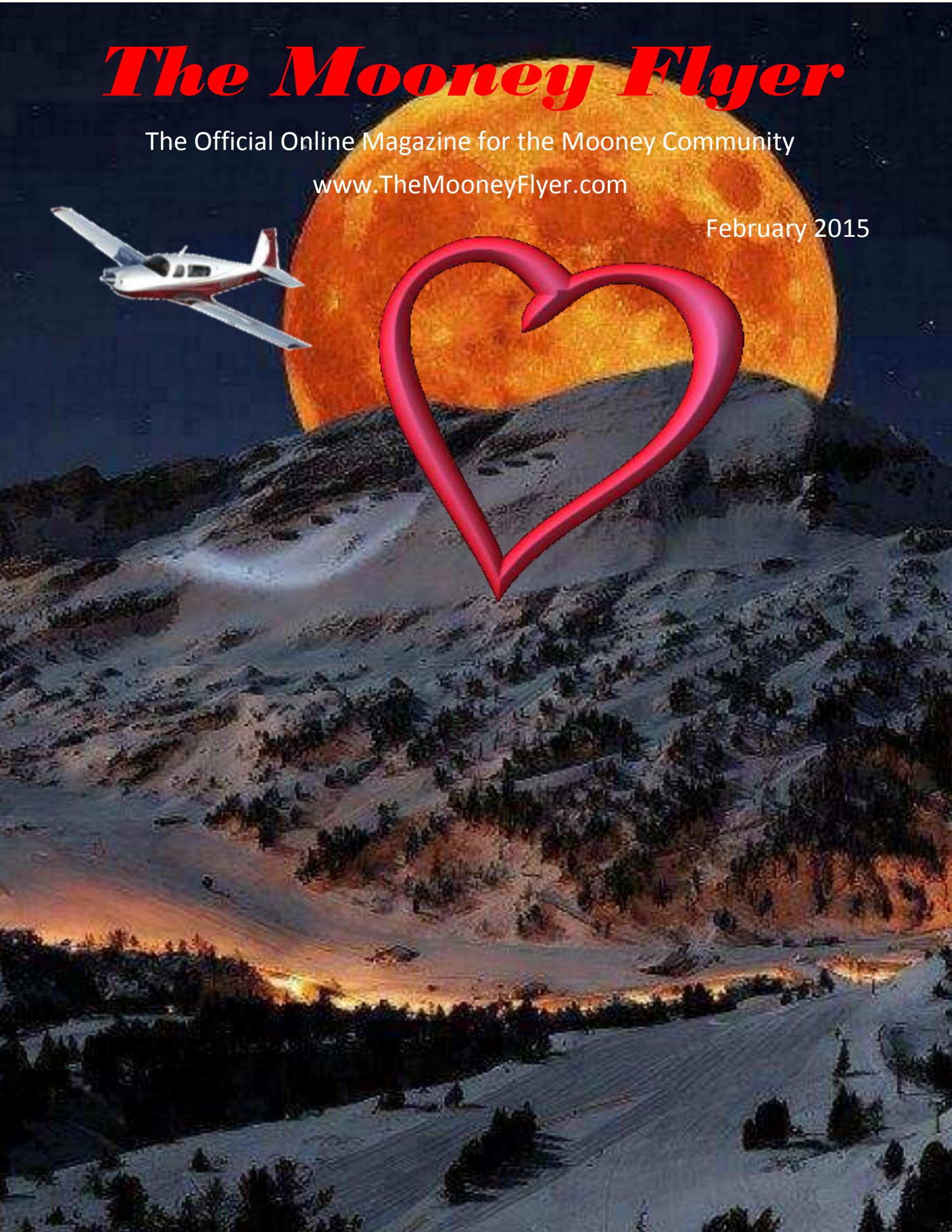


The Mooney Flyer

The Official Online Magazine for the Mooney Community

www.TheMooneyFlyer.com

February 2015



The Mooney Flyer

Announces

First Mooney Flyer Summit

The Official Online Magazine for the Mooney Community

June 12-14, 2015 at Paso Robles, CA

What could be better than Paso Robles in mid June! The weather is clear and cool and there are no crowds. It's a great time to attend the first annual Mooney Summit, June 12 through 14, sponsored by [The Mooney Flyer](#).



Mooney International will be participating with key people, products, and the keynote speaker

Plan to arrive on Friday for a **Mooney Flyer Wine Tour** on Friday afternoon. Your host will take you on a special wine tasting at 2-3 wineries. Even if you are not interested in wine tasting, you'll find the wineries and the scenery to be breathtaking. This will be a lovely afternoon. Friday evening, there will be a **Reception at the Estrella Warbird Museum**, with finger food and drinks as well as a chance to mingle with our keynote speaker, seminar speakers, and sponsors from Mooney, LASAR, Top Gun and Mountain West Aviation.

Saturday morning there will be two **Seminar Tracks**. **The Mooney Owners and Pilots track** will include topics such as maintenance, modifications, flying/takeoff/landing/stalling Mooney techniques, as well as a personalized session at your airplane. **The Non-Pilot track** will include topics such as Quick Companion Flying and Mooney Destinations. There will be a huge lunch with a keynote address from Mooney. After lunch, we plan to have 2 choices for attendees. First, there will be additional seminars for Owners & Pilots, and another entertaining group event.

Saturday night will be capped off by a **Mooney Bonfire** with music and drinks. Sunday will have 2 ways to have fun. There will be a **Brunch at Hunter Ranch** and the **Birds of a Feather Sessions**. These roundtable sessions will be led by the attendees and driven by the attendees' interests.

The Mooney Summit will conclude Sunday, June 14th at 11:00 am.

Register Online before May 12th

\$100 for Pilot

\$50 per Passenger

Fun Fun Fun!

Wine Tour
Reception Food
Mooney Bonfire
Hearst Castle
Warbird Museum
Brunch
"Birds of a Feather"

[CLICK HERE](#) to Register for The Mooney Flyer Summit
You will not be billed at this time



Contents

Features

Editors

Phil Corman
Jim Price

Contributing Writers

Bruce Jaeger
Bob Kromer
Tom Rouch
Paul Loewen
Geoff Lee
Linda Corman
Cliff Biggs
Mike Elliott

To Subscribe

[Click Here](#)

To Advertise

[Click Here](#)

To Submit an Article

[Click Here](#)

[It's not my fault! My iPad made me do it](#)

Jim Price describes 10 ways your iPad can get you into trouble

[Mr. Hopkins – A Flight Instructor](#)

Cliff Biggs brings you a huge dose of nostalgia, history, and the impact that one man made on his aviation life.

[Black Holes, White Outs, and Gray Dismay](#)

Editor Phil Corman writes about vertigo in the Mooney cockpit... it can be lethal and it can happen to any of us

[What About that Red Knob?](#)

Mooney expert Bruce Jaeger explores the nuances of leaning

[Mooney Tales to Alamos, Mexico](#)

Linda Corman writes about flying to Alamos, Mexico in the foothills of the Sierra Madre for a 4-star experience at a resort and for your Mooney too.

[A Passion for Mooney Fuel Tanks](#)

A Q&A with Weep No More Owner Paul Beck, the superstar for fixing Mooney fuel tank leaks

[Aging Mooneys \(Australia and CASA\)](#)

Paul Loewen's response to a possible CASA (Australian FAA) intervention and an AD for Aging Mooneys... a very interesting read

[Electronic PIREP Submissions](#)

[VOR Decommissioning](#)

In Every Issue

[From the Editor](#)

[Appraise Your Mooney's Value](#)

[Mooney Mail](#) – Feedback from Flyer readers

[Ask the Top Gun](#) – Tom Rouch answers your questions

[Upcoming Fly-Ins](#)

[Have You Heard?](#) – Relevant GA news & links for the month

[Mooney Instructors Around the Country](#) – Mooney Instructors around the USA

[Product Review](#) – Navworx

[Click Here](#) to Subscribe

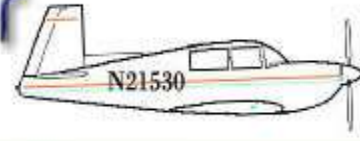
[Click Here](#) For Back Issues

If you would like to donate to keep **The Mooney Flyer** healthy, please send your donation via your PayPal account to sales@TheMooneyFlyer.com



From the Editor

Phil Corman



Mooney Flyer Summit

You've noticed our announcement to hold the first Mooney Flyer Summit at Paso Robles, CA on June 12-14.

We've located it in Paso Roble, CA because of its location and many opportunities for attendees. Paso Robles has more than 320 VFR flying days per year. There are more than

225 wineries, [Hearst Castle](#), Estrella Warbird Museum, and a downtown with more than two dozen restaurants and shopping for everyone, (all within walking distance).



The Summit will begin on **Friday afternoon** with a Mooney Flyer Wine Tour of 2-3 wineries. [CLICK HERE](#) to see the scope of the more than 225 Paso Robles Wineries. The wineries and the scenery will make

your afternoon. If you are a wine taster, Paso Robles has some of the best wine in California and a relaxed, enjoyable experience due to the laid back nature of the wineries. Friday evening there will be a reception at the [Estrella Warbird Museum](#) where you can mix with notable aviation dignitaries.





The heart of the Summit takes place on **Saturday**. Mooney International will kick off the Summit on Saturday morning with a keynote presentation. After the keynote, there will be a slate of seminars for both Owners & Pilots as well as our Passengers and Co-Pilots. In the afternoon, there will be more seminars for Owners & Pilots. If you prefer, you can take in a tour of [Hearst Castle](#) or go to downtown Paso Robles and do some shopping, eat at your

choice of dozens of local restaurants/outdoor cafes, wine taste and more. Saturday evening we will have a special Mooney Bonfire at the airport with drinks and music.

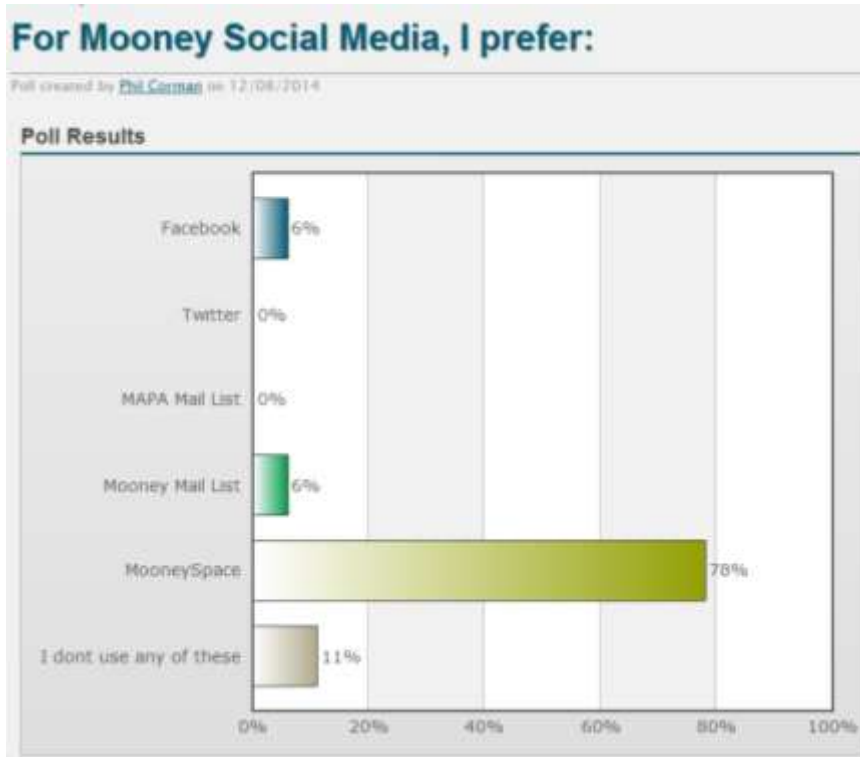
Sunday morning will be filled with a **Brunch at Hunter Ranch** and multiple “Mooney Birds of a Feather” sessions, led by the attendees. These informative and fun round tables will be driven by the attendees’ interests.



The Mooney Flyer magazine is free. To produce this Summit, we are asking attendees to make a donation of \$100 for each pilot and \$50 for your co-pilot/passenger. The total cost is less than half the cost of comparable events and encourages you to bring your favorite passengers.



[CLICK HERE](#) to Register for **The Mooney Flyer Summit**
You will not be billed at this time



Last month’s poll asked, “What is Your Preferred Social Media for Mooney Stuff?”

MooneySpace is the overwhelming favorite for Social Media related to everything Mooney. Our conclusions are:

1. It’s a positive and informative source
2. It’s a modern format (i.e., forum and not a mail list)
3. It’s Free

Next month’s poll: “Are you considering attending the first Mooney Flyer Summit? We hope that



you certainly are planning to attend. We are working hard to provide Mooney Owners with informative, entertaining maintenance and flying articles. This is our attempt to bring everyone together for a weekend of the same. [CLICK HERE](#) to vote.



Appraise Your Mooney’s Value

Don’t forget about our cool new **Appraise your Mooney’s Value** using Jimmy Garrison’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.

- [M20C](#)
- [M20E](#)
- [M20G](#)
- [M20F](#)
- [M20J](#)

The GPS design was loosely based on LORAN and the Decca Navigator system, both of which were developed during World War II for allied forces to navigate ships and aircraft at long range.



Dear Sir: I just wanted to extend a huge thank-you to your staff for the help in tracking down a maintenance/service manual and a parts catalog for my recent Mooney M20 purchase. I am new to the aircraft owner's world and I



really appreciate the help. I have been flabbergasted as to how difficult it is to track down part numbers and the manuals were a huge help. I am one of your newest Mooney Flyer readers and I am really enjoying your online publication. The articles are easy to read and understand with really useful information. I hope to be a member of the Mooney community for a long time and again thanks so much for all the help!

Happy New Year!

Russ G

RE: I Used to Make Good Landings – I really learned a lot from CFII Bruce Jaeger's article. His viewpoint on the superior authority of the Mooney elevator and the correct method for utilizing that performance to make good landings. I also agree with his recommendation to establish and maintain target airspeeds in the approach and landing. This is most important in a Mooney. A few years ago, I had to do my biannual review (BFR) in a C-182 since my Mooney was in annual. He asked me for a normal landing and I put it down in 500 feet or so. He then sarcastically said, "I guess we won't need to do a short field landing". What he didn't realize is that, as a Mooney pilot, correct airspeeds make for a great landing, but in Cessna's, it also makes for an efficient landing. Mooneys just make you a better pilot. Thanks to Mr. Jaeger for an insightful article. It should be a must-read for newbie Mooney pilots.

Tom D

Kudos -- Great job on the FLYER. Really enjoying it. Best, **Jack N**

RE: Ask The Top Gun – Tom Rouch just keeps on helping us Mooney pilots. I read his feature first every month. He writes about critical Mooney maintenance items in a language that I, a non-mechanic can understand. I feel like I am so much more knowledgeable about my Mooney after reading his stuff for years in **The Mooney Flyer**. It's fantastic. Top Gun Aviation is one of the best MSCs in the world, but they give so much more than that with these types of articles. Thank You Top Gun!

George S

RE: Cloud & Fog Season – I read, with keen interest, Geoff Lee’s article on Cloud & Fog Season. It was an excellent review for me on the proper procedures for filing IFR from uncontrolled fields. I do it rarely. His review of the limitations of ATC in the initial climb and MVA considerations was right on. His advice on “Always Have a Backup Plan” is also dead right on. I saw 2 airplanes take off from an uncontrolled field in a heavy Tule Fog in the Central Valley of California. The visibility was probably 200 ft in every direction. Although legal, what was their escape plan if they had any mechanical issues on departure? I suspect they had none. And each departure was from the opposite end of the runway... completely relying on the other to communicate perfectly since visual avoidance was impossible.

Tom S



Willmar Municipal KBDH

Willmar, MN

weep no more LLC
Your Fuel Tank Repair Specialist

Your tanks - better than new
More than 10 years experience
Let us show you what we can do

Click **HERE** to learn more at
www.weepnomorellc.com or
call Paul at 320-295-1671
Email: paul@WeepNoMoreLLC.com

When the Soviet Union launched Sputnik into orbit in 1957, two American physicists started monitoring the satellite's transmissions. They quickly realized that because of the Doppler effect, they could identify where the satellite was in orbit. This would later become a key principle in GPS operation.

Black Hole Departures



In the blockbuster movie *Interstellar*, Matthew McConaughey flew into a Black Hole and lived to tell about it. In it, he discovered multiple dimensions beyond our X,Y,Z plus Time. We are not talking about black holes in the centers of galaxies in this article, however. We are talking about departing at night, in your Mooney, where the image out your windscreen is completely, or mostly, black, with little or no visual situational indication. This happens when you depart without city lights, moonlight, or starlight.

I'm pretty sure that the vast majority of readers would say that they should transition to 100% reliance on instruments, without delay. That would be the correct answer. But the reality is that, as with most rules, it is easier said than done. The loss of horizon or ground reference leads rapidly to the onset of "vertigo". What do pilots do that are experiencing vertigo? One of two things is the answer. First, they might bank and pull back on the yoke (possibly creating a stall/spin), or second, they might bank and push forward on the yoke (possibly creating a death spiral). With no ground reference, it is that much

more difficult to recognize the correct recovery. And, at low altitude, this could be fatal. Compounding this scenario is that the pilot was not expecting a disorienting vertigo situation.

It is not only black hole departures that are relevant here. White outs can induce the same vertigo response. Another is the Gray outs, typically related to the John Kennedy fatal accident near Nantucket Island years ago. In both cases, as with the Black Hole, the pilot very unexpectedly loses ground reference. Because he or she is not prepared for it, delaying the transition to 100% instruments may be fatal.

**Keep in mind
that black
holes can be
black, white
or gray.**

Let's face it. We hope, plan and expect each flight to be successful. The vast majority of a pilot's flight is straightforward and uneventful. It is precisely this expectation that drives the pilot's response. The pilot is quickly surprised with a vertigo-inducing experience. It is the pilot's psychology of overconfidence that may be the initial response to the panicky experience of vertigo. An over-confident pilot can be a deadly pilot.

Some Medical Background

Normally, your eyes and your ears are in sync. Your eyes see the horizon. But once you enter one of these "black hole" conditions, you can become disorientated because your eyes no longer have the input they need and your ears begin lying to you. The trouble is that your ears are filled with fluid and their signals may lag reality by 15-20 seconds.

Think of your Vertical Speed Indicator. It lags your actual vertical speed because the air outside air pressure and internal air pressure take a little time to move the needle.



For instance, if you enter a constant rate turn, your ears will soon tell you that, but if you remain in that constant rate turn, believe it or not, your ears will start sending signals that you are straight and level since the fluids in your ear canals has stopped moving. Here is another side effect of our sense of balance in our ears. If you are in a black/gray/white hole and enter a turn "too slowly", your inner ear may not detect a turn. If you then make an abrupt move to straight and level, your inner ear will send a signal that you are now in a right turn. Being a human pilot, you might start correcting by making a left turn.... And so on. This is a never ending oscillation that can't end well. This could end up as a "graveyard spiral" if not stopped. This happens because you keep making left and right turns. Because you are unaware, you are also losing altitude, and by pulling back on the stick, you are tightening the spiral. Definitely "Not Good".

Here's another effect, which is equally disconcerting to us. Say that you are in a constant turn for a while and your inner ear equalizes as described above. Now you make a sudden head movement, such as checking your instruments or your tablet on your knee. This, of course, gets your inner ear fluids

moving and sending all sorts of bad data to your brain. The normal response would be to make an equally abrupt move with the stick, which could leave you in an unusual attitude to recover from with little or no outside visual references.

Here's another inner ear effect, that you might remember from your primary training. It's called Somatogravic. When you accelerate, your inner ear thinks you are pitching up. When you rapidly decelerate, the opposite effect occurs where you feel you are pitching down. If you are near terrain when this effect occurs and you are NOT on instruments totally, you will be inclined to make a very inappropriate pitch adjustment.

Lastly, if you find yourself in turbulence with no visual reference points, and find that you are climbing, perhaps significantly, resist the desire to push the stick forward. Confirm that your airspeed is constant and if able, that your AI is showing level wings and nose. If so, ride out the lift, no doubt caused by the turbulence.

Think this cannot happen to you?

Think again. I have a personal friend who flew Navy Attack Aircraft, taking off and landing on Carriers. One night he was on final approach to "trap" on the carrier. Here is one of the most experienced, well trained, as well as one of the most skilled pilots in the world. On final, on a dark night at sea, the black hole "arrival" overcame him with all the symptoms of vertigo. Another flight found a Navy pilot

following his lead fighter in misty gray conditions. In an instant, he lost sight of the lead fighter, and began looking around to re-acquire him. During that disruption, he got vertigo and found himself inverted before transitioning to instruments. In this case, vertigo could have been the result of his rapid head movement, or the loss of ground references.

Another example occurred when a Highway Patrol aviator took off expecting to do some night VFR pattern work in marginal VFR ceilings and a light mist. As he entered pattern altitude, the mist became a light rain and all ground references were lost. He fought the symptoms of vertigo. He did not expect the conditions he encountered, thinking that staying in the pattern would keep him VFR. Had it not been for a pilot in the right seat, his ASRS report indicates that the panic of vertigo may have resulted in a fatal accident.

There are two ways to avoid finding yourself in these situations. The first is to not fly when you have a likelihood of finding yourself in a black/white/gray situation.

The second way is a variation of "Aviate, Aviate, Aviate", and in this condition, it is "Get on your instruments, Remain on your instruments, Believe in your instruments, and expect and understand the symptoms of vertigo". Pilots have to have their total 100% focus on flying "in the moment", while "expecting the unexpected" at any time.

That's how you can stay "ahead" of your Mooney.

Vertigo causes dizziness, a spinning head, tilting, swaying, unbalance, and a pull in one direction. In aviation, it can be brought on by loss of ground reference and/or rapid head movements.

Electronic PIREP Submission

The National Weather Service (NWS) has recently developed an electronic PIREP submission tool, outlined below. The march to automation continues and, in our opinion, continues to improve cockpit safety.



U.S. Department
of Transportation
**Federal Aviation
Administration**

InFO

Information for Operators

InFO 14011
DATE 8/21/14

Flight Standards Service
Washington, DC

http://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/info

An InFO contains valuable information for operators that should help them meet certain administrative, regulatory, or operational requirements with relatively low urgency or impact on safety.

Subject: Electronic Submission of Pilot Weather Reports (PIREP)

Purpose: This InFO serves to inform operators and pilots of the recently developed electronic PIREP submission tool located on the National Weather Service (NWS) Aviation Weather Center (AWC) Aviation Digital Data Service (ADDS) website.

Background: The PIREP submission tool will enable users to enter their turbulence and icing PIREPS electronically, which will be displayed graphically and distributed nationwide. In an effort to introduce users to this tool and maximize the benefits, the Federal Aviation Administration (FAA) is requesting Title 14, Code of Federal Regulations (14 CFR) Part 121 Domestic/Flag Dispatchers, Part 121 Supplemental personnel authorized to exercise operational control, Part 91K Program Managers with an Operations Center, Part 135 § 135.619 HEMS Operation Control Centers with 10 or more Helicopter Air Ambulances and General Aviation users to submit their PIREPS at the following link: https://www.aviationweather.gov/exp/pirep_submit/

Discussion: PIREPS are reports of meteorological phenomena encountered in flight. When reported, these observations assist other pilots, dispatchers and flight planners with flight plan preparation, situational awareness and operational control decision-making. Additionally, these PIREPS are integrated into the NWS forecast production process to help improve the accuracy of forecasts. This includes human generated products such as the AIRMET and SIGMET as well as automated products such as the Graphical Turbulence Guidance (GTG), the Current Icing Product (CIP), and the Forecast Icing Product (FIP). Often, there is a lack of PIREPs submitted that report better than forecast weather (e.g., the forecast calls for an area of turbulence but the pilot encounters smooth air). A PIREP reporting good weather (often called a null report) is just as important to the forecast process as a PIREP reporting poor weather conditions. It is expected that national airspace users including all Part 121, Part 91K, HEMS and the General Aviation community will benefit from improved accuracy of forecast products.

Recommended Action: Operators interested in participating in this effort should direct email inquiries to ncep.awcweb@noaa.gov. The following information is necessary for enrollment.

- The location name
- The name and email address of the primary POC
- Telephone number

After the request is received, the information will be verified by a call back and the account login will be issued at that time. Users will then be able to submit their PIREPS via the following link.

https://www.aviationweather.gov/exp/pirep_submit/

Contact: Questions or comments regarding this InFO should be directed to the Future Flight Technology Branch (AFS-430) at (202) 267-8790.

It's not my fault! *My iPad made me do it*



Paper charts and books have a definite life cycle. Keeping up with all of them can be arduous and expensive. Yet, it's a good idea to keep them current because of all the changes. For instance, Sectionals and TAC charts have a life span of six months. When a new TAC is published it includes an average of 100 new changes. A new Sectional averages 278 changes. The Airport Facility Directory (A/FD) is good for 56 days, and when the new one comes out, it has, on average, 825 new changes. Terminal Procedures (approach plates) are also good for 56 days, and have fewer changes – an average of just 75. The king of change is the IFR chart. They change every 56 days and include 1,300 changes.

PAPER CHARTS

Do you need to have paper charts in your possession when you fly? Not all pilots are required to have a chart when they fly. FAR 91.503 says that pilots in command of a large (weighs more than 12,500 pounds), multi-engine aircraft, or an aircraft in a Fractional Ownership Program, must have "pertinent aeronautical charts" available for each flight. (Reference [AOPA](#))

According to the *July/August 1997 issue of FAA Aviation News* (cleared through the FAA's Chief Counsel's office), ". . . it is not FAA policy to initiate enforcement action against a pilot for having an old chart or no chart." That's because there is no regulation on the issue. However, in that same issue of FAA Aviation News, it states that "**. . . if an out-of-date chart, no chart, or an out-of-date database contributed to the condition causing an FAA investigation, it could be used in enforcement action.**"



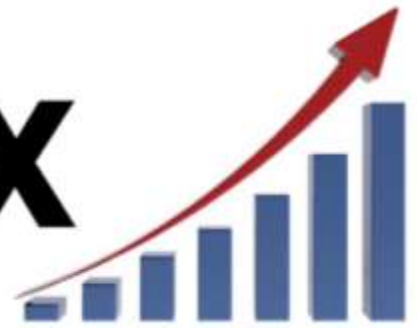
ELECTRONIC CHARTS

Can I legally use my iPad as a replacement for paper charts for VFR or IFR flight? Yes, under FAR Part 91, you can legally use an iPad that has *current charts* installed for both VFR and IFR flights. [AC 91-78](#), dated 07/20/07, makes it perfectly clear that under PART 91, Electronic Flight Bags (EFBs) / Electronic Chart Displays (ECDs) can be used during all phases of flight operations, [IFR or VFR], in lieu of paper reference material when the information displayed meets the following criteria:

- (1) The components or systems on board the aircraft which display precomposed or interactive information are the functional equivalent of the paper reference material.
- (2) The interactive or precomposed information being used for navigation or performance planning is **current, up-to-date, and valid.**



10X



So, apps like ForeFlight, Wing-X and Garmin Pilot, when current, legally take the place of paper charts. However, an FAA inspector recently stated that iPads and their apps are causing more violations than ever before; 10 times more. These same apps that are designed to keep pilots safe, are causing problems. Let's explore the ways your iPad and app can put you in the FAA's doghouse.

1

This isn't a toy or game app. If you don't know how to use your app, it can get you into trouble. Consider the guy who, when flying over Palm Springs, CA, saw two F16s along side of his aircraft. He thought that ForeFlight showed TFRs all the time. However, once he landed, he discovered that "TFRs" was not selected and he had flown smack dab into the middle of a



Presidential TFR. He also didn't realize that without something like Stratus, a TFR can pop up while you're in flight and you'd never know it.

Do not use ForeFlight, Wing-X or Garmin Pilot, unless you are properly trained! Learn how to use your app with an instructor before you blast off alone.



2

Charge to 100%.

One of Murphy's Laws says that your iPad will always turn off when you are in between restricted airspaces. You can run low on battery power and not have a charger, or your iPad can overheat and shut down. There are lots of reasons that you should not rely on it. **Charge it to 100% before flying and if possible, have paper charts in the plane.**

3

Don't Multitask. This can get you into soooooo much trouble. Take, for instance, this pilot who was programming his flight plan while taxiing. Yikes!! **Program your iPad or panel mounted GPS before you taxi.**



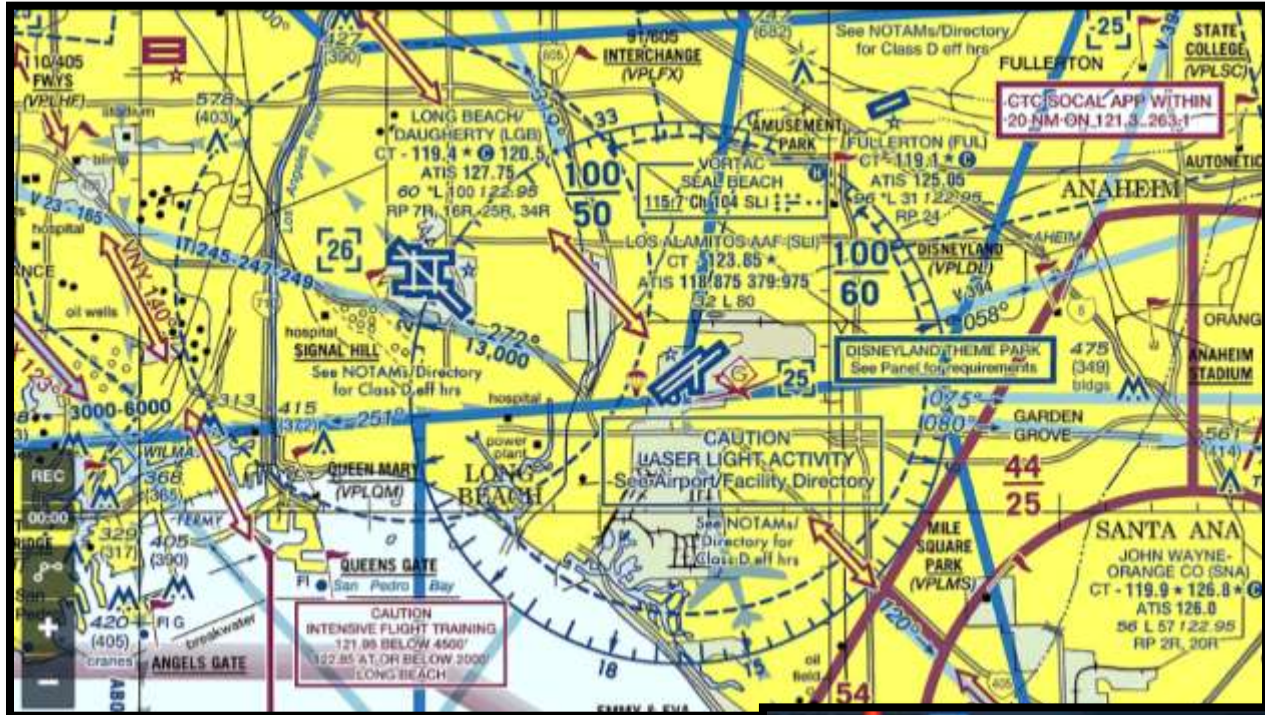
4



Zoom Out. Take a look at the big picture. For instance, look at this view of Long Beach, CA.

Zooming out will reveal a bigger picture of hidden airspace that you also need to avoid. **At a minimum, always display your next two waypoints.**

Unless you have a Stratus type ADS-B

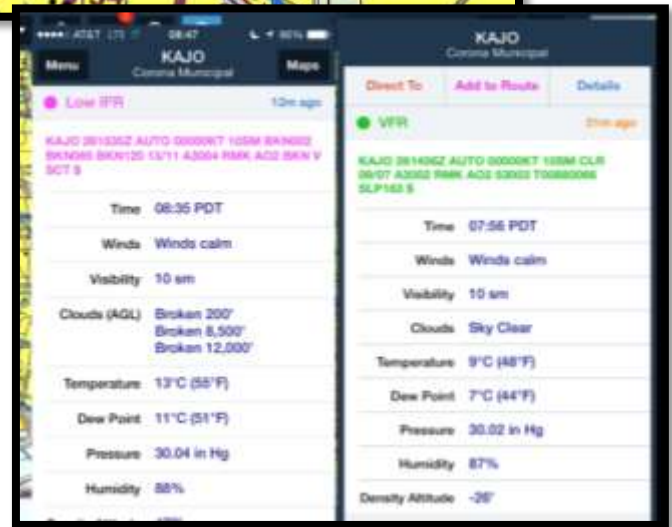


5



An “In” device’s, weather does not magically update in flight.

Some pilots think that if they have looked at the app’s weather before takeoff, it will stay that way. Without a Stratus type ADS-B connection, the weather won’t update. In the example to the far right, this is the iPad weather that the pilot looked at before he took off. Notice the slim temp/dew point spread, but it’s still VFR. The left, Low IFR display is the more current KAJO weather, checked by an iPhone.





You should know that:

- ADS-B and XM weather are not real time. There is a 7 to 10 minute delay from the radar to the ADS-B tower.
- The only real time weather is that derived from an AWOS or ASOS. That's because it's updated every minute.
- Strong cells develop fast before they appear.
- ADS-B and XM weather is for long range planning ONLY.

Verify the weather with Flight Watch and look outside.

6

Don't rely on the app's "Hazard Advisor" to keep you safe from higher terrain. Terrain Advisors don't show the down drafts over a mountain that can put you into a steep descent. **Don't plan to cross a mountain at less than 2,000' above the highest elevation!**

Mountain Flying 101: Barely clearing a ridge can be dangerous because just a few knots of wind can create down drafts. A wind speed of 1 mph can pull you into a 50 FPM descent. However, as that 1 mph wind crosses the crest, the laws of physics doubles the wind's speed as it descends the mountain. Therefore, a 1 mph wind and a meek 50 FPM descent becomes a 2 mph wind with a 100 FPM descent or pull. Let's consider a 15 mph wind, doubling to 30 mph as it descends down the slope. Now you've got a downdraft, pulling you down at 1,500 FPM. If you are relying on Hazard Advisor and plan to barely cross the mountain at 100 to 500 feet above the crest, you're looking for trouble.



7

Keep your data up to date. Always update before you fly! If you have an out of date database, georeferencing won't work, (assuming you paid for georeferencing).

Before you fly, check to see if you have data for the states that you'll fly over. Put your iPad in "Airplane Mode" and try to access the charts and procedures that you'll need. If those maps look blurry, or you see a "Database Out of Date" notice, you need to update.



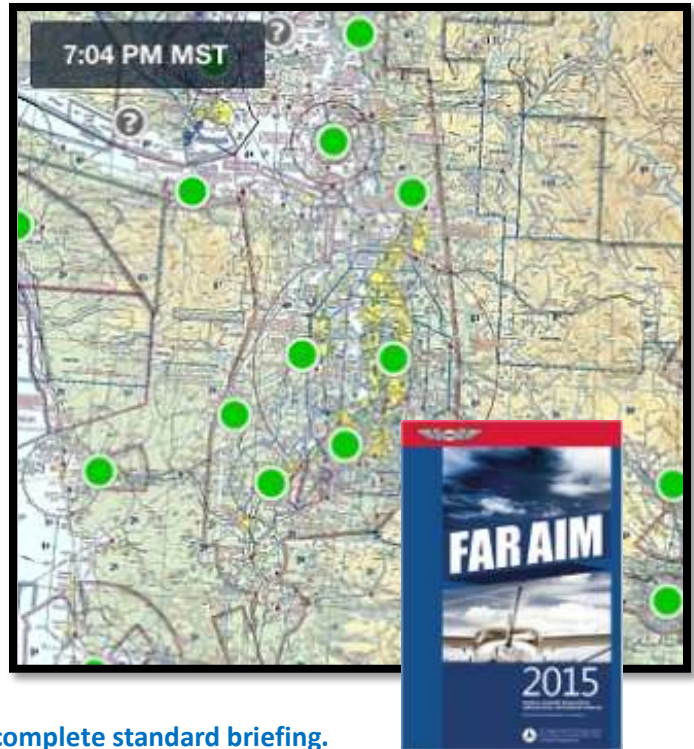
8

Don't trust the green dots. Don't assume that because the Flight Rule dots are green where you are planning to fly, that you have just received a valid weather briefing. They are a great tool, but they're just an overview.

FAR 91.103 Preflight action

Each pilot in command shall, before beginning a flight, become familiar with all available information concerning that flight. This information must include –

- (a) For a flight under IFR or a flight not in the vicinity of an airport, **weather reports and forecasts**, fuel requirements, alternates available if the planned flight cannot be completed and any known traffic delays of which the pilot in command has been advised by ATC;



Call Lockheed Martin and get a complete standard briefing.

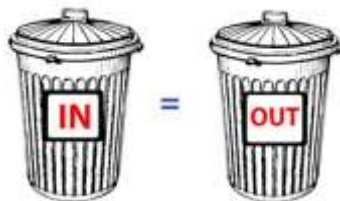
You'll have the satisfaction of knowing that your briefing was recorded. If you have a weather related accident, you don't want to stand in front of an Administrative Law Judge and explain that you flew into Low IFR because your iPad had a green dot and that was your briefing. ForeFlight, DUATS, etc., will generate a text briefing for you, but you need to read all of it. It won't bode well for you if you tell the judge that you got a text briefing, but you didn't read all of it.



9

Garbage in, garbage out. It doesn't matter how much experience you have, you can still make a mistake. Here's a true Story from a NASA report:

An airline pilot received his pre-departure clearance on his iPad. He wrote, "This is a relatively new process for me. The iPad shows the "cleared route" just above the "filed route". I programmed the "filed route" into the FMS. The only difference was the SID. After departure, NORCAL asked why we missed the turn." **Train before you fly.**





10

Flying too close to TFRs, Restricted, Class A, B, or C airspace is risky.

That's because:

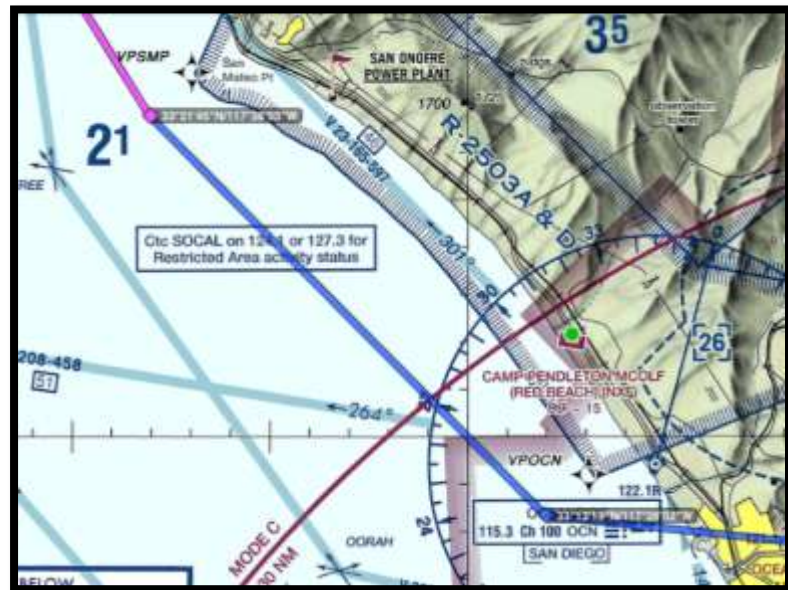
- The GPS position on your iPad is more accurate than the FAA's radar.
- The FAA radar automatically triggers a violation if it "feels" that that you flew uninvited into a TFR, Restricted, Class A, B, or C airspace.
- You're guilty until proven innocent!



It's tempting to fly right along the edge of forbidden airspace. However, if the FAA's radar is off by a mile or two, three weeks later, after you've forgotten all about your flight, you'll receive a letter from the FAA. You're busted and you didn't do anything wrong. How do you prove you're right? Do you record all of your flights to prove your innocence?

Play it safe and avoid the problem. Fly two miles and 500 feet above/below the airspace you're trying to avoid.

To avoid problems with all these cool tools, you should become competent in their use. Know the app's strengths and limitations and don't assume anything.



Aviation Law

If you follow the simple rules in this article, you should stay out of trouble.

However, if for some reason you find yourself staring at a letter from the FAA, **1st: File a NASA report within 10 days of the event or, if you were not aware that an event occurred, file it within 10 days of the letter/notification.** **2nd: Remember, you "know nothing about aviation law". So, don't try to fix this on your own. Aviation law is not a do it yourself hobby. Immediately**

consult with and possibly retain a good aviation attorney.

Fly safe, Jim

Updates from the Navy's navigation system were too slow for high speed Air Force operations, so in 1963, a study was funded to determine if a satellite based navigation system would work..



A Passion for Mooney Fuel Tanks

Q&A with Paul Beck

It's not every day you have the chance to visit with someone who has a passion for Mooney fuel tanks. I've heard Mooney owners use all kinds of words that are not very flattering. Is it possible that someone actually enjoys

fixing them? There is such a person and his name is Paul Beck.

Since September of 2000, Paul has dedicated his life to Mooney fuel tanks. That's more than fourteen years and, I was advised, well over 600 Mooney airplanes. The introduction of a Polysulfide chemical digestant, Paul's dedication and a whole lot of patience are the reasons for success.

From the beginning Paul wanted to help the Mooney owner and he knew that someone needed to find a way to make a difference. Leaking fuel tanks and few repair options were compromising the value of the entire Mooney fleet. When Paul was approached with an idea by Bruce Jaeger, then owner of Willmar Air Service, he agreed to give it a try. This interview is prompted by Paul's continued service with Weep No More. These are the details of my interview with Paul.



Just how significant are tank problems?

Fuel tanks are a concern for every airplane type, from airliner to a trainer. The integral Mooney tank is a great design that doesn't compromise strength or add weight. When properly sealed, they also provide a very long life. There are serviceable tanks out there as old as me and that's over 37 years. However, it is inevitable that at some time every tank will start to leak. With over 10,000 Mooney airplanes worldwide, many having reached their 40th birthday, tank repairs are going to be around for a long time.

How did you get selected to work on fuel tanks?

Bruce was asking for help and no one else volunteered. Imagine that. Having experienced cleaning tanks by hand, there just had to be a better way and I was very interested in the chemical process. It looked like there would be plenty of job security and this was something new where I could get in on the ground floor.

Were there growing pains?

The obvious answer to that question is yes. I still recall the first project. It was a 1978 201. The chemical digestant did its job and there was hope. I was excited for the next airplane which turned out to be a nightmare. The chemical would not digest a foreign sealant that someone had applied (really thick) inside those tanks. What makes the unique chemical formula work in fuel tanks is that it picks and chooses what it attacks. It had turned the sealer soft which made hand removal even more difficult. This project tried my nerves. In the end, the chemical manufacturer got involved and we were on the way to a new formula. Today, I know exactly which chemical to use as there is more than one choice.

Protecting paint was another challenge. It isn't possible to remove the covers without touching the paint. I have learned how to limit paint blemishes to an absolute minimum. There were a host of other minor problems, each handled by developing a procedure.

Do you require special equipment?

We called the special equipment an apparatus. The original equipment continues to do the job today with only minor modifications. New tools have also been designed to help isolate leaks.

When are tank repairs required?

Fuel tank leaks have become a way of life for the vintage Mooney owner. Minor repairs to tank covers are quick and can be completed almost while an owner waits or as part of an annual inspection. An owner may not be given a choice to delay tank repair when required by a mechanic as part of an aircraft inspection. The service manual gives some direction, but in general, if fuel dries as fast as it leaks, repair can be deferred. A smell of fuel in the cabin needs to be addressed. Of course, fuel leaks will stain the paint and I can assure you that leaks will not get better or go away on their own. The question whether to totally clean and reseal or repair is in part based on the age. We start to draw the line at 25 years. If you are considering repainting your Mooney it is important to first address the condition of your tanks.

Is total clean and reseal the only choice?

Minor cover leaks are quickly and effectively repaired. Leaks in the seam forward of the main gear tire are also quickly isolated and can be repaired. These leaks are quite common in later long body models. Leaks in the wing walk area are often only a screw that can also be corrected without removing a cover. Even seam leaks can be isolated and repaired. More difficulty comes when leaks are in multiple locations or in the top of the tank. These top leaks result in fuel seeping from drain holes outside the tank. These are hard to isolate, even using some tricks I have learned. The biggest factor may be the aircraft's history and number of years in service. Attempts to repair an old or dried up tank may be wasted effort and added expense.

How long does it take and what is your warranty?

I have developed a routine for removal of old sealer which generally takes a relatively short time, at least in comparison to scraping by hand. Preparation inside the tank, application of various sealers and required curing time takes multiple days. I have learned that being in a hurry does not save time. Once work is complete, tanks are fueled to absolute capacity. I have again learned that fuel will search out the smallest defect. I request 48 hours following completion of work before scheduling delivery. This leak-free time creates comfort for both me and my customer. I ask two to two and a half weeks to complete the entire process, based on the size of tanks being worked on. Though the factory warranty was limited to three years, my confidence in the latest sealers and tank repair methods results in a better than new warranty. We employ a 5 year warranty.

Have you ever had a leak in a newly sealed tank?

Again the answer is yes. Preparing the cleaned surface to accept the new sealer was relatively simple. However, the best way to apply sealer had to be learned. I had plenty of difficulty in the first few years as the sealer we used simply did not flow and coverage took multiple applications. After research, I discovered better sealers and the concerns went away. For me, applying filler, base and top coat sealers has become an art. I am as proud that there are no leaks as I am of the professionally installed appearance. Being patient is an area where I sometimes have difficulty. When it comes to applying sealer and the time to cure, I have learned the importance of taking enough time.

Is it expensive?

Expensive is when it's not done right the first time. As fuel tanks have a typical useful life, just like an engine or any other accessory, it should not be a surprise when repairs are needed. When it is time to market a Mooney for sale, fuel tank history is part of determining the value. Yes, any tank repair is expensive, but professional tank repair also adds value and will be a factor when you consider selling or trading your Mooney.

Is repairing Mooney fuel tanks your only business?

In addition to Mooney, other manufacturers have similar designs. I am in the process of determining if there is a way to help frustrated owners of other wet wing airplanes. The process of repairing fuel tanks provides the opportunity to closely inspect areas of the airframe not often exposed. This is a great time to assure the tubular structure and windows are in compliance with Service Bulletin M20-208.

Is there a way to keep my tanks from leaking?

I have wondered how in the world a 1960's Mooney could still have original tanks when a much newer airplane has a problem. Some of this may be related to the sealer, but I personally feel tank life is extended by keeping them full and keeping skin temperatures under control. A Mooney parked in the sun on a hot summer day is stressed. This stress is aggravated even more when the tank is not filled. Keep your tanks full and if concerned about the weight of extended range fuel, consider alternating topped tanks between flights. At least this will keep the sealer moist half the time.

What is next for Weep No More?

As the owner of Weep No More, I intend to provide the best tank repairs possible. It is also my desire to expand service to other wet wing airplanes.

As a rated mechanic with substantial Mooney experience, I am aware of aging airplane issues. I have seen the facial expression of an aircraft owner who just learned his or her airplane has serious corrosion or needs expensive maintenance. Part of my service will be to help an owner set priorities, which may come before or after tank repair.

How does anyone get to Minnesota?

Though my location is both geographically and environmentally challenging, Mooney's come to Willmar nearly every day. Getting to Minneapolis is a 30 minute flight. Pick-up and delivery at a Twin Cities airport can be arranged. If your schedule is a problem, an experienced Mooney pilot can be sent to pick up your airplane.

Is the Weep No More service offered at other locations?

We have expanded to the Netherlands! Mastenbroek Aeroskill is now offering Weep No More to all of our European Mooney friends.

Conclusion For the majority of thirty years, a typical Mooney fuel tank does a great job. Then the inevitable blue stain or distinctive smell of Avgas appears. You were hoping that a leaking fuel tank would be someone else's problem, but no such luck. So now what can you do?

It is time to make a call. Not just to anyone. Tank repair is a unique service that requires an experienced technician. There are many locations willing to work on fuel tanks, but very few that have Paul's experience to know what's best. Carefully consider your options and invest wisely. Paul was very willing to give credit to anyone who offers to repair fuel tanks and warranty their work.

Aging Mooneys (Australia) and Potential CASA Intervention

G'day Paul

We have recently had a change of leadership in our regulator and we'd like to meet the new head of CASA to discuss this matter with him. We'd like to be able to say that we have consulted with experienced Mooney maintainers in Australia and the USA and that they support the view that "there is no need for supplementary inspections of older Mooney aircraft provided that the aircraft is properly inspected in accordance with the Service and Maintenance Manual for the particular model". Would you be comfortable with our saying that you concur with that view? If so, then we'd like to illustrate the depth of experience of the people that we've talked with - could I ask you to let me know when you started working on Mooney aircraft and how many 100 hourly/annuals have been done in your shop since that time.

We are trying to head off CASA and stop them doing something stupid about a specific Mooney SID in OZ. Our position (and the factory's when we last spoke with them) is proper annual maintenance is the key to maintaining older Mooneys.

Would appreciate any other comments. Also, are you aware of any Mooneys that have broken up in flight due corrosion or dodgy maintenance?

Cheers,
Russell Kelly



We at LASAR generate 300 Work Orders (Mooney related) a year. We started working on Mooneys in 1966, and have specialized in maintaining the Mooney since then as A&P, IA, and FAA Repair Station. That's nearly 50 years.

The Mooney steel tube structure began in the 1950's with the Mooney Mite. The steel tubes have always been treated internally with Linseed oil and painted externally with paint or Zinc Chromate and more lately with Epoxy Primer that was introduced by Service Bulletin M20-208 around 1979. After that time frame Mooney began coating a lot of Aluminum and Steel parts with the Epoxy Primer.

Early 1960 to 1964 had little or no internal structure protection coating on the aluminum. After that, Zinc Chromate primer was used on most fuselage structure, but not the wing structure. Early Mooneys had few grease fittings, but later production added more grease fitting on moving parts.

We have never seen a Mooney fail due to corroded structure, but we have seen all kinds of corrosion, caused by all kinds of environment as well as salt from soda crackers, spilled soft drinks, urine, mice urine or internal heat treatment, as well as rusted thru steel tubes. We have seen more corrosion in early 1960 Mooneys in the wheel well area on the rear stub spar, but the structure is so well overbuilt, we have not seen it cause a failure, even though the condition is deemed unairworthy.

Metal protection with anodizing and or epoxy painted components definitely adds to the longevity of the structure. "There is no need for supplementary inspections of older Mooney aircraft provided that the aircraft is properly inspected in accordance with the Service and Maintenance Manual for the particular model". I agree with this statement as an Annual Inspection seems to be adequate.

In 1983, a Korean Air Lines 747 strayed into Soviet airspace and was shot down, killing all passengers and crew. Shortly after, President Ronald Reagan issued a directive making GPS freely available to the public once the system was sufficiently developed.



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

MR. HOPKINS- A Flight Instructor

Flight Instructors have a unique position in our flying world. We generally look up to them as we are learning and what they say generally stays with us throughout our flying life. For most of us, our first Flight Instructor was the first of many as we advanced in our learning. For a lucky few, it has turned out to be a life long relationship.

My father introduced me to Mr. Hopkins when I was 15 years old. I was abruptly awakened one Saturday morning in June and informed that Mr. Hopkins was going to take me flying in a DC-3! I was also informed that the proper way to address him was “Mr. Hopkins”! Back then courtesy and honoring our elders was paramount in decorum.

“Get out of bed and get ready,” was the command. I was going flying. My Father, knowing full well that I would not have slept the night before, kept this trip a secret until that morning.

I must digress here and fill in some blanks. I had been interested in airplanes since I was 8 or 9 years old. I built plastic models, balsa models, designed my own model planes. I flew control line and free flight models as much as my weekly allowance could allow. At 15, I was in my World War 1 era and I was studying all I could find about flying back then. Lufbery, Emmilmann, Von Richthofen, Rickenbacker, Goring and others were in my mind’s lexicon. The Ardennes Forest, Tri-planes, Spads and Newports drifted through my thoughts as I went to sleep every night. Airplanes and flying was my all encompassing passion. School, as it turned out, took a back seat.

As I rubbed the night out of my eyes, I was hardly able to think about what was going to happen. I was going to fly in a “real” airplane, and a DC-3 no less! My getting up and dressing and going down the street to meet Mr. Hopkins (he lived just 4 doors down the street), is lost in the annals of excitement and time. I do, however vividly remember driving to the airport (KBUR, Burbank, CA) with him and walking out to the airplane.

I can remember walking UNDER the nose of the DC-3 as it lay, wheels chocked, with its tail pointing to the blast fence on the north side of runway 7-25, just opposite the terminal. I was thinking how big it was. It was huge to me. I was cautioned to not walk into the wheel wells or under the engines as oil would drip onto my clothes. Radial engines always drip oil, don’t they?

As we walked up to the airplane, the cabin door was open. Mr. Hopkins went in first and I followed. I looked up and saw the high angle of the cabin isle as it climbed up to the cockpit. It was, after all, a tail dragger! With some trepidation, I followed and stepped into the cockpit area and got my first look at a real airliner!

Switches and levers and gauges too numerous to count, met my neophyte eyes. And there, in front of each pilot seat, I saw the big CONTROL WHEEL! WOW! I was really here!

In due time, the “Stewardess” showed up. Yup, they were called Stewardess back then. The co-pilot finished his preflight, the door was shut and we were ready to go. We were flying to Oakland, CA (KOAK). The sound of the starter as it engaged, the counting of the prop blades before the mags were turned on, and then the belching of the smoke as the engines roared to life, has stayed with me for over 50 years. Nothing sounds or smells quite like a radial engine in the morning. When it’s your first real

It was as big as a house and I was going to get to fly in it!

airplane experience, it tends to stick with you. Even today, I can tell by the sound, without even looking up, that a DC-3 is going overhead. I do, however, have to run outside and watch it go by, so strong is the memory.

As the throttles were advanced and the taxi started, I couldn't hear what the tower controller was saying, because just like in the movies, they were wearing WW2 headsets. We taxied to runway 15 and lined up on the runway. I was standing between and just behind the pilot seats so I could see everything as it happened. It was a different world back then. The engines roared, the speed built up, the tail raised and finally we were airborne. I was actually flying! As I watched the tower pass the left side of the airplane, we banked right and started our trip to Oakland.

That first hour was a blur of sights and sounds. Houses, cars, buildings all grew smaller. Hills even gave way to our climb. When at last we leveled out, I started to relax and sat down on the jump seat next to the "meat chopper" door. This is a door cut in the side of the cockpit for the forward luggage access, just opposite the left prop. The left prop that was happily spinning away, less than 2 feet from the door, swung a three bladed meat cleaver, ready to surprise anyone foolish enough to open the door.

I wasn't sitting for more than a few moments when I saw the copilot get up and Mr. Hopkins waved me up to sit in the copilot seat. My head was swimming, my breathing was shallow and rapid, I was actually sitting in a pilot seat in this huge airliner! The view was better out the right side window, because the front windshield is rather small. Someone pinch me, tell me it's real. And then, the unthinkable happened.

Mr. Hopkins told me to hold the control wheel and fly the airplane! That big control wheel, right in front of me, the one that I saw when I first got a glimpse of the cockpit. He let me bank a little left and right, push and pull a little, so went up and down and then he "tried" to get me to fly straight and level. This was not only my first flight, but my first flying lesson to boot. How could a young kid of fifteen even begin to comprehend what was happening? To this day, I am humbled to say that the first airplane I ever "flew" was a DC-3.

From that day, Mr. Hopkins took me under his wing, (an old cliché but apropos), by taking me on several more DC-3 trips that summer. A few weeks before my 16th birthday, he taught me to fly. He soloed me on my 16th birthday in 1962.

As I mentioned, it has turned out to be a life long relationship. Mr. Hopkins trained me all the way through my MEATP. He actually gave me my first flying job as a copilot/mechanic on a corporate Navajo, and left me with thoughts on safety and training that I use and pass along to this day.

One lesson I learned from him about flying, came in very handy decades later when I was Captain on a 737 crossing the Rocky Mountains one dark and stormy night. While on one of those DC-3 flights, during my 15th summer, we landed in Gallup, New Mexico. We had taken a load of Indian fire fighters back home and we were flying empty back to Burbank. It was a summer night, and when we took off, there were thunderstorms in all quadrants. Of course, a DC-3 back then didn't have weather RADAR, so what were we to do?

Mr. Hopkins turned the cockpit and panel lights down low, and watched out the windshield to see where the lightning flashes were coming from. With this information, he directed his copilot so they could avoid the cells. It worked beautifully. Forty years later, I needed that lesson when the RADAR failed in my 737 as we were passing through a line of thunderstorms. It worked just as well in a 737 as it did in a DC-3.

Mr. Hopkins was also an A&P, so naturally I had to go to A&P School so I could be just like him. His meticulous approach to aircraft maintenance was transferred to me, maybe to the point of being anal about doing things right or not doing them at all. I still find myself cutting off safety wire that I just tied, saying to myself, "Mr. Hopkins wouldn't like it that way".

How do I do homage to a person who, for all practical purposes, taught me everything he knows about flying? How do I "pay back" for the effort it took to take a me, stupid and ignorant 15 year old, and groom me for a career in aviation that I would never have been able to accomplish without that help? How can I ever live up to what he gave me?

In some small way, I do it by trying to pass along what he taught me to those not as fortunate as I. I am fortunate indeed, because I have been able to maintain a lifelong relationship with my first Flight Instructor. Someday I may write a book with about all those memories; a very thick book.

Here is a picture of "Mr. Hopkins" at the FAA's presentation of my Wright Brothers Award for 50 years of safe flying. This may be the only time the Wright Brothers Award has been presented to someone with his first Flight Instructor in attendance AND at the airport where the recipient had soloed!





What About That Red Mixture Knob?

by Bruce Jaeger

Even experienced pilots are intimidated by mixture. Ask an instructor and you are likely to hear, “That is your decision.” Reading articles about mixture may add insight, while raising even more questions. You have had cylinder problems when someone else with your same model does just fine. So what’s the deal?

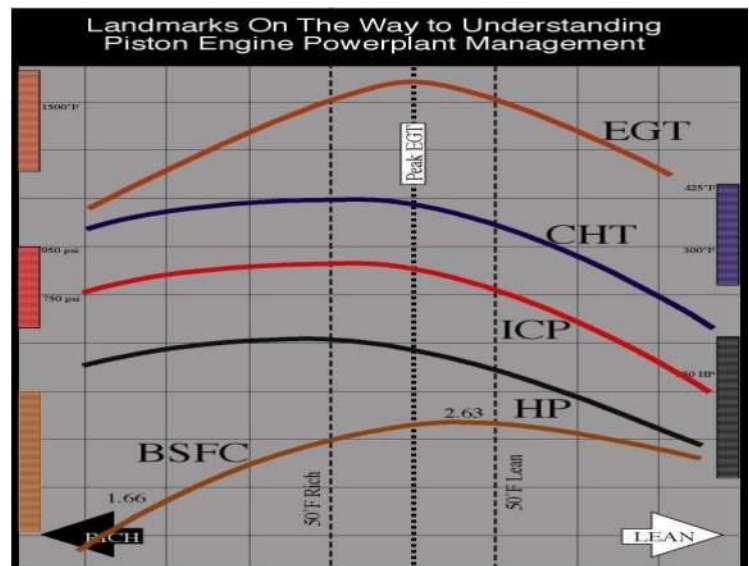
As the former owner of a Mooney service center and over 18,000 flight hours, I cannot claim to have the answers. However, many conversations with trusted engine rebuilders, TCM and Lycoming representatives, other pilots, and of course the folks from GAMI, have given me the tools to comfortably make suggestions. Over thirty years of owning a Mooney service center provided ample opportunity to learn from the good and not so good experiences of many Mooney owners.

I would like to start by simply saying, “The highest performance comes at a price.” That price could be the need for more fuel or an increased probability of cylinder wear. If you are willing to risk these consequences, I am hopeful the slight performance differences make you happy.

In my early years as a flight instructor, I recall leaning solely by listening to the engine, and in some cases, this remains the only option. The introduction of EGT gauges, even single cylinder, were helpful, but the lack of understanding added more complexity. I thought we had the answer when reliable fuel flow gauges were introduced. But I ultimately learned that leaning primarily by fuel flow was wrong. Though each of these systems were helpful, we needed something more.

Finally, I started to understand when, at a certified Lancair sales meeting, I listened closely to a TCM representative. He showed a graph that referenced internal cylinder pressure. At the time, I had 25 years as a flight instructor, but I had never heard that term. So what is it? Internal cylinder pressure is what occurs inside the combustion chamber during four strokes of the engine. It only makes sense that the highest pressures and stresses occur during the combustion or power stroke as the spark ignites and the piston is forced down. I am envious of those who truly understand the chemistry and mechanics that takes place in an internal combustion engine. However, as a flight instructor, I do not need to know every detail. I just need to understand the factors contributing to engine life.

It was pleasing that I actually seemed to understand the generic engine management graph shown that day. This chart gave me the tool to help pilots manage the engine effectively. Leaving the “Why” up to those who know, I could now teach the “How” to those who should care.



It became obvious that higher power settings require a richer mixture or a really good understanding of lean of peak. The blue arc in the Ovation now made sense, because at maximum power, the EGT range is rich enough to keep the internal cylinder pressure below that caution red line. As a result of this graph, leaning in climb also became manageable and rewarding. At least in the Lycoming, I no longer teach leaning in a maximum power climb until available power is limited to 75%. At that moment, how far to lean can be precisely determined by a one-time lean test to find peak and enrich to the suggested 150-200 degrees. Once found, this number can be used for all future flights. The resulting lean factor also works well for continued climb. As available climb power is reduced, peak EGT is also lower. With reduced power, the same lean to peak spread can be less. As a result, that same 75% power climb EGT factor provides a great number into the flight levels. It now only makes sense that this same EGT would work well for those high density altitude takeoffs.

Always wanting to introduce new training tools, I have found that completing slow flight and stalls with recoveries at 8,500 to 9,500 MSL, accents V speeds and the need to lean. This is a wonderful demonstration of the 75% lean factor EGT.

From the powerplant management graph, anyone can quickly see that power settings of 65% or less will, at least in theory, keep you out of trouble. If you were to quiz anyone who's had an engine live a full life without cylinder repair, it is likely you will discover they have flown frequently with a conservative percentage of power.

As there are many factors contributing to engine life, this is a good time to start a list:

- Starting with a factory engine or good overhaul is helpful
- There are differences and merit to both factory new or reconditioned cylinders and the decision deserves research
- Have confidence in your mechanic and have regular inspections to include accessories
- Engine setup for the Continentals is critical
- Grade of oil and frequency of change (How often and where you fly make a difference)
- Clean air filter
- Flying often (Lycoming suggests 30 minutes at operating temperatures every week)

SHOULDER HARNESS KITS



- Factory Style, 3 Point Diagonal Design
- Factory Quality, TSO-C114 AMSAFE Belt Systems
- Choice of Stock Colors or Special Order, Same Price

Fixed Strap – \$299.00 Per Seat, Inertial Reel - \$399.00 Per Seat

- M20C – G “Minor Change” Installation Kit **\$35.00** 2 Seats

AIRCRAFT JACKS – THAT FIT



Three Leg Design
Rugged Construction
#6000 Capacity Ram
Range 24” – 41”
Locking Safety Collar

MODEL 324 \$249.00 EA.

Tail Stand / Weight Available

Online at www.alphaaviation.com

Alpha Aviation Inc.

1505 Chateaulin Lane Burnsville, Minnesota 55337

1-800-653-5112

1-952-856-5158 (fax)

- Temperature control of all types (Oil temp too low is not a good thing)
- Conservative % of power and mixture settings
- Don't tolerate even the smallest discrepancy

The choice to operate rich or lean of peak is a controversial topic for another time. Though either has merit, I have a suggestion that may help you decide. At optimum altitude, select a conservative power setting and lean to the lean side. Now document the fuel flow and stabilized true airspeed. Follow this by returning the mixture to ROP and observe an increase in airspeed, and of course fuel flow. It would now be interesting to adjust power to a level ROP that results in the same airspeed seen on the lean side. The reduced % of power now allows leaning quite aggressively, thus lowering the fuel flow while remaining on the rich side. The ultimate difference in fuel flow for the same performance, whether rich or lean of peak, will help you make a choice. We must also remember that comfortably operating on the lean side, requires a finely tuned engine.

Thanks to the GAMI tuned nozzles and later changes at TCM, engines can operate more efficiently, smoother, and cleaner whether rich or lean. This article was written in an effort to provide insight into engine management that simply makes sense. There is no reason to randomly adjust mixture or select a power setting. Make adjustments with a purpose. When it comes to protecting an engine, common sense and understanding the basics make a difference. Maybe the introduction of internal cylinder pressure will motivate some to pay more attention. Thanks to GAMI and TCM for their ongoing efforts.

FAA Decommissioning VORs

- The VOR MON Program will implement the [[minimum operational network of VORs](#)] by decommissioning 30-50% of the VORs in the NAS by 2025 (although the current plan retains all VORs in the designated mountainous region of the U.S.—roughly the western third of the country).
- The reduction will begin gradually over the first five years during which time the bulk of the procedural/airway/airspace work will be assessed. Then the plan is to accelerate the process, with 20-25 VORs shut down each year.
- Only FAA owned/operated VORs will be considered for shutdown.
- DMEs and TACANs will generally be retained.
- Many of the remaining VORs will be enhanced to supply increased service volume. VOR standard service volume (SSV) will become 77 NM radius at 5000 ft. AGL.
- Increase support for direct navigation between VORs without airways.
- Retain sufficient ILSs, LOCs, and VORs to support “safe-landing” at a suitable destination with a GPS-independent approach (ILS, LOC or VOR) within 100 NM of any location within CONUS.
- Provide seamless VOR coverage at and above 5000 ft AGL.
- More than 5,000 instrument approaches may be affected by the reduction in operational VORs.
- Nearly 1,300 SIDs, STARs, and ODPs may be affected by the reduction in operational VORs.
- FAA is considering how to refer to and chart DME-only facilities.

Graphics in the presentation include a pair of maps that show how the current airway structure will be changed when the MON is established.



Alamos, Mexico

by Linda Corman

Several years back, our first trip by Mooney into Mexico was to a small town called Alamos. We were at a Tucson, AZ fly-in and the gentleman who owned and operated a resort in Alamos approached us. We looked

over his lovely publication about the *Hacienda de los Santos Resort*, and fell in love with it. Alamos is located in the foothills of the Sierra Madre Mountains. To be honest, I was a little concerned about flying into a remote area of Mexico. But, I was pleasantly surprised by the airport and the services there. Our Mooneys were pulled into an air conditioned hangar, with a painted concrete floor and murals on the wall. I felt our Mooneys were being kept at a 4 star hangar. The owners of the Hacienda de los Santos are Jim and Nancy Swickard, who several years ago bought up some Mexican Haciendas and combined them to



make up the resort compound. Over the years, they have added restaurants, swimming pools, a library and patios for a quiet place to sit and relax in the warm Mexican sun. They have a fitness center to work off the wonderful meals consumed there. A bonus for private pilots who fly to this resort is membership in the Pilotos de Mexico Club. One of the perks of membership is the right to put your airplane in their

beautiful hangar. Your plane will be as pampered as you are. The Hacienda de los Santos is made up of haciendas that were owned by silver barons and they have tried to keep the old world feel with beautiful antiques in all the rooms and on the patios surrounding the pools. We flew down to Alamos with three other Mooneys in a loose formation and were surprised that the hangar could fit all our planes, and then some. We were met at the airport by Jim, who made



sure our planes were taken care of. He then loaded everyone into several vehicles and headed to the resort. Haciendas de los Santos is located in the middle of a quaint village. If there is one drawback about the village, it is a little too quaint and quite without nightlife or shopping. But, we felt no need to venture far from the resort. On our arrival, the staff met us at the front door with Margaritas for all. That's my kind of hospitality. We just sat and enjoyed our drinks while the staff checked us in. Our rooms were beautiful. They left the old world charm and added modern baths and air conditioning. The resort was between seasons, so we basically had the place to ourselves. Jim took all of us on a tour of the resort and showed us where we were going to meet for breakfast and dinner. Then, he showed us my favorite spot, the Tequila Bar. The bar was surrounded with shelves that held over 400 different Tequilas. My first response was, "So many Tequilas, so little time". Some of the Tequilas had hand written labels, (produced locally). For happy hour that evening, we all assembled in the bar before dinner. Our waiter asked me what I would like to drink, and of course I said, "A shot of Tequila". I asked him to pick, as I don't know that much about Tequila. He chose a Tequila that had been aged for several years and was as smooth as any wine I have tasted at home.



The next day, Jim escorted us all around the authentic little village and showed us the cathedral and some lovely old hotels. This is not a tourist experience. This is a real Mexican village and it provided a wonderful and warm experience for the duration. As I said before, shopping was sparse, but walking around the village was like going back in time to the 18th century. The people were very nice and the town looked clean and well maintained. In the afternoon, Jim drove us out to the

local cemetery, which was really interesting, as they are running out of room for crypts and have started to stack them one on top of another. After our tour of the town and the outlying area, we returned to enjoy the refreshing pools and nap in the shade of the courtyard's colonial Palms and Agaves. That evening, we all dined on wonderful Mexican dishes and were serenaded by a local Mexican band which included our host's son-in-law. If you are looking for a lovely and peaceful get away, I would go to Alamos and stay with Jim and Nancy at the Hacienda de los Santos. The flight down was uneventful and getting into and out of Mexico was



hassle free for the most part. On our arrival at Obregon to check in with the Mexican customs people, we were met by two very young looking soldiers carrying automatic weapons. At first, we were a little apprehensive, but as they approached our plane, they just handed us a clipboard to sign and showed us the way to the terminal. I even had my picture taken with them as they were our first welcoming committee; happy to oblige us. The only hiccup in the whole procedure was after entering the terminal, we didn't know where to go because the place was deserted and we had to wander around a bit to find the building we needed. After finding the correct building we still had to wait a while for the correct people to show up. Oh well, it is Mexico and no one is in a hurry.



Now about the Mooney trip home. It was spectacular and very interesting. We left Alamos and headed back up the coast of Sonora along the sea of Cortez. The country below us was stark and beautiful. We would fly for long periods of time and see nothing but desert and the sea shore, and then out of nowhere, a resort or casino would appear on the coastline. We had to reenter the U.S. at Calexico and all 3 Mooneys had to land and go through customs at the same time. As we

approached the airfield, the winds had picked up and they were blowing directly across the runway which made for a very interesting landing. We were number 3 to land and were told by the pilot ahead of us that he would rate the landing as "sporting". The point of reentry consisted of an old airfield and a prefab building erected sometime in the 50's. The two gentlemen who met us were nice enough, but we did have to call some distance out, to make sure they would meet us when we arrived. The process was fairly fast and we all departed for our various homes after a couple of hours. If you have not experienced Mexico and want to stay in a lovely place run by Americans, I highly recommend Alamos. Of course, the best way to get there is by Mooney.

Flying There

Alamos (MM45), is in the foothills of the Sierra Madre with an easy approach and landing. The nearest Airport of Entry is Obregon (MMCN), which is about 20 mins west. It took us about 60 minutes to go through the entry process, which was painless, and the Mexican officials were very helpful.

Where to Stay

The [Hacienda de los Santos](#) is run by an American couple, Dick and Nancy Swickard, and Dick is a pilot. This is a place you go to experience 4 star comfort in a non-tourist village. There are multiple restaurants, pools, lounges and you will be treated like royalty.

Upcoming Fly-Ins



February 14, Bartow (BOW)
March 14, Fort Pierce (FPR)



Fort Myers, FL February 6-8, 2015
Santa Maria, CA April 24 -26, 2015
Chattanooga, TN June 5-7, 2015
Atlantic City, NJ September 11-13, 2015
Fort Worth, TX October 23-25, 2015

Top Gun Aviation



Specializing in Mooney and Cirrus
(209) 983-8082
For Service and Maintenance, ask for Mark or Tom
FAX: (209) 983-8084

6100 S. Lindbergh St., Stockton, CA 95206
or visit our website at www.topgunaviation.net



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



Send your questions for Tom to TheMooneyFlyer@gmail.com

Q1: Concerning the health of my engine, what do compression numbers indicate? What other checks should I perform if compression is lower? Why does TCM feel lower compression is more acceptable on its engines than Lycoming?

Lycoming uses 60 over 80, which is too simplistic for me. TCM's method is better. They have a tool that measures your shop's air pressure and it gives you a standard to use. In my shop, it is usually a minimum of about 45. So, if you have a cylinder that is 45 over 80, it is OK "IF" you do not have either valve leaking. A leaking valve is a no-no for Lycoms, but the low end of the compression remains 60. TCM has done many tests for engine power and claims it does not drop until below the test figure. One other figure I feel matters, is the hi-lo between cylinders.

Example: You have three at 75/80 and one at 60/80. I would be a little concerned of the spread and want to check the low cylinder a little closer. On a TCM engine, you could have a 45 and a 75. I feel that is almost too much of a spread. There is one other factor to consider. On a turbocharged engine, the turbo will make up for the loss of compression until at critical altitude. I had one TSIO-360 with two dead cylinders and the owner didn't realize they were dead because he didn't fly above 10,000 ft. The two dead cylinders were opposites, so the engine power was balanced.

Q2: In the winter my engine oil temp drops to 175. Is that ok? At what point is low oil temp an issue?

Each different engine will have a different spec for low and high oil temp, but 175 is usually in the safe range. Almost all engines have an oil temp controller, much like the water thermostat in a car. So, unless you are in extremely cold temps, your oil temp should be in the range stated in your POH. Most engines run in the 190 to 210 range. Dramatic changes in oil temp will result in opposite changes to oil pressure.





Foreflight adds Synthetic Vision

Foreflight recently added a synthetic vision upgrade to their popular iPad-based flight-planning software. The upgrade provides a three-dimensional view of terrain and airport features, and dims or brightens to simulate daylight and night conditions. The Stratus ADS-B receiver is not required to run the feature, the company says, but with Stratus 2, the built-in AHRS "drives a super responsive pitch and bank instrument in the center of the Synthetic Vision view."

With AHRS, the upgrade provides a "backup glass cockpit



on your iPad" that can help you stay aware of your position and surroundings, the company says. Without the Stratus AHRS, the horizon at the center of the synthetic vision view remains fixed, and displays GPS-derived ground speed, altitude, vertical speed, track, and an HSI display with a course deviation indicator. The feature works in either split-screen or full-screen mode. It's available to current subscribers for a \$25 annual fee. A full review of the new upgrade will be featured in the February issue of *Aviation Consumer* magazine. [READ MORE](#)



SocialFlight University - free videos and webinars

SocialFlight University includes a collection of videos, webinars and reference materials on a variety of

educational topics from pilot training, safety and technique, to aircraft ownership, operations and maintenance. It also includes materials on aircraft, avionics and pilot products, as well as clubs and community-related topics. The entire collection is available for viewing on most phones and tablets, as well as on the web. SocialFlight University is part of the SocialFlight app, and is a free resource for the general aviation community through the support of aviation industry leaders including Jeppesen, Champion Aerospace, Continental Motors, Aspen Avionics, FreeFlight Systems, Piper Aircraft, Sennheiser, Avidyne, Lightspeed Aviation and ASL CamGuard. [READ MORE](#)

The power of one negative letter

20 Hours of Sim Time for Instrument Students? Not so fast!

In December, 2014, Flying Magazine made a big deal about the FAA permitting more training time in flight simulators to count toward the instrument rating? Well, forget about it. The FAA formally withdrew that policy on January 15th, and then reinstated the mind-boggling requirement that instrument students wear Foggles or other view-limiting devices while flying on instruments in a simulator.

The reason? **The agency received one negative comment from someone who apparently didn't like the changes.** [READ MORE](#)





NavWorx ADS-B Products

The cost of ADS-B compliance for 2020 has been the outcry of pilots across the country. To be sure, it can quickly become expensive to add ADS-B OUT, ADS-B IN, a WAAS GPS and all that installation cost.

To a large extent, NavWorx comes to the rescue with comparably lower cost solutions that meet the 2020 mandate.

NavWorx ADS S600-B and ADS S600-BG Transceivers

The difference between the two units is that the S600-B does not have a TSO WAAS GPS, while the S600-BG does. The S600-b retails for \$2399 while the S600-BG is \$2999. Both units meet the mandate. These units are remotely mounted so they do not take up panel space; a nice plus. These are Universal Access Transceivers (UAT), which transmits ADS-B OUT information, as well as receives ADS-B IN information, including ADS-B, ADS-R, TIS-B traffic and FIS-B weather. Providing multiple interfaces allows the ADS600-B to support a variety of panel-mounted EFIS/MFDs and portable displays. If you already have a Mode C transponder, then you are good to go and do not need to replace that unit. This will reduce your cost.



NavWorks ADS S600 Receiver

If you already have an ADS-B OUT device, then you can look at the ADS600 unit. It retails for \$1199. The S600 Receiver has TSO/STC/AML for GA aircraft, an optional ADS-B Compliant WAAS GPS internal module, and provides Traffic and Weather to numerous displays. It's WiFi capable with optional module, two simultaneous display capability, and can be upgraded to ADS600-B OUT at any time

NavWorx PADS-B



The PADS-B is a Portable ADS-B Transceiver with UAT OUT and Dual-Band ADS-B IN. The unit displays Traffic and Weather on iPad/iPhone/Android devices via built-in WiFi. NavWorx took the design straight out of their TSO/STC certified ADS600-B product, miniaturized it, and created the non-TSO'd PADS-B. In our opinion, this product competes with the Stratus II. It will give you all of the FIS-B (Weather) and TIS-B (Traffic) services of ADS-B, but since it is an ADS-B IN only device, it does not meet the 2020 mandate. This unit retails for \$999.

Mooney Instructors Around The Country

Arizona

Jim Price (CFII, MEI, ATP). Chandler, AZ (KCHD) 480-772-1527. Proficiency training and IPCs. Website: www.JDPriceCFI.com

Boris Vasilev (CFI, CFII, MEI, AGI), Phoenix Are, Tel: 602-791-9637, email: boris@atieuhosting.com, Time in M20C through M20R models. Private commercial and instrument training, BFR's IPC's FAAWings

Connecticut

Robert McGuire, Durham, 203-645-2222 cell, rmcguire007@hotmail.com

Winslow Bud Johnson, smgemail@aol.com, 203-348-2356

California

Geoff Lee, San Martin, CA, 69050@comcast.net

Chuck McGill (Master CFI) located in San Diego, CA 858-451-2742, Master CFI, MAPA PPP Instructor, M20M, M20R, M20TN, Website: [Click Here](#)

Rodrigo Von Contra, Oakland, (510) 541-7283, Rodrigo@vonconta.com

George Woods, Woodland (O41), (530)-414-1679, , georgemichaelwoods@yahoo.com, Fixed wing CFII, Multi-Engine, Helicopter, Glider & Gyroplane CFI. Owns Mooney Rocket

Colorado

Ben Kaufman (CFI/CFII) – Fort Collins (KFNL) - (801)-319-3218 - bkaufman.mba@gmail.com

Florida

Mike Elliott (CFII) Master CFI located in Tarpon Springs, FL, Contact 317-371-4161, Email mike@aviating.com, Quality instrument & commercial instruction, transition training, ownership assistance, plane ferrying

Robert McGuire, Hawthorne, (203) 645-2222, (Dec – Feb), rmcguire007@hotmail.com

Georgia

Jim Stevens, USAF, Col, (ret), CFII. Atlanta, GA area. 404-277-4123. Instrument, commercial, IPC, BFR, transition training. 20 year owner of 1968 M20F.

Kansas

John R. Schmidt (COL, USAF, Retired) Fort Leavenworth, Kansas and the Kansas City area. Instrument and commercial instruction, transition training, BFR. (913) 221-4937 jspropilot@att.net

Massachusetts

Ralph Semb, ralph@bowling4fun.com, 413-221-7535

New Jersey

Parvez Dara, daraparvez@gmail.com, 732 240 4004

New York

Jack Napoli, Long Island, TT 6,000 hrs & Mooney time 3,000, kj4kqvh1@yahoo.com, 631-806-4436

Texas

Austin T. Walden, Lubbock & Abilene, Texas 432-788-0216, Email

AustinWalden@gmail.com

PhD, Specializing in Models C thru J, www.WaldenAviation.com

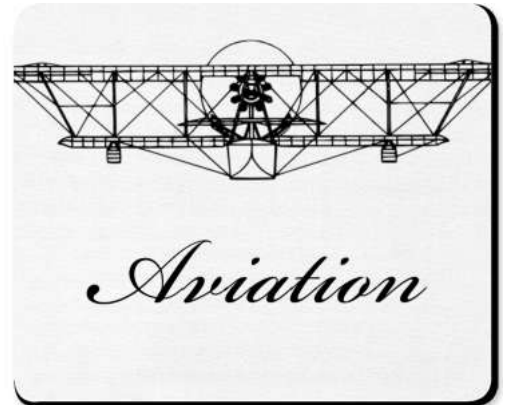
Brian Lloyd, Kestrel Airpark (1T7), 210-802-8FLY, Brian@Lloyd.aero

Mark Johnson, mjohnsonf16@hotmail.com, 832-773-4409

Jerry Johnson, mooney9281V@hotmail.com, 817-454-2426

Vermont

Ted Corsones, tedc@corsones.com, 813 435 8464



Rule of Thumb: A 10% change in A/C weight will result in a 20% change in T/O distance



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



AIRNAV.COM Fuel price report

Summary of fuel prices at 3614 FBOs nationwide

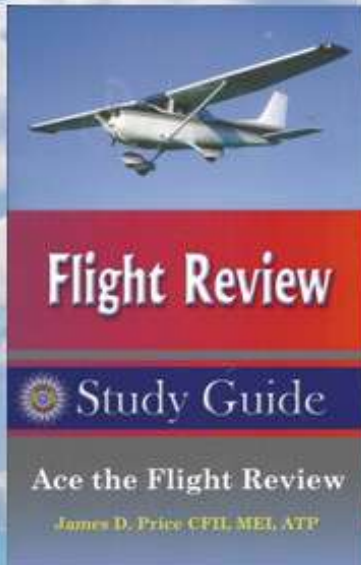
	FBOs	100LL Avgas			
		FBOs	Avg	Min	Max
Nationwide	3614	3531	\$5.22	\$3.00	\$9.99
Alaska	76	64	\$6.90	\$5.57	\$9.99
Central	350	348	\$5.12	\$3.79	\$8.70
Eastern	360	346	\$5.75	\$3.57	\$9.58
Great Lakes	737	726	\$5.40	\$3.41	\$9.17
New England	142	136	\$5.53	\$3.99	\$9.30
Northwest	379	375	\$5.32	\$3.49	\$8.43
Mountain					
Southern	655	648	\$4.97	\$3.15	\$8.99
Southwest	565	557	\$4.86	\$3.00	\$8.33
Western-Pacific	350	331	\$5.23	\$3.71	\$8.73

This report was prepared by AirNav on 05-Feb-2015

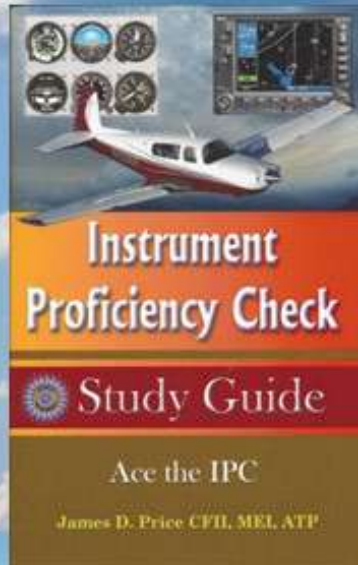
This Report includes prices reported between 07-Jan-2015 and 05-Feb-2015

At least 50% of prices are no more than 8 days old (28-Jan-2015 or more recent)

Increase Your Knowledge



Flight Review
Study Guide
Ace the Flight Review
James D. Price CFI, MEI, ATP



Instrument Proficiency Check
Study Guide
Ace the IPC
James D. Price CFI, MEI, ATP



Aircraft Expense
Tracking
Aircraft Owner's Expense and Maintenance Tracking System
Single and Multi Engine
Sole Ownership or Club
James D. Price CFI, MEI, ATP

Keep yourself safe,
proficient and living your
dream.

Order yours today at
JDPriceCFI.com

CLICK HERE TO ORDER

