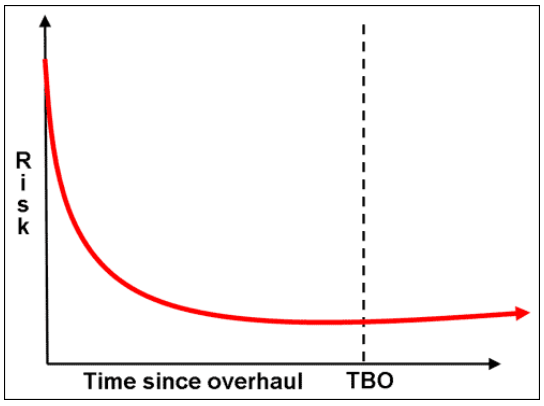
There seem to be certain laws in nature, or at least we treat them like laws. We take gravity for granted, but if you are a string theory physicist, gravity may be just an influence from another dimension. The speed of light is a constant, but maybe not. Well Mooney pilots, perhaps all pilots believe that at TBO, you must turn your engine in for a Factory Reman, or overhaul her. Most owners believe that their engines are "most" prone to failure at and after TBO, as illustrated below.



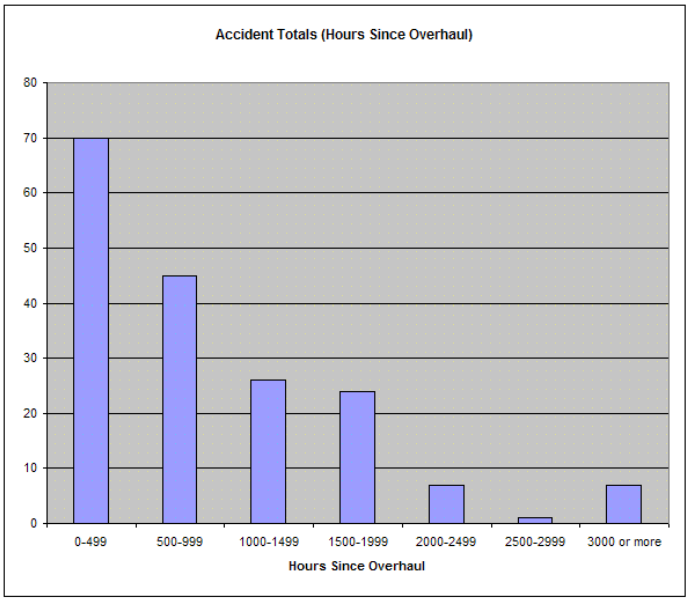
There are some pilots who understand that engines may be more prone to failures after reman or overhaul. After all, no mechanics are perfect and no engine parts are perfectly machined. Infant mortality makes sense to this subset of pilots. For instance, the most catastrophic kind of engine failure I can think of is breakage of the crankshaft. We've seen a rash of such failures in recent years in both TCM and Lycoming engines, and a rash of Airworthiness Directives recalling the affected engines for crankshaft replacement. In some cases, the crankshaft failures were caused by improper manufacturing procedures, while in others they were caused by metal impurities in the raw crankshaft forgings. In all cases, the crankshafts invariably failed within the first 200 hours of engine operation. These pilots tend to believe the illustration to the right is true.



But the reality may look more like the following graph. And if this is true, we may be discarding a perfectly good engine at TBO in favor of big expenses and substantially higher risks to engine failures. Whereas, a crankshaft failure is more likely in a young engine, in the overwhelming majority of cases, the events that will ultimately necessitate an engine teardown will be a spalled cam, a cracked crankcase, worn or contaminated bearings, a worsening oil leak, or some similar old-age disease that may cause serious impact to the owner's bank balance but not to life and limb.



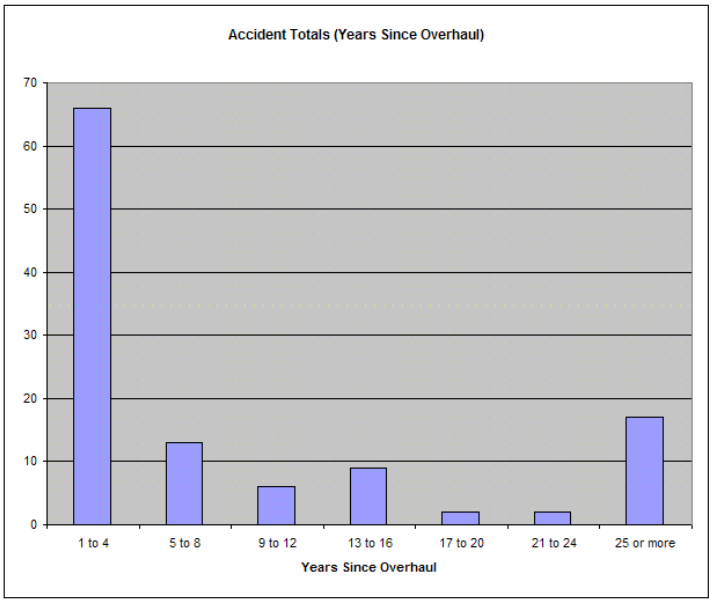
Don't believe this? Here's some NTSB data. The data clearly suggests that accidents caused by engine failures drops well below the early hours in the life of an engine. So why do we believe that TBO is a brick wall, like the "demon out there at Mach 1, for Chuck Yeager"?



The data strongly suggests that if you know your engine, and have maintained it well, you shouldn't rush to a new engine at TBO.

How Do You Know?

Well, you can never know with 100% assurance, but here are some things you can, and in our opinion, should be doing.



1. Change your oil regularly, per your POH and/or Engine Owner's manual. If you don't fly it regularly, then change it after 3 months.
2. Changing the oil… then dammit, change the filter also. It's the best $20+/- you'll ever spend. And don't forget to cut the filters and look for metal. Have a mechanic teach you what's normal and what's not. If you can crunch those metal looking parts in your fingers, then it's carbon, not metal.
3. Perform Oil Analysis every single oil change. It costs a little more than $20 and worth more than that. There are a few, but we like Blackstone Laboratories. Click Here for their website. Unlike cutting your filter which tells you what metal is being ground in your engine at the moment, Lab analysis is more about trends. You need to get 2-3 samples over time so that the lab can establish a trend on each metal type such as nickel, steel, aluminum, etc.
4. Monitor those CHTs and do your best to keep them below 380o on most 4 cylinder engines and maybe 400o on those big Continentals. But keep your eye on them, even during the climb. Use those cowl flaps, keep the mixture correct during climb out, and lower the nose if nothing else is getting your CHTs manageable.
5. Every once in awhile, you should check your compressions (say at the annual), and also take a look see inside your cylinders with a Borescope. It'll show you abnormal or normal, but excessive wear on the cylinder walls (read rings). In addition, the scope will show you how well your valves are seating as seen in the flame burns around them.

6. Finally, run your engine LOP or ROP (pick your religion), but regardless, keep the mixtures out of the Red Box. Running your engine at 50o ROP is just about the worst place you can run your engine because that mixture creates the highest internal cylinder pressure and that's just plain not good for your engine. Where's the Red Box?

Red Box = No Fly Zone

- At and below about 60% power, there is no red box. Put the mixture wherever you want it.
- At about 65% power or so, 100ºF ROP to Peak.
- At about 70%, 125ºF ROP to 25ºF LOP.
- At about 75%, 180ºF ROP to 40ºF LOP.

At about 80%, 200ºF ROP to 60ºF LOP.

Suggested Additional Reading (a lot of this article was drawn from these authors)

John Deakin on the Red Box – Click Here
Mike Busch of the Savvy Aviator – Click Here

Wouldn't Want to Overhaul This Without a Good Reason

Good Maintenance is Important

Pay Now or Pay Later !

By Paul Loewen, Owner of Lake Aero Styling & Repair (LASAR)
first appeared in the MAPA Log in February 1998, and updated for this publication

My mechanics tells me my airplane is in perfect condition. I save a lot of money by not going to one of those high-priced Mooney shops that think they have to look at everything ". I hear this all the time. Then the aircraft is brought into a "Mooney shop" for a pre-purchase inspection, which the buyer has selected because he wants to know what he is buying.

I know licensed A&P/IA mechanics are supposed to conduct an inspection by the same FAA standards, with all the manuals, specifications, tools, AD list and Service Bulletins that apply to the aircraft being inspected. We are often overwhelmed at what we find, and so is the owner, when a Mooney is first brought into an experienced Mooney shop. We wonder on what basis the airplane has been maintained and annually returned to service, certifying that the airplane is indeed airworthy...really?

I'd love to publish, at some time, all the discrepancies we've written up during the past 47 years of performing Mooney annuals. It would be boring reading, but if we had a computer whiz condense them to the most reoc-curring common problems, it could be helpful. Actually, this is what Service Bulletins are all about in a sense.

Items often overlooked are: air filters, hoses, baffling, nose gear steering, control travel, shock biscuits, panel mounts, windshield and windows, door and vent window seals, broken seat backs, landing gear rigging, gear doors, fuel leaks, mice damage, loose control wheels, battery box corrosion, trim system, missing rat socks, inoperative autopilots and PC systems, interior rust and corrosion of structural members and improper insulation., also required paper work i.e. Weight and Balance, Equipment list and check of Ads. Some of this deferred maintenance can cause critical, non-repairable permanent damage when wear and corrosion develop beyond economical repair.

Owners of Older Mooneys-Beware!

Often in the course of selling an airplane at LASAR Plane Sales, a customer will ask me to make arrangements with our Mooney Service Center, Lake Aero Styling And Repair, to do a pre-purchase inspection on planes we have not previously maintained. In a past period, we have had six planes come to our shop (three for pre-purchase inspections) —two 1962 M20Cs, two 1963 M20Cs, a 1964 M20E and a 1961 M2OB - that had extensive corrosion in the wing (in plain view...no disassembly required). All six of these airplanes had been regularly maintained, but not at a Mooney Service Center, and all six owners thought their planes would pass the pre-purchase inspection or annual inspection with "flying colors."

Rust on tube structure—Found during Service Bulletin inspection M20-208B

Corrosion seems to be a more common problem in Mooney models built between 1961 and 1964. The area of concern is called the "stub spar." You can see it — or what's left of it —by looking up in the wheel wells. Looking aft, you'll find the spar running through the wing between the main landing gears.

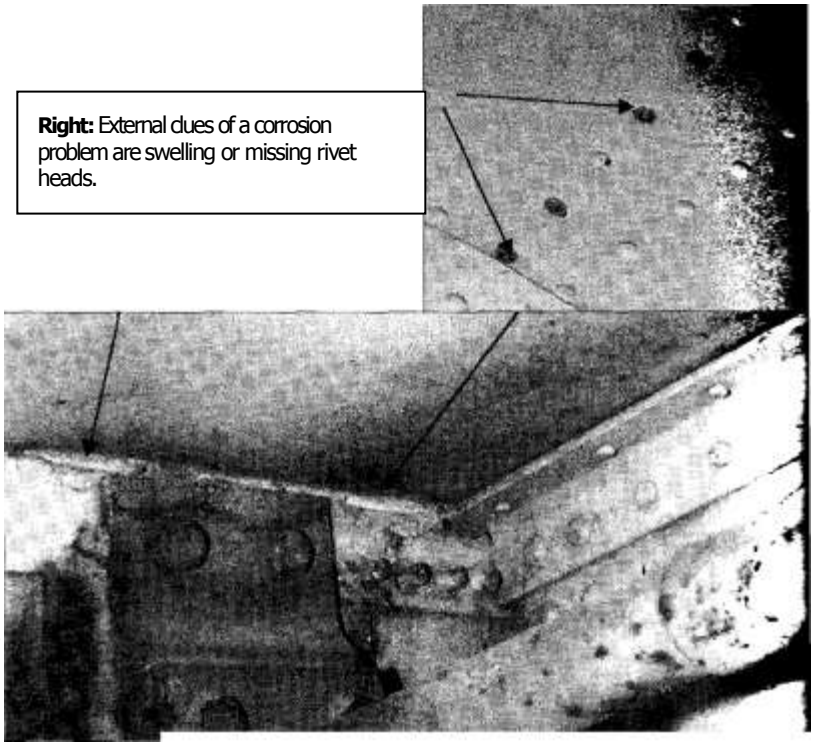
You can pick out the spar; it is the back wall of the wheel well and the rear support of the gear truss is attached to it. It's about 5" high and 10ft. long. It also runs through the cabin and forms the back of the rear seat pan under the forward part of the baggage compartment (not as easy to see because the seat cushion covers it).

Main Spar- corrosion found under the rear seat upholstery

The areas of severe corrosion have been viewed by looking along the heavier spar cap (extruded aluminum angle riveted on the top and bottom of the spar web) in the wheel well area. This corrosion is the worst kind, intergranular. It renders the structure to the strength of a soda cracker, and that's what it resembles. It's like a cancer working from the inside out. It is extremely deleterious to the strength of the alloy, and often it is very difficult to detect. It usually happens when a component under stress is subject to a corrosive environment, either of which acting alone would not cause a problem. The stress does not have to be externally applied, often it is so-called "residual stress" due to manufacturing methods that cause the problem. Maybe the component on the older Mooneys was not properly stress-relieved. I suspect it is caused during the forming of the metal extrusion. Sometimes the layer of paint is all that's holding it together.

The spar can be locally repaired in accordance with a *Mooney Structural Repair Manual*, if damage is localized to one small area. However, it is usually found throughout the entire member. The repair can take 100 hours of labor, or more if the wing is removed.

A factory new replacement may be difficult to find, at any price.



Right: External clues of a corrosion problem are swelling or missing rivet heads.

Another area of corrosion in the older Mooneys is the tail cone, which is manufactured with the lower fuselage skins (of the tail cone assembly) overlapping the upper fuselage skins. This forms a natural ridge and lets water, snow, dirt and debris settle in the skin joint as opposed to draining off. The extruded (-formed) "L" stringer (longeron) that is behind this skin joint is subject to the development of corrosion. This may be stress related; it could also be that dissimilar metal connection or surface corrosion causes this. Whatever the cause, we have seen quite of few of these. Damage caused by corrosion is difficult to repair. It requires drilling the skin joint apart, treating or replacing the skins and stringers, then riveting. The procedure involves many hours of labor plus parts.

Missing Record of Airworthiness Directives (ADs) can be expensive at Shop Rate prices. It can take five hours to fully list the AD notes in a record , noting if they apply or not to that Mooney or if they are reoccurring or when an inspection is due again.

A discovery on a recent Prebuy and sale cost the seller nearly $40,000 to comply with an overlooked AD on previous Annual Inspections. The AD, missed for 5 years, was a recall on certain Lycoming crankshafts and he had one on the list that had to be replaced.

“Pay now or Pay Later” -- Although this article was inspired by Mooneys now over 50-years-old, preventative maintenance, as well as keeping the airplane clean inside and out, will help preserve its value for a long time. Someday today's newest Mooney will be old, too. The first 201’s are now over 35-years-old!

Send your questions for Tom to TheMooneyFlyer@gmail.com

What oil is recommended for different models?

This is an area that always creates heavy discussion and opinions. What I will do is give my opinion based on my experiences and what we find is what the majority of our customers use and the reasons why.

The dominate oils are:

- Aeroshell 100W
- Aeroshell 100W Plus
- Aeroshell 15W50 Multigrade
- Phillips XC 20W50 Multigrade
- Phillips 20W50 Mineral.

I will take the Phillips Mineral first. This is the dominant break-in oil used today.

Almost all OEMS and overhaulers use this oil but there are exceptions. Example: Lycoming recommends using detergent oil all the time, including for break-in of the turbocharged 540s. I have done that for over 25 years and have great success with those big block Lycomings.

Turbocharged engines: This is where I recommend using a multi-vis oil. These engines operate at more extreme range of temps and altitudes and with the high temperature of the turbo, that the multi-vis really is needed. I also recommend 25-30 hour oil changes on turbo engines. Oil doesn't break down but it can be contaminated and diluted with blow-by, moisture, etc. We learned, early on, that the 540 in the TLS would use a lot more oil in the second 25 hours on the oil when we were at a 50 hour oil change. We would average about 4-6 hours a quart.

Aspirated Engines: Most of these are four cylinders Lycomings. I recommend the

AS100W plus. It has the Lycoming additive, LW 16702, which was designed for lubing the cam and lifters for the O-320-H2Ad and is required by an AD for that particular engine. I also recommend 25-35 hour oil changes for the aspirated engines and for the same reasons I gave for the Lycoming 540 in the TLS. I am neutral on additives.

We have customers who use additives, (very few), and have seen no harm. I also can't say I have seen anything positive with those using additives. The only one I agree with is that in AS100W plus, which was implemented due to camshaft wear that is notorious for the Lycomings. I also want to add that in over thirty years on Mooneys, I have only experienced a few camshaft problems with the Lycs. It must be the good California air. That can be another separate discussion.

I have always liked the Phillips XC because it is all oil based. The Aeroshell 15W50 is semi-synthetic and highly detergent. I don't like to change an older engine to the AS15W50 because it can loosen sediment in the oil pan and possible plug oil passages or gum up oil control rings.

Summary:

The Aeroshell oils are dominant, but that is because they are readily available. I used the Phillips XC early on when the 231 hit the market, but my customers objected because they could hardly find it while traveling. When Aeroshell 15W50 first came on the market, we had problems with prop seals, clogged oil rings, etc., but those problems have long since been resolved and it is now the dominate oil for not only the turbos but also with customers with aspirated engines. All oils on the market are technically interchangeable, so if you are on the road and need to add oil, don't worry about using a different brand or weight. I do believe in sticking with one brand as much as possible.

I have no proof or tests or anything else to prove that idea, just my feeling after a lot of years fixing airplanes. I believe more important than what oil you use is to: at least fly a few hours a month, warm up the oil before going to full power, change oil and filter frequently, get a good engine monitoring system. We change most engines at TBO, next would be higher time engines with a prop strike,

Hardly any with a failure and believe it or not, we change very few cylinders, with the most being the TSIO-360 GB/LB/MB engine and the fewest on the IO-550-G.

What tools/parts to carry in your plane?

This is open to many ideas and also the mechanical capability of the owner. I added couple of possible problems where just "know-how" would help.

My approach was to think of it as Mooney related, and what would that require, keeping in mind the possibility of landing at an airport with little or no maintenance.

1. A set of Mooney jack pads, or install a set of LASER jack pad/tie downs.
2. A wing fuel drain valve and a box wrench to fit. A stuck open valve can really be a big problem. We can change a valve in a full tank and lose about a quart of fuel.
3. A spare spark plug with socket to fit. If you don't have JPI, EI, etc. to isolate the bad plug then carry at least 4 or 6 spares and change the set for the mag giving the problem.
4. The rest of the tool list would be generic and only recommended if you are mechanically inclined.
   - Duct tape- to cover the hole when the oil door rips off.
   - Ratcheting screwdriver with different screwdriver bits.
   - Vise grips
   - Wire cutters/dikes

- Set of open end/box wrenches
- Set of ignition wrenches
- A hinge handle or rachet for the spark plug socket.
- A pack of hand wipes/diaper wipes help clean up if there are no available (check restrooms)

Problems:

Flaps stuck, usually down:

Remove the belly panel that covers the area between the flaps. Size will vary between models. There will be a flap actuator with small microswitches. Tap lightly on the switches with the flap handle selected to the opposite position as the flap current position. 95% of the time it is a stuck microswitch and the flaps will move. We will also spray with contact cleaner, if available. Have your shop replace both switches when you get home.

Starter:

Bendix won't engage-this applies to the old style starters, depending on the model, you need access to the starter. With a long screwdriver, while hand moving the prop, you can pry the Bendix out and as you turn the prop, it will engage the ring gear and come right out and stay engaged. To prevent this from even being a problem, especially on a cross country flight, when you shut down, with the mixture and throttle full out, engage the starter for a few seconds, the Bendix will spin out and stay engaged until the next time you start the engine.

Dead battery:

This can be a real problem. If you have a 12 volt, I recommend carrying jumper cable that has the plug for your Mooney, if you have the external plug. 24V is a larger problem. I had a customer stuck at a small airport in Utah and she found a truck driver with a tractor and got a jump start from him. Two 12v batteries can be paralleled for the 24V.

Broken clamshell gear door bracket:

This can happen on all the models with a clamshell door. Simple, use the tools in your kit and take both doors off and put in the baggage area. A torn or missing door can be very expensive and hard to get. If you fly out of an airport that may have snow and ice, recommend you take them off for the winter.

MAPA Convention

By Jeff and Debbie Rowley, 1975 M20F N6854V, Oklahoma City, OK, Wiley Post Airport (KPWA)

We've been enjoying our 1975 Mooney M20F and MAPA membership for the past two years.
It is our first airplane - we bought it after I achieved my Private Pilot Certificate in a Piper Cherokee in September 2010. I subsequently earned my Instrument Rating in the Mooney in April of 2011 and followed that up with my Commercial SEL in October 2011.

ARRIVAL, THURSDAY, GILLESPIE COUNTY AIRPORT, FREDERICKSBURG, TX (T82)

We were met at the ramp by some friendly folks and were marshaled in by the MAPA Clown. We visited with the MAPA folks and I recognized names that I had seen online before but had never met. We were pretty tired from the early start and flight down. We headed into town to find our lodging, *The Angels Lodge Above the Creek*. It's very nice with a pool and gourmet breakfast delivered to your room daily. The Lodge is a great place if you want a nice little get away that's very comfortable and close to everything. Fredericksburg is a great little place to visit. There are many very nice restaurants and everyone is very friendly.

FRIDAY MORNING, FREDERICKSBURG INN AND SUITES

Trey Hughes welcomed everyone and had some opening comments. More people started to arrive as the morning progressed. Jimmy Garrison from All American Aircraft spoke about the Mooney Market. The hottest model right now is the J model. Jimmy suggested if you don't have a Garmin 430 or 530, you might as well buy and install one, because when want to sell, you will be discounting your plane if you don't have one. Paul Loewen from LASAR was scheduled to speak next but he was unable to make the trip. Sherry stood in his place. Jerry Manthey did a great job speaking about Landing Gears and some other useful information. He also asked if someone in the group might be interested in hosting another Maintenance course for next year.

FRIDAY AFTERNOON

We broke for lunch and the Ladies went to a Mexican Restaurant and heard a talk on hip and knee replacements from Dr Bob Achtel. Following lunch, Hector Fernandez from Aero Comfort talked about the services they offer. They have a new facility and many testimonials were offered on the quality of Aero Comforts work. Don Maxwell talked about Engine Mounts and took questions about other maintenance issues. Larry Marshall talked about Electronic Medical Filings. John Beer finished up the convention forums with his very riveting talk on the multiple engine failures he's experienced. These engine failures were in IMC conditions and some in mountainous terrain. His advice - fly the airplane - always!!!

Dr. Achtel gave a talk to the women on hip & knee replace-ments

FRIDAY EVENING

After dinner on our own, we joined the Ice Cream Social

We ended the day and everyone went to find some dinner. We met back at the Fredericksburg Inn and Suites at 8pm for an Ice Cream Social. Jolie & Mitch are filming a documentary about Mooney and the people who built them. Their DVD will be called, "*Boots on the Ground*". It will be available sometime late next year. We screened a trailer for the documentary, which everyone seemed to enjoy.

SATURDAY MORNING, AIRPORT DAY, T82

We had about 26 planes on the ground. We were all handed a voting sheet so we could vote on our favorite plane in each model represented. This was my first Mooney Fly-In and I really enjoyed seeing all the Mooney tails on the ramp. We not only had Mooney Convention attendees out there, but there were others walking the ramp and looking at our great looking planes. Lunch was supplied by a Fredericksburg caterer.

SATURDAY AFTERNOON, MOONEY FACTORY TOUR, KERRVILLE

About 30 folks went on the factory tour

We boarded the shuttle and traveled to Kerrville, were we were met at the factory door by 3 of the 8 Mooney Factory employees. Before the partial closure, there were 460 - 480 employees. Sixty were laid off in June of 2008. Following the election in November, there were order cancellations and Mooney had to shut down the plant. Still, there are 4 planes almost ready to go, needing engines and avionics. The plant is still supporting Mooney owners. There were a few wings in the sealing shop with another wing on the jig. They had produced a gear door a day or two earlier and there was a tailcone assembly that was being readied for shipment. Prior to the shutdown, the employees were trying to reduce the hours required to build a plane. It used to take 6,500 hours to build the Mooney, and they had decreased that time to 4,100. They had hopes to further reduce it to 2500 hours when the factory closed. A current Mooney model has 7,900 parts and includes 29,000 processes to build. We left the factory sad to see the plant idle, yet amazed at what went into building them.

SATURDAY EVENING, DINNER AND AWARDS BANQUET, BECKERS VINEYARD, FREDERICKSBURG

We had a very nice BBQ meal followed by a tour of the Winery and some delicious wine tasting. Trey moderated the evening and thanked Lela and all the other people that went into making the convention a success. There were a couple door prizes and the various model beauty contest winners were recognized and awarded plaques.

WE'LL BE BACK!

We met some nice, welcoming and fantastic people. If you haven't been to a MAPA Convention, I would recommend you seriously think about attending next year. When you look around the room, you have folks like the Hughes, Maxwells, and Loewens as well as many others that work on behalf of all Mooney owners. However, we need more people involved so we can continue to fly our brand for a long time.

A Mooney Adventure to Winslow, AZ

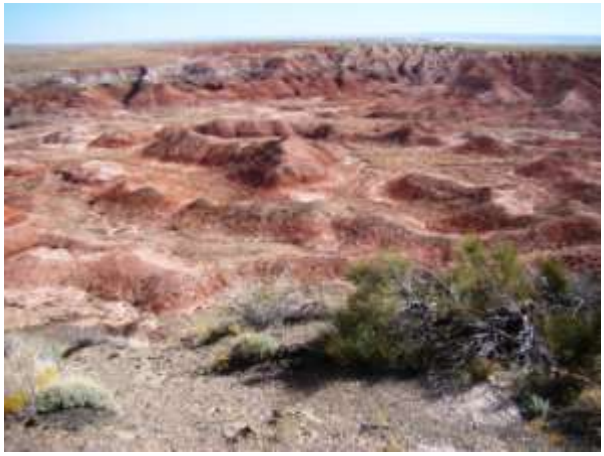
by Linda Corman
Right seat navigator & Mooney lover

A few years ago Phil and I went to Oshkosh and on the way back decided to fly over Winslow AZ and look for Meteor Crater. We found it, took several photos from the air and kept on flying home.

We talked about going back and seeing it on the ground some day. So one day, on the spur of the moment, we did just that.

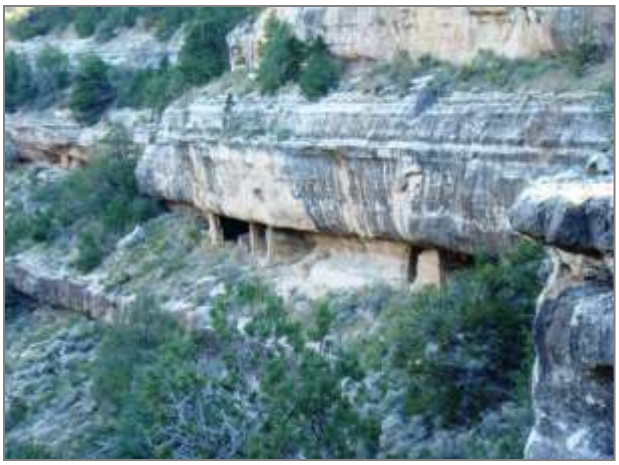
After arriving at Winslow airport and picking up our rental car, we proceeded to Meteor Crater. It is a must see. It is easy to find, even from the ground, as it is the biggest attraction in the area. We almost had the place to ourselves. After walking through the discovery center and gift shop you arrive at the crater rim, and look down! This crater is huge. The little movie you see beforehand is very informative and helps you appreciate what you are about to see outside. Again more photos and a short walk along the rim, then we decide to head out to the Painted Desert.

A short drive got us to the entrance of the Painted Desert and the Petrified Forest Park. The Painted Desert was first and was it beautiful. There is a rim trail that takes you to a restored inn and along the edge of stark beauty. You look out at a landscape that seems surreal. All the colors of the rainbow are there in unexpected places. We hiked down into a canyon called Blue



Mesa that takes you around and near fallen petrified logs and as the name implies blue colored mounds. It was an easy walk contrary to what the signs said (steep trail). From here we drove a short while to the Petrified Forest. Wow! It was a huge forest at one time. Now it is desert rock. The fallen trees really do look like a forest that turned to stone. You can see the crystal patterns in the tree rings. I was walking around seeing something that was amazing and knowing we would never have driven to this place, but the Mooney made it possible to go there.

After a wonderful day in the desert, we drove into Flagstaff and checked into our hotel. As it was also dinner time, we went into the old town section to look for a restaurant. We found a cute little place called Criollo. It was located on N. San Francisco St. and advertised sustainable and local fare. It was really good. We ate on the patio outside with nice garden views and big shade trees. After dinner we decided to explore Old Town. Shops of every kind, block after block. What a treat for me. As I checked out all the stores Phil found a brewery that had a guitarist who was singing songs from the sixties.



The next day we hadn't made plans so we asked some locals where to go next. They all said we must see Walnut Canyon. We had never heard of this canyon and it was a great surprise. After leaving the guest center you walk down into an incredible pueblo settlement. These ancient dwellings hung high on the sides of these serpentine canyon walls. The fun part is you can walk into the mud and rock rooms left behind by these native peoples. There are hand prints where they slapped mud and adobe bricks onto the walls of their homes and painted them with natural colors. I highly recommend a day at this special site.

This was our last night at Winslow so we decided to eat at a place everyone (local and visitor) recommended, the Turquoise Room. This restaurant is located in the La Posada Hotel in downtown Winslow. They were all correct, this was a wonderful place for dinner. As I sat enjoying my cocktail, Phil disappeared for a few minutes. As a surprise for me he had booked us a room in the hotel. The La Posada Hotel had been written up in Sunset Magazine as must stop for travelers in the Winslow area. I have to agree. The room was remodeled with a spa tub and lovely southwest décor. After we put our stuff in our room we walked downtown to The Corner. Everyone who has heard the Eagles song, standing on the corner in Winslow Arizona knows what corner I mean. We took our pictures on the corner for fun and returned to the hotel to explore the grand old place.

We left the next morning with some great memories of a place we would never have visited without our Mooney to get us there.

Continental Diesels Running Jet A

These are made for Mooney!

By Bob Kromer
Former Mooney Executive VP and General Manager 1986-1991
Former Mooney Engineering Test Pilot 1983-1986
Former Executive Director MAPA 1997-2001

I recently visited with the Senior VP Engineering at TCM. He gave me some insight into the new family of diesel/Jet A piston engines they are developing:

1. 1st engine that will be ready is the TD-300. It is 230HP, turbocharged. This is available for production in July, 2013. This engine is perfect for the Mooney M20J/M20K airframe as a retrofit. Estimate 185KTAS, 12,500 ft, 12GPH of Jet A.
2. 2nd engine is the TD-450, turbocharged, 300-350HP. It's available in early 2015. Might be an engine to consider for the current Mooney M20M/M20R "long fuselage" airplanes as a retrofit, but a better application would be in a new version of the four-seat Mooney with a pressurized cabin. Our market research at Piper showed customers strongly desire a four-place, pressurized airplane at $800K - the lowest cost pressurized new airplane is currently the Piper Mirage at $1.15M. This new JetA piston-engine in this horsepower class from TCM raises excellent possibilities for Mooney to consider. The result might be a pressurized, JetA burning, 230KTAS airplane at 15,000 feet and 15GPH of Jet A. Not a dream, but a real possibility with this engine in a version of the Mooney airframe.
3. 3rd engine will be in the 180-200HP range. This engine will be available in 2016. I think it has limited interest in the current Mooney airframe, but may be perfect for a trainer with worldwide appeal.

My opinion is the availability of these new diesel engines from TCM is a game changer for Mooney. The Mooney airframes are perfectly matched to the weight and horsepower of these new engines. Their installation could result in exciting new Mooney models that not only revive the company, but could leapfrog it ahead of the competition. And in addition to market success in the USA, their availability would have worldwide appeal due to the current lack of 100LL fuel in other parts of the world. One would think Jet A burning piston Mooneys would be excellent for Europe and Asia.

Many Have the Dream of Flight

JIM PRICE ATP, CFI-I, MEI

The developer's Duck logo doesn't have a cape, but the system it represents is certainly "Super". It was an FAA approved NexGen AWOS system, but suddenly, in January 2012, the FAA, in a bizarre chain of events, decertified Super AWOS. (You can learn more about this by clicking HERE). Since January, the manufacturer has been engaged in a valiant battle to regain certification and save the company. For now, Super AWOS broadcasts can only be used as an advisory. That means that IFR pilots cannot, at this time, use the altimeter setting to "shoot" an instrument approach. This clever system has been installed at over 80 US airports, and you just might find yourself using it. So, it's worth the time to learn about it.

Super AWOS serves General Aviation in five ways:

- It greets inbound pilots, informs them that it's there and tells them how to use it.
- It provides complete advisories, including weather, traffic and runway information.
- It provides a two way radio check
- It offers weather information for preflight planning (online)
- It monitors 121.5 ELTs and reports to the USAF Rescue.

Super AWOS lives on the Unicom frequency. *AirNav.com* calls it "**AUTOMATED UNICOM"** and instructs pilots to use "3 CLICKS FOR ARPT ADVISORY & WEATHER, 4 CLICKS FOR RADIO CHECK". *Flight Guide's* reference lists it as: "CTAF: U-122.8 **auto – wx".** However, the A/FD doesn't seem to want to call it anything and ignores any difference in the UNICOM. You'll just see something like "COMMUNICATIONS: CTAF/UNICOM 122.8".

Approaching an Airport with Super AWOS

Inbound to an airport, one of your concerns is other aircraft in the area. Super AWOS resides on the UNICOM frequency, constantly listening for traffic. Let's suppose that you don't hear anyone on UNICOM, so you broadcast for airport advisories. If no one responds, Super AWOS senses that and becomes the airport greeter, broadcasting, "***Good evening. This is XYZ airfield automated advisory. Wind 230 at 4. Altimeter 29.98. Conditions favor runway 24, right traffic, pilot's discretion.***" Super AWOS added "Pilot's discretion" to the end of the advisory because, except for you, it has not

detected any traffic on UNICOM. If Super AWOS "hears" other aircraft on UNICOM, instead of advising "pilot's discretion", it will add, "***listen for traffic***".
Super AWOS will also provide "how to" instructions by adding, "**For further services, click your mike three times for advisory, or four times for a radio check**."

Need More Information?

Three clicks will initiate a broadcast of wind and altimeter. If low visibility or high density altitude are a problem, Super AWOS will add those to the advisory.
If the conditions have changed significantly since your last call, for instance a wind shift, you'll hear something like, "**Updated XYZ advisory. Wind 220 at 21, caution crosswind – wind shear**."Now that's smart!
Super AWOS continually balances between information volume and frequency congestion. If the airport is busy, Super AWOS's adaptive personality kicks in and simply broadcasts the essential facts.

Preparing for Takeoff

Just click the mike three times on UNICOM frequency for the wind and barometric pressure. If Super AWOS "feels" that visibility or density altitude is a problem, it will add that information, too.

4X for a Radio Check

At a quiet airport, wouldn't you like to know if your radios are working before you blast off? Four clicks on the microphone and Super AWOS will advise you to initiate a radio check, then echo your transmission. If the frequency isn't too busy, it will also evaluate your transmission with a certain value out of a possible score of 10. ("10 of 10" - "1 of 10"). If density altitude is a problem, it will also add "**Caution, density altitude**" to the radio check.

Super AWOS has Your Back

Super AWOS has another special feature. It scans 121.5 and listens for ELTs. If it hears one, it reports its finding to Air Force Rescue.

We Don't Need No Stinking Ceiling Reports

Super AWOS does not provide ceiling information because:

- Pilots only need to know the visibility before "shooting" an instrument approach. Ceiling requirements were excluded from the criterion to initiate an approach in 1967. See FAA letter, bottom of page four.

- The sensors, called Laser Ceilingometers, are terribly expensive to maintain.
- These sensors only look at one tiny point in the sky, and sometimes manage to exaggerate, one way or the other, the true ceiling.

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Online Access

For online weather at Super AWOS airports, simply go to: http://www.superawos.com/

and . . . click on the Super AWOS Duck
Choose from 82 airports in the US. (See next page)

#	SuperAWOS Airports							
	Airport Name	State	ID					
1	OldHarbor	AK	6R7	Text Display	Graphic Display	Mobile	Activity Report	QC Analysis
2	Mogollon	AZ	AZ82	Text Display	Graphic Display	Mobile	Activity Report	QC Analysis
3	29Palms	CA	KTNP	Text Display	Graphic Display	Mobile	Activity Report	QC Analysis
4	AppleValley	CA	KAPV	Text Display	Graphic Display	Mobile	Activity Report	QC Analysis
5	BryantFieldMono	CA	O57	Text Display	Graphic Display	Mobile	Activity Report	QC Analysis
6	Healdsburg	CA	HES	Text Display	Graphic Display	Mobile	Activity Report	QC Analysis
7	Inyokern	CA	KIYK	Text Display	Graphic Display	Mobile	Activity Report	QC Analysis
8	LittleRiver	CA	KLLR	Text Display	Graphic Display	Mobile	Activity Report	QC Analysis
9	MedocHsp	CA	CN01	Text Display	Graphic Display	Mobile	Activity Report	QC Analysis
10	Paramount	CA	2CN4	Text Display	Graphic Display	Mobile	Activity Report	QC Analysis
11	Redlands	CA	KREI	Text Display	Graphic Display	Mobile	Activity Report	QC Analysis
12	Rangely	CO	4V0	Text Display	Graphic Display	Mobile	Activity Report	QC Analysis

You can opt for a display in **Text, Graphic or Mobile**

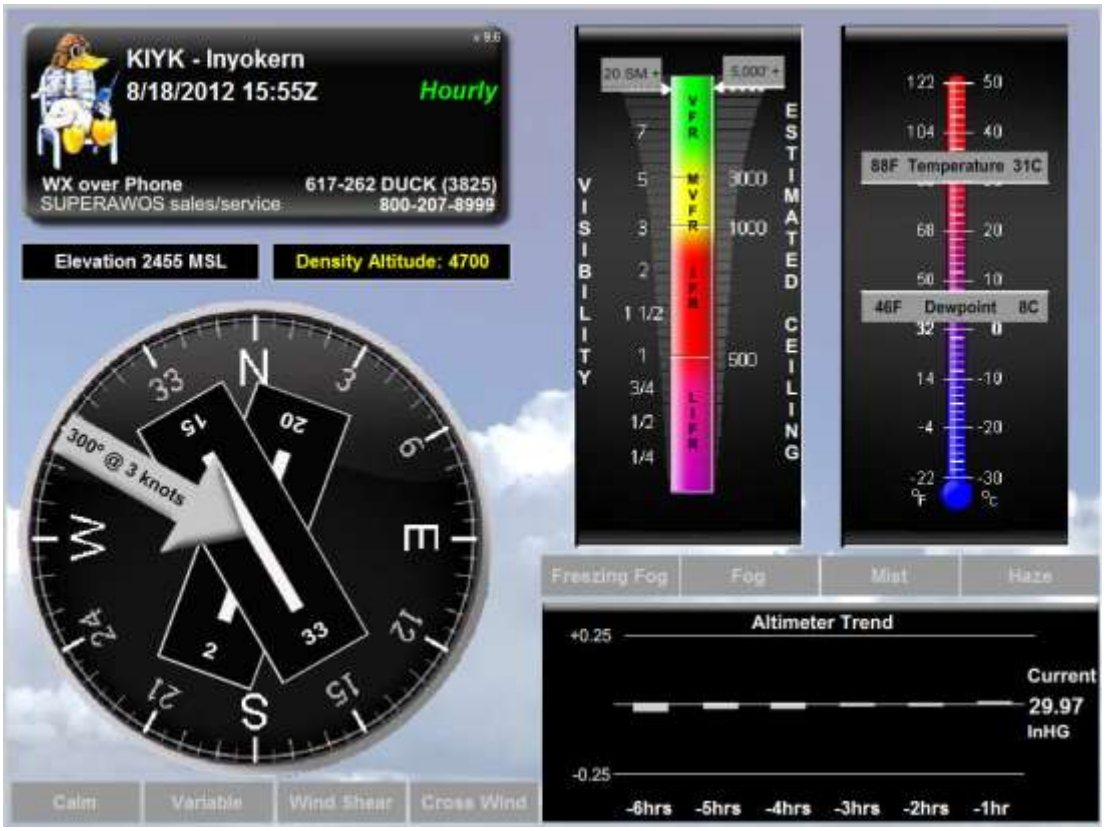
Text Display *for Inyokern, CA (KIYV)*

Developmental Site: KIYK - Inyokern - Version 235
Most Current 90 Days From WX Data Base
Most Current 90 Days From Radio Data Base
Elevation 2455 MSL - Primary Runway 15/33
Visibility Serial No. J2403-03
Magnetic Variation: 14E degrees

	Date UTC Local	Conv Greet Radio Advis	Altim DenAlt (ft)	Wind	Speed Gust	Weather	Report	Vis (SM) Humidity Brightness	Temp/Dew Lapse LCL (ft) Est Ceiling
81	8/18/2012 15:55Z 8.55A	23 0 0 4	29.97 4700	300	3 0			40 SM 23% 134 VFR	88F / 46F 5 8400 Above 5,000
80	8/18/2012 14:55Z 7.55A	8 0 0 2	29.96 4600	270	1 0			40 SM 24% 117 VFR	86F / 45F 5.5 7455 Above 5,000
79	8/18/2012	2	29.96	Missing	6			25 SM	82F / 45F

Remarks: Conditions are generally fair. Pressure is stable over last two hours. Temperature is rising to 88 degrees Fahrenheit. Temp/Dew spread is widening. Next Update: 5 minutes before the hour

Graphic Display *for Inyokern, CA*



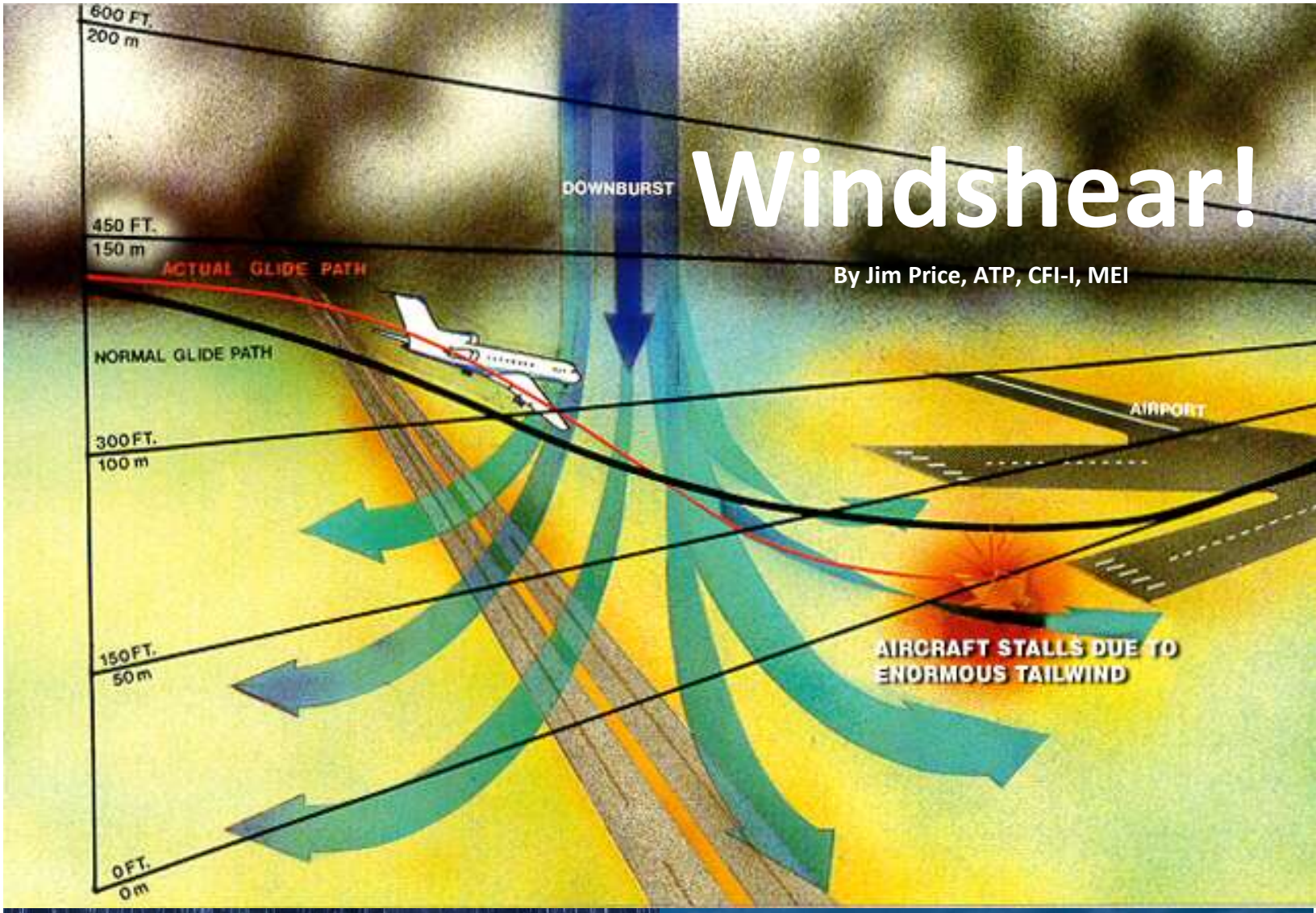
Using a Smart Phone? Click on the "**Mobile**" option.

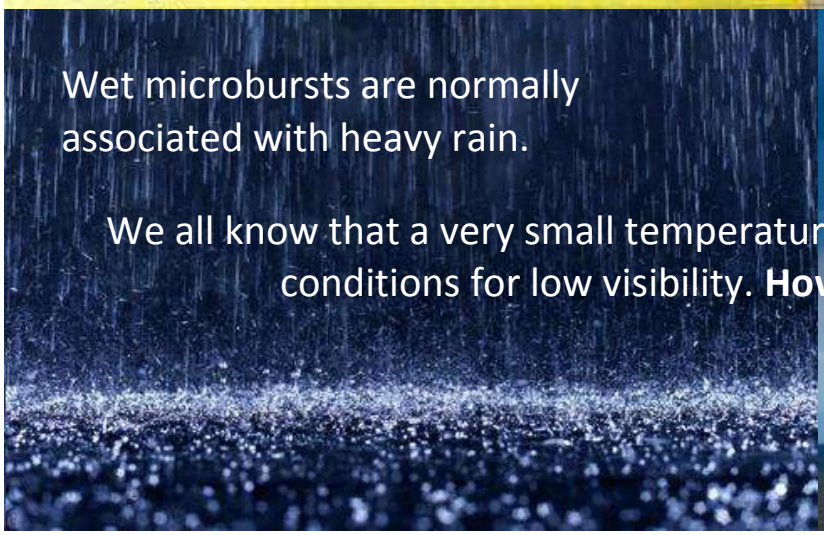
Mobile *display for Inyokern, CA*

For more information, you can watch a 9 minutes video about Super AWOS. Go to: http://www.youtube.com/watch?v=lwMXdLwt3YI&feature=player_embedded

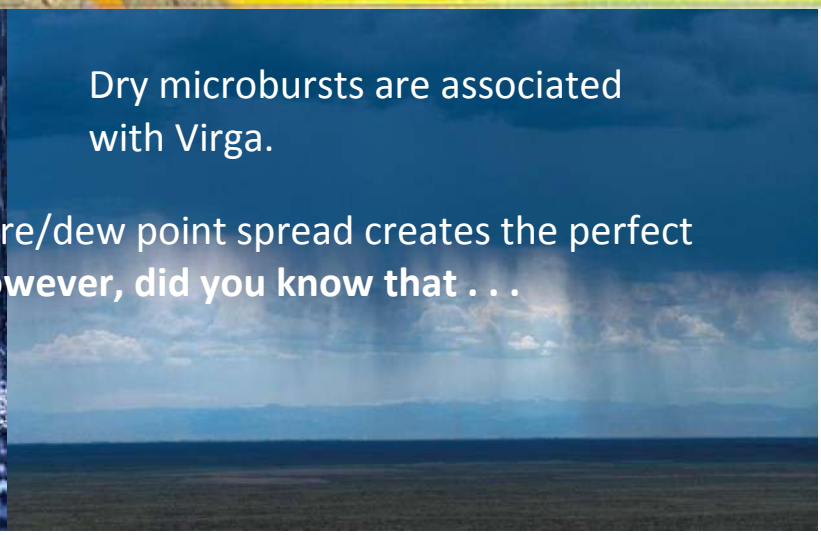
Windshear!

By Jim Price, ATP, CFI-I, MEI





Wet microbursts are normally associated with heavy rain.



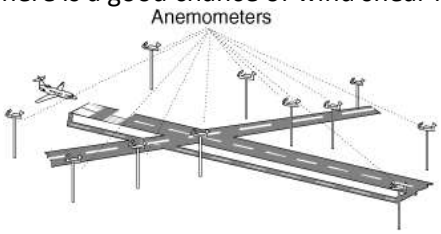
Dry microbursts are associated with Virga.

We all know that a very small temperature/dew point spread creates the perfect conditions for low visibility. **However, did you know that . . .**

. . . a very high temperature/dew point spread associated with convective activity can be an indication of an imminent danger to light airplanes.

When the spread between the air temperature and dew point is between 15 and 30 degrees C and convective storms are in the area, that's a recipe for wind shear.

There is a good chance of wind shear from microbursts associated with thunderstorms, even if the storms have passed. Many major airports have LLWAS (Low Level Wind shear Alert Systems) and Terminal Doppler radar to help detect microbursts. These warnings are very accurate and pilots should not take these warnings lightly.



RULES AND GUIDELINES

There are no wind shear FAR restrictions (Part 91 or Part 135). As always, your good judgment is the key to survival. If ATC issues a Wind Shear alert or another pilot reports encountering an airspeed loss on takeoff or landing, then you should consider delaying your takeoff or approach until the wind shear situation is no longer relevant.

WIND SHEAR RULES AND CLUES

Airlines have wind shear rules to help their pilots make approach and landing decisions. The report of a 15 knot airspeed loss on takeoff or approach is a *show stopper*. Subsequently, if a GA pilot PIREPs that he or she did not experience wind shear, or that the airspeed loss is less than 15 knots, airline approaches can resume. Other clues that wind shear is about to bite you in the *empennage* are:

- Groundspeed variations (decreasing head wind or increasing tail wind, or a shift from headwind to tailwind)
- Vertical-speed excursions of 500 fpm or more
- Pitch attitude excursions of five degrees or more
- Glideslope deviation of one dot or more

PIREPs

PIREP wording is important when it comes to wind shear. Avoid the phrase “Negative wind shear on final”, for that could also mean “none”. The more appropriate wording would be, “Mooney 257 Kilo Whiskey encountered wind shear, loss of 10 knots at 800 feet.”

AVOID TROUBLE

If you don’t have personal limits when it comes to wind shear, consider adopting those developed by the airlines. When you notice wind shear clues such as a high temperature/ dew point spread, consider delaying your takeoff or landing to give the wind shear time to dissipate. It might save your Mooney and your life!

PHIL CORMAN

Phrases in Airplane Advertisements That Drive Us Nuts!

Special thanks to Kareem Fahmi

We've all seen them...the words in for-sale ads that just make you want to cringe, because you think "Is that really meant to fool anyone?" Here are some of the more common ones -- with translation included.

"Fresh annual with sale" -- *my mechanic will pop an inspection plate off, make sure it's still got two wings and a tail, and sign it off.*

"Strong engine" -- *800 past TBO but I'm pricing it at mid-time.*

"Apollo Loran included" -- *because I'm too broke to pay somebody to remove it.*

"Corporate owned and flown" -- *I put it in an LLC so I could claim that. Plus, we all know corporations fly the airplane more gently than your average pilot, right?*

"Great compressions" -- *just don't look at the oil analysis, if there was one, which there isn't.*

"Never been out of state" -- *Because airplanes wear less when they're not flown across state lines. Right?*

"Doctor-owned" -- *I'll say this because it makes me sound like a careful, responsible owner, even though I just taxied my Cirrus into a ditch*

"Minor prop strike" -- *As opposed to a major prop strike, of course.*

"Over $100K invested" -- *My wife/accountant/lawyer won't let me sell it for less than I've put into it, no matter what the market says.*

"Cream puff" -- *I just paid a high school kid $30 to wax the bird, hoping that'll encourage you to overlook the ADs that didn't get done*

"Babied by loving owner" -- *I flew her 10 hours a year.*

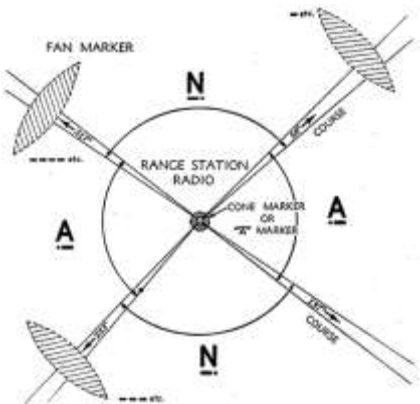
"Has been sitting a short while" -- *If you call since 1987 a short while.*

"No reasonable offer refused" -- *I'm so desperate, I'll pay you to take this thing off my hand*

"One of a kind" -- *Good luck finding anyone to work on this thing, 'cause I sure can't*

"Years of flying left in these engines" -- *It's a Beech Duke with 50 hours to TBO on both engines. If you fly 15 hours a year, that's like 3 years of flying left!* (I actually saw this on T-A-P)

"Classic, original condition" -- *Avionics, paint, and interior haven't been updated since about 1956. Now, where's the nearest radio range?*



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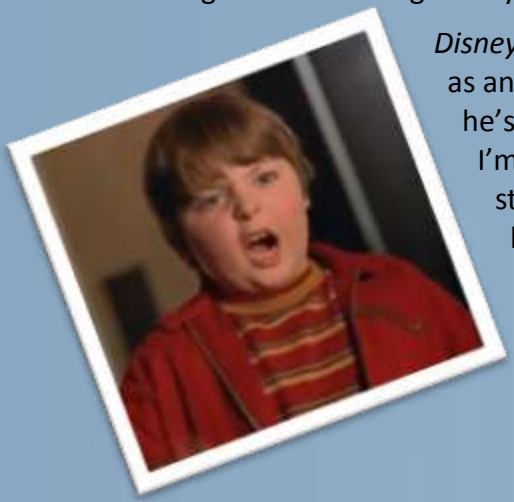
Mismanaging Fuel

What can we learn?

By Jim Price, CFI-I, MEI, ATP

CASE #1, 2012: The pilot of a Mooney M20C had been flying about 4 hours, 25 minutes since the last fueling. This day had included **two takeoffs and climbs**. During approach to the destination Florida airport the engine lost power. The Mooney was 3 miles out and 1,200 feet AGL. The fuel selector was positioned to the left main fuel tank when the power loss occurred. The pilot landed on a road, and while veering left to avoid an automobile, the left wing impacted a median. The airplane spun 180 degrees and came to rest upright. The FAA inspector found the left wing fuel tank was intact and **did not contain any fuel**. The right wing fuel tank had approximately **1/2 gallon** of fuel. 1 Minor injury, 1 Uninjured.
CASE #1 THOUGHTS: Consider the extra fuel burned during multiple takeoffs and climbs.

CASE #2, 2011: While on a cross-country flight, the fuel in the left tank of the Mooney M20C was exhausted and the engine stopped producing power. The pilot switched to the right tank, which contained fuel. Realizing that he was too low to attempt an engine restart, he elected to perform a gear-up landing in an Oklahoma field. The airplane's fuselage and right wing sustained substantial damage during the landing. The NTSB determined that the probable cause of this accident was fuel starvation as a result of the **pilot's inadequate fuel management.** Injuries: 1 Minor injury.
NON-FUEL THOUGHTS ON CASE #2: Be a high flyer! Mooneys love the air at 9,500 and 10,500 MSL. Don't fly so low that should your engine fail, you won't have enough altitude to restart the engine or gather your thoughts.



Disney's movie, The Kid (2000), portrays Russ (Bruce Willis) meeting himself as an eight year old, "Rusty", (Spencer Breslen). When Rusty finds out that he's now forty years old and isn't a pilot, he exclaims, "What a loser!" I'm reminded of that line and how special I am, each time a Cirrus pilot stands and bows his or her head as I pass. I also understand that just being a pilot isn't enough. Sure Mooney pilots are special, but in addition to navigation and stick and rudder duties, we need to pay attention to the systems in the airplane. There few, if any, acceptable excuses for fuel mismanagement.

Future events are on the 2nd Saturday of each month

- October 13, Flagler (XFL)
- November 10, Punta Gorda (PGD)
- December 8, Lakeland (LAL)

Formation Clinics for Initial 2-Ship and Advanced 4-Ship on October 26-27 ($10)

Academics:

Newbies: We'll be teaching initial 2-ship academics Friday evening Oct 26th.
4 ship initial Academics: Additionally, we'll teach initial 4 ship academics for those looking to expand their skillset.
**Academic attendance is required only for those either new to formation or new to 4 ship.

Location:

Visalia, CA is located in the heart of the San Joaquin Valley with a 6750' x 150' runway, http://www.airnav.com/airport/KVIS

Hotel Registration info: (both on-field)

Comfort Inn: http://www.comfortinn.com/hotel-visalia-california-CAA78 9300 W. Airport Drive, Visalia, CA, US
Phone: (559) 651-3700, - free breakfast , Group rate on request - expect details Wednesday 26 Sep

Holiday Inn: http://www.holidayinn.com/hotels/us/en/visalia/visap/hoteldetail**,** 9000 West Airport Drive, Visalia, CA
Hotel Front Desk: 1-559-651-5000, - No free breakfast but restaurant on-site, about $10-15 more per night

Schedule:

Friday 26 Oct PM:

- 6pm: Group Dinner: Format TBD
- 7pm – 9pm: Formation Academics + beer at hotel

Saturday 27 Oct:

- 0700: Complimentary breakfast at hotel / on your own
- 0800: Meet at airport - flight assignments/brief
- 0830-1030: Sortie 1
- 1030-1200: Sortie 2 - possible sortie 2 land at Porterville, CA (PTV) for lunch at the Airway Cafe
- 1200-1330: Lunch
- 1400-1530: Sortie 3
- 1600-1800: Sortie 4?

Sunday 28 Oct:

- 0700: Breakfast at hotel
- 0800: Meet at airport
- 0830-1200: AM fly for those interested

Register by sending email to **dandtmarten@hotmail.com** with Name, Email, Cell Phone, Aircraft Type/Model, Formation Experience, Desired Training (2-ship, Initial 4 ship, 4-ship wingman practice, 4 ship Lead)

Landing Your Mooney
No Flaps, Partial Flaps, Full Flaps?

Low or No Wind Scenario

So you are landing your Mooney in a no wind or light and variable wind situation, how much flaps do you use? Well, the general answer is to use full flaps. Why? You have adequate rudder control, and generally want to touch down at the slowest airspeed. Full flaps, wings level, and gear down gives you that desired solution.

Crosswind Component
So you don't have your E6B handy, what is the rule of thumb for the direct crosswind component?
30° is 50%
45° is 75%
60° is 90%

Moderate Wind Scenario

So you have a 10-14 knot wind with a healthy crosswind component. Most of our Mooneys can easily handle this level of crosswind component (check you POH for your model). The issue here becomes "effectiveness of rudder control". We want, and need to get the nose aligned with the runway before the gear touches down to prevent a side load on the gear, and maybe even loss of longitudinal control. There should be enough rudder control in these levels of winds. Of course, gusts and downdrafts can affect your decision.

Remember, the crosswind in your POH is not a limitation, it is demonstrated crosswind.

Stronger Wind Scenario

In these scenarios, the main concerns of the PIC are longitudinal control (nose down the runway) and having the airplane stick once it lands. Most pilots are considering either partial flaps or no flaps. Of course, there is no standard answer, but a lesser flap setting gives you a couple of advantages. First it gives you a higher stall speed which will help to keep your Mooney on the runway after touchdown. Secondly, with a higher landing speed you will have more rudder authority to align the nose before touchdown. In a severe crosswind, if you cannot align the nose, sometimes adding a little power will give you just enough authority to align the nose.

Do you know your stall speed with no flaps, partial flaps, gear down, gear up, at 0°, 30°, etc.? If not, please learn these numbers and commit them to memory

Good rule of thumb: You can decrease your landing speed by approximately 5% for each 300 lbs under Gross Weight.

Using the Flight Log & Lost Satellite Reception

By Jim Price

Using the Flight Log

The flight log saves up to 50 recorded flights. Recording begins when the GPS speed exceeds 30 knots and altitude exceeds 250 feet AGL. When you land and speed drops below 30 knots, the flight entry is saved. A touch and go, or a brief stop of less than 10 minutes, appends to the current flight record, rather than starting a new entry.

VIEWING FLIGHT DETAILS, Garmin 396/496:

- Press ***MENU*** twice, and highlight "*FLIGHTS"* from the vertical tab list.
- Press ***MENU*** and select "*Show Hours and Minutes*" to view the flights in minutes and hours.
- Highlight the flight, and press ***ENTER***. This opens the flight details window.
- With "*OK"* highlighted, press ***ENTER*** to return to the "*Flights*" tab.

VIEWING FLIGHT DETAILS, Garmin Aera

- From the '**Home**' Screen, touch **Tools** > **Flight Log**.
- Touch the desired flight log. Route, date, hours, distance, and the flight

VIEWING FLIGHT DETAILS, Garmin 695/696

- Press the **MENU** Key twice to display the Main Menu.
- Turn or move the **FMS** Joystick to select 'Flight Log', and press the **ENT**
- Key. (Hours and minutes can be displayed by pressing the **MENU** Key and
- Select 'Show Hours and Minutes'.
- Turn or move the **FMS** Joystick to select the desired flight from the list, and
- Press the **ENT** Key. Route, date, hours, distance, and actual flight path is
- displayed.
- With 'Done' selected, press the **ENT** Key to return to the previous page.

Lost Satellite Reception

A panel installed Garmin, like the 430 or 530, has been certified to never conflict with other frequencies. Hand held GPSs don't come with the same "guarantee". If your portable Garmin loses satellite reception, change your aircraft's active VOR frequency. I had this problem whenever I would fly to Prescott, AZ (KPRC). It took a while to realize that the problem was occurring because I had the Drake VOR frequency (114.1) in an active spot in the #2 VOR. This small detail would cause my 496 to announce "Lost Satellite reception."

IS IT THE VOR?

- Press ***MENU*** twice, and select the GPS tab.
- Change your aircraft's VOR frequency(s).

If the satellite bars suddenly reappear, the active VOR frequency is the problem.

IS IT THE ANTENNAE?

One user reported:
"[I] experienced loss of integrity on GNS480 and Lost Satellite on Garmin 496 .... powered off GNS480 and immediately recovered Satellite Reception on 496. By the way, the GNS480 also killed GPS signal to my iPad."
The Fix: "The WAAS antenna was bad and was creating interference. I had to get a new WAAS antenna and it solved this issue."

IS IT THE OPERATING SYSTEM?

You can restore satellite reception by updating the operating system/antennae at Garmin.com. Keeping the unit updated with the latest operating system and antenna software will help prevent problems.

October 2012

FAA MEDXPRESS **Effective October 1, 2012, FAA will discontinue use of the paper version of FAA Form 8500-8**, the form that airmen use to apply for FAA medical certification. Airmen will be required to apply electronically for medical certification, using FAA MedXpress, an online application capturing the same information that was included in the paper form 8500-8. Read more HERE

Aviation Media, Inc., producer of the Wonderful World of Flying series of aviation videos, will make the entire library of Wonderful World of Flying content available via streaming over the Internet on a subscription basis. Subscribers to the new service will be able to access all the Wonderful World of Flying programs any time on the computer, as well as iPhone, iPad and Android devices, company officials said. Read more HERE

The AOPA Foundation's Air Safety Institute (ASI) has released "Unmanned Aircraft and the National Airspace System," a new interactive online course. Topics include: what unmanned aircraft systems (UAS) are and how they operate; their impact on general aviation; how manned and unmanned aircraft can safely share the airspace; and how UAS are operating in today's national airspace system (NAS). Take the course HERE (AOPA membership required)

ForeFlight's Version 4.7 has added the Runway Proximity Advisor (RPA), which allows the app to provide audio and visual alerts to pilots as they approach, enter or cross a runway. Read more HERE

New! Bendix King has produced a new App - ***myWingMan Navigator***. It's a bit different from ForeFlight, in that it has three-way split screen options, Forward View and WingMan View and wireless connectivity to cockpit instruments. Visit Bendix King for more information

Hilton Software WingX Pro7 for iPad and iPhone introduces a Ground Proximity Warning System (GPWS) with Look Ahead Protection. WingX Pro7's new GPWS warning system alerts pilots to an impending or immediate danger of impacting terrain or an obstacle, company officials said. Read More HERE

***AOPA Live This Week*, the association's video magazine, is now available on its own public channel on Roku,** an Internet-enabled box that allows viewers to stream content instantly on their televisions. Don't know anything about ROKU? Click HERE

Mountain High Equipment & Supply's newest technology is the two-person portable MH EDS O2D2 Pulse-Demand FADOC (Full Authority Digital Oxygen Control) Oxygen Delivery System designed for Beech, **Mooney** and Piper aircraft. For more information: 800-468-8185 or MHOxygen.com.

Dress to Survive: Aviator Tactical Vest. If you had an unscheduled off-airport landing in rough back country, would you be able to survive to tell the story? Maybe, maybe not. It all comes down to how well prepared you are. A big part of that is having a survival kit, but if you can't reach it after the "landing," it doesn't do a bit of good. See http://www.rescu-me.com/ for more information.

Stratus - ADS-B In

By Phil Corman

There are only a few devices to select if you want to start receiving ADS-B information in your cockpit, and the Stratus unit from Appareo Systems is an excellent one. It receives ADS-B IN for FIS-B (Flight Information Broadcasts) over the UAT, 978 Mhz. The unit measures 5.8x4.2x1.1". Here's the best part. There are no wires required to connect to the iPad device running the industry leading Foreflight program. Note: We reviewed Foreflight in our last issue. The Stratus unit connects to the iPad using WIFI, a wireless method. It has its own rechargeable batteries which last for 8 hours before recharging, or you can recharge in flight. The antenna is built-in so you can just place your Stratus on your glareshield and you are in business. There is an optional remote antenna that you can purchase as well.

Operation

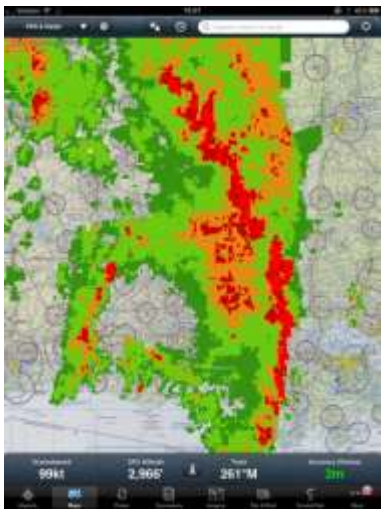
This is a pretty simple device to operate. You turn it on. If the batteries are charged, it will show connectivity with you iPad in a few seconds, and if you are in range of an ADS-B tower, it will begin receiving. If you have multiple devices in your plane that want to take advantage of the Foreflight/Stratus features, you are in good luck since the Stratus unit delivers WIFI in the cockpit. So all iPad 2s or later and iPhone 4s or later can connect to it and display the information.

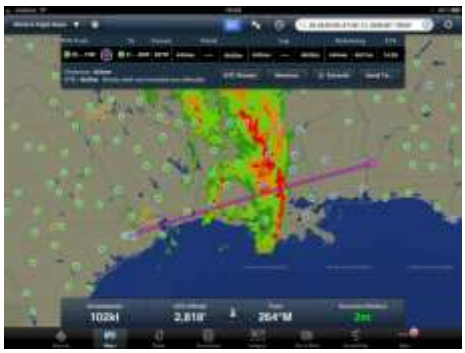
There is a slight limitation to Stratus. Before you can see the FIS-B information, you need to be airborne and within reception of ADS-B towers. While you are on the ground Foreflight provides its library of weather information and maps via cellular data or WIFI. You get your Wx data on the ground for planning that way, and get updates enroute via Stratus. Foreflight makes this transition seamless. Here is the current ADS-B coverage map we showed you in an earlier issue. ADS-B is being built out continually, so this will only improve.

GPS

The Stratus unit has ADS-B IN and is also a WIFI station, but that's not all. It has a built-in WAAS GPS, which is considerably better than the one built-in to the iPad.

Weather





In ADS-B parlance, weather and NOTAMS are referred to as FIS-B, or Flight Information Broadcast. The Stratus receives: NEXRAD radar, METARs, TAFs, TFRs, SIGMETs, AIRMETs, NOTAMs, Pilot Reports and wind/temperature aloft. So you say this is all available via XM

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Weather. And you are correct. Here's a significant difference. You will pay XM $60 per month. The ADS-B weather is FREE. And you get PIREPS on your Stratus, but not on XM. You get a Satellite image on your XM, but not on your Stratus, as ADS-B does not provide that data feed. The biggest things on XM that are not currently on ADS-B Weather are Satellite Image, Lightning, Cells, Weather forecast, and Echo Tops. But you will get the following, not on XM: Notams-D, Notams-FDC, and Status of Special Use Airspace.

Traffic

In ADS-B parlance, Traffic information is referred to as TIS-B, or Traffic Information Broadcast. TIS-B is not supported at this time. There are NOT enough aircraft transmitting ADS-B OUT so displaying traffic would be incomplete and therefore a li ttle less than desirable.

ADS-B utilizes two frequencies; 1) UAT, or Universal Access Transiever, on 978 Mhz, and 2) 1090ES, or Extended Squitter, on 1090 Mhz. UAT is generally used by general aviation and below 18,000 MSL while 1090ES is for heavier metal above 18,000 MSL. Weather information comes over UAT, while Traffic comes over either UAT or 1090ES.

FOR SALE -- 1975 MOONEY M20F, N7183V, Serial # 22-1181 - $64,900 (Below Appraised Value)

TT 4630, SMOH 815, New Prop Hub w/ overhauled blades 815, Fresh annual 6/2012, IFR equipped, Aero Resources nose cowl & Spinner, New paint 2010 by Art Craft in Santa Maria, CA, Leather interior, GNS 430W with GPS steering, KX 170B, STEC 50 autopilot, JPI 700, O & N fuel bladders, JPI 450 fuel flow, New front windshield, EI electronic tach, New Gill battery, Fine wire spark plugs, Plane Power alternator, Sky-Tec starter, Oil cooler relocated, Goodyear Flight Custom III tires, Halogen landing light, Laser rebuilt nose gear, Rebuilt gear actuator & New shock disc, Complete logs, Major work done by Top Gun & Lake Aero, Hangered at KLVK, Call Bob Keller 925-462-7942 or email Keller36@sbcglobal.net