The Mooney Flyer

The Official Online Magazine for the Mooney Community

www.TheMooneyFlyer.com

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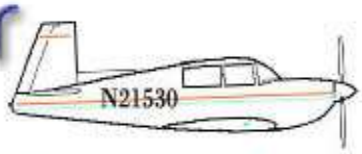
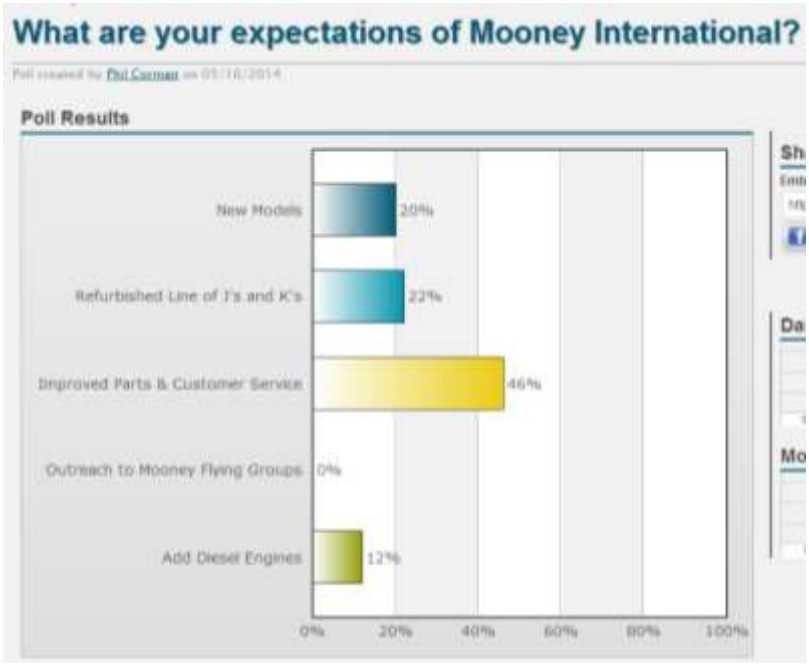
From the Editor

Phil Corman





Here are the results of last month's survey on your expectations of the new Mooney International.

We were only slightly surprised that almost half of the expectations of the new Mooney are improved Customer Service & Parts. The bulk of the other half of the respondents were looking at new models and refurbished J/K lines. This is NOT surprising to us and seems to make good business sense.

Next month's poll:

What is the #1 reason you own a Mooney. **CLICK HERE** to vote.

Mooney Service Centers – They're Everywhere

We saw this floating MSC while cruising in the Mediterranean. Wow! MSCs are certainly full service!

Top Gun Aviation's 25th Anniversary

The Mooney Flyer salutes one of the top MSCs in the world. Located in Stockton, California, Top Gun Aviation was founded by Tom Rouch 25 years ago. Before that, Tom had an amazing run at *Performance* in Hayward, California. Top Gun continues to lead the industry with son Mark Rouch now at the company helm.

The banner below, says it all about Top Gun's philosophy.

You could feel the excitement in the hangar with about 80-90 folks in attendance, including Paul & Shery Loewen of LASAR and Don & Jan Maxwell of Maxwell Aviation. Don & Jan flew all the way from Longview Texas to share this special occasion.

Pictured to the left are the founders of the top 3 MSCs in the world. There was an overdose of Mooney expertise in this picture. These MSCs have provided most of the parts and services during Mooney's five year hiatus. These guys are as legendary as the Mooney itself.

Congratulations to Mark & Tom for their fantastic run!

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. Just another benefit to our subscribers. These forms are currently Beta test quality. Please send errors to us.

M20C M20E M20G M20F M20J

Baja Bush Pilots

http://www.bajabushpilots.com/index.php

The Baja Bush Pilots are obviously not a Mooney group, but the website and the organization is chock-full of great information, should you want to fly your Mooney to Mexico.

The organization schedules the best fly-ins to Mexico. You need to be a member to attend these Mexico fly-ins, but as with Mooney fly-ins, it is often the best way to travel, surrounded and assisted by other pilots.

Baja Bush Pilots offers a preponderance of good information if you are planning to fly to Mexico. Of course, AOPA also has some great information, too.

BBP is also planning a fly-in to Cuba. How cool is that?!

Our Mooney group met in June for a cook out at Latrobe Airport in Western Pennsylvania. We had a great day of telling flying stories, with good eats and a lot of laughs. Any chance of a piece in your next Mooney Flyer? The guys would really enjoy that.
Lloyd B

Editors Note: We feel that the group of Mooney pilots pictured below, appear way too happy. We'd appreciate it if they would wipe those smiles off their faces. All kidding aside, we love those Mooney fly-ins. Great airplanes, pilots and passengers.

Kudos on another fine edition of the Mooney Flyer. It's not even the end of May and I've read the June edition already - I've nothing left to look forward to!

I appreciated your help in understanding how to get through the LA/San Diego airspace. When I tried it, the flight went well with no stress; just fun. I'm not sure what the tower at KSAN thought when I showed-up, cleared to land #1 at the MZB VOR, but then having to extend downwind as more 737s arrived. Good thing it wasn't any busier or I might have been extended to about Las Vegas...

Your article (June edition of the flyer) about the hacking device and microprocessor based devices hit home with me and largely addresses why I bought a steam gage equipped C model. My first experience with Mooney's was a J model and both the electric flaps and the electric gear gave me problems. That, coupled with 34 years in electrical/avionics work at Boeing, pretty much convinced me to absolutely minimize the E/E gadgetry for my own safety. I do not think that GPS is such a great thing - too easy to

block signals (truckers are doing it all the time) and I've had satellite drop-outs in more than one location in the country - most recently for over 30 minutes climbing north out of Lake Tahoe. Give me the VORs and DMEs that were designed in the tube era over all this fancy high-speed, highly-integrated digital stuff. Yeah, it's cool when it works right but largely a distraction for most pilots who stop looking outside, and no one can understand all the failure modes/effects). I don't know what I'm going to do when 2020 comes around and anyone who wants to fly places I do needs a GPS installation just to feed latitude-longitude to the ADS-B out function. Maybe someone will come-out with a transponder (squitter) that has an integral GPS and all you need to support it is an antenna installed. I'll continue to fly VOR to VOR none-the-less (in unfamiliar territory).

Last but not least I agree with one letter writer about the value of the articles Paul, Shery, and Mike Riter have been providing with respect to the nuts & bolts side, but all the articles are good in my estimation, (yours too!).

Mooneys are the best in the single engine world!
Bill B

The Mooney Flyer **cover art is priceless! Love it. Every Month!**
Marty H

I must let you know that The Mooney Flyer is not only the most entertaining and informative Mooney publication, but ranks as one of the best GA magazines. I hope you guys continue publishing forever. I particularly appreciate the Q&A that Mr. Tom Rouch, The Top Gun, provides each month. It seems that Tom probably forgets more about Mooneys in 5 minutes than I know in total. Thank you Mr. Rouch.
Bert B

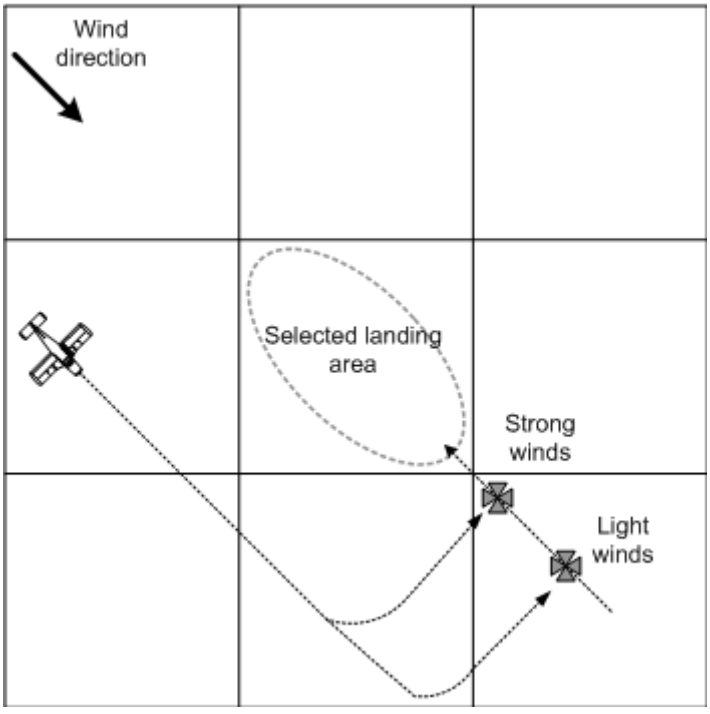
Forced Landings in Mooneys

Night v Day and Flat v Mountains v Water

Here at The Mooney Flyer, we tend to focus on the positive, even when discussing "Forced Landings". Why, you ask, could a forced landing be a positive item? Well, in our opinion, if you can walk away, and survive, then that is a positive experience. We hope that this article reinforces best forced landing techniques and also give you a few more tricks to add to your forced landing operating procedures.

Most off-field landings are caused by fuel starvation or mechanical failure. We don't include CFIT (Controlled Flight into Terrain), since that is not a forced landing. We'll strive to hit the main scenarios from "best", or daytime forced landings in a flat unpopulated area, to the "worst" scenarios - forced landings in the mountains at night.

First, let's get the stuff you need to know and should include in your emergency procedure, regardless of the type of off-field landing. We all know that we need to "aviate, aviate, aviate" before we do anything else. So first, set the Mooney up for best glide or longest duration, and trim it for that airspeed. If possible, while establishing that speed, select your landing zone. Honestly, it is best to always be looking for an emergency LZ while flying, almost like a normal instrument scan (i.e., continuous or at least regular intervals). If you know the wind, then plan for landing into that wind. Remember that $E=\frac{1}{2} MV_2$. That means that if you land with half the groundspeed on impact, you will only have ¼ of the energy. As you near the touchdown zone, remember to pull your prop for minimum drag or push it full forward for maximum drag/braking. At this point, you should begin to drop your flaps. This will help minimize your impact speed. **Note**: The use of gear is dependent on each scenario, so we don't have a uniform recommendation here. Before impact, remember to shutoff the fuel, pull the mixture, set throttle to idle, and open the door. If you have survival equipment, it should be in your lap so that it will be accessible after impact. You don't want to be a statistic, having successfully used your "piloting" skills to survive the crash, only to fail to survive the elements. This happens much too often.

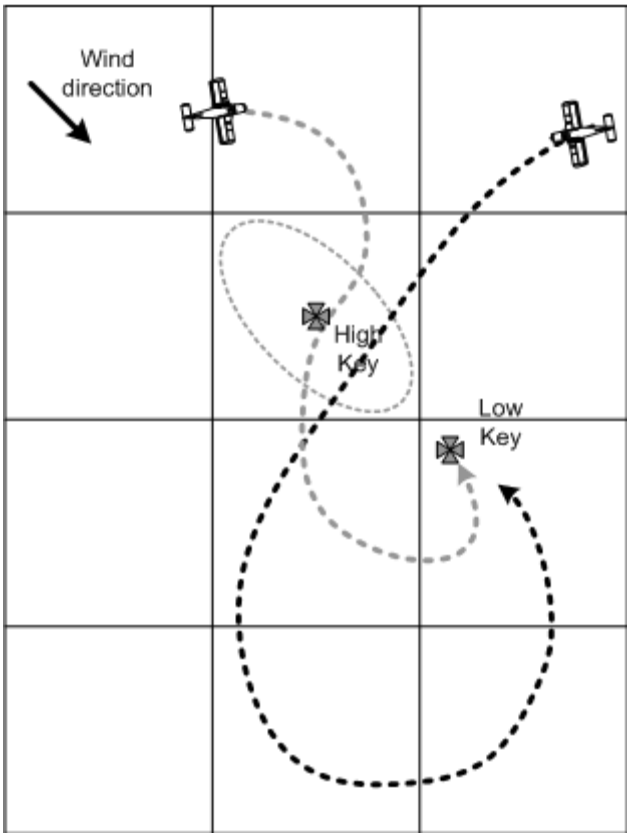


A final generality is to "select a road" or "don't select a road". This is a tough call. Our recommendation is simple. We want to minimize injuries and/or fatalities. If a road is vacant, and the best landing option, then take it. But if there is traffic, we recommend an LZ (Landing Zone) near the road, so you'll be observed and get more immediate assistance. We don't want to injure innocent vehicles and their passengers.

Emergency Approach Patterns

Before we delve into specific scenarios, here is a final general recommendation. You will fly your emergency landing pattern

differently than you fly a normal traffic pattern and landing. Assessing the wind is critical. It goes without saying that you need to turn towards your LZ sooner in stronger winds, as the illustration suggests.



Flying a circular approach keeps you and your Mooney close to your touchdown area. In the Canadian military, they teach High Key/Low Key approaches, depicted in the illustration to the left. The High Key is your touchdown spot and the Low Key is your rollout spot. For low altitude failures, when the landing area appears behind the trailing edge, next to the fuselage (with the pilot looking over the left shoulder and downward), this is an excellent target for an LZ. The higher your altitude, the wider your circle.

If you have time and altitude, then now is the time to broadcast your *May Day* on 121.5 and to Squawk 7700.

Scenario #1: Flat Field

If the field is dark in color, chances are that it is freshly plowed. It is better to utilize a light colored field since the surface will be harder. We recommend a gear up landing in a dark field as it will reduce your chances of flipping over. You'll need to use your own judgment on a light field or a green field. Green fields tend to be the best off-field landing zones as they may not be plowed and quite landable. In this case, gear down might be the right choice. If there are rows of crops, say corn or grape vines, then land parallel to these rows. In the case of grapes, there are wires, which would not be wise to cross. Of course, select the parallel direction most favorable to the wind.

If the field is too short, but there are trees, then consider landing between two trees. The wings will break away and you'll decelerate a little slower than if you were to impact something head-on, such as a boulder, stone wall, or other immovable object. This decision could be crucial, and we realize a very tough one to make, since you are sacrificing your Mooney. But remember, the insurance company owned your plane a few minutes ago anyway, and Mooneys are replaceable. You and your passengers are not.

Scenario #2: Mountains

Mountain landings are never good. The winds have a higher probability of buffeting and swirling your Mooney and your LZ options will be vastly reduced. So what are your options? First is one that you made before departing. If possible, in a single engine Mooney, selecting a flight path that offers mountain strips and roads as a gliding option is the single best decision you can make to survive a forced mountain landing. Even a winding mountain road provides opportunity to decelerate in a few hundred feet. It also leaves you more "findable" after your impact. The same goes for a short mountain strip. But what if these are not options? Your only recourse is to land into the wind on as gentle a slope as possible. Remember, that updrafts can usually be found on the sunny side of a valley or canyon. Use

this to your advantage. Landing on a gentler slope is obviously preferable to a steep slope. Select an LZ at lower altitude to achieve this. You should land into the wind because as your ground speed decreases, your chances of survival increase. If the slope is treed, then find two trees that the fuselage can get between. If not available, flare into the canopy. Easier said than done, but it is an option. Rivers might be an alternative, but most mountain rivers are filled with rocks, so this might be a desperate option. No simple or pat answers when landing in the mountains.

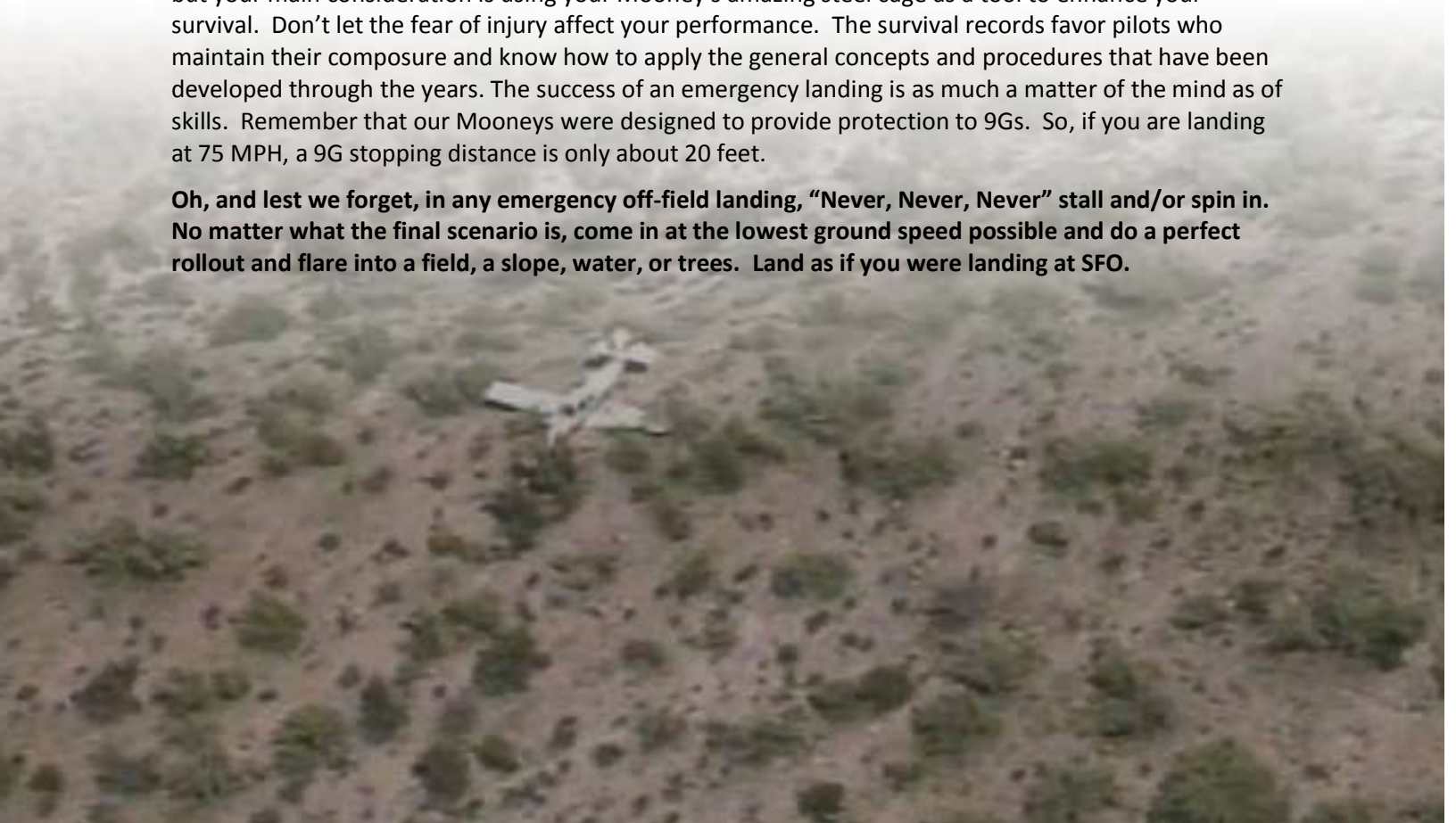
Scenario #3: Water

On a lake, land into the wind. The waves will be relatively small. If you are near the shores, you can tell which way the wind is blowing by looking for the smooth areas. If there is a smooth area along a shore, followed by ripples, then the wind is blowing off that shore. If you are landing in the ocean, your best option is to land parallel to the waves. Unfortunately, this may put you in a crosswind situation since the wind usually blows perpendicular to the waves near shorelines, but you'll have less chance of being flipped over and drowning. Again, don't survive due to your pilot skills and die in the water. If possible, you should don your life jackets early in the process. Don't forget to open the door before impact. We cannot envision a scenario in which you should land in the water with your gear down. Gear up would minimize your chances of flipping over, making your cockpit escape much more difficult.
If there is a sandy beach available with no bathers, then a gear up in the sand parallel to the shore could be a non-event for both you and your Mooney.

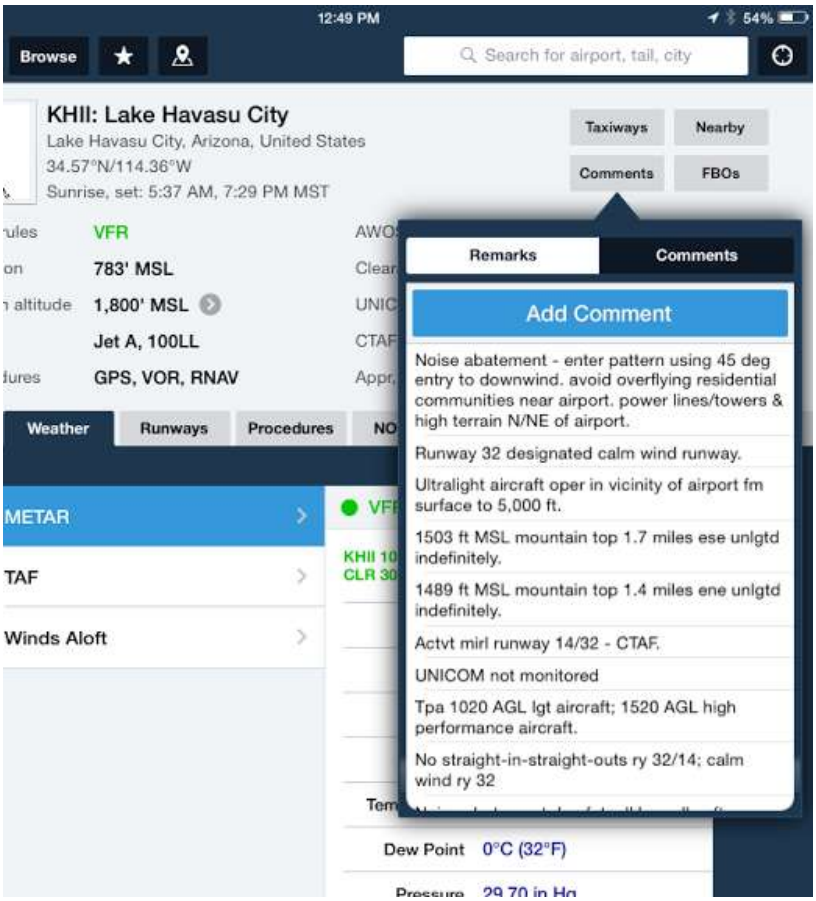
Some Parting Thoughts

After "Aviating, Aviating, and Aviating" and sticking to your emergency checklists, one of the most common errors we pilots will make in an Emergency situation is a reluctance to accept the emergency situation. An unconscious desire to delay the dreaded moment may lead to such errors as: failure to lower the nose to maintain flying speed, delaying the selection of the most suitable landing area within reach, and general indecision. Desperate attempts to correct whatever went wrong, at the expense of airplane control, is a serious error.
Don't try to save the plane. Your primary goal is to save the occupants. This is easier said than done, but your main consideration is using your Mooney's amazing steel cage as a tool to enhance your survival. Don't let the fear of injury affect your performance. The survival records favor pilots who maintain their composure and know how to apply the general concepts and procedures that have been developed through the years. The success of an emergency landing is as much a matter of the mind as of skills. Remember that our Mooneys were designed to provide protection to 9Gs. So, if you are landing at 75 MPH, a 9G stopping distance is only about 20 feet.

Oh, and lest we forget, in any emergency off-field landing, "Never, Never, Never" stall and/or spin in. No matter what the final scenario is, come in at the lowest ground speed possible and do a perfect rollout and flare into a field, a slope, water, or trees. Land as if you were landing at SFO.



Did you know that in ForeFlight, if you click on the "Comments" button, you can get most of the information that is in the A/FD tab? You can quickly learn the calm wind runway, noise abatement arrival and departure procedures and other information that you don't readily see in ForeFlight.



Sometimes, there are no "Noise Abatement" procedures listed in ForeFlight's "comments" tab or the A/FD.

For instance, using ForeFlight, Sky Ranch at Carefree, AZ (18AZ), has just a few noise abatement procedures listed in "Comments" and ***zilch*** in the A/FD. Yet, if you go to their website, you'll find a whole page of how they want you to enter and depart Sky Ranch.

AOPA has published nine noise abatement guidelines that make good sense and will help you be a good pilot neighbor, no matter where you fly.

AOPA
AIRCRAFT OWNERS AND PILOTS ASSOCIATION

AOPA's 8 Guidelines:

1. If practical, avoid overflying noise-sensitive areas. Make every effort to fly at or above 2,000 feet AGL over such areas when overflight cannot be avoided.

2. Consider using a reduced power setting if flight must be low because of cloud cover or overlying controlled airspace or when approaching the airport of destination. Propellers generate more noise than engines; flying with a lower RPM setting will reduce aircraft noise substantially.

3. Perform stalls, spins, and other practice maneuvers over uninhabited terrain. (This is a no brainer)

4. Familiarize yourself and comply with each airport's noise abatement procedures.

5. Use PAPI/VASI whenever available. This will indicate a safe glidepath and allow a smooth, quite descent to the runway.

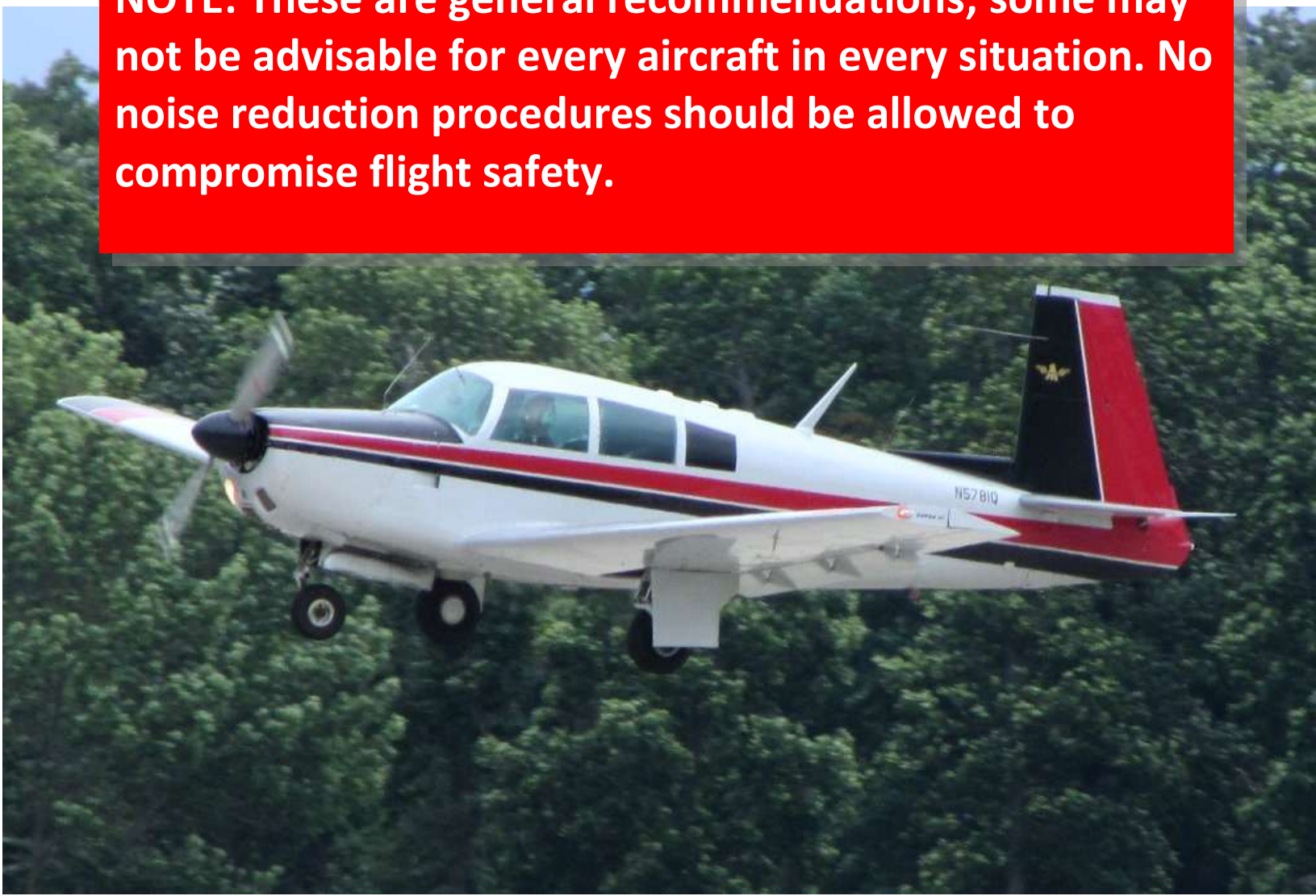
6. Retract the landing gear either as soon as a landing straight ahead on the runway can no longer be accomplished, or as soon as the aircraft achieves a positive rate of climb. If practical, maintain best-angle-of-climb airspeed until reaching 500' or an altitude that provides clearance from terrain or obstacles. Then accelerate to best-rate-of-climb airspeed. If consistent with safety, make the first power reduction at **500 feet.**

7. Fly a tight landing pattern to keep noise as close in to the airport as possible. Practice descent to the runway at low power settings and with as few power changes as possible.

8. If possible, do not adjust the propeller control for flat pitch on the downwind leg. Instead, wait until short final. This practice not only provides a quieter approach, but it also reduces stress on the engine and propeller governor.

9. Avoid low-level, high-powered approaches, which not only create high noise impacts, but also limit options in the event of engine failure.

NOTE: These are general recommendations; some may not be advisable for every aircraft in every situation. No noise reduction procedures should be allowed to compromise flight safety.



Geoff Lee. CFI

Aircraft Purchase

by Geoff Lee, CFI

One of my students purchased a 1958 Cessna 175 and used it to train for his private license. The 175 is much like the 172 but with more power. It has been, for both of us, a great basic trainer. I told him, during the training process, that his appetite for more speed and travel would increase, once he obtained his private license. A couple of rides in a Mooney were all it took to get him pointed in that direction. Of course, a little gentle nudging from yours truly did help the steering process. Now, he has decided to acquire a Mooney 231.

Divesting himself of the 175 Skylark is the first order of business, so it has been duly polished up, photographed and advertised for sale. With less than 2300 hrs TT, under 400 hrs on the engine and priced under $24,000, it should find a new owner with relative ease.

At this point we are reviewing two M20Ks. The first one presented some eye opening situations of an aircraft not being quite as represented in the ad. It was put forth as having had two “hard landings”. The asking price was low enough and the incidents far enough in the past to perk our interest. However, upon researching the FAA Accident /incident files, it was revealed that one of the ”hard landings” was 2 miles short of the airport and the aircraft had rolled out through a field of young crops, striking an irrigation pipeline and a fence. The post accident repair form 337s were a masterpiece of non-descriptive documentation. We did glean that some skins on both wings had been replaced and that one landing gear had been replaced. (*I had made my decision to depart at this point*). The propeller had been replaced and the Engine had been dismantled per the mandatory Continental service bulletin, SB96-11A. Lycoming engines have a mandatory AD (2004-10-14C) for the same issues. These two documents apply to any propeller damage requiring its removal for repair or a strike incident. In both cases, these events require complete teardown and inspection of all the rotating components of the engine. It is an expensive thing to strike or even slow the rotation of your propeller, whether or not power is being applied to it. In the old days, unless the strike was catastrophic, we would simply put a dial indicator on the end of the crank and check for any rotational run out or crankshaft wobble. The log books for the aircraft were barely legible, with handwriting that appeared to have been laid down by a second grader. The attendant general paperwork did not provide a clear picture of the life of this aircraft. There was no computer printout reflecting any review of outstanding ADs. There was just a handwritten list on a grubby piece of dog eared paper in the same barely readable scrawl. Tachometer times and Hobbs hours could not be correlated between the two engine removals. The paint job was obviously a ”spray over” done by someone other than an aircraft paint shop. This Mooney looked fine in the photographs, but horrendous in up close reality.

We had taken a 1.5 hour flight to review the craft and wanting to be polite, we elected to fly the plane. I just wanted to complete the saga and leave. The seller had also flown to meet us so we knew the plane was flyable. After doing an initial preflight cockpit check, we noticed the “milky” windows and cracked and yellowing “Royalite” trim. I moved around the craft, checking the prop, looking carefully at the nose wheel well. I tested it for slack by grasping all the rod ends and the steering horn. It seemed a little sloppy. If the bushings in that little triangular casting are too worn, it will cause shimmy in the steering and a scalloped nose tire.

The shock doughnuts looked tired. The wing leading edges and tips were ok, but the thin metal strips that block reflection from the strobe light were cracked and wavy, having been bent back and forth many times by careless individuals. The aileron rod ends had not been lubed in a long time and were somewhat stiff. These tend to break off if they are not lubricated with silicone. The result is no aileron. I like to hear a nice "click clack" when I rotate the bearing and or the actuator rod between thumb and forefinger. I firmly grasped the ailerons and they did appear to move correctly in relation to the yoke. My crusty RAF instructor told me a long time ago, "I*f the damn parts will come off in your hand, you don't want to fly it boy*!" Remembering those words, I firmly grasp all the movable flight control surfaces. The right flap was in the lowered position and exhibited more than usual interference with the wing surface. It was generously greased in the leading edge area. A flap adjustment is not that difficult, so why was this not adjusted? The flap seemed secure but the hinge points exhibited some light ground contact. Placing both hands under the bottom of the rudder can reveal excessive looseness in the tail link bolt and or the jack screw that trims the empennage. Any perceptible movement, when lifting the empennage is too much. The play is measured in tenths of an inch at the tip of the leading edge of the vertical stabilizer. The link casting, bolt and bushing are not hard or expensive to replace and Mooney owners should keep a "tight tail" at all times. Another must on preflight checks is the rudder rod end bearing, checking for freedom of movement and listening for that "click" sound.

Over the years, I have seen and experienced two rudder disconnections on different aircraft due to broken rod end bearings.

The starboard flap was firm and showed just the usual light interference. The brake pads on both wheels were at minimal thickness and the door linkages were excessively loose. One tire had flat spots in two areas. One outer gear door had been crudely hammered back into almost the correct shape and painted over. The wheel wells were filthy and it was not evident that the gear had been lubed recently. Even the replaced landing gear had old dried, caked grease around the pivot trunnion areas. I wanted to check back in the wheel well corner areas adjacent to the spar for fuel leaks. Fuel leaks are signified by the purple fuel staining down the face of the spar as fuel escapes between the wing skin and the spar cap. The apparent poor condition of the gear doughnuts prompts attention to wing fuel leaks. Any stress due to landings, hard or otherwise, are transferred directly to the wings via the doughnuts. If the rubber has become hardened or fully compressed, this contributes to leaks in the wing tanks.

I know that everyone already knows all this stuff, so on to the flight of this aircraft.

The cockpit check proceeded normally with fuel on best tank, trim and flaps set. After a three count on the fuel boost with ¼" throttle, the engine fired up easily. The plane had an NB engine but no aftermarket intercooler or turbo controller, so I needed to be careful with the initial throttle up for takeoff For takeoff, I would be looking for 40" MP and 2650 RPM. A digital tachometer had been installed, but I prefer the analog indicator, because it is easier to read and seems faster. The throttle was stiff and binding some.

I applied takeoff power (2700 RPM) and checked the fuel flow for about 23-24 GPH and TIT around 1400^{o}F. I kept the weight off the nose wheel until we broke ground at about 65-70 KTS. I retracted the gear when firmly airborne and retracted the flaps as we passed 95 KTS. Climbing out on the high end of the white arc, everything seemed normal with all the temperatures about mid green. After leveling off at 4,500 ft, we executed some steep turns and slow flight to get a feel for the plane.

After trimming straight and level to check the feet / hands off position of the ball, I observed that the yoke was significantly canted to the right. After releasing the yoke, the aircraft immediately banked about 40 degrees to the left. A quick check of fuel confirmed a balanced load. I had been unconsciously correcting the obvious out of rig condition as we climbed and performed a few maneuvers, never noticing the canted yoke. After getting the plane level again, we checked the alignment of the ailerons which appeared normal. That generously greased up right flap was the culprit. It was not fully retracted and obviously significantly interfering with the upper wing surface. With both flaps in any position other than fully retracted, the plane flew perfectly straight. *A split flap condition is not nice.*

We immediately turned back to the airport with a tiny bit of flap extension to even out the out-of-rig situation. We decided that we did not wish to pursue the why and wherefore of the flap interference. This could be the result of a deformation of the flap or the repaired wing surface. That heavy application of grease to the leading edge of the flap told me in retrospect that it was probably not a simple adjustment issue.

I informed the owner of the Mooney of our observations and our lack of enthusiasm for moving forward with any purchase and we flew home.

Interestingly, the owner called my student the next day and apologized for the somewhat" incorrectly" represented the aircraft.

Cliff Biggs

ATP, 767,757,737,727, A320, LRJet, CE500, MU-2, Wright Bros Award, A&P 46 Yrs, B707, B727, B720, B747, DC-10, DC9, DC-8, CE500

Say Ahhhhh!

Maybe your Dentist can help your next Annual?

You say you'd like to look inside your cylinders and see what condition the exhaust valves are in? Look at the piston or cylinder walls?

One cylinder has low compression? Like WAY low, none to be exact, and you want to see what is going on in there?

For less than $30 you can have a useful boroscope. By searching ebay, you can find a Dentist's camera for direct connection to your laptop through the USB port.

This camera will show full color, real time views in a self lighted camera with a focal distance of 20mm to 30mm.

By reading all the ads you can pick the one with the narrowest camera head. There are many available. This one came out of China, with tracking, and made delivery in 2 weeks. Many of you will be able to figure out how to make it work on a tablet or phone.

The driver disc that comes with it is a small version of AMCAP. Not all options are available on the included disc but a full version of AMCAP can be bought and downloaded for around $30 more. The included software does allow real time viewing of the probe and capture of video into the laptop. If you want to capture a still photo or export same you will need to use a 3rd party program or by the full feature version of AMCAP. If you have Windows 7 you can use the included "Snip" program to cut out stills after you stop the video where you want. These can be sent via email to your customer if needed. For most of us, what is included in the $30 camera package is more than enough.

The probe itself is narrow enough to be inserted through a spark plug hole and rotated to view the cylinder head and valves. With a little practice you will find it is easy to get focus and good viewing. By using both spark plug holes you can get a real good picture of what is going on inside your cylinders.

It is possible to view the top of the piston by bringing the piston up in the cylinder (be careful to not crush the probe! Better yet remove the probe before you bring the piston up!) and rotating the probe 180 degrees to look down on the piston. You will get a small amount of the cylinder wall also.

I did not find that this probe was as good as a dedicated true boroscope for viewing the cylinder walls (due to the limitations of maneuvering the probe) but it does give a useful look . Possibly with some modification of the probe, better wall pictures could be obtained. At $29 you can cut it up and not lose a lot of money.

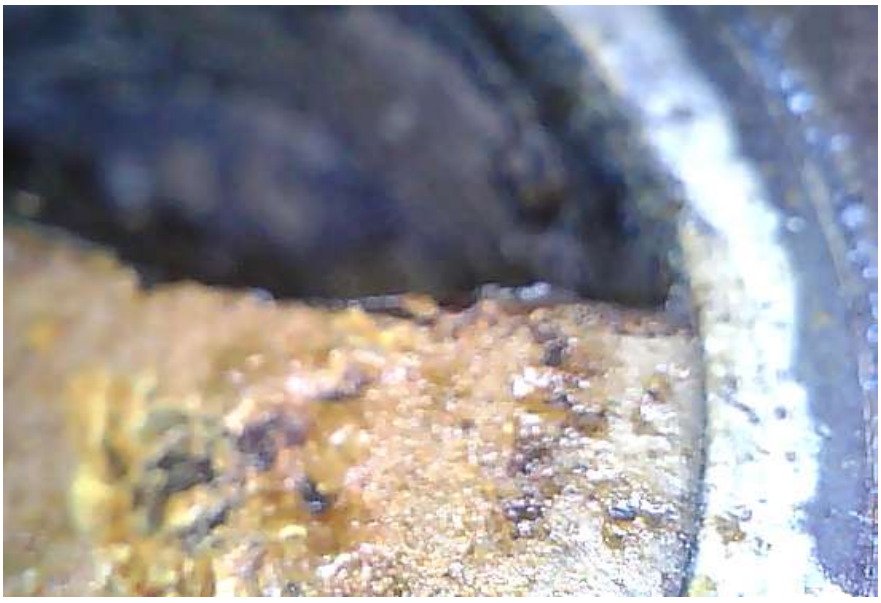
In picture (next page and on the left), we have a look at the top of an intake valve and its surrounding seat. The detail that can be seen on the PC is astounding.

In the photo (above right) shows the edge of the exhaust valve in the open position. We get a real good look at the seat ring on the valve here. By rotating the valve after removing the springs we can look over the entire periphery of the valve in great detail.

In photo, below, we have a look at the valve seat in the head. As you can see, there are lots of pits in this seat, but on the compression check, it still sealed well. We get a look down into the exhaust port and a reasonable look at the valve guide end in the port. Even though the camera couldn't get into perfect focus range we still get a usable look see.

In photo below, we get a usable view of the upper end of the cylinder walls, (here showing some of the cross hatching). Due to the thickness of the camera shaft we can't get too deep into the cylinder for a better wall photo. I found this the only real limitation using this system.

Now we come to a real interesting photo of a failed valve. In photo below, we see what happened when a cylinder went south on a Twin Comanche. As can be seen, half the valve head departed the cylinder through the exhaust port. Even though, in this clip of the video, the valve seat is somewhat blurred, we can see the large amount of erosion on the seat area where the valve broke off. Heat is the enemy of exhaust valves (not EGT heat). An exhaust valve, not seating well, can't be cooled properly by contact with the seat. The valve heats up and bingo!, we have problems.



As you can see, the exhaust valve piece decided to leave the airplane through the exhaust system! Miraculously, it only touched the piston and cylinder head lightly in a few places before it went “down the pipe”. We can move in real close to view the dents in the piston top in the photo below. They are about 1/16th of an inch in diameter.

This valve failure actually happened BEFORE we had the camera probe and we had to pull the cylinder to see just what exactly happened. With zero compression it was coming off anyway, but it would have been nice to verify our guess with a true picture as we have seen here.

Bear in mind that these pictures were clipped from a video and do not show all the detail and viewing angles that you can see in the live presentation on your laptop.

So, for around $30 and your laptop you get a very useful tool that allows you to view your cylinders every time you remove your spark plugs. If your compression check comes out low, you might just get a head start on an impending failure by taking a look inside! If things show a slightly leaky valve, you can judge if grinding it in place, (as shown in a previous article), will be successful.

It only takes a few minutes to look with this tool!

Miss Personality

In June, the sleek, efficient Mooney 201 was the runaway winner of the AOPA Aircraft Personality Quiz.

Keys To The Plane

By Albert Dyer

Before I was old enough to drive a car, my dad put the keys to his airplane in my hand and said to me, "Son, if you can afford the lessons and the gas, here is the plane to fly."

Wow! How is that for incentive to a young teen? That father/son talk took place in the early 70's and the airplane, N5261B is a 1957 Mooney.

During the mid-60's my dad, with help, rebuilt the wood wing, built and installed the metal tail section and then had all new radios installed just before giving me the keys. It was now a modern "fly anywhere" capable airplane. He spoke of something about how a person shouldn't have to make an ILS approach with a single old "coffee grinder" radio.

My dad bought that Mooney around 1961. I suspect back then it was easier for the average working guy to buy an airplane that was only a few years old. These days, where I live, a similar type airplane about four years old would cost a person more than two new houses. Anyway, in time, I soloed, earned private pilot privileges, an instrument rating and even met who was to eventually become my wife in that old wood wing Mooney.

Almost 40 years and a few more airplanes have now passed. And still there is an airplane in the family. Only now, I own an airplane with my dad. The airplane is an older Mooney Super 21 which we purchased a few years ago and it's based in New Smyrna Beach, Florida at Jack Bolt Field (KEVB). Did I mention that I live outside the Chicago area, about 1200 miles away? I am proud to own an airplane with my dad, even though it is a long distance partnership for me. At the moment, I want my dad to have access to the airplane anytime he feels like flying. For me, the airplane is just another reason to go home for multiple visits throughout the year. I get to fly with my dad and also have a set of wings ready if I want to visit friends. Moreover, I know this will be the last airplane my dad will own as he understands his limits. When I fly with my dad, I remember how I felt with the keys to N5261B in my hand. I hope, after my dad calls it a career as "pilot in command", that I will still be able to say to him, "C'mon dad, let's go flyin'", and an airplane will be waiting a few minutes away. I might have to get checked out in a rental airplane if the Mooney is no longer at KEVB, but we are pilots, the grassroots type; always will be. A simple airplane will be just fine for us to fly. Our joy is sharing the flying experience, not the type airplane we fly.

Within the first days of being home my dad asked if I had time, would I take his friend Jim Speer flying. I told him that I would.

"We have common interests," my dad said to me.

The weather during this visit had not been very good. Not nearly as bad as what most of the country was currently experiencing, but not "nice" Florida weather either. Rain, high winds and low ceilings dominated most of my days while home. I didn't get to fly much this visit and I really wanted to go flying with my dad at least once more before I left for Chicago.

This was not the first time my dad made this request, and I'll admit, I had been a bit reluctant to call Jim Speer. I didn't know Jim; had never met the guy. Truthfully, I was just being a bit selfish with my time and the few days of good weather. Now, this last evening home, as I began to pack, my dad asked yet once again if I had had a chance to take Jim flying.

"No." I said. "The weather didn't give me enough time, and I'd rather fly with you if the weather is better tomorrow before I have to leave."

"Jim is a good guy, a good friend; you should meet him and fly with him. He used to fly," my dad argued. Not too much more than that was said. Eventually, though, I surrendered and told my dad to call Jim and set up a meeting at the hangar for the next day. We would go flying in the morning, my last day home.

The first week of 2014 began with a polar vortex blast affecting three quarters of the United States. Thousands of flights nationwide would be cancelled due to horrible snow storms and intensely cold temperatures, which seemed to overwhelm and paralyze travel over roads and air. Accordingly, hundreds of flights were also cancelled at Chicago Midway (MDW) and O'Hare (ORD) airports. Checking the Southwest Airline website early in the morning my flight to Chicago was still being posted as "on time", non-stop into MDW. Secretly, I was hoping my return flight to Chicago, like hundreds of other flights into Chicago, would get cancelled before I had to leave today.

Jim and I met at the hangar mid-morning along with a 500 ft. scattered ceiling and winds at 12kts, gusting to 18kts. After 20 minutes of talking with Jim beside the Mooney, we talked about the current weather conditions, an overview of the Mooney systems and expectations of today's flight. I now understood why my dad wanted me to meet Jim. I felt an instant connection.

We decided to head over to Epic Aviation for a cup of coffee and give the low ceilings a chance to lift a bit more. Epic Aviation, besides being an FBO, is also a flight school which mainly trains international students. Very young, professional looking student pilots were busy preparing for today's flights and seemed not to even notice us enter their "office". I was wearing shorts, a tee shirt and cap and Jim was fashioning a short sleeved shirt and blue jeans. You might say that we sorta didn't fit in.

As we sat down in soft, over-sized sofa chairs to wait for the weather to improve, I asked, "Jim, what type of flying did you do?"

"I flew for the airlines." Jim said. "I flew in the military too." His answer was just that simple; not boastful in any manner.

Surprised, I asked, "What did you fly in the military?"

F-84 Thunderjet


F-102 Delta Dagger

"I flew during the Korean War. I was active duty in Germany flying the F-102 Delta Dagger. In the Indiana Air National Guard at Fort Wayne, I flew the F-84 Thunderjet, F-100 Super Sabre and F-4C and E Phantom. I flew with TWA for a number of years, too."


F-100 Super Sabre

F-4 Phantom

"Wow!" This was all I could say at the moment as I collected my lower jaw from the carpet. Jim flew the Delta Wing fighters! I built plastic models of all these fighters when I was a kid. And here is a guy who actually flew those fighters, whose life depended on knowing all the capabilities of the aircraft, sitting right across from me! Briefly, Jim told me something pertinent about each fighter he flew during his military career as our coffee slowly found the bottom of the cup.

The time passed and the ceiling outside lifted. More students and instructors were now passing on their way into the next room to plan their flights. All the pilots, both men and women, were wearing smart fitting white Van Heusen shirts, epaulet boards on their shoulders, black pants and polished black shoes. I wondered what Jim's thoughts were on all this formality, now knowing more of his flying background.

Jim said, "I have never flown a Mooney. I'd like to feel comfortable flying it from the right seat. So, would it be ok if I flew it a while?"

"Sure!"

Time was becoming a factor if we were going to fly today, and now, after learning a little about the type of aircraft Jim flew in his younger days, I really wanted to see that my flight had been cancelled. I had so many more questions that I wanted to ask. So, before leaving Epic I checked Southwest's website one more time. My flight was still posed as "on time".

Jim and I headed back to the hangar to go flying. Completing the pre-flight check, we slid into the seats. A pilot doesn't get in a Mooney - a pilot wears a Mooney. It's a "well-fitting" cabin.

I talked about the Mooney's systems, the takeoff and landing procedures along with important airspeeds before I started the engine.

Once airborne and away from the airport traffic area, I gave Jim the airplane so he could become comfortable with the handling. Feeling satisfied, Jim offered me the controls and asked, "How about doing some pattern work while I watch? Then perhaps, could I do one?"

"That won't be a problem," I said without difficulty, after watching the past 20 minutes of Jim's flying.

The controllers working in the tower did a very nice job sequencing us in with the other traffic. As Jim observed, I did three takeoffs and landings, talking through every setting change or visual check. The winds were still at 12kts, gusting to 18kts and just off the nose a bit so the landings were not a "gimmie." I had to work a little for nice landings.

"Could I take the airplane around once?" Jim asked.

"Your airplane," I said.

I didn't know how long it had been since he had flown any type of airplane, but his years of experience were evident. Jim was comfortable as he worked his way around the pattern.

Securing the airplane back in the hangar after an hour of flying, I looked at Jim saying, "Jim, that was really good work up there. I hope you and my dad can get together and do a lot of flying this year. I think it would be great for both of you."

After thanking each other for the time shared, I stood by the open hangar doors and watched Jim leave. I thought of our day as I began to close the hangar doors and reminisced about the day when my dad gave me the keys to that old wood wing Mooney. I smiled. Those keys have sure opened a lot of wonderful doors for me.

Walla Walla, Washington

by Linda Corman

I read an article, written by a wine loving person that discussed the second best place to taste and enjoy wine in the USA. They were talking about Paso Robles, CA. I, on the other hand, think of Paso Robles as the first in wine tasting and Walla Walla, WA as the second. A few years ago, Henry Hochberg and Fred Juhos had a Mooney Fly-In to Walla Walla, so we decided to fly up, have fun with other Mooney people and try the very fine wines. Their wineries are still small enough so you can enjoy the experience minus the big crowds. We flew our Mooney there and I really enjoyed the trip. Walla Walla is located in a large valley, with rolling hills, in the southeast area of Washington. The weather is dry and cool so they can produce some very nice white wines. I had no problem spotting the airport as it is almost the only thing on this plain except farms and vineyards.

After landing, we picked up our rental car and headed for downtown Walla Walla. I was pleasantly surprised by the downtown area. It has an old and small town feel with many cute shops and restaurants lining the main street. The Marcus Whitman Hotel is located just a block off the main street. They have done a really good job of keeping the feel of roaring 20's hotel. There is a bar there named the Vineyard Lounge where they have an extensive menu of local wines

and cocktails. We had no problem finding a restaurant that evening. We decided to try Brasserie Four. As we were walking down the street, we passed a couple who were eating on the sidewalk portion of the restaurant. We stopped to admire the fish dish they were eating. They were happy to indulge us with what was in the dish and we were sold. Inside, the chef was working the eat-at bar and was very hospitable and gracious, He was happy to make us the same dish. We were happy campers.

After a good night's rest, we were off to the wineries to taste some of Washington's best. One of our favorites was a place named Basel. This winery is also a beautiful bed and breakfast, but it was way out

of our price range. The wine was excellent and the grounds were lovely. We tasted wine, then had lunch on the patio - a brilliant combination. We also tried Three Sisters wine and Pepper Bridge which were named in "Wine and Spirits" magazine. Now this is something I didn't know about Walla Walla: They are known for their onions. They have huge sweet onions that we decided to take home. This type of carryon is not allowed on an airliner. I loved walking up and down the main street looking into the shops. Of course, they have plenty of wine tasting bars right in town, so you don't have to travel out into the country if you don't want to. We were leaving the next day and I have to say, I would probably never have gone to Walla Walla, as it is off the normal path for us. But, the plane ride there was wonderful and the area is worth the trip, especially in a Mooney.

My husband embarrassed me on departure by calling the tower, "Walla Walla Tower Tower, This is Mooney Mooney 21530 requesting permission to Taxi Taxi". Geez, and they gave him a Pilot Certificate? Reminded me of the movie *Airplane*.

July 12, Williston (X60)
August 9, St. Augustine (SGJ)
September 13, Lakeland (LAL)
October 14, Flagler (XFL)
November 8, Vero Beach, (VRB)
December 13, Punta Gorda (PGD)

August 15-17: Gold Beach, Oregon (4S1) – Join us for a fun-filled weekend to the coast of Oregon. We're arranging for discounts at The Inn of the Beachcomber and a Jet Boat tour up the Rogue River. **CLICK HERE** to check out the area. More details later.

September 27: LASAR Fly-In (1O2) – 3-in-1 including a Mooney BBQ, Splash-In Fly-in, and Pear Festival. Friday afternoon seminars for all pilots. Friday evening Prop Wash, an informal wine & cheese gathering. Splash-In Pancake breakfast on Saturday morning. LASAR Mooney-Only BBQ from 1-3pm on Saturday. Shuttle service from LASAR to Splash-In & Pear Festival. Plus 100LL Fuel discounts.

October 3-5: Return to Page, Arizona (KPGA) – Join us for a day or the entire weekend at beautiful Lake Powell. Fly-into Page (KPGA). Optional activities include Lake Powell Flight Seeing Tour, Dinosaur Museum, "Blue Boat" Colorado River Tour, World Class Trout Fishing trip, Slot Canyon Tour, as well as the usual dinners on Friday and Saturday night and BBQ on Saturday at the airport.

The 2nd Mooney Summit will be hosted by Mike Elliott on **October 24-26**, at Panama City Beach, FL.

The last two 2014 **Mooney Safety Foundation** pilot proficiency programs will be helt at:

September 5-7 – Roanoke, VA
October 10-12 – Branson, MO

Send your questions for Tom to TheMooneyFlyer@gmail.com

Q1: What nicks and dings on the prop are ok to fly with?

Any nick should be "dished out" to relieve any possible stress in the metal. It is this stress that occasionally results in a blade breaking, which results in almost a catastrophic event. Dings I will define as damage to the blade other than on the leading edge. Usually a rock hit in the inside of a blade, after being sucked up off the ground during run-up.

Again, it is a judgment call, made by someone with experience, as to whether or not it should be "smoothed out". I is usually done with some crocus cloth, since using a file like we do on nicks, is very difficult on a flat spot.

In both cases, the goal is to remove any stress that may be induced by whatever caused the damage.

To directly answer the question, the majority of nicks are OK to fly with, but I would definitely get a sharp nick dressed out.

Q2. What is the difference between static and dynamic balancing? Do you recommend both? And how often?

Static balancing of a propeller is when the prop is off the plane and balanced. It's normally done in the prop shop. Dynamic, is when a balancing machine is attached to the prop/engine and the engine is run.

The technician then adds weights to the prop as needed to balance the prop and engine as one unit. It definitely should be done after an engine or prop change. How often? If you look at the whiskey compass and it looks blurry, then get the prop balanced. Although an approved method, drilling holes in the spinner bulkhead to attach balancing washers is something I am very much against. I have seen too many cracked bulkheads from this method. There are other means of attaching weights, depending on the type/make of prop.

July 2014

ACR Electronics Launches new ELT

A new emergency locator transmitter for aviation has received Cospas-Sarsat and FAA approvals and is now available for sale. The ELT 1000 by ACR Electronics, Inc., is designed with multiple installation configurations to reduce overall installation cost.

The electronics maximize frequency stability and power while incorporating a new, built-in GPS navigational interface. Including GPS data in the emergency transmission allows search-and-rescue personnel to know the location within 100 meters in less than a minute. Designed to accommodate multiple installation configurations, the new ELT 1000 is a quick retrofit for obsolete 121.5 MHz ELTs. READ MORE

FltPlan launches free Android app

June 18, 2014 by General Aviation News

FltPlan has launched its free Android Go app designed as an alternative to the iPad which, until now, has been the primary device available for inflight usage.

FltPlan's new redesigned FltPlan Go for Android is the mirror image of its iPad Go app, introduced earlier this year. The company points out that if you are familiar with the iPad Go app pilots can transition easily to the Android Go.

"The beauty of FltPlan is that you can keep and use both, an iPad and an Android," said Ken Wilson, founder and president of FltPlan, the largest flight-planning service in North America. "We are giving people choices. You are not limited by being tied to one device."

The free FltPlan Go app for Android shows graphical flight plan routes and gives registered users offline and in-flight access to NavLogs, approach plates, weather briefings, high resolution/zoomable sectional, victor low charts, and jet high charts. READ MORE

Product Review: Carbon Monoxide Tester

Most of us do not think too much about Carbon Monoxide poisoning while flying. But it is a serious issue, should you be exposed while flying. Let's face it, older airplanes may be more susceptible to exhaust leaks. In terms of probabilities, CO poisoning is a little like getting struck by lightning or eaten by a shark. But, it is insidious like hypoxia or dehydration in its effect on the PIC.

Here is a simple tester that you could keep near you, along side of your Oxygen Oximeter. It's cheap insurance.

The **OI-2100 TOCSIN Cockpit Monitor** is an advanced, maintenance free, disposable, single gas detector. It combines a rugged design and reliability with advanced sensor resolution. Advanced micro-processing capabilities allow for quick unit configuration adjustments.

Features:

- Alerts the pilot to dangerous levels of carbon monoxide in the cabin
- Three alarm modes: flashing lights, vibration, and 95 dB Piezo horn
- Alarm points pre-set at 35 and 200 parts-per-million (PPM)
- Display always shows ambient air Carbon Monoxide levels in PPM
- Once activated, remains on for 2 years (pilot cannot forget to turn the monitor on)
- Kit includes 3M™ Dual Lock™ attachment tape suitable for high-temperature cockpits
- Has a lifetime of two-years with an automatic deactivation after 24 months of use

Both the battery and the sensor are non-replaceable.

Mooney Instructors Around The Country

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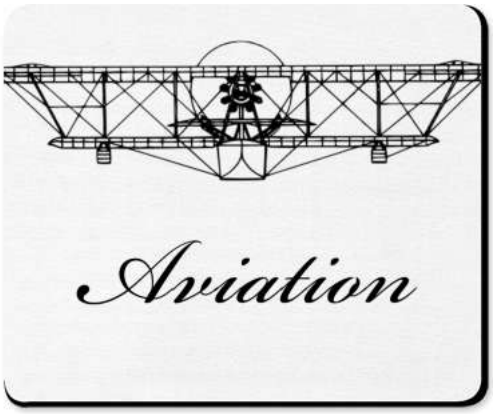

LASAR'S Free Site

Check out Lake Aero Styling & Repair's " LASAR" Web Site: www.lasar.com : New under Mooneys for Sale, "List your Mooney for free" and "Mooney Instructors." Also check out Parts, Mods, and Services! LASAR, est. 1975 **(707) 263-0412** e-mail: parts-mods@lasar.com and service@lasar.com --

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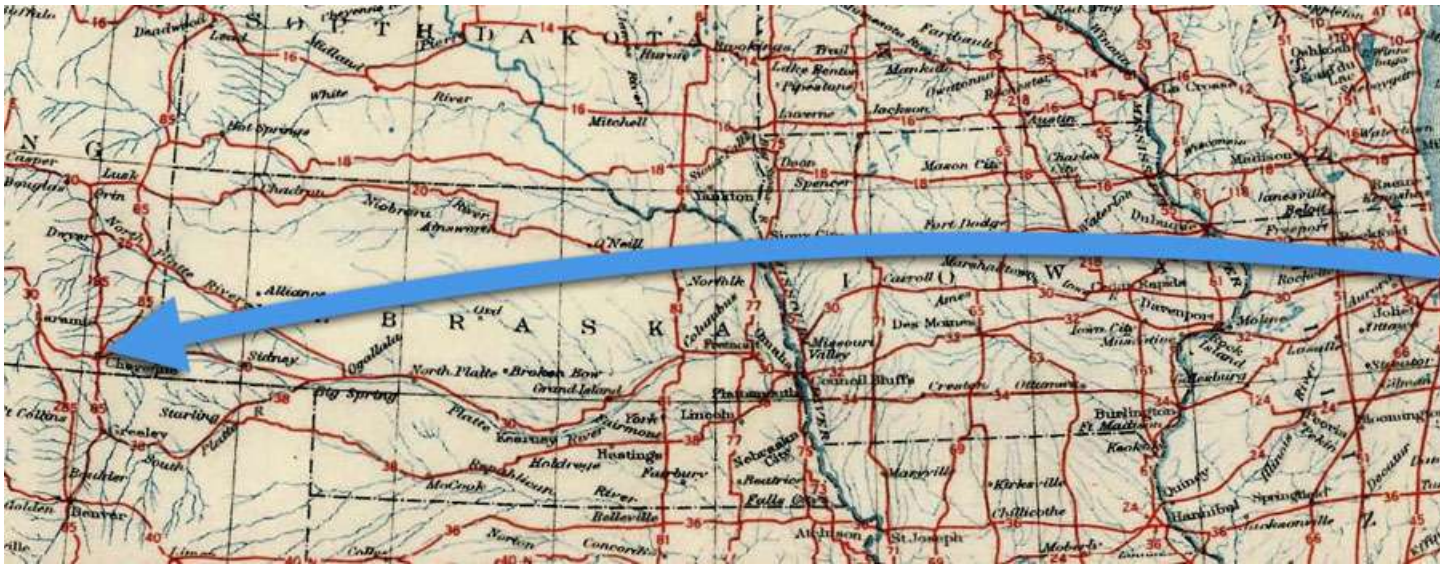
Twelve Things You Didn't Know About Lighted Airways

1) In 1923, the US Congress funded the first lighted airway, known as the Transcontinental Airway System.

2) The first section of the route stretched from Chicago, Illinois to Cheyenne, Wyoming. The segment's location in the middle of the country allowed aircraft starting from either coast to depart during the day and reach the lighted airway by nightfall.



3) Lighted emergency airfields were funded along the route, spaced every 15 to 20 miles.

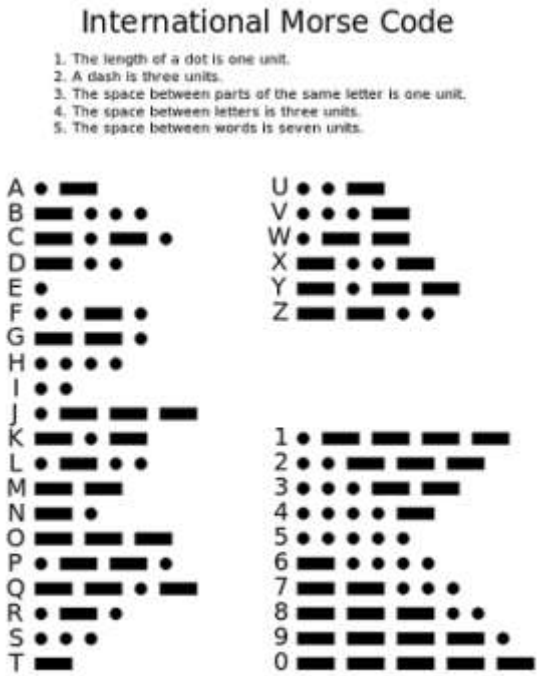
4) By 1933, the Transcontinental Airway System totaled 1500 beacons and 18,000 miles.

5) Airway beacons included a rotating white light, which created a quick 1/10 second flash every 10 seconds. In clear weather, it could be seen for up to 40 miles.

6) Each beacon had a set of red or green course lights below the white beacon, pointed along each direction of the route. Red lights were used on beacons in-between airfields, and green lights were use on beacons located at airfields.

7) Beacons were spaced 10 miles apart.

8) Each beacon's course lights flashed one of 10 letters in Morse code: W, U, V, H, R, K, D, B, G or M. The letters represented the numbers 1 through 10, indicating the beacon's sequence on the route section.



9) Pilots remembered the sequential order using the phrase "When Undertaking Very Hard Routes, Keep Direction By Good Methods."

10) The standard beacon stood on top of a 70 foot concrete arrow, painted yellow and pointed in the direction of the course.

11) The Low Frequency airway system (NDB Airways) began to replace the lighted airway system in 1929.

12) Montana still maintains around 19 lighted beacons in the western section of the state, which you can find on the Great Falls sectional. They're indicated by a star, with the Morse code for the associated letter.