# The Mooney Flyer

The Official Online Magazine for the Mooney Community

www.TheMooneyFlyer.com

March 2016



**Thursday, Sep 15th** : Hands On Workshop by Cliff Biggs – "Work you can do" and "Work you can inspect".

**Friday, Sep 16th** : Includes three fun tour options and an evening wine reception at the Museum.

**Saturday, Sep 17th** : Seminars, both technical and non-technical (for the non-flyers), followed by a great dinner and awesome speaker.

**Sunday, Sep 18th** : Brunch for those interested, before departing for home.

DETAILS COMIN' SOON!

Estrella Warbirds Museum and Woodland Auto Display Paso Robles, California

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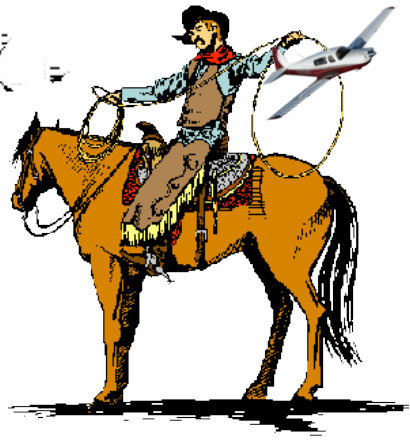

# Features

**Editors**
Phil Corman
Jim Price

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

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## In Every Issue



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# From the Editor

**Phil Corman**

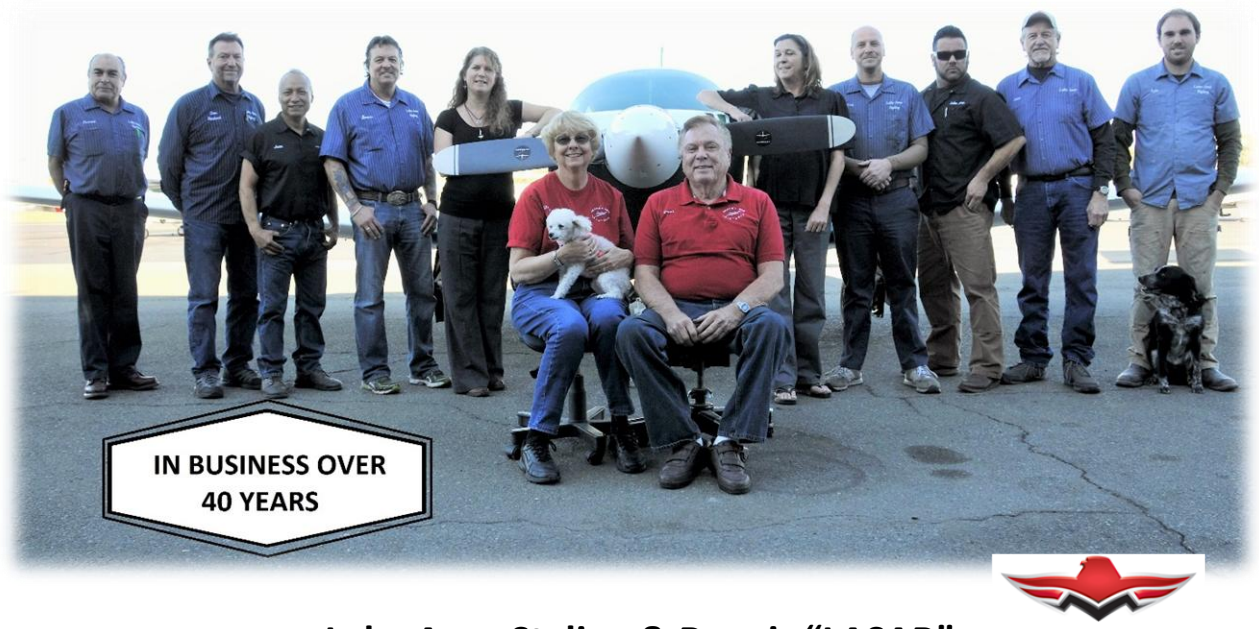



Jim and I decided to do another Mooney Flyer Round Up in September of this year, once again in beautiful Paso Robles (KPRB). It's mostly insanity to put these events on, since it takes so much time and logistics. However, last year, after seeing how the more than 100 participants had such a great and productive time, we're going to do another one.

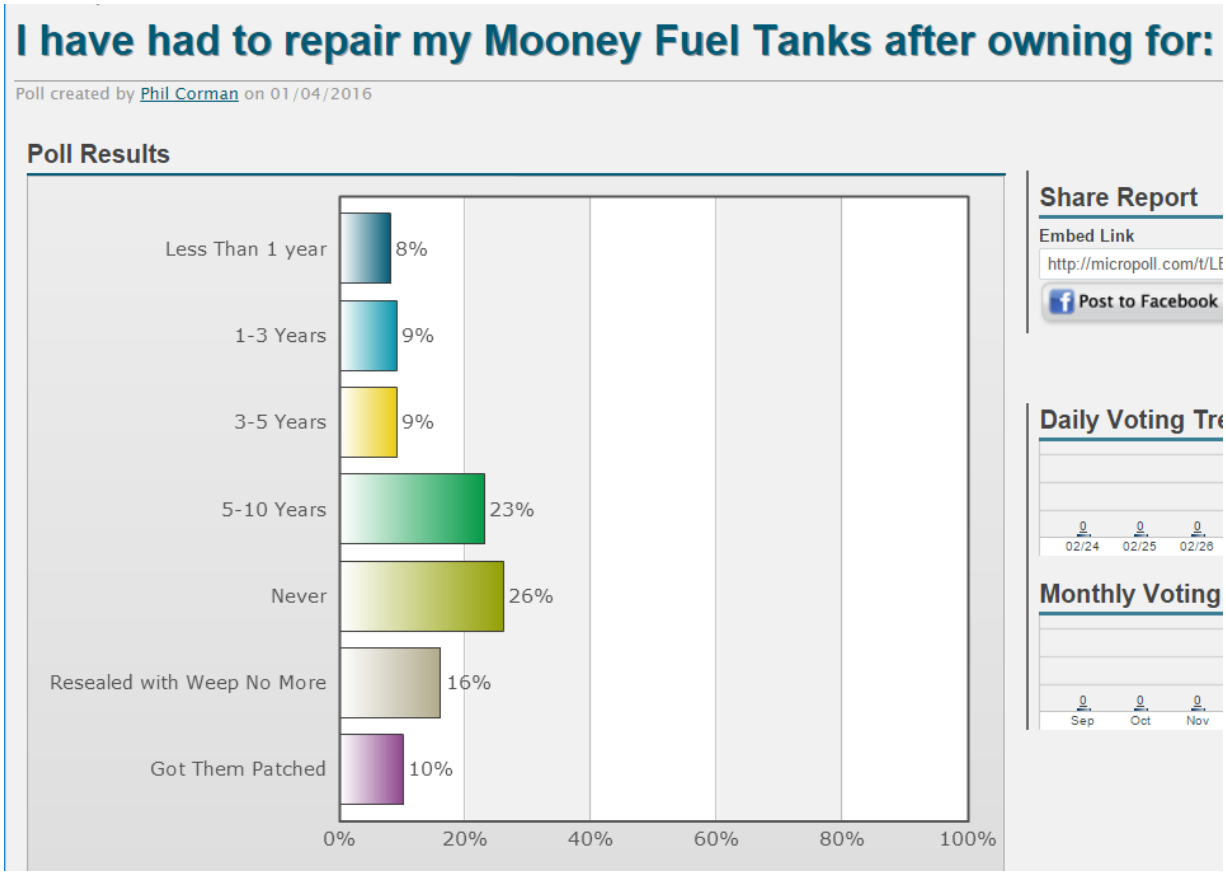
This will not be a simple repeat of last year's event, but we will try to improve on it, based on the feedback we received. It'll have an optional day on Thursday, devoted to a Hands On Mooney Maintenance Hangar Session. FAA Wright Brothers Award, A&P and Mooney Owner, Cliff Biggs, will have a Hands On clinic. Cliff did this in 2015 for a Mooney Flyer Fly-In October in Page, AZ and everyone thought it was amazing.

**Speakers for this year include Bob Kromer, Don Kaye, Tom Rouch, Paul Loewen, Frank Setzler, Paul Beck, Bruce Jaegar, and many more.** The Seminars will once again be divided into two (2) tracks; one for pilots/owners and another for co-pilots. **This year, we will be improving on our popular Pinch Hitter Seminar by adding a "Full Motion Simulator" for a Mooney.** There will also be a new seminar showing your co-pilot how to get involved in the pre-flight phase and the enroute phase of flight.

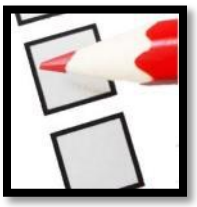
In the next month, we will be announcing the "Fun Events" scheduled throughout the Round Up. We expect to offer more fun event and tour alternatives, as well as a new Winery Dinner on Saturday evening.






Last month's poll asked, "How long did you own your Mooney before you needed to repair the fuel tanks?"



**Next month's poll:** "Do You Plan to Attend the Mooney Flyer Round Up?

**CLICK HERE** to vote.


## Appraise Your Mooney's Value

Don't forget about our cool new **Appraise your Mooney's Value** calculator.

M20C M20E M20F M20G M20J


I'm putting together checklists for the M20E I just bought. Pre-flight, engine start, etc. What I cannot find (the 1965 Owners Manual is a minimalist publication) is a good emergency procedures checklist. Do you have any suggestions on where to find one?
**Randy S**

Editor: Try this homegrown list and use or modify it for your use.

Hi Phil and Jim: Glad to hear the Round Up is happening again in September. I'm especially looking forward to the Cliff Biggs hands-on clinic on Thursday. We were unable to attend the last one over in Page because it was on the same weekend as SLO Airport Day. Kathy and the 99's run the Tower Tours and the Kid Zone. I provide essential maintenance and ground support . Anyway, just wanted to let you know we appreciate all of your hard work and we're looking forward to the Round Up weekend.
**Jim&Kathy**

**RE: The Grand Tour** – I was so energized by Lee Fox and his wife Deb, who did something many of us only dream about, a "Grand Tour in their Mooney". If there was one mission that the Mooney is best equipped for, it is a flying trip of this magnitude. I am planning a trip around CONUS (Continental US), but I was really inspired by their excursion all the way to Alaska. There's a lot of empty and uncompromising terrain up that way, but our Mooneys handle it very well. Kudos to the two of you. You were lucky to have severe VFR on your long flight up the coast of Alaska. Funny that we don't have to worry that much about AvGas down here. I am adding a trip like this to my bucket list.
**Lee J**

**RE: Rabbits & Rules** – I always appreciate the insight I gain from Mr. Lee's experiences. A lot can be learned from book learnin', but I learn so much more from a first hand story. In many circumstances, even sometimes in VFR, ATC seems to take the ultra-conservative stance and attempt to talk a PIC off his planned course of action. Mr. Lee's story informs me that if you know the rules and you know your limitations, then stick to those convictions. Given that, I'm not so sure that I would shoot an approach when ATC is calling below minimums. I'm not criticizing Mr. Lee, but just recognizing my personal minimums. I also give kudos to Mr. Lee for getting in front of the issue by contacting ATC proactively. This was clearly a learning experience for all.
**Bob A**

RE: Magneto Miseries – I love the back to back articles on Magnetos. The Mooney Flyer is so helpful to us Mooniacs in getting concise, professional and expert information. I passed my Magneto 500 hour inspection last year, but did not get them serviced since they passed my Magneto Run-Up check. About 2 ½ months later, my annual was due and my mechanic noted the time. I told him they were operating fine. He convinced me to get them serviced and we found that they really needed it. So, although some of these times between service seem advisory, it seems best to follow them. Thank you Bruce!
**Lloyd C**



*On some 201 J models, there are a group off small fuses in the cockpit. Where are they and what are they for?*
*Mike Maksym*


# Big Mistakes - Beyond Erasing

by Jim Price

## Failing to Go-around when the Approach is Unstabilized

This is probably the biggest landing problem in the GA world. Many of the crashes, even those involving Mooneys, could have been avoided with a simple and timely go-around.

### To avoid a "bad" approach, you should always fly a stabilized approach

On final approach, ask yourself three things:

- Is the airplane on speed?
- Is the airplane descending at the proper rate of descent, usually 500 to 750 feet per minute, (except when approaching with an obstacle)?
- Is the airplane on target, and are you aiming for a landing in the first 1000 feet or in the first third of the runway, whichever is shorter?
- Is the gear down and flaps set?
- Is the power set where you normally have it set?

Set a limit. If you're not stabilized when you're at 400 – 500 AGL, go around, and do it right this time!

**CASE:**

The pilot was attempting to land on McKinnon, Tennessee's runway 8. He said this runway, [3,000 feet long], was the shortest one he had ever attempted to land on.

During the approach, the pilot noted that the winds were shifting from east to west. The airplane was high and fast on final. I guess we could call that an unstabilized approach. He decided to go around and added power, but did not retract the landing gear or the flaps. The airplane collided with a line of trees about 700 feet beyond the end of the runway.

Probable cause: The pilot's delayed decision to go-around after failing to recognize that he was attempting to land with a tailwind, and his failure to retract the landing gear and wing flaps for the go-around, which resulted in a collision with trees and terrain near the departure end of the runway.

## Thinking: "Yes, I have an emergency, but if I can fly a bit longer, I'll be home"

In 2009, a Piper Saratoga crashed in Florida, killing all four on board. During an engine fire situation, the pilot in command could see his home airport, and he elected to continue flying towards it. If I can only make it home. Had he performed a forced landing in the flat Everglades or on a nearby highway, disaster could have been avoided. Your life is more important that your airplane.

## Not Doing a Proper Pre-flight

The FARs make the pilot-in-command ultimately responsible for determining the airworthiness of the aircraft. You can avoid many system failures if you perform a good pre-flight check. Some believe that if you haven't spent at least a half hour doing a pre-flight, you have overlooked something.
The purpose of a preflight inspection is not only to see that everything is attached to the airframe, but also that everything works. Testing the proper function of indicating and warning systems before taking off is one of many things we should be doing if we want them to be available to protect us.
WATCH a video of a DHC-4 Caribou takeoff and crash because the crew forgot one little thing.

## Not Having or not Sticking to, Personal Limits

Set personal wind, ceiling, and visibility limits. There have been tragic losses in the Mooney community because pilots thought that a 40 knot crosswind was well within their skill level. Some pilots have thought that despite the low ceiling, they could find their way safely, only to find themselves in an IMC condition. Don't have personal limits? Then stay within the aircraft limits and your certificate, rating and currency limits.

There's no such thing as "a little overweight" or "a little over redline"). There should be no excuse to fly through "a little thunderstorm" or "a trace of ice," or flying "a little lower" to find the runway on approach to your home airport. If you allow yourself to "fudge" the limitations, human nature says it's likely you'll soon be accepting more and more risk as "creeping normalcy", or "normalization of risk" sets in, and what was once unacceptable has gradually become your norm.
It also applies to the mechanical limitations. Follow the FARs about required equipment and inoperative equipment. Get familiar with the airplane's Kinds of Operation and Equipment Limitations (KOEL chart) if one exists for the aircraft.

The regulations are a *minimum* standard. They are the very edge of appropriately managed risk. Where limitations are concerned, "no means no."


## Not Fessin' Up

If you are lost, made a mistake or put yourself in a bind, don't be embarrassed! Communicate your situation or emergency to the air traffic controllers. They are there to help you and keep you safe. Don't wait until you are in a terrible situation.


## Skimping on Fuel

It must be pretty easy to run out of fuel in an airplane because it happens so often; roughly twice a week in the GA world. History shows that a great many fuel exhaustion incidents happen within five miles of the intended destination.

Make sure you have enough fuel to fly to your destination and have lots of reserve fuel. Fuel exhaustion happens all too often.

### CASE:

The private pilot of a Mooney M20G and his instructor were practicing touch and goes in the pattern at Naples, Florida. The pilot had just completed a touch and go on Runway 14 when the tower controller instructed him to fly right-hand traffic. On crosswind, the engine lost power. As the pilot wrote in his report, "I pitched down and tried to restart the engine on either tank using both the starter and windmilling." There were too many people on the nearby golf course to land safely, so the pilot opted for a road and made a gear-up emergency landing.

Examination of the wreckage revealed that the right fuel tank was empty, and that the left tank contained about 10 gallons of usable fuel. The left fuel system operated normally, and no problem was found with the engine.

The aircraft had last been fueled about three weeks prior and had been flown 1.7 hours previous to the fateful flight. On this day, the pilot had flown about 45 minutes, and the fuel selector had been set to the right tank for the duration of the flight. The pilot stated that he attempted to select the left tank when the engine quit, but he may have inadvertently selected the "Off" position.

Running out of fuel may be easy, but so is taking the basic precautions needed to avoid the problem. All it takes is a little time for a careful preflight, thorough planning, and the proper attention to fuel management.

## Not Calculating Takeoff Performance

There are lots of entertaining and gut wrenching videos on YouTube, featuring pilots who failed to prepare for the takeoff and consider the weight of the aircraft, high altitude, grass field, or short strip.

Crash After Ta keoff  Another Crash After Takeoff

An Almost Crash After Takeoff (After the flight, I'll bet a HAZMAT crew was called out to clean the seats)

## Scud Running

This happens when pilots try to fly beneath low weather in order to maintain VFR. When the cloud layer drops or it begins to rain, scud running pilots find themselves in a situation where their pleasant VFR flight turns into an IMC nightmare.

## Flying VFR into IMC

It's the leading cause of fatal GA accidents. Here's a story of a Mooney pilot who survived, but the results could have been fatal:

**CASE, THE PILOT'S NARRATIVE:**

Things went just fine out of the Silicon Valley and across the California inland empire. As we got closer to the mountains, I could see some stratus cloud formations. It looked very benign, and I could clearly see that there was a huge gap between the broken clouds beneath me and the stratus layer above me. We motored on. And I kept watching the cloud decks in front of me. I could see between them, easily. I imagined I could see all the way to Utah, so there was no question of not making it.

But it just kept looking ***not right***. I was still VFR, but the broken clouds below me had closed up, and I was sandwiched between layers. But ***look*** the gap between the layers **must** be 3-5,000 ft.

It wasn't A few miles into the mountains and the bottom deck was up to my wings and the gap, which had looked clear for 500 miles, was down to perhaps 500 ft above me.

I was ***not*** IMC, but I was as-good-as. Yes, I was still clear of clouds, but I was surrounded by them, and I had lost any horizon other than the cloud surfaces themselves. Straight-and-level could not be determined, and I felt very uncomfortable, knowing I had no context for flying the airplane. At this point I turned 180 and backed out the way I came, clipping clouds on the way. ATC (I was getting flight following) asked what I was doing, told 'em I was turning and heading south to avoid some weather.

As I got away from the clouds I realized that I had been on the very edge of VFR into IMC. Me! With confidence, until the very last turn, that I clearly, obviously, would be able to maintain VFR and the action I was taking was as safe as could be.

Flying is serious business and we can't afford to be too casual. Be professional when you operate your Mooney – as if your life and reputation depended on it.


Jim

PHIL CORMAN

# Do You have *Good ATC*?

You probably have no idea what I mean by the title of this article. Although many of us have hundreds or thousands of hours, good radio technique and the corresponding great flying skills, it's good to review the best ways to converse with ATC. This starts with good radio technique, followed by good flying technique. Here's what we mean.

## The Initial Call

Before the initial call, tune in the correct ATC frequency and then keep your mouth closed and your ears open. You will learn a lot in the first 15-20 seconds. First, you'll learn how busy the controller is. Second, you will learn what is going on in this sector/area.

After listening, you'll be smarter and you might be able to avoid asking a question. This is important because the frequency is a shared resource, and minimizing its use is valuable to everyone. For instance, if you are about to call the tower, first get the latest ATIS version. Listen, and you'll learn how much traffic is operating in the zone. If you are calling the Center for Flight Following, the same guidelines apply. On the initial call, consider transmitting, "ATC, Mooney N21530, <location> **VFR Request**". This takes very little frequency time and gives ATC the chance to call you back when able with a Squawk Code. Saying, "ATC, Mooney N21530 <location> enroute to <destination> requesting flight following", is very wordy, especially if ATC cannot handle the request at this time. Since Flight Following is optional, if this person is extremely busy, wait a little while. If you need to pick up an IFR clearance, that's another story. It should go without saying that you should not transmit anything until you know exactly what you want to say/request. The "rambling… pausing… repeating aircraft" is annoying to everyone and it's unsafe.

## The Handoff

The same guidelines apply when you are handed off to the next enroute or approach sector. Listen first. Learn what's going on. And then, minimize your own frequency transmissions. If you are enroute with Flight Following, and you're at 8,500 MSL, simply transmit "ATC, Mooney N21530, eight thousand five hundred". Please, please, please, never say "with you". ATC hates it; finding it superfluous and unnecessary. If you have been restricted with a heading or altitude assignment, it is sometimes useful to remind, or let the new ATC, know your restriction.

## Traffic Separation Information

When issued traffic separation information, it is imperative that you listen to the information in its entirety and then repeat it back to ATC. Believe it or not, the separation is not legal until you do so. For a Traffic Advisory, it is only important that you respond with "Traffic in sight", or "Negative Traffic".

## Enroute or Terminal

Controllers have to abide by many different rules and regulations. When a VFR pilot calls for flight following in the en route environment, ATC is required to provide traffic advisories and radar services if circumstance and the traffic volume permit. Sometimes, because of radar limitations or a busy sector, ATC may not be able to provide flight following from the get-go. For VFR aircraft in the enroute environment, there's no specified minimum. That's because separation from IFR and VFR aircraft is the responsibility of the PIC, and there are no altitude or mileage restrictions. In the terminal environment, specifically Class B airspace, TRACON controllers are required to have 500 feet or three miles of separation between VFR and IFR, or VFR and VFR aircraft. In Class C, VFR separation is 500' vertical or target resolution.

## In Need of Assistance

Many pilots, when faced with difficulty, are reluctant to ask for help. There seems to be a misconception that pilots should only declare an emergency as a last resort. That's just wrong thinking. The vast majority of ATC personnel want to be both **safe** and **helpful**. These two attitudes go hand-in-hand if you think about it. Of course, there is the occasional ATC person who is having a bad hair day and takes it out on you. I "met" a controller like that enroute to South Lake Tahoe one morning at 7am. I was VFR with Flight Following and for the first part of the flight, 8500' was very nice. However, as I approached the Sierra Nevada mountains, I climbed to 10,500'. ATC got on my case, about it. I reminded him that I was VFR and was climbing VFR for terrain and that at 7am, I was probably the only airplane within 200 miles. Remember, the vast majority of controllers are amazingly professional. If you need help, just ask. Have you ever flown in really marginal VFR? Have you been caught on top in VFR? Maybe you've become a little lost? Just call ATC and ask for assistance. While ferrying my Mooney home to California from Virginia, I flew VFR over overcast skies. The overcase was more extensive than forecast. Long before I had fuel issues, I told ATC of my situation. About 10 minutes later, a Malibu called ATC and said, "There is a good size hole if that Mooney still needs it". I was vectored to the hole, which was close by, with nothing lost except a little humble pie. ATC and other pilots are very helpful. Take advantage of that.

## Landing

When landing at an airport that has ATIS or AWOS/ASOS, you should consider a few points. When you check in, tell the controller that you have the ATIS or AWOS/ASOS information. Do this before you call the tower or ask others in the traffic pattern. Listening is always better than asking for redundant info. This also frees up the frequency**. Never, never say**, "Anyone in the traffic pattern, please advise". Geez… Nobody likes that!!

## Other Considerations

Let's say you are flying VFR with Flight Following. You are approaching some complicated airspace, maybe Class B or C followed by Class D. Can you assume that ATC will ensure that you are talking to the correct ATC person? Maybe. Sometimes various ATCs have agreed upon methods for handling VFR traffic. For instance, while I am flying VFR into Camarillo, it is convenient to descend through Oxnard's Class D airspace. If I am talking to Mugu Approach, they have an agreement with Oxnard Tower to handle me. But, another Mooney pilot was flying through Phoenix Class B, and was not handed off to the tower before he entered their Class D. The pilot got the dreaded, "Call ATC at this number after landing". Who is right? The answer is simple. Do NOT assume things while flying and talking with ATC. Here is another example where I avoided a big screw up. I had departed Long Beach after an AOPA Expo, and was flying counterclockwise under and around LAX Class B. A helpful controller told me that I could turn direct to KBUR (Burbank). If I had done so, I would have violated LAX Class B. Why? Because I did not receive "Mooney N21530 cleared into Class B", and my acknowledgement, "Mooney N21530, cleared into Bravo". ATC tried to be helpful, and probably everything would have worked out well, but you are still PIC and should assume you are responsible for everything.

*Remember,that if you make a mistake, you might die. If ATC makes a mistake, you might die.*


# *Flying Over the USA*

by Linda Corman

This article will be a little different from my normal "Go somewhere, do something, fly home article". Instead, it will be about actually flying over the USA. We live in an awesome country where we can hop into our wonderful flying Mooneys and go wherever we want. Don't get me wrong, this is not a political article. I really mean that we can fly the skies of America any time we want. When you think about how beautiful this country is, it is hard to comprehend that not everyone gets to enjoy that sense of freedom and wonderment that we few enjoy in our small airplanes. Of course, millions of people fly every day, but do they get to really see the country like we do – from a bird's eye view? It is so different to see the Pacific Coast, the Grand Canyon, the flat plains of the Midwest, the majestic Sierra Nevada Mountains, the deserts and river ways, from a low flying airplane. I have crossed this great country in our airplane several times. We have flown from Canada to Mexico and from the Pacific coast to the Atlantic Ocean. Each trip has been an adventure and a revelation that we do live in an incredible country. This country is made up of diverse topography and vast amounts of uninhabited areas. When you are strapped into a tin can at 32,000 feet and are sitting in the aisle seat all that scenery goes by unseen and unappreciated. I have also come to the conclusion that most of the people we have met in our many travels are really good and decent individuals. If someone told me that there is a particular state or area of the U.S. they would not want to travel to, I would say, "How sad".

We have found in our travels, that the majority of the citizens of this country are hard working, fun loving, and kind hearted people.

During one of our flights across the vast plains of the Midwest, we planned to stop for the night in a small town in Iowa. We found a tiny airport situated in the middle of a gigantic corn field that seemed to extend forever in all directions. First, let me say the lyrics, "The corn is as high as an elephant's eye" is absolutely right! We had to really look hard for this landing strip because it was totally surrounded by corn. Living in the west, the green was so beautiful it hurt my eyes! After landing, we were surrounded by crop dusters; we were the only general aviation plane on the field. We met the FBO manager in the terminal and asked if there was a rental car agency nearby. Nope, but we could take the airport loaner car for the night. Now this guy had never met us before, but he was giving us a car to drive and then pointed out a place to stay and eat while we were in town. We told him we would be leaving early next morning and asked where we should leave the car key? He just laughed and said, "Leave it in the car, after all you're in Iowa".

Another example of hospitality was in Custer, South Dakota (KCUT). We had planned to stop for gas and then decide where to go from there. The FBO manager, after hearing we were just passing through, offered a free car, a discount on a local hotel and ideas of what to do while visiting his town. This was awesome. The car even came with stickers on the windshield to get us free entry into the National and State Parks. This included a wild animal park, and of course the most famous site in the area, Mount Rushmore. How do you top this kind of hospitality? I could go on and on about the nice people, but I want to get back to the scenic portion of this article.

I have a question. How many non-pilots actually look out the window and are awestruck by the scenery? Has flying become routine? I encourage the non-pilots to look again. I am fascinated by what is passing below us. To me, it never gets old. Even if the route we take has become a milk run, the view is always changing; season to season. Additionally, the time of day makes a huge difference in the appearance of the valley floors, tall mountains, and desert panoramas.

After a substantial winter rainy season, we flew to Death Valley. As we dipped down closer to the valley floor, we realized that the mountain sides had bright yellow and orange colors, which I assumed was caused by minerals. As we flew closer, we found that these were wild flowers in bloom. This is something that only happens a few times every 25 – 35 years and we were able to witness this event. As we started our descent into the Death Valley Airport, Furnace Creek (L03), which is 210 feet below sea level, we noticed a large body of water with what looked like small boats floating on it. The rain storm had produced enough water to cover a dry lake bed and an enterprising person was selling kayak rides and T-Shirts emblazoned with, “I Kayaked Death Valley”. The lake seemed as large as Lake Tahoe, in the Sierra Nevada Mountains, but was only 3-5 inches deep. So, look out the airplane windows and be amazed at the things most people will never get to see.

**Death Valley**

We have the pleasure of living in the West. I must say that I love the wide open spaces and the contrast in California. The Pacific coastline is dramatic and it is wonderful to see it as you fly up from Big Sur to Half Moon Bay and up to the Oregon coast. The sandy beaches give way to steep mountain cliffs and thick tree covered areas. After a short flight inland, you pass over San Francisco Bay and Napa Valley with beautiful vineyard views. I remember flying that route and realizing that the San Francisco Bay was fed by rivers and a huge delta area that all started in the Sierra Nevada Mountains. We have two large valleys in California, the Salinas Valley, which is considered the salad bowl of America and the great Central Valley that grows grapes, cotton, rice, and just about any agricultural commodity you could mention. When you look down on these vast valleys, it looks like a tapestry of colors and shapes, like a gigantic jigsaw puzzle or a patchwork quilt. Because we live in the West, we have been able to seeing large dry regions and vast desert lands. Believe it or not, these areas are also quite beautiful.

**Hoover Dam**

The shades of dark gray to light tan with high mesas and valleys are incredible, especially when you think that the early settlers had to walk across most of this to get to their new homes. One place that is fun to fly over is Las Vegas, Nevada. As you approach from the West, there are large areas of nothing but desert. Then, you come upon some fairly tall mountains which drop straight down as the Vegas area opens up below you. The interesting thing about Vegas is the open mine pits, right in the middle of neighborhoods. If you

don't view Vegas from a small airplane, you'll never see these pits located only a few feet from someone's front door. Of course, it is also fun to see all the casinos and hotels on the strip. Outside of town is Lake Mead and Hoover Dam, with the new expansion bridge that bypasses the dam. The one attraction that is probably lost on people who just drive through Vegas, is the area known as The Valley of Fire. This area is made up of red rock that juts out of the landscape and is very distinctive, especially from the air.

Enough about my home area. There is so much to see all over this great country that I could go on and on about the wonders of the United States. I may do some more in later articles because I have seen and been awestruck by the beauty of every part of this place we call home. So, to sum it all up, get out there, fly your plane and enjoy what few people have the privilege to see and appreciate.

**Our view from the Paso Robles traffic pattern**

**The Pacific Coast, 5 minutes from our home airport**

Geoff lee.

CFI

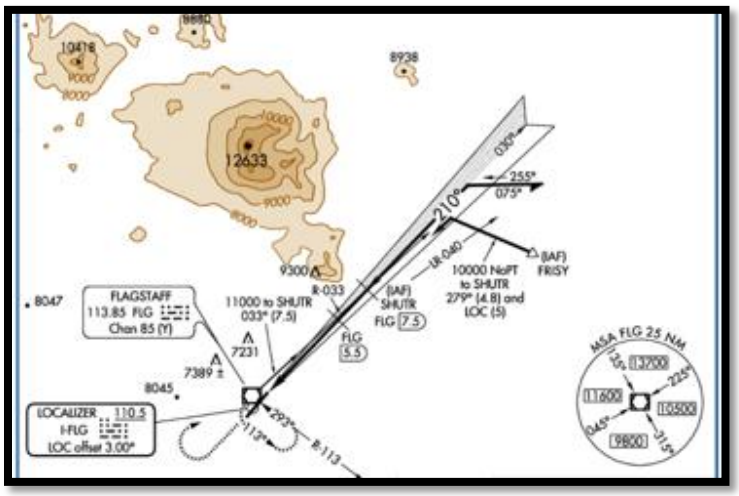
# *Approach Plate*

by Geoffrey Lee CFII

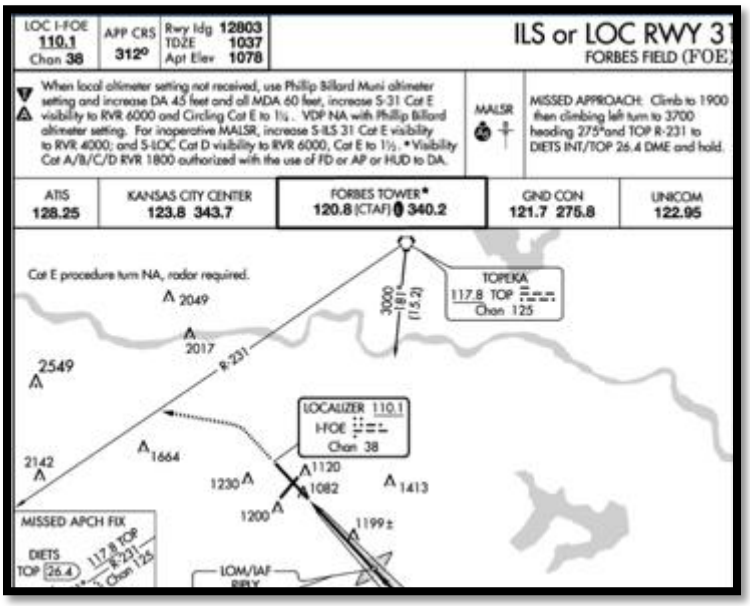
When making the transition from the IFR enroute phase of a flight into the approach segment, you should make a quick perusal of the approach plate because you are coming within the bounds of that little map. Some detailed study of the document should have been accomplished prior to the flight and or during the cruise phase.

The first questions that enter my head, other than the specific destination weather and runway/approach in use is: What is the initial approach altitude? Also, how much time do I have to dispense with the altitude difference between the cruise altitude and approach regime and also configure the aircraft? The available time, of course, defines the needed descent rate. A quick look at the plate will reveal the initial approach altitude plus any possible terrain or man-made obstacles that might interfere with your flight path in the descent . This assumes that you have figured out the direction you are going relative to that approach plate. It is a good idea to pencil /draw that flight path on the plate or iPad and observe all those "dots" and inverted Vs with numbers adjacent. These numbers are associated with the height of physical obstacles/vertical protrusions that must be considered as you descend to intercept the final approach line. If you are fortunate to have an approach plate "Geo positioning" feature (available with some popular iPad applications), it will greatly simplify this task. If you are being vectored, the controller will usually keep you above these obstacles as he descends you lower and onto the final approach course. The controller references a minimum vectoring altitude (MVA) and a minimum safe altitude (MSA) related to the particular area. He will keep you above these altitudes, thus assuring no conflict with any of the aforementioned dots and inverted Vs.The exposure to mishap arises primarily during the descent, when the controller has not yet identified or cleared you to proceed under his guidance.


*For instance, when you are* descending from VFR conditions to an IFR environment, particularly at night in marginal VFR. There is also a danger in mountainous terrain when you are on your own navigation to an IFR approach that is beneath you and enshrouded in fog or cloud, and you don't have the needed IFR clearance to penetrate the cloud layer. It is prudent to ask the controller what his minimum vectoring altitude is along your descent flight path. Approach plates have an MSA circle, depicting minimum safe altitudes related to quadrants associated with a particular nav fix.




The dots and Vs are more specific and useful once you have defined your path across that approach plate map.




It is apparent that approach plates associated with airports located within high surrounding terrain features, have such topography depicted therein. The airports located within flat terrain have dots and inverted Vs depicting, for the most part, man made obstacles.

Even the VFR pilot can gain much useful information if he or she has a basic familiarity with the Instrument approach plate. It beats trying to scan a sectional map for flight path obstacles when one is rapidly closing the gap to an unfamiliar destination. The approach plate starts to become useful when you are within about 20 miles of the intended landing airport. All the needed airport and approach/departure controller frequencies are there. Also, the pertinent ground obstacle altitudes and locations are quickly available at a glance. When within 15-20 miles of the destination, using the "initial approach altitude" as minimum descent altitude, until you can actually see the airport is a useful ploy, assuming you are not still in an area of high terrain relative to the airport elevation. Using the MSA circle on the approach plate will provide a clue as to how safe this will be.

An innovative VFR pilot can ask the controller for a "*practice approach in VFR conditions*" in order to get some guidance to the active runway approach path at an unfamiliar airport. Some basic knowledge of the type of procedure and communication routine will be useful. The pilot will be handed off to the airport approach controller when within 25 miles of the destination airport and should make the approach request with that controller, not the enroute controller. The frequency of the final approach controller will be on the approach plate.

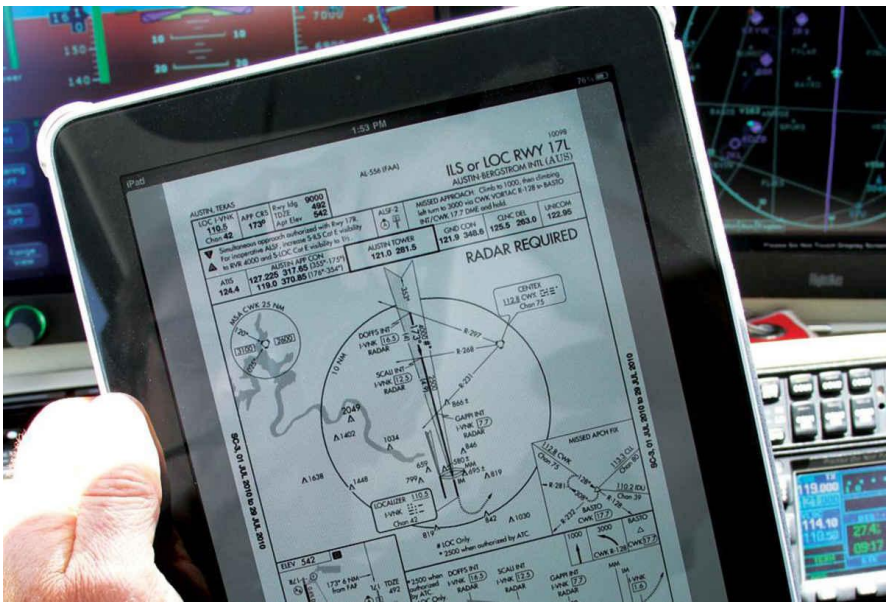
I do realize that one can view an approach plate on an iPad app, but I still encourage obtaining paper approach plates relative to the destination. This minimizes finger poking and head down time during the period when maximum attention should be either on the instruments or outside of the cockpit. Plus, it is a backup in the event of a "black screen" or the distraction generated by a misdirected finger. I do see a good deal of this malaise at awkward times and *I have been guilty of it myself.* Approach plates can be acquired and printed from the "Airnav" website without cost. The possession of a "hard copy" approach plate also reduces the possibility of a need to use expletives in the cockpit when one has nervous passengers.

Credit must be given to electronic mapping because it reduces cockpit clutter and maximizes map and approach plate currency. It also provides both pictorial and textual weather information in a minimally equipped cockpit. The profile view of a flight route is an invaluable altitude planning asset to the iPad equipped pilot who ventures into unfamiliar mountainous territory, particularly at night or in instrument conditions. Ground planning should include a look at the selected route altitude using the app's profile view.

This WingX geo positioned approach plate iPad illustration shows the aircraft location on plan and profile views. This can also be done in ForeFlight.

In restricted visibility conditions, without the Geo positioning feature, (shown at right), a pilot must mentally visualize the course line across the plate when approaching an airport. The profile view at the bottom of this illustration, shows the relative position of the cruise altitude (*blue line* 5000ft) and the terrain height 20nm ahead of the aircraft. The aircraft position remains at the left side of the depiction, but the green terrain picture will continually move to the left as the aircraft proceeds on track. The "look ahead" range value can be adjusted by the two finger squeeze /expand method.


The iPad makes it so easy. However, unless you are disciplined in your iPad use, you can become addicted to it. This addiction can be mentally and visually distracting and a great hazard in flight.




# Why doesn't Mooney have a fat wing?

It's a matter of principle — an aerodynamic principle. The laminar flow wing, pioneered by Mooney in light planes for general aviation, is a low-drag airfoil section. It is the key to Mooney's unusual high speed to horsepower ratio. The laminar-flow airfoil, in non-technical language, means there is less aerodynamic drag than on standard high lift "fat" wings. The Mooney wing, together with a long flap section and 33 degrees of deflection permits a slow landing speed with excellent control and yet, in cruise, affords high speed with little drag. This same basic principle is utilized on all modern military and airline jets for high speed performance. As strange as it seems the reason this type wing is not used on more light planes is simply because some of the popular models today still are built on a design so old they would have to start from scratch with a new design to employ many of the modern aerodynamic improvements that have come along in recent years.

Mooney's efficient laminar flow wing is just one more of the aerodynamic advantages you'll discover in Mooney. See the modern ones — Call your Mooney dealer today for a demonstration ride — the beginning of a long friendship with Mooney.

MOONEY MOONEY AIRCRAFT, INC. • KERRVILLE, TEXAS

SEE YOUR DEALER ABOUT MOONEY'S FLY & WIN PRIZE-O-RAMA!

FLYING—August 1967 3


Send your questions for Tom to TheMooneyFlyer@gmail.com

**Question 1: If I do a gear up landing… What is the proper method for hoisting it and moving it to a hangar?**

This is an interesting question; not one you would normally think about, but important. Through the years we have repaired many geared-up Mooneys. Almost all occurred because the pilot forgot to lower the gear. Many pilots are in denial, standing by their story that “the gear just retracted". This is frustrating for the shop, because we spend time trying to find a gear problem that doesn't exist. Landing gear that retract during landing cause a lot more damage; bending all the retract rods and damaging gear doors. Most of the time I have found that the pilot doesn't even know the gear is up until he hears the grinding sound as he slides a couple of hundred feet down the runway. Besides being forgetful, the other common cause is the stuck up landing gear. In that case, the pilot does have a chance to stop the engine and center the prop horizontally, avoiding a prop strike and engine tear down. In the case of older aircraft, the cost to repair exceeds the value, so the insurance company “totals” many of them.

Now, we need to raise the plane and minimize damage. Our worst case was a pilot flying a TLS with 54 hours total time who made a night landing at Santa Barbara with the gear retracted. (He thought the horn he heard was the outer marker). The local shop had a crane and a sling available, but they did not use a spreader bar on the sling. It "crunched" the top of the fuselage by "pinching' the skin. Once they raised the plane, it would have been easy to open the pilot window, turn the master on and lower the gear. No, that never occurred to anyone, so they took a crowbar and pried the main gear open so they could disconnect and lower the gear. We ferried the plane to Stockton where we had a major repair situation. It is the only time I have replaced the Top of a Mooney because of a gear up landing. We usually repair gear-ups that someone else has removed from the runway, so it is important for the pilot to be aware so he or she can provide some guidance to the removal company.

The very simplest method I have used, was years ago, in a wet field near Travis Air Base. I had with me a short jack, which we put under the tail skid. I also had an inexpensive engine hoist, which we attached to the prop hub with a strap. Since it was muddy, we used some plywood under the jacks and hoist, then raised the airplane with the tail skid pivoting on the tail jack. Then, we reached in and lowered the gear. We towed the plane from the field with a three wheeled Honda. We used a variable of this method at Stockton by using a stand under the tail and a strap to our forklift to raise the nose high enough to lower the gear. If any of the gear rods get bent, we use short pieces of metal and C clamps to lock the gear down.

**Q2: With respect to the above, my airplane had the service performed on March 19, 2004 @ 621 hours and the no-back clutch spring (spring date 12-23-03) was replaced. Today, my plane has 1643 hrs. and is having a new engine installed, plus undergoing its annual inspection. The shop has advised me that SB M20-282-A is no longer suggested or recommended by Mooney (after purchasing the kit I might add). However, according to the SB, this spring is to be replaced after 1000 hours. What do you suggest?**

**SB 282 is still and has always has been in effect**. Mooney **recommends** the spring be changed every 1000 hrs. The question came about a few years ago when Mooney placed this recommendation in a different section of the manual. There was also some confusion on the East Coast, and some thought that it was **mandatory**. The only way a manufacturer can make an item mandatory is by an **AD**, as Mooney did with the Dukes actuator. I suggest that anyone with a doubt should call Mooney's customer service.

As far as a reason to change the spring, there have been several instances of the spring breaking. If it does break, you have a 50-50 chance that the landing gear will be stuck up; depends if the spring breaks on retraction or extension. I had a customer that had a spring break during extension while in Malaysia. He had to fly the plane to Australia with the gear down, (24 hours of flying time), to find someone who knew how to change the spring.



## The Mooney Flyer Fly-Ins

**March 25-27:** Spring Training Fly-In to Glendale, AZ (KGEU). Informal dinner on Friday night. Take in the Seattle Mariners vs LA Dodgers ($39 for patio seating with all the food you can eat)… DETAILS HERE

**May 14:** Tour the largest Binocular Telescope. This would be a joint fly in with the Arizona Breakfast Club. The airport is located in southeast Arizona (KSAD). This is a first class event. The town arranges transportation and room accommodations with a cowboy breakfast @ the University of Arizona base camp @ 8 am. The University has buses reserved with lunch provided all for $45.00 per person. The Breakfast Club has hosted this event several times and knows the logistics of early & late arrivals.


**February 13:** Fort Pierce (KFPR)
**March 12**: Ocala (KOCF)
**April 9**: New Smyrna Beach (KEVB)
**May 14**: Winter Haven (KGIF)
**June 11**: Williston (X60)

## Henry Hochberg's "Wild Wings to Walla Walla" Fly-In

**June 24-26:** This fly-in takes place whenever Henry gets the urge to host it. It's located in SE Washington state at KALW. Walla Walla is located in a beautiful wine area and Henry usually suggests wineries to visit and schedules 1 or 2 lunch and/or dinner get togethers. Stay tuned for more details as Henry figures them out. Room reservations can be made at the **Whitman** Hotel via 866-826-9422. If you are really in need of additional information you can ping henry at : aeroncadoc@comcast.net


**February 12-14:** Melbourne, FL
**April 15-17:** Bullhead City, AZ
**June 10-12:** Denver, CO
**September 9-11**: Manchester, NH
**October 7-9**: Mansfield, OH


## *PS Engineering's IntelliAudio Debuts in PMA8000-series Audio Panel*

FEBRUARY 3, 2016, GENERAL AVIATION NEWS

PS Engineering has introduced the PMA8000BTi audio selector panel, a version of the its PMA800BT that includes IntelliAudio spatial audio technology.

IntelliAudio is a technology that PS Engineering has licensed from the United States Air Force Laboratory. When activated, the IntelliAudio application places the Com 1 audio signals at the relative 10 o'clock position and COM 2 audio signals at 2 o'clock relative position to the pilot. This allows the pilot to take advantage of the multi-talker or cocktail party effect, where the brain automatically interprets and differentiates conversations at different locations for reduced listening effort and greater comprehension.

When PS Engineering introduced IntelliAudio two years ago, they were amazed at the reaction from the pilots when they heard IntelliAudio for the first time.Pilots loved it, so they decided to add it to their flagship audio panel.


Company founder and CEO Mark Scheuer said, "We didn't raise the price, only the bar."

The PMA8000BTi carries the same list price as the PMA8000BT, $2,095, and includes all of these features: Bluetooth telephone and music connectivity, patented IntelliVox automatic VOX intercom, Alternate Intercom Function (AIF), **digital aircraft radio playback**, Swap Mode, a front panel utility jack, marker beacon receiver/indicator, and multiple music muting modes. IntelliAudio can be easily switched on or off from the front panel.

The PMA8000BTi is a plug-and-play replacement for the PMA8000-series audio panels, as well as the Garmin GMA340, he added.

# *Waterproof Solar Power Bank – the SQ1*

Power is easy to come by if you are at your home or office. But what if you're on a cross-country (aerial or ground-bound)? What if you've gone camping or are otherwise off the grid?

At just 6.29 inches square and .38 inches thick, the SQ1 won't take up much room. In fact, easily stick it to the windshield — via four included suction cups — so it can charge while flying and you won't even have to pack it.

The SQ1 is available from the Flybox Gadgets website for $65. READ MORE

# *Garmin Announces all-in-one ADS-B Transponders – with WAAS GPS Options*


On February 9th, a line of all-in-one ADS-B transponders became the latest addition to Garmin International's line of Automatic Dependent Surveillance-Broadcast products. The GTX 345 is a 1090ES Mode S transponder that provides ADS-B Out compliance; it also receives weather information on the 978-MHz Universal Access Transceiver frequency, and traffic information on both ADS-B Datalink frequencies. The GTX 335 provides ADS-B Out only. An integral WAAS GPS receiver that meets the ADS-B Out position source requirements is available as an option for both transponders.
READ MORE

# *BEADBUSTER XB-455*™

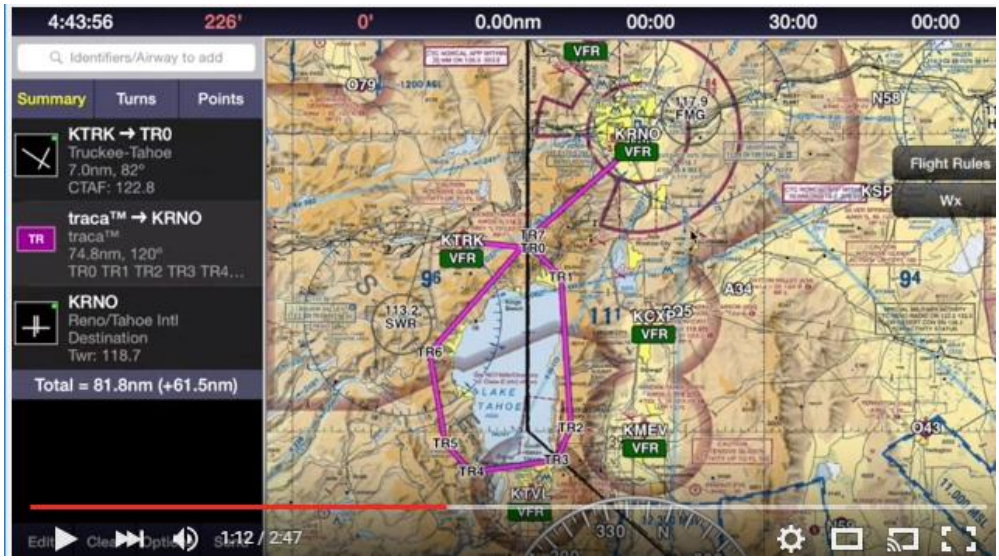
The BeadBuster XB-455™ has the home mechanic and trail rider in mind, it was specifically designed for difficult-to-remove general aviation light aircraft tires, works just as well on just about every kind of tire there is. No adjustment is needed for different tire/wheel sizes. It is small, portable, and perfect for stashing in your tool box. Save time, money, and frustration by quickly and easily changing your own tires whenever, and wherever you want. Available at Aircraft Spruce
READ MORE

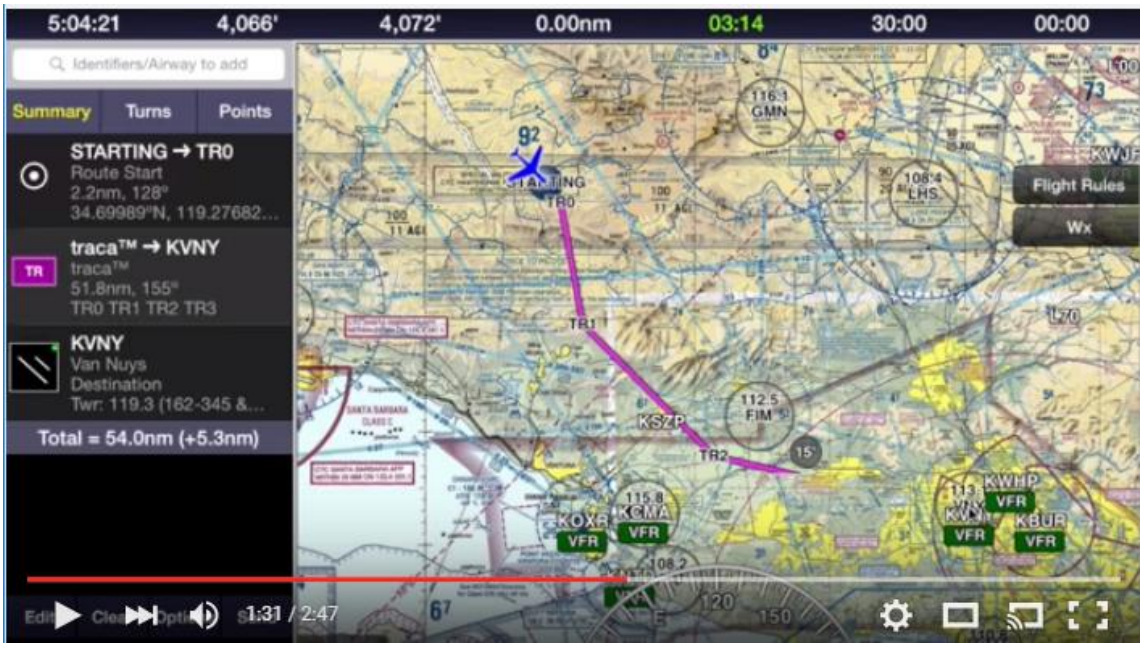
# TMF PRODUCT REVIEW

## WingX Pro

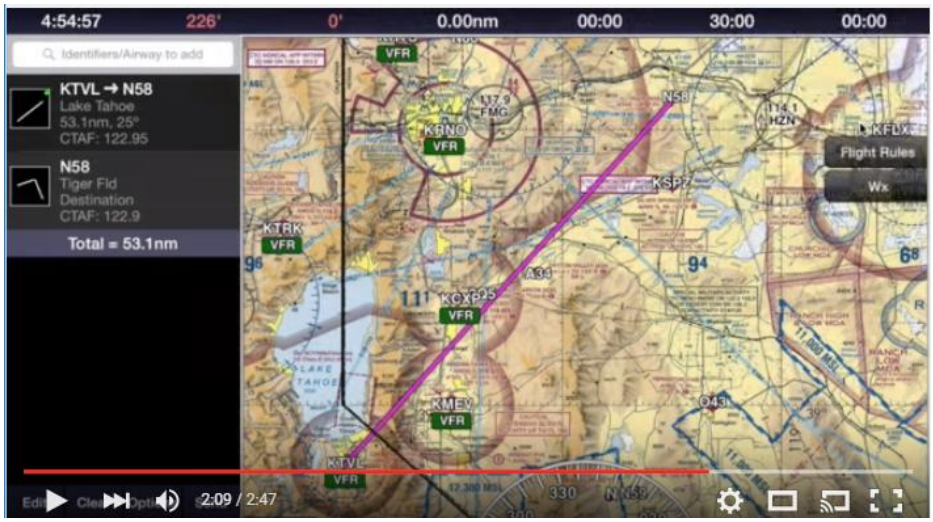
I have been a customer of ForeFlight since they made their first version available. Recently, they increased their annual Basic Subscription by 33%, from $74.95 to $99.99. So I checked on the Hilton Software site and noticed that WingX remains at $74.99 annually. Additionally, **WingX Pro** offers more on their Basic subscription, such as a look at your route's "Profile View". This Is valuable to me when transiting a new route along the Sierra Nevada or Rocky Mountains.

I downloaded **WingX Pro** for only $0.99 and got a 30 day trial. I found a really fun and useful capability that Hilton Software calls **Traca™**. It enables you to literally draw a route on a chart. In the example to the right, I simply traced a route from Truckee (KTRK) clockwise around Lake Tahoe and on to Reno (KRNO), and voila, there was my route. They call this "airport to airport".



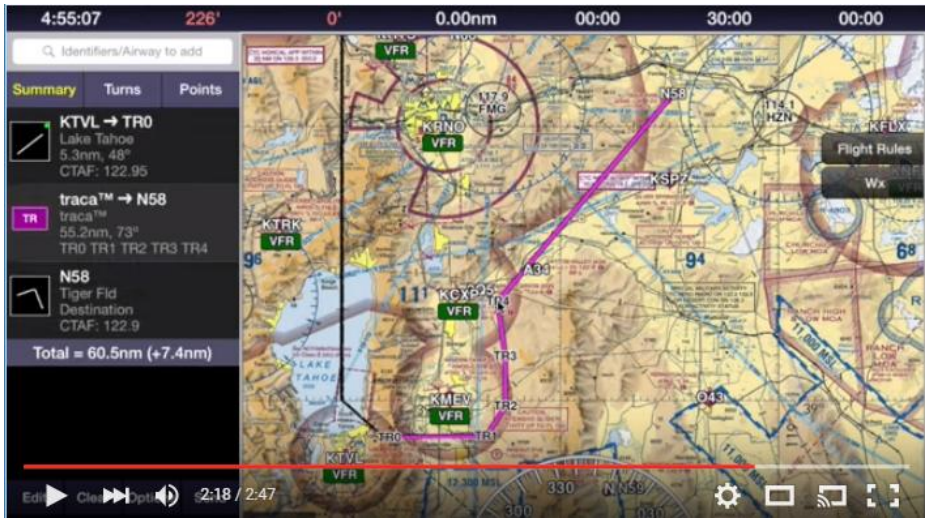




In the next scenario, using **Traca™**, you can trace a route from your current position to your destination, or next waypoint. I find this useful if I want to easily divert around something like a line of weather or Special Use Airspace.




In another scenario, imagine that you get re-routed. Here is a before and after shot. The first illustration is your initial route.

While enroute, you decide that you want/need to divert to the right and then return to your original course. Simply select “Re-Route”, drag your finger along the re-route and voila.

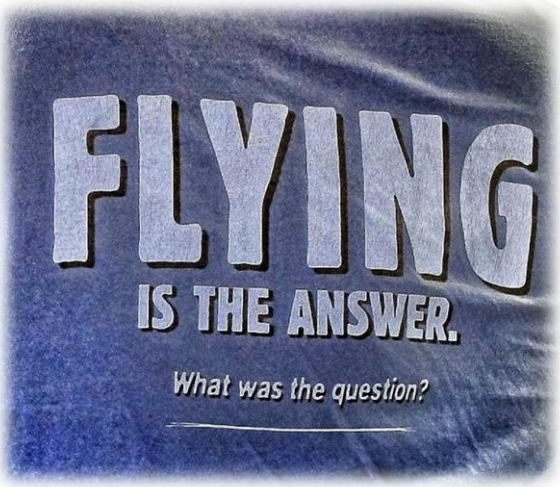



It appears that there are endless ways to employ **Traca™**.

Imagine you’re on a photography mission. All you need to do is to trace your route, take off and set up your autopilot.

On a Civil Air Patrol Search and Rescue pattern? Again, trace the pattern and you are good to go.

Given ForeFlight’s recent price increase, maybe **WingX Pro** is worth a second look!



# Mooney Instructors Around the Country


## Arizona

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

**Boris Vasilev** (CFI, CFII, MEI, AGI), Phoenix Area. 602-791-9637, boris@atjeuhosting.com.Time in M20C through M20R models. Private commercial and instrument training, BFR's, IPC's, and FAA Wings.

## California


**Geoff Lee**, San Martin, CA. 69050@comcast.net. 9,000+. Teaching since 1969.

**Don Kaye** (Master CFI) Santa Clara, CA. (408) 249-7626, Website: www.DonKaye.com. Master CFI. PPP Instructor, MAPA, 8 years; Owner: M20M. Total: 10,265; Mooney: 8454; Instruction: 5641

**Chuck McGill** (Master CFI) San Diego. CA 858-451-2742, Master CFI, MAPA PPP Instructor, M20M, M20R, M20TN, Website: Click Here. Mooney: 6000; Total: 13,000 Instruction: 9800

**Rodrigo Von Contra**, Oakland. CA. (510) 541-7283, Rodrigo@vonconta.com. Sets record in a Mooney. 7,000 hrs. CFII & Gold Seal; Garmin (including G1000) training; Ferry flights (experience in Central & South Amer) transition training & Aircraft Mgmt; Owner: M20J/Turbo Bullet

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

**Paul Kortopates**, San Diego Area. (619) 560-8980, Kortopates@hotmail.com. PPP Instructor, MAPA; Owner: M20K/252. Total: 2500; Mooney: 2000

**Mike Jesch**, Fullerton, CA. (714) 588-9346 (e-mail is best), mcjesch@pacbell.net. Total: 20,000 Instruction: 1500, FAASTeam Lead Representative, Specialites: Airspace, Garmin 430/530, Proficiency flying; Wings Program, VP Pilot's Asso. Master CFI for ASME, IA.


## Colorado

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


## Connecticut

**Robert McGuire**, Durham. Cell: 203-645-2222, rmcguire007@hotmail.com. MAPA Safety Foundation Instructor; founding partner, Aero Advocates Aviation Consultant. Total: 6500; Mooney: 5000

**Winslow Bud Johnson**, smgemail@aol.com, 203-348-2356. Bud specializes in teaching in the M20K and has logged more than 1,500 hours in that aircraft.


## Florida

**Mike Elliott** Tarpon Springs. (CFII) Master CFI. 317-371-4161, mike@aviating.com. Quality instrument & commercial instruction, transition training, ownership assistance, plane ferrying. Mooney: 1600; Instruction: 600

***Ronald Jarmon,*** *Panama City. (850) 251-4181. IAELLC@gmail.com. Total: over 7000. WILL TRAVEL! Will accompany customer out of Country, ferry flights, mountain flying, avionics training, Garmin Products. Total: over 7000. Web Site: IslandAirExpress.com.*

**Robert McGuire**, Hawthorne. (203) 645-2222, (Dec – Feb), rmcguire007@hotmail.com. MAPA Safety Foundation Instructor; founding partner, Aero Advocates Aviation Consultant. Total: 6500; Mooney: 5000

**Ted Corsones,** Naples. tedc@corsones.com, 239-263-1738. Total: 7500, Mooney: 4500, Instruction: 2000+. ATP & MCFI for MEL, MES, SEL, SES, Instrument Airplane & Glider. **Master Instructor Emeritus. He serves with the MAPA Safety Foundation as an instructor, treasurer, and chief financial officer.**


## Georgia

**Jim Stevens**, Atlanta. USAF, Col, (ret), CFII. 404-277-4123. Instrument, commercial, IPC, BFR, transition training, ferry flights. 20 year owner of 1968 M20F. Total: over 6000; Instruction:1500


## Kansas

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


## Maryland

**George "Brain" Perry**, Maryland area (Frederick). Commander, USN, Retired.
Interim Executive Director, AOPA Foundation, Senior Vice President, AOPA Air Safety Institute. 5000+ hours TT in lots of different aircraft including F-14 and F-18's. 1000 Hours in Mooneys of all flavors. 1000 hours of dual given. CFII / MEI / ATP / 525S. I currently own a 99 Eagle M20S and fly about 200 hours a year. Cell (240) 344-1777. George.perry@aopa.org


## Massachusetts

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


## New Jersey

**Parvez Dara**, daraparvez@gmail.com, 732-240-4004. ATP, MCFI SEL/MEL with an advanced ground Instructor rating. Parvez has owned a Mooney M20J and a Mooney M20M (Bravo).


## New York

**Jack Napoli**, Long Island. TT 6,000 hrs & Mooney time 3,000, jacknapoli12@gmail.com , 631-806-4436. He has been flying since 1965 (before he owned a car) and has over 6,000 hours of total flying time including 3,000+ hours in Mooneys. He currently owns a M20K-231.


## North and South Dakota

**Doug Bodine**, Commercial Pilot/Flight Instructor, Cell 605 393-7112, mei.cfii@gmail.com I am a retired USAF pilot, now working as a commercial contract pilot, so various model

experience from WWII Warbirds through heavies. I have been flying Mooneys for 12 yrs and have a 201. I have been instructing since 1994 and am at about 10,000hrs. I actively instruct in tail wheel and turbine as well. I have flown all the common Mooney modifications – missile, rocket, screaming eagle, trophy, etc. Even have time in the M22 Mustang. (See also, Texas). Total: 9800; Mooney, 1300; IP: 5600/21 years


### Ohio

**Mike Stretanski**, Delaware Municipal Airport (KDLZ), Delaware, Ohio, AGI, CFI, Mooney Owner/Flyer, Flight Physicals, Senior AME, Test prep/Written review prep, Transition Training, G1000, HP/complex endorsements. 614-975-1003.MFSTRETANSKI@gmail.com


### Tennessee

**Shawn Cuff**, Hohenwald, TN (0M3) ATP/CFI-II-MEI. Flying an M20K with Garmin 530W for local company. Relaxed and pleasant flight instruction, flight reviews and instrument competency checks. Contact: **Shawn.M.Cuff@icloud.com** or 931-230-5400. Thank you for reading and safe flying! :-)


### Texas

**Austin T. Walden**, Lubbock & Abilene. 432-788-0216, AustinWalden@gmail.com. PhD, Specializing in Models C thru J, www.WaldenAviation.com.

**Doug Bodine**, Commercial Pilot/Flight Instructor, Cell 605 393-7112, mei.cfii@gmail.com Retired USAF pilot, now working as a commercial contract pilot, so various model experience from WWII Warbirds through heavies. I have been flying Mooneys for 12 yrs and have a 201. I have been instructing since 1994 and am at about 10,000hrs. I actively instruct in tail wheel and turbine as well. I have flown all the common Mooney modifications – missile, rocket, screaming eagle, trophy, etc. Even have time in the M22 Mustang. (See also, North and South Dakota). Total: 9800; Mooney, 1300; IP: 5600/21 years

***Bob Cabe**, San Antonio. Cell: (210) 289-5375, Home: (210) 493-7223, bob_cabe@hotmail.com. Total: 5000; Instruction: 2000+. Pilot since 1965. Served as an instructor providing transition training for people purchasing new Ovations & Acclaims. Total: 5000; Instruction: 2000+*

**Brian Lloyd**, Kestrel Airpark (1T7). 210-802-8FLY, Brian@Lloyd.aero. WILL TRAVEL! Owner: M20K/231; Non-Mooney :-) specialist in spin training, upset recovery training, basic aerobatics formation training, tail wheel transition. Total: 8500; Mooney: 500

**Mark Johnson**, Houston area. mjohnsonf16@hotmail.com. 832-773-4409. CFII, SEL. Citation 501 and a King Air 350, F-16s and F-117s; currently a T-38 Flight Instructor at Sheppard AFB as a Reservist in the USAFR. Owns an '81 M20J 201. 5800 total hours, 2200 military and 1500 hours of it in Mooney aircraft.

**Jerry Johnson**, Southwest Texas. mooney9281V@hotmail.com. 817-454-2426. Member MAPA Safety Founda- tion. Owned Mooneys for over 30 years. Total: 11,000 +; Mooney: 6000.


### Vermont

**Ted Corsones**, Rutland. 813-435-8464, tedc@corsones.com. Total: 7500, Mooney: 4500, Instruction: 2000+. ATP & MCFI for MEL, MES, SEL, SES, Instrument Airplane & Glider. **Master**

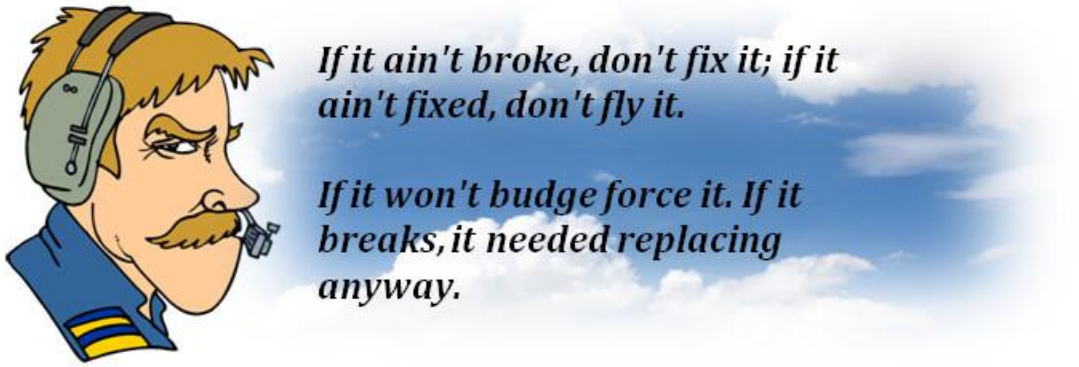
**Instructor Emeritus. He serves with the MAPA Safety Foundation as an instructor, treasurer, and chief financial officer.**


### Virginia

**William Wobbe**, Leesburg. william.wobbe@gmail.com , (713) 249-7351. ATP, SES, SEL, MEL, MES, CFI, CFII, MEI, AGI, IGI, ADX. Time in M20B through M20TN models and very familiar with Garmin G-1000, GTN750/650, and G530/430 avionics. 1600+ dual given in Private through ATP training. MAPA PPP instructor and lots of experience in cross country all weather flying including TKS Known Icing Systems. Flight Service Station Specialist and familiar with iPad weather planning apps such as ForeFlight. I can answer questions on the Washington, DC SFRA and ICAO Flight Plans.

***Joseph Bailey,*** *Winchester. (540) 539-7394. b747aviator@yahoo.com. ATP MEL, Commercial, SEL, SES, Glider. CFI, CFII, MEI, CFIG. EXP in Mooneys A-J. Providing initial & transition training. Total: 7800; Mooney: 500; Instruction: 3000*

**Lee Fox**, Fredericksburg. 540-226-4312, LCFox767@gmail.com. Mooney Staff CFI, Mooney Safety Foundation. Retired American Airlines Check Airman. Owns a M20J 201. Total time: Over 20,000.

**AVIATION SERVICE DOCUMENT NOTIFICATION**

**TO:** Owners of Record for the GTN 6XX/7XX
**DATE:** March 1, 2016
**SUBJECT:** GTN 6XX/7XX Software Upgrade to Main Software Version 6.11 and GMA 35 Audio Software Version 4.10A/4.11C

**CERTIFICATION**
**APPROVAL:** TSO Authorization

**COMPLIANCE**
Optional

**PURPOSE**

GTN 6XX/7XX Main Software Version 6.11 contains the following changes from Version 5.13:

- Added support for custom holding patterns. Holds can be created over an existing fix in the navigation databases (or over a user-defined waypoint) and inserted into a flight plan or with direct-to navigation.
- Added Search and Rescue patterns (requires enablement).
- Added controls to animate precipitation from several weather sources, including:
- Flight Information Service-Broadcast (FIS-B) Regional and CONUS radar imagery from the GDL 88 ADS-B datalink or GTX 345 transponder
- SiriusXM US and Canada NEXRAD radar information received from the GDL 69 SXM receiver
- precipitation imagery received from the GSR 56 Iridium datalink transceiver
- Updated ownship icon options.
- Added display of fuel range rings that show aircraft range until operating on reserve fuel (based on pilot configurable reserve time) and total endurance. Fuel range rings require a fuel data input into the GTN.
- Added support for the time to top-of-descent user field based on the VCALC utility.
- Added additional Metric and Imperial unit display options.
- Updated VCALC page to increase input range for the offset distance and change the default altitude type from MSL to Above WPT.
- Added ability to load a secondary approach while flying the missed approach hold for a prior approach.
- Changed the trajectories between leg transitions to define the navigation path to include the curved trajectory between legs, and CDI guidance along the trajectory and depiction of the curved path on the moving map.
- Changed the map so that it shows previous flight plan waypoints.
- Changed CDI guidance to be provided during the transition from a VI leg to a CF leg.
- Added LP +V to provide advisory vertical guidance on LP approaches.
- Added support to fly Instrument Approach Procedures (IAPs) with radius-to-fix (RF) leg types.
- Added additional range marking to the 2.5 NM range and 5 NM ranges for the weather radar display.
- Added support for lighting offset adjustment when configured for lighting bus backlight input.
- Added support for control of GMA 35c Bluetooth audio and pairing.
- Added support for GWX 70R with the mechanically limited 90 degree sweep size.
- Added GTN COM/NAV radio control from G3X™ Touch display.

The following service documents have been resolved:

- Service Advisory 1479: GTN 6XX/7XX Catalog Flight Plan Menu Preview
- Service Advisory 1503: GTN 6XX/7XX Checklist Page User Field
- Service Advisory 1540: GTN 7XX Units with Main Software Version 5.11 or 5.13 and FliteCharts Updates
- Service Advisory 1574: GTN 6XX/7XX User-Defined Waypoints

## PRODUCTS AFFECTED

GTN 6XX/7XX units are affected.

Please contact your local Garmin Avionics Dealer (http://www.garmin.com/dealers/) for additional information or for questions regarding this notification. This service notification and associated bulletin/advisory product changes can only be implemented through Garmin's authorized dealer and service center network. This document is not a substitute for and cannot be used in lieu of the document(s) referenced above for airworthiness approval.

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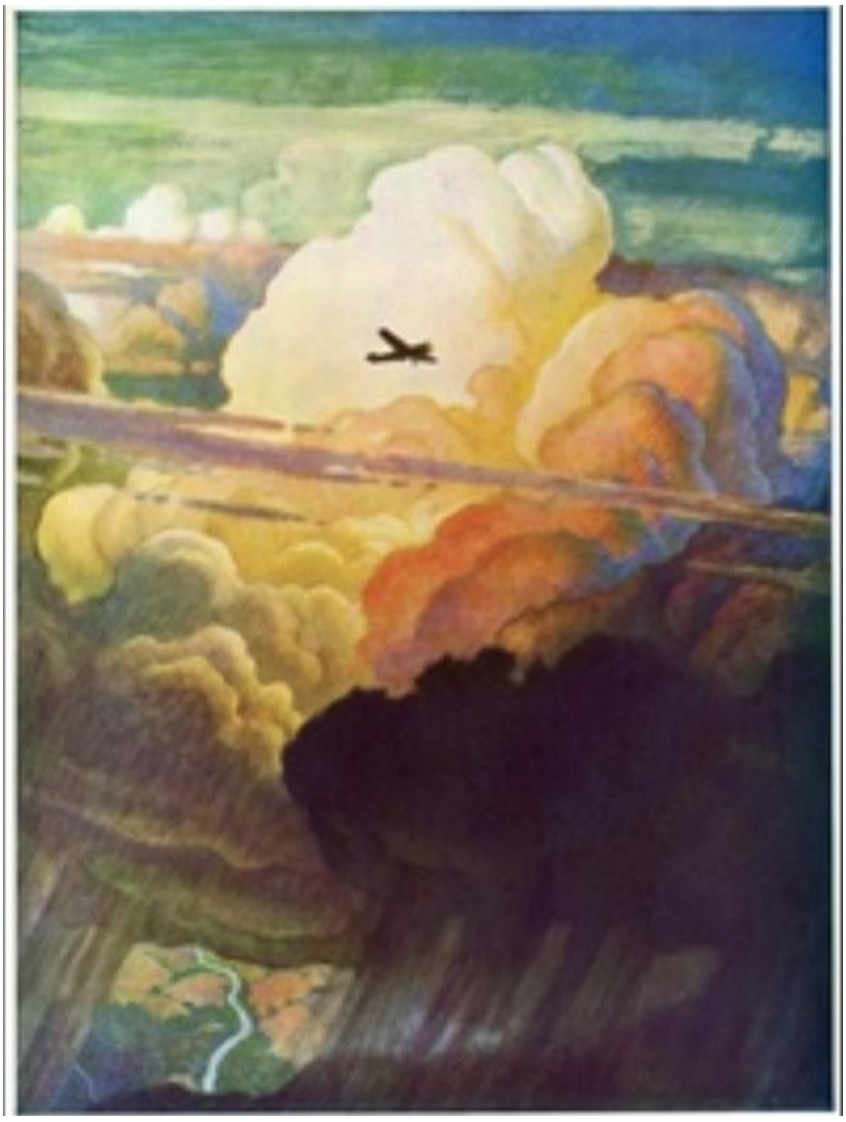

GARMIN.
1200 E. 151st Street
Olathe, KS 66062
913-397-8200

# SERVICE ADVISORY

**NO.: 1619 Rev A**

**TO:** Owners and Operators of Garmin GTN 6XX/7XX Navigators
**DATE:** March 4, 2016
**SUBJECT:** Changes in the Display of Steering and Navigation Information

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## AFFECTED PRODUCTS

GTN 6XX/7XX series navigators with software version 6.00 and later are affected.

## DESCRIPTION

GTN software version 6.00 and later provide an improved methodology for computing GPS steering and navigation paths. This improvement makes the GTN consistent with the Garmin Integrated Flight Decks and complies with the requirements of DO-229D. This change provides improved path definition on the moving map and provides Course Deviation Indicator (CDI) guidance during the transition between flight plan legs.

This is a change from previous versions of the GTN. GTN users need to be aware of how these changes affect the display of navigation on the GTN and on externally interfaced HSIs and CDIs.

## Pilot Action

The following table describes the change in the GPS navigation function.

**Table 1 – Navigation Changes Between GTN v5.13 and v6.11**

| Function | Prior to GTN v6.00 | GTN v6.00 and subsequent |
|---|---|---|
| Moving map depiction of a flight plan route<br><br>*(See Figures 1 & 2)* | • Solid straight lines between flight plan waypoints.<br>• Active leg is shown in magenta.<br>• Future legs are shown in white.<br>• Prior legs are not depicted. | • Solid curved line transitions between flight plan legs.<br>• Active leg including curved transition is shown in magenta.<br>• Future legs are shown in white.<br>• Prior legs are shown in light gray.<br>• If on an off-route Direct To only that Direct To course is shown unless graphically editing the flight plan in which case the flight plan route and off-route Direct To rout are shown. |
| CDI Guidance for GPS navigation along a flight plan route | CDI guidance provided for the straight line course between flight plan waypoints. CDI guidance corresponds to the flight plan depiction shown by solid lines on the moving map | CDI guidance is provided for the full flight plan path including curved transitions between flight plan legs. CDI guidance corresponds to the flight plan depiction shown by solid lines on the moving map. CDI |

| | | |
|---|---|---|
| | and the DTK indication between waypoints on the flight plan. | guidance does not correspond to the DTK indication between waypoints on the flight plan while on curved segments. |
| Roll Steering commands (provided to roll steering capable autopilots) | Roll steering commands are provided for the path including the transitions between flight plan legs as depicted by the dashed magenta lines. | Roll steering commands are provided for the path including the transitions between flight plan legs as depicted by the solid flight plan line. |
| Heading Legs to Intercept a Course<br><br>*(See Table 2)* | No CDI guidance is provided along the heading leg until reaching the centerline of the course to be intercepted. For and autoslewing HSI the course pointer is slewed to match the heading on the heading leg and snaps to the course for the leg being intercepted upon reaching the centerline of that leg. Roll steering is provided along a path that includes the heading leg and transition to the next course. | No CDI guidance is provided along the heading leg until reaching the start of the turn to transition to the next course to be intercepted at which point CDI guidance is provided relative to the turn (not the course being intercepted). For an autoslewing HSI the course pointer is slewed to match the heading on the heading leg and snaps to the course for the leg being intercepted upon reaching the start of the turn to transition onto the leg being intercepted. Roll steering is provided along a path that includes the heading leg and transition to the next course. |


Figure 1- Main Map Turn Not Smooth, GTN v5.13


Figure 2- Main Map Turn Smoothing, GTN v6.11

As of GTN v6.11 the previous legs of the flight plan will be shown on the main map. Additionally, when the pilot is navigating on an off-route direct-to, the ability to graphically edit the active flight plan, or the direct-to, is available.

Figure 3- Previous FPL Legs, GTN 6.11

Figure 4- Graphically editing off-route DTO, GTN 6.11

Operational differences

As a result of these changes in the GPS navigation function pilots may need to change their operational technique when transitioning between legs in flight plans.

Previously pilots were provided no useable CDI guidance during a turn to transition between flight plan legs or when intercepted a course. Upon reaching the later part of the transition turn many pilots would use the rate of CDI movement toward center as a means to judge the sufficiency of the rate of turn to accurately capture the subsequent course.

With this change in function pilots are provided with CDI guidance throughout the turn and may adjust the rate of turn continuously through the transition turn to maintain a centered CDI and thus accurately capture the subsequent course.

For example, if during a transition turn the aircraft heading was still 30 degrees prior to the next selected course and the CDI was approximately centered then the pilot would recognize that the course would be overshot and might increase the rate or turn or continue the turn through the selected course to reintercept. With the new functionality a centered CDI through the entire duration of the turn is normal and should not be mistaken for an overshoot condition.

**Table 2 - Sequence for Headings to Intercept a Course**

| | |
|---|---|
|  | On course approaching a heading leg that intercepts the next course. |
|  | Immediately after sequencing to the heading leg and in a left turn to the charted 297° heading. |
|  | Established on the heading leg approaching the intercept. |
|  | Intercepting the curved path from the heading leg to the next course (268°). |
|  | Established on the 268° course. |


**For Sale -- Mooney M20J, IO-360-A3B6D, Exhaust System**. Removed recently to install a Power Flow Exhaust System. In good, serviceable, condition, according to the Mooney mechanic who inspected it at pre-buy (7 months ago) and the mechanic who removed it (2 months ago). Asking $450 plus shipping. Shipping calculated upon sale. Located in Perry, Oklahoma (F22). Call 405-338-8992.

## For Sale

King KX155 Navcom and KI 209 Glideslope Receiver. Removed from my Mooney 201 due to an upgrade to my panel. Guaranteed to work perfectly. Asking $2,995 for both units.
Contact Henry Punt at henrypunt@gmail.com, 562-881 9018


**For Sale -- Complete M20C O-360 A1D 180 HP Mooney exhaust system**. Removed several years ago to install a new Power Flow system. Was working fine at the time. Always stored indoors. May need to be inspected to obtain a yellow tag. Make offer. Shipping extra. Located at Cobb County McCollum Field (KRYY). Call Ron at 678-848-9899

**For Sale – 1978 Mooney M20J 201.** Aspen with extended warranty, Avidyne traffic, storm scope, very good paint (8), interior (7). King 200 autopilot coupled to the Garmin GNS 430 and Aspen. Factory engine with 850 hours. $ 88,000 - mbmaksymdc10@aol.com

## *Parts for Sale*

I have several Mooney parts for sale from a 1969 G model. Brand new voltage regulator, never used. Instrument light rheostat controller, cowling plugs and like new fuselage/cockpit and tail feather covers. G model POH. Contact me at Wilson Brown, located in Georgia, 678-469-6182

## *Mooney Cover*

This cover will fit a newer, longer body Mooney. Asking $600 (When new, these covers cost $1,149), Contact Jason Herritz at Chandler Aviation, Inc. 480-732-9118 parts@chandleraviation.com

## 1965 Mooney M20E Super21, J-Bar

SMOH 1351
Since New Prop 207,
Other maint: Tank seal, New Exhaust, EGT, New Starter, Throttle Cable.
GX50 IFR
Great traveling machine!
$30k (Vref price)
F70 space #59
Ready for Annual now.

Poor paint, interior is nice.
Jim H 951 303 0704,
Cell 951 704 5857

## LASAR'S Free Site

Check out Lake Aero Styling & Repair's " LASAR" Web Site: www.lasar.com New, under "Mooneys for Sale", you can List your Mooney for FREE!


Also check out Parts, Mods, and Services. LASAR, est. 1975 **(707) 263-0412** e-mail: parts-mods@lasar.com and service@lasar.com