The Mooney Flyer

The Official Online Magazine for the Mooney Community

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Contents

Features

In Every Issue

Editors
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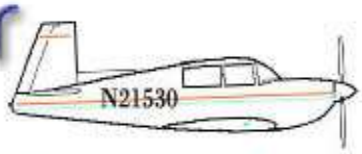
From the Editor

Phil Corman



A Huge Thank You from The Mooney Flyer

We are overwhelmed with the generosity of your donations. As you know, The Mooney Flyer is a passion shared not only by Jim & I, but by all Mooney pilots and owners. We are doing our best to create an informative, entertaining, and participatory magazine. We have experts from Mooney, Mooney Service Centers, CFI's, Controllers, A&Ps, and yourselves. So the magazine's success is really all of our success. At least that's how Jim & I feel.

H. R.

IN THE HOUSE OF REPRESENTATIVES

A BILL

The General Aviation Pilot Protection Act of 2013

Reps. Todd Rokita (R-Ind.) and Sam Graves (R-Mo.) have introduced a bill in the U.S. House that seeks to abolish the third-class medical certificate for many pilots who fly recreationally. The proposed rule would allow pilots to use a valid state driver's license in place of the traditional medical certificate if the flights are:

- Not for compensation
- Conducted in VFR operations only, at or below 14,000ft MSL
- No faster than 250 knots
- In aircraft with no more than six seats and no more than 6,000 pounds gross takeoff weight.

If you are like me, I dread the FAA Medical because I am older and more prone to things the FAA deems unsafe. And I also think the government allows people to drive vehicles much heavier than our Mooneys without anything but a drivers license. I also think that most pilots I know are responsible and would probably self-ground themselves if any medical conditions threatened the safety of flight.

Click Here to read the full HR 3708.

The New Avionics Business Model

One of the most impactful things that is happening in the cockpit is the price of avionics is coming down radically in portable/handheld devices. Like Apple or not, the iPad started this dramatic drop in prices. When I bought my first Garmin 496, it was $3000 or so. Then I had to update several databases at $50 per database every month or so. Then Apple invented the iPad and ForeFlight invented a great app. I can get an iPad for $500 and ForeFlight for $75 per year. If I want ADSB-In, it's just another $599 for a Stratus. What would that have cost us pre-iPad? The Garmin/Jeppesen pricing is in another galaxy.

This month, Jim Price reviews the SkyGuard TWX products that offer ADSB-In/Out for less than $1500 and it also works with your iPad. I don't know about you, but I expected to spend very many AMUs (Aviation Monetary Units = $1000) for ADS-B. It's only 2013 and the mandate is still for 2020, and the prices are already realistic. Garmin & Jeppesen would not have gotten us there. It's the new model of

computation and electronics that is disrupting the old avionics business models. I know, some of you are saying that it is not approved by the FAA. When approved by the FAA, the SkyGuard TWX will be ADS-B compliant. But take what we can get, which is Weather, NOTAMs, TFRs, and Traffic. And did I say that all of the information is FREE (i.e., no subscription). And how much would a Traffic system cost you on top of everything else. Have you priced out a TCAS system lately? So you can have this for less than $1500. For me this is an exciting and amazing time.

The most amazing thing to me is that Apple never envisioned this usage. It was primarily intended for picture, music, web browsing and streaming video, yet it is a revolution in cockpit capabilities at a mere fraction of the old prices. Read Jim's Product Review for all the details.

If while flying VFR and under Flight Following, can the pilot enter a Class D airspace if Center does not hand the pilot off to the Tower?

This is a good question, says Dylan Krassensky, ATC Manager. There is actually quite a bit of debate on this topic, however the official answer is that **if an aircraft is receiving flight following, it is the controller's responsibility to coordinate.**

Reference the following:

FAA 7110.65 2-1-14: **a.** Ensure that the necessary coordination has been accomplished before you allow an aircraft under your control to enter another controller's area of jurisdiction.

2-1-16: **b.** Coordinate with the appropriate control tower for transit authorization when you are providing radar traffic advisory service to an aircraft that will enter another facility's airspace.

Edgar Schmued, a German immigrant, made a massive contribution to win WWII by designing the P-51 Mustang, later the F-86 Sabre and then finally had a hand in the T-38/F-5. Not in the hall of fame, but his designs are legend.

Appraise Your Mooney's Value

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

M20C M20E M20G M20F M20J

AvStop – Valuable GA Stories/Info

http://avstop.com/stories/index.html

With winter upon most of us, here is a website you can peruse next to a warm fire with some hot cider. It's filled with valuable information and stories for GA pilots. Given the season, I like the article on Winter Flying and Cold Weather Tips. There are dozens of other interesting stories. Enjoy.

LEAN MIXTURE - Nonalcoholic beer

On Formation Clinics: Keep us posted on the formation flight clinic schedule… I too wanted to get one this year but the only one near here was on the same weekend as another event I could not miss. I'm not interested in formation flying to OSH as I was there this year, and from that 4 day experience, ONCE IS ENOUGH. Would like to do some formation flying to local fly-ins with other Mooneys perhaps do a formation fly-by.
Bill H

On Time & GPS: Thanks again for another excellent issue. I write regarding what I think is an incorrect detail in Geoff Lee's article Time and GPS. He writes: "The bottom line is, if DME information is required and there is no GPS overlay on the selected approach, then you need DME." However AIM 1-2-3 does allow an approved RNAV system (including an IFR certified GPS) to provide DME distance and even to fly a DME arc.
Best regards,
Roy R
Editor's Note: "There still exists a little misunderstanding regarding the use of GPS distance in lieu of DME in the IFR environment. Two things form the bottom line, when it comes to DME or GPS substitution whether it's an approach at your destination or alternate: 1) GPS, WAAS or non-WAAS can take the place of DME on all Localizer/DME approaches and VOR/DME approaches. 2) GPS replaces ADF, except those NDB approaches without a GPS overlay. As of April 2013, GPS approaches may be considered for alternates by both WAAS and non-WAAS aircraft if only the LNAV or circling minimums are considered. For non-WAAS equipped aircraft, GPS approaches may be considered for either the destination or alternate, but NOT BOTH. Of course for use in the IFR environment, your GPS equipment must be "in-panel" and IFR approved."

I love The Mooney Flyer!!! From the moment I started to read I felt the addiction for knowledge running through my brain. I cannot wait to read the next publication. In the mean time I will have to settle for historical issues. I am very surprised that I don't see this published as a magazine at the local book stores but I am grateful that you guys provide this service free of charge. I wish general aviation had more selfless people like those putting this flyer together. Not only it is very informative, but I find that these articles might just save my life and/or my engine some day
CW3 Isaac R

I really enjoy your publication. In the December 2013 issue, I found the "Declaring Your Present Position" article clear and to the point. Often when articles are written, providing instruction on operating complicated avionics, too much information is the typical. This article focused on one very important, often overlooked feature of the Garmin GPS. It was easy to read and kept my attention. Bravo!
Greg J

I love the magazine you guys put out. Great work. If I mail a donation – what is the address? One question though – IO 360 A3B.....where did you come up with the CHT of 380 F? I am trying to read and understand as much as I can about CHT and EGT. I have tried LOP several times but not on real long

trips, just short hops. One issue for me is, I do not have GAMI injectors or a fuel flow meter (indicator).
Randy P

Editor Note: Here are just a few links to the importance of 380-def F for Lycoming engines such as your IO 360 A3B.

http://www.jpitech.com/press_releases/Bush_Article.pdf
http://blackbeltaviator.com/?page_id=49

Regarding running your IO360 LOP… You do NOT require GAMI injectors… Have you run the GAMI test? Click Here for details: http://www.gami.com/gamijectors/leantest.php

Click Here or the Video to view our fun "Mooney Is Back" video.

PHIL CORMAN

Flying Your Mooney in Winter

Before you go to the airport, you should always perform a thorough pre-flight briefing, but it becomes even more important in the winter. Why? Because if you have an issue, and must do an off-airport landing, you must survive the elements to have a successful outcome.

Airborne icing is bad for all non-deicing airplanes, but it is particularly dangerous on the laminar wing of a Mooney. The laminar wing is designed for speed and efficiency. But as all Mooney pilots know, it is also less forgiving than your garden variety Cessna wing or Piper Hershey Bar wing. A little ice can have a larger impact to your lift.

Many pilots tend to stay near roads when transiting "airplane unfriendly" terrain such as mountains. In the winter, these roads have some additional factors that help you less. First, they may be ice and/or snow covered and harder to find. Secondly, it may be harder to land on those surfaces, and finally, those roads may not be as frequently travelled, so help may not be as readily available.

It goes without saying that pilot and passengers should dress for exterior weather, even though the flight will be conducted in a warm and cozy cabin. Pilots in Command should consider a winter kit. The kit should include: Shelter material (could be a large durable plastic sheet), medical kit, water, energy food (3 days), gun and/or knife, waterproof matches, fire starting material, flares, camping shovel, water bags, and mirror. Needless to say, a PLB (Personalized Locator Beacon) is probably the most important item for rescue. **Click Here** for a sample of PLBs, which are very affordable.

If you are like most pilots, we don't tend to file VFR flight plans as often as we used to do so. For me, I usually do Flight Following in lieu of a flight plan. But in winter, a flight plan is cheap and affordable insurance. It seems wise to file on winter flights, especially on cross country flights and any flights over inhospitable terrain.

Pre-Flight

Again, you should always do a thorough and detailed pre-flight at all times. But it is imperative in cold weather and we'll cover additional items to take into consideration here. Here is why you might not do as thorough a pre-flight. It's cold. You are shivering. So shiver some more and take more time. Most accidents are caused by the PIC, don't let this decision come back and bite you; do a thorough pre-flight. Have your passengers remain in a warm car.

First, the fuel must be scrutinized. If your Mooney has been warm and then it gets cold, and maybe your tanks weren't topped off, there is a higher probability of water contamination. Drain a little extra from

HOBBS METER - An instrument requiring an immediate emergency landing if should it fail during dual instruction

your sumps and look twice for water and/or other contaminants. When your Mooney has been in sub-freezing temperatures, there is also a higher chance of water freezing in the lines or at the filter. If fuel is not draining freely, this could be an indication that the sump, filter, or lines are iced up.

Pre-Heating: Your POH should provide guidance here, but unless you fly regularly in cold weather, you may not be up on the information. Most engine wear, in all seasons, takes place in the first seconds after start. Normal oil will have gravitated off the surfaces that need oil the most. This happens in less than 24 hours. Using Camguard increases lubrication of all parts for much longer. In cold weather, oil congeals and batteries lose a lot of their charge. If you can preheat the entire airplane, that is the most useful. But for your engine, it is critical. Because the oil is congealed, you are also putting a higher load on your starter. So preheat. Read your POH for when to preheat. My POH indicates preheating at -13^{o}F, but I think that is too cold. I usually preheat at 30^{o}F. It costs nothing and is better on my engine, my starter, and my battery.
Regarding priming or running your boost pump, many POHs suggest additional priming as the ambient temperatures decrease. This may be necessary, but realize this: Fuel is washing oil residue off the cylinder walls setting you up for even more engine wear. As in life, this is all a compromise. Be informed so you can make the best decision.

Another cold weather issue is icing over of your spark plug electrodes. This happens when your engine fires for a couple of turns and then quits. The couple of turns melts water, if present, and then ices over your electrodes. This little bit of water condenses on the spark plug electrodes, freezes to ice, and shorts them out.

Here's another cold weather tidbit. Don't turn on any electronics until after your engine is up and running, and your electrical power has stabilized. This is a simple step to take and will prolong the life of your electronics. I have a Radio Master in my Eagle, which I don't engage until the engine and electrical are stable.

Regarding snow and ice. Never ever assume that your taxiing and takeoff will remove ice or snow. It may not. If there is blowing snow or ice on the ramp, check all of your "openings". These include, but are not limited to pitot tube, carb intakes, cowl intakes, air intakes, and heater intakes. Also check your landing gear wells for snow and ice so that your gear will be less likely to get hung up, which is never a good thing. I also check all tight surfaces such as ailerons, elevator and flaps for snow and ice buildup. Even a little can prevent proper operation. I have speedbrakes on my Eagle, so I check them also. Speedbrakes are sensitively set, so even a little snow or ice can cause inoperation.

Taxiing and Takeoff

Most pilots realize that they should consider taxiing an early phase of flight, or the last phase. Vigilance for gusting winds is critical. In the winter, there is another factor. The taxiway may have snow and ice which makes crosswind corrections more challenging. And try to avoid taxiing through snow, even a little. The snow may be thrown into your landing gear wells and prevent proper retraction, and possibly proper extension later.

Don't overboost your engine if you have a turbo and realize the following: Power output increases at about 1% for each ten degrees of temperature below that of standard air. At -40°F an engine will develop 10% more than rated power even though RPM and MP limits are not exceeded. If you have a carbureted aircraft, use Carb Heat, as required.

Lastly, if you are equipped with Pitot Heat, turn it on before your takeoff roll. It's cheap insurance and it's very nice to know your airspeed on departure.

At Cruise

The only item we would warn about which is more likely in cold weather is Carbon Monoxide. In the warmer temperatures, most of us have the vents open widely and breathing fresh air. In cold weather, we tend to close those vents and crank up the heat. This combination increases the chance of Carbon Monoxide buildup. The symptoms are similar to dehydration including headache, nausea, dizziness, and your vision may be impacted. Open your vents immediately and flush the cabin with fresh air and/or use your oxygen immediately, regardless of altitude.

Back at the Hangar or Tie Down

You are not done with your Winter Flying responsibilities after your Mooney is secured, during the winter. Fill your fuel tanks immediately. Don't let condensation increase the risk of fuel contamination and starting or operating woes. If you're outside on a tie down, cover your plane and plug all the openings such as cowl, air intake, and pitot tube.

Suggested Additional Reading:

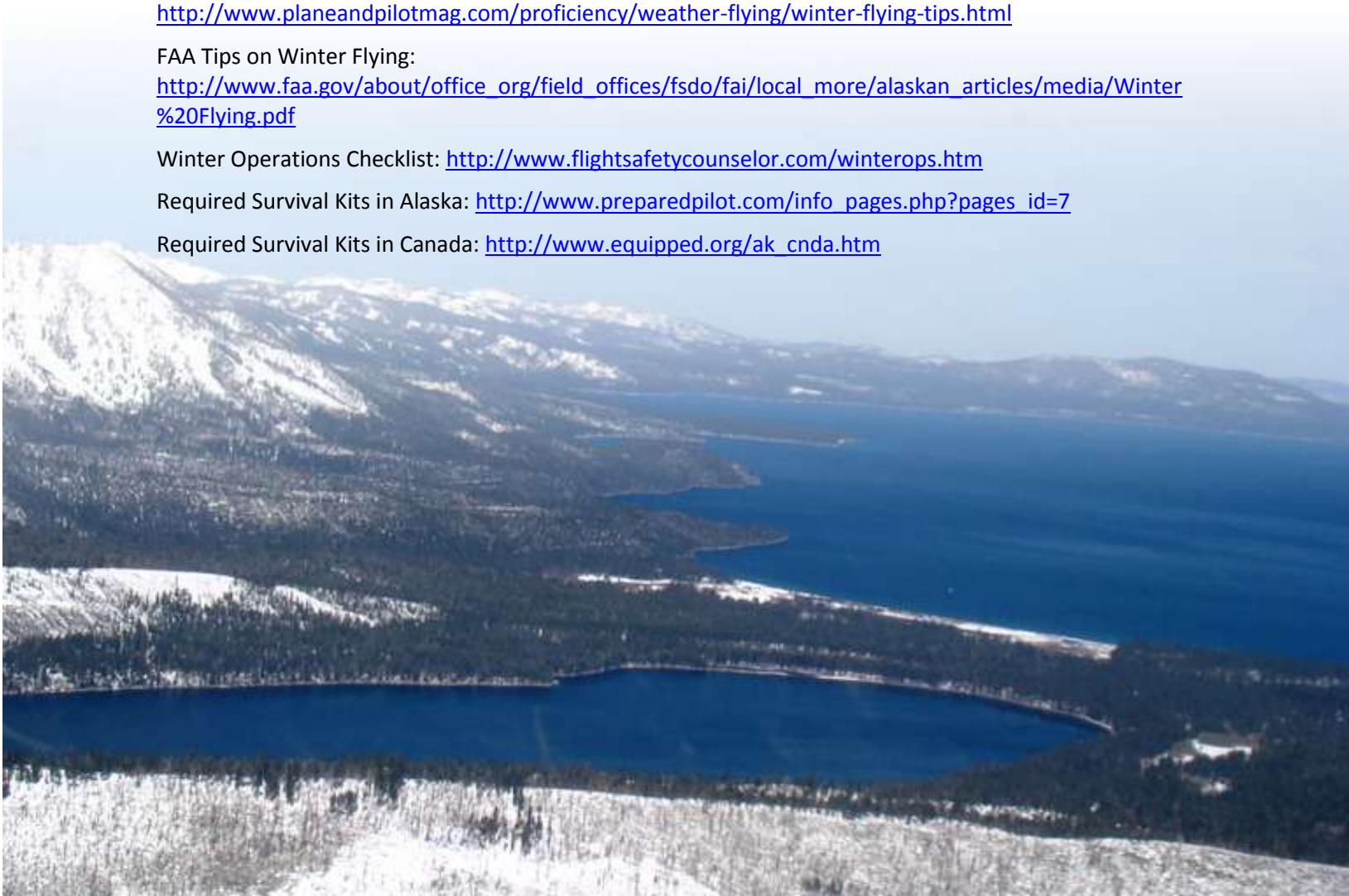
Winter Flying Tips from Plane & Pilot Magazine:
http://www.planeandpilotmag.com/proficiency/weather-flying/winter-flying-tips.html

FAA Tips on Winter Flying:
http://www.faa.gov/about/office_org/field_offices/fsdo/fai/local_more/alaskan_articles/media/Winter%20Flying.pdf

Winter Operations Checklist: http://www.flightsafetycounselor.com/winterops.htm

Required Survival Kits in Alaska: http://www.preparedpilot.com/info_pages.php?pages_id=7

Required Survival Kits in Canada: http://www.equipped.org/ak_cnda.htm



Why I Made the Move to a Mooney

by Gabriel Silverstein

I spend an inordinate amount of time researching major decisions. The choice to move to a Mooney recently, when most of my flight time has been in a Cirrus SR22, was no exception.

I am a low time, relatively new pilot with roughly 300 hours. At the time I started making the decision early last summer, I had only about 200 hours. I had been flying for 18 months at the time I purchased our Acclaim Type S. I had been instrument rated for about a year. Almost immediately after getting my private with 35.2 hours in a 141 program I moved into a 2006 normally aspirated SR22, with the Avidyne glass panel and dual Garmin 430s. Cirrus takes the prop governor control element out of the pilot's workload, so I had a high performance endorsement but not a complex endorsement.

In addition to my instrument rating training, I did several long and short trips with an instructor in the right seat as a sort-of SIC to build supervised experience in what is my typical real world flying scenario – longer distance trips with some time constraints to factor into decision making and planning. I fly for business, and my typical mission is 500-1,000 miles, day and night. More often, I fly solo.

I had flown back and forth over the Rockies, and being in a non-turbo piston plane, even a very capable one, this limited me too much for my comfort level on altitude and routing. I also wanted the ability to get above more weather even when mountainous terrain was not a factor. I wanted more speed, both in TAS and in what tailwinds could do for me at higher altitudes. I also wanted better range, as I only had 81 usable gallons in the Cirrus and for one mission that I regularly fly back and forth, I had to have a fuel stop part way. This was a huge time loss to face every trip. Cirrus upped the fuel capacity to 92 gallons for any plane that was a generation three Cirrus or newer, (2008 and later models).

I live in New York and icing is a reality here. FIKI was a requirement for me, not an option, and non-FIKI ice protection would not be enough for me to be comfortable.

My shopping list included a fast plane with a turbo engine, FIKI anti-ice system (preferably certified), and a G1000 panel, as I didn't want anything that would be outdated soon. I considered one experimental option, but was primarily left with the Cirrus SR22, the Columbia (now Cessna) 400, and the Mooney Acclaim (20TN).

Price was relevant in comparing relative values between the planes, but not a major obstacle in my decision-making. The market for Cirrus is large and clearly there were far more Cirrus planes available than Columbia

and Mooney combined. However, to be a Cirrus and fit my checklist, it would have to be a 2009 or newer model to get FIKI. The earlier G3 models were inadvertent ice certified only. That did narrow the list of Cirrus options, because, like every other manufacturer, by 2009 Cirrus had significantly lowered production in the midst of a weak market brought on by the Great Recession.

I never flew the Columbia, though one of my instructors spoke very highly of it. Ice protection was after-market, the best option being Thermawing, which I liked. Similar to the side yoke Cirrus that I was used to, it was a sidestick plane, and like the Mooney it was complex. The Mooney was the only retractable gear plane of the three, which again I had no experience with at the time. The Cirrus was by far the slowest of the three planes, topping out at 20-30 knots TAS lower than the other two. To me that was very relevant, making the Mooney and Columbia options, both being more than 10% faster, meaningful to a long-distance flyer.

There was a dearth of Columbia and Mooney options on the market. Thankfully the GA after-market was soft, and pricing was buyer-favored even with low numbers of options for those makes and models. The Columbia was going to be the more expensive option, if for no other reason than adding the Thermawing, which in most cases was not yet included.

I looked at planes online and read more about each of them every night. I spoke to a lot of sellers and dealers and mechanics. By late summer it was pretty clear that I was going to be joining the ranks of Mooniacs. I wasn't planning on starting my Commercial certificate training until 2014, but I accelerated those plans to get my complex endorsement, and to get a few extra hours of PIC complex time.

Before I ever stepped inside a Mooney I had already done the homework on systems, features and options, without the chance that my decision was being clouded by the emotion of the flying experience. It was a good thing, because when I finally got to fly my first Acclaim, I was beyond thrilled – Wow! What a great handling speed machine! Speed wasn't really the focus of the test flight, but it was hard not to notice that in low cruise mode going into handling exercises at 5,000 feet MSL, we were already pretty much truing out as fast as the normally aspirated Cirrus ever got.

For all that we, as Mooney pilots, are (rightfully) so focused on speed, more than anything else it was the handling that did it for me in the end. I knew I would be able to learn to fly any of my finalist planes, but the Mooney all but flew itself for me, compared to what I was used to in the Cirrus and the Piper Arrow, (which I had been trained in for complex work). The Mooney required almost no effort to maintain speed and altitude setting in steep turns. Stalls were so benign that the first one that I did, I thought I might not have really fully stalled. The Cirrus, by comparison, sinks like a rock to begin with, and I found the stall to be very noticeable when compared to the Mooney. Overall, the Mooney felt like a race car in its responsiveness and control. (I have driven race cars, so the comparison is not gratuitous). Since buying the Mooney I have seen a jet now compared to a Mooney for its great handling. What other piston plane would be used as a comparison to hype good handling on a high performance jet?!

My biggest surprise of all was liking the traditional yoke. I had transitioned to side controls so early in my flying that I didn't really remember what it was like to steer with a traditional yoke. I was nervous that I would not like a yoke in my lap. I prefer to keep my iPad and notes uncluttered, while resting my arm comfortably on a rest. For those that aren't aware, the Cirrus is a side yoke, not a sidestick, but while the difference between direct control inputs and fly-by-wire is significant, the side yoke of the Cirrus still doesn't have the same subtle control or feel of a traditional yoke. This is because they use springs to alleviate control input forces on the wrist, which really numbs the "feel" of the plane for a pilot. I notice the benefit particularly in crosswind landings and other situations where the feel for making minute adjustments is key,

and where I always felt the Cirrus side yoke was cumbersome. I'm sure I will fly a sidestick in the future (a lot of smaller jets have gone that route now in fly-by-wire setups), but for now I am happy with the controls back in my lap.

I never had an issue flying a composite airplane vs. a metal one, but all else being even close to equal I want the stronger plane every time. I am not debating the merits of composite vs. aluminum skin as a reason the Mooney is more solid (the Mooney wing spar is for sure!) but there is absolutely a difference flying the two planes in similar weather. The Mooney is indescribably more solid in feel. It's not just my sole opinion, either. My husband, Angel, made the same comment as a passenger, right from the start. I was genuinely nervous in the Cirrus more than once, but in the Mooney, I have been in worse conditions without ever having a concern. I like the huge over-engineering the Mooney provides vs. FAA required strength, (where Cirrus narrowly passes), but this isn't just a comment about the numbers, the Mooney really feels more solid.

Several people asked me, after the fact, if no longer having the parachute was a big deal to me. I understand the reason people ask, and I do not consider the parachute a gimmick. It is easy to dismiss it if you have never had one. Having possibly taken it for granted as a Cirrus pilot, I personally noticed not having it in the Mooney more than I might have expected. I have had an engine fail while over a heavily wooded area with few, if any, emergency landing options. One of the few situations that floating down markedly increases the odds of a less severe crash. Overall, though, I was and am more concerned with situations that I think a better plane can keep me out of than the number of safety nets that are there for a plane that helped get me into one I should have been able to avoid.

I did two things when I finally got to pick up my Mooney that I am very glad I did. Firstly, before I even got there I had the Monroy extended tank STC'd modification done. Our Mooney already came with the extended range 100-gallon tanks, so now I have 130 gallons. That really makes a difference on long distance trips. I flew from New York to Miami (over 1,000 nm as routed) last month non-stop, and never came close to range limits.Without that STC I would have had to stop along the way, or fly at much lower speed settings to maintain appropriate reserves.

Secondly, after a day of intro and emergency procedure training locally in Denver where I took delivery of our plane, I flew to one meeting and then right to a three-day MAPA Safety Foundation training weekend. It was the best investment I could have made in my new Mooney. Being in an all Mooney setting with Mooney instructors and pilots really made a difference for me.

All the features I wanted have proven relevant and beneficial. Shortly after bringing the plane home, Angel and I flew to a conference in Chicago. Coming back we took advantage of the fuel capacity to fly for a night in Mackinac Island (KMCD), the last weekend it was open for the season. There is no fuel on the field at KMCD, so we had to go from Chicago, to Mackinac, and the next day to New York without any chance of refueling. I suppose that we could have stopped somewhere for fuel. We arrived at KMCD in 16-26 knot gusts, 60 degrees crosswind to the only runway, and after two go-arounds I was very glad for the handling control. I had to get safely on the ground without just turning for New York. Flying directly to FL 250 in 22 minutes on the leg home, through some light rime ice with the TKS on, we caught a great tailwind and that 666 nm flight took 2 hours and 13 minutes total. Welcome to Mooney flying!

Ultimately I ended up purchasing a 2008 Mooney 20TN, the Acclaim Type S. I am beyond thrilled with our Mooney. If I haven't flown in a week I get very antsy to fly it again, I love it that much. In the first three months I flew it 50+ hours, with half of that in winter.

USED *vs* New

by Geoff Lee, CFII

Hallelujah! The possible resurgence of the Mooney International should bring some vitality back to the market for these aircraft. I believe that the poor availability of parts and an uncertain future limited the sales market for used Mooneys considerably. The projected price for the new models are, for most of us, somewhat stratospheric ($600k). Perhaps these prices, coupled with a company resurrection, should at least bolster prices in the used Mooney market.

One has to wonder why the corporate history of Mooney has had such an undulating path; the company has changed hands 4 or 5 times since its inception in 1929 and bankrupt about 3. The aircraft is aerodynamically efficient and great looking but its robust and beautiful shape are produced by an outdated manufacturing process, relying a great deal upon hand working and individual craftsmanship. Companies in any field survive, dive or thrive on profit margins and competitive marketing. The construction of a Mooney is labor intensive and thus expensive to build in the US. In my opinion the long term survival of the design will depend upon a drastic revamping of the manufacturing process and probable change in construction materials from aluminum to composites. The level of investment for such change would be daunting to any investors in view of the limited GA market which is rife with competition. Ted Smith's beautiful Aerostar passed into history due to a production process similar in style to the manufacture of a Mooney. That aircraft still out performs any comparable twin, but speed and style are not sufficient for product survival in today's world.

According to TMF sources , before Mooney shuttered its manufacturing, the labor hours to build an Acclaim had been reduced by almost 35%, but still remained higher than modern composite competitors.

In my mind the concern still remains regarding the future of Mooney International; will it need to go "offshore" for cheaper labor in order to survive? At this time there is no hint of any design or manufacturing change just a continuation of two of the staple products, the Acclaim and the Ovation. After 4 years of stagnation the task of re-starting production will be quite difficult unless some of the "old hands" can be re-employed. The future of general aviation in countries like China, which has a very restrictive posture regarding their airspace use, but is moving in a positive direction, as is difficult to gauge as is the market size for $600k 4 place aircraft. I guess the new investors in Mooney are optimistic regarding all of the above. On the bright side, here in the US we do have the prospect of a revitalized source for parts to keep our aging aircraft flying.

To compare, I have owned a new 1979 231 with a 305 HP Rocket conversion, approximately 3,200hrs TT and less than 200hrs on my second TSIO 520 NB engine. The engine is de-rated from 350HP so it does not work very hard. The Rockets' current value would be in the range of $130-$135K in 9-10 general condition. The Rocket will perform easily comparable with a $600k Acclaim, if not a little better. It has a shorter fuselage which translates to less "after body drag". The useful load is about 1,000 lbs. The gross weight is 3200 lbs. On any day with 2 up front the Rocket will climb into the teens at 115kts indicated at 1000fpm, at 100kts it will climb at 1500 FPM from sea level to about 5000ft but you cannot see over the nose, so I settle for 120 KIAS at 900-1000fpm with great forward visibility. It is certified to 25,000ft, but it will still climb 1000 fpm at that altitude. During initial certification testing, the Rocket was flown to 32,000ft. I rarely need open cowl flaps in the climb. On longer trips, I "block time" in the mid- teens at 200kts TAS @ 65-70% power. The engine is silky smooth @ 31" 2300 RPM, TIT 1550 F. Below 10,000ft the Rocket, cruises at 185-190 ktas.

Millenium cylinder TSIO-520 –NB
Gami-injection, polished ports, flow balanced

A new Acclaim with comparable performance will relieve the buyer of $600,000 plus $55,000 in tax; it will certainly have more up to date avionics for the additional $450,000 above the cost of a used Rocket but a substantial complement of new, glass panel avionics can be installed in the used aircraft for less than 10% of $450,000. A condensed comparison of the performance numbers as follows.

	Acclaim	**Rocket**
Top speed	242 KTAS	248 KTAS
Climb rate Sea level	1,240 fpm	1,550 fpm
Takeoff distance Sea level	1,620 ft	1,200 ft
Max operating altitude	25,000 ft	25,000 ft +
Horse power	280 BHP	305 BHP
Gross weight	3,368 lb	3,200 lb
Useful load *approx*	1000 lb	1000 lb
Engine	TN-IO-550-G (Turbo normalized)	TSIO-520-NB (Turbo charged)
	Dual intercooler 2 turbochargers	Dual intercooler single turbocharger

It is noticeable on long body Mooney aircraft manufactured in the 80s and onward that the gauge (thickness) of the fuselage skins is somewhat thinner than on shorter body models. Pressing lightly on the cabin roof of a 252, for instance, will produce an “oil can” effect that is not evident on the shorter body models manufactured in earlier years. Some long body aircraft exhibit barely perceptible wrinkling of the fuselage side panels aft of the door. Under wing access panels are simple stamped out flat plates as opposed to the more rigid and heavier formed access plates of earlier Mooneys. The under wing access panels look a little “cheezy”. The changes that appear in the long body aircraft are certainly for weight/cost reduction. The Acclaim gross is 168lb heavier and fuselage is 15” longer than the 231 Rocket. This additional length does benefit the aircraft with more elevator authority to overcome the effect of the higher HP / heavier engine and thus eases the pitch control. The Rocket tends to feel slightly nose heavy in pitch during the flare. The feeling is readily offset with trim. The Acclaim has 20 gallons more fuel to carry at 100 gallons, which occasionally I would like particularly when flying from East to West. My fuel capacity is 80 gallons but I decided not to install optional greater capacity because I prefer to get on the ground after about 3- 4 hours max on the longer trips. 90% of my flights are under 2 hours in duration. Leaving Mooney tanks at low level for extended periods tends to allow the tank sealant to dry out and crack, causing leaks. My habit is to fill up at the end of the day. (*There is a reason why a couple of companies have survived for some time on fixing Mooney tank leaks.),*

I have owned new and used Mooneys since 1968. My opinion is that the quality of construction was best between 1955 and 1980, with 1968 being the optimum. The finish on the interior appointments and exterior paint work has greatly improved since those early years due to the availability of better quality raw materials. However,the exterior metal workmanship and quality have diminished a tiny bit. Nevertheless, I have never owned or flown a Mooney that I did not like, with the exception of *the pressurized Mustang*.

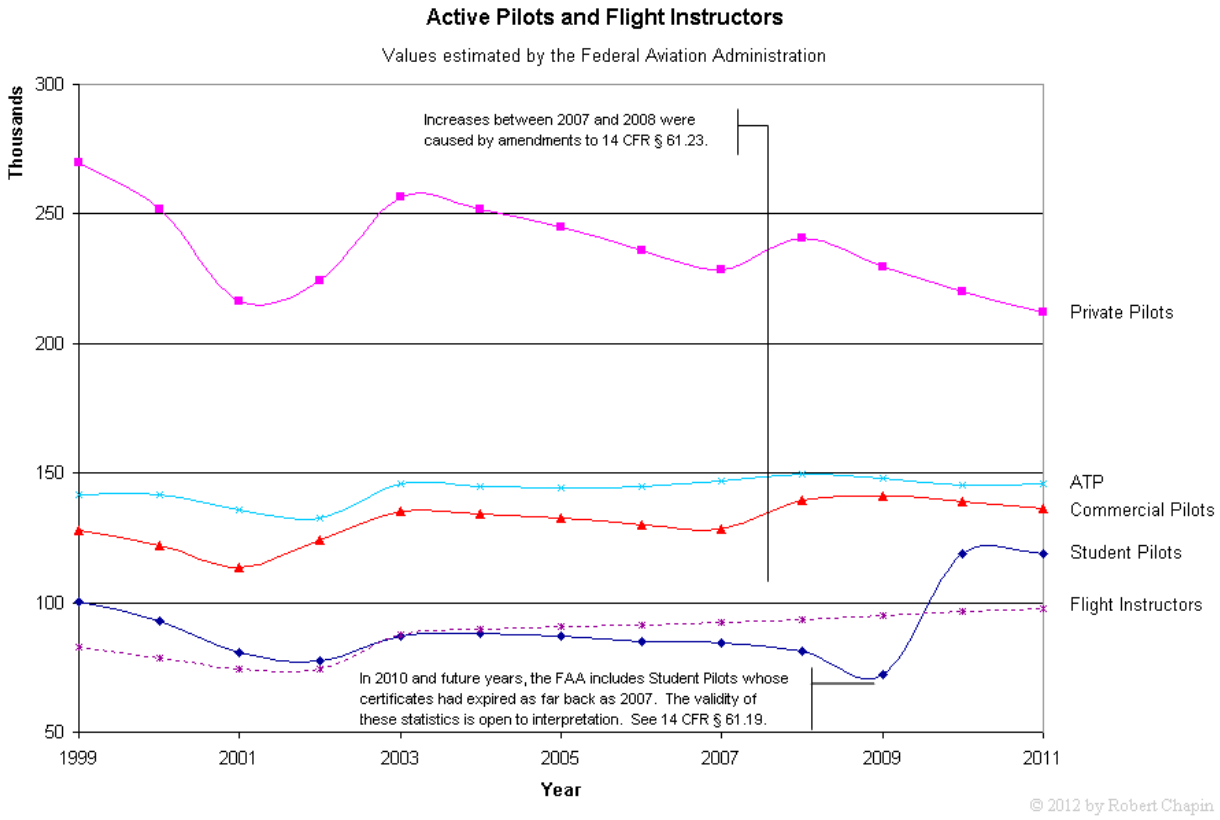
I do wish the new owners success in their venture for the sake of all current Mooney owners and sincerely hope that they can re-employ some of the longtime and knowledgeable workers from earlier times, in order to imbue new hire staff with some of the historic workmanship skills and manufacturing techniques.

Geoff **CFI-I**

And Then There Were None

The Declining Pilot Population

by Phil Corman



Most pilots lament the declining pilot population and then rue about what to do about it. We contemplate the reasons for the decline and then talk about things that might turn the trend around. Many claim "the changing values of society and culture" that does not include flying. Most of the Mooney pilots we talk to told us they knew they wanted to be a pilot when they were in grade school. Flying was clearly in their DNA, or so they told us. This was true for me. Others lament that the middle class is diminishing and flying is a discretionary spending item. Still others believe that it is simply a case of poor marketing. That, in fact, private pilot flying is not visible to the public, and to those that are aware of it, they feel it is nothing more than a "rich man/woman's hobby". At The Mooney Flyer we think this are tangential reasons for the decline of private pilots, but not the primary reason. Usually things come in threes. For aviators in an emergency, it's FLY FLY FLY. In real estate, it's LOCATION LOCATION LOCATION. Well, the problem in the decline of private pilots is MONEY MONEY MONEY.

Let's look a little closer at the numbers. Private pilots were at their zenith after WWII, in the US. Why? The government was practically giving airplanes away after the war. There was a surge of interest. There were 371,000+ private pilots in the early 1950s. There was a bump again in the 1970s, maybe the kids of those aviators from WWII. Today it stands at 195,000 or so. To be sure, flying was significantly cheaper then. Airplanes and fuel cost much less. But is that the whole story.

Airline pilot population has grown steadily throughout the decades. See AOPA chart below in the Additional Reading. There may be many explanations, but good old capitalism is surely a significant factor. It's supply and demand. And there is a financial reward… a career. As air travel increases, so will the demand for pilots. Historically, the military has been a reliable farm club for airline pilots. But it goes without saying that as air travel grows, so will the airline pilot population base.

Commercial pilot populations have declined hitting a high in the late 1970s and declining since. Our focus in this article is the private pilot population, however. What are some of the things that AOPA, EAA, and other general aviation groups doing about the concern? Well, the most exciting program, to us, is the EAA Young Eagle's program. As you know, this program gives kids a ride in a general aviation airplane. If the kids are lucky, it's a Mooney. If not, it's a Cirrus. Kids between the ages of 8-17 are eligible. This is mostly a "marketing effort" with longer term results. Why? Kids get introduced to flying, but probably don't have the money to start or maintain lessons. But the seed is planted and maybe carried into adulthood when the money starts flowing. AOPA has started the AV8RS program. Mostly this gives an introductory kit to young people and free membership to AOPA. Another great program, but again, misses the major obstacle – Money. Most all of the efforts could be categorized under the label of "cheerleading". This is not meant to be diminutive. But we feel it is not addressing the driving factor behind declining private pilot populations.

What Can Help Impact the Decline

There is no panacea response here. But, undaunted, here are some ideas we have at The Mooney Flyer. Please email your ideas to TheMooneyFlyer@gmail.com.

First, let's attack **Pilot Training**. What could address the problem? Well, it's a long and expensive process with significant variable costs and variable times. I soloed at 8 hours, but a current friend has not soloed at 40+ hours. Clearly there is variation in skills between people. But that much? If the time

and cost of attaining a Private Pilot license could be more predictable, there is less risk in wanting to proceed with training. This is true in most people's bigger financial decisions.

Second item is the **cost of operations**. Airplanes cost a lot to operate. The cost of renting is high because the cost of the aircraft is high. The FAA drives the cost up with over zealous certification of everything from the plane itself to engines to avionics to you-name-it. The Small Airplane Revitalization Act might be a start to addressing this issue, but the Act simply tasks the FAA with doing something.

Another cost of operation/ownership is "**liability**". The cost of a Lycoming or Continental engine has built in costs, accounting for unrealistic liabilities and the expectation that these engines will run flawlessly for years and years. A reform in liability law, could have a significant impact on lower the cost of owning/operating an aircraft. This argument also could drive another cost down, namely insurance. Hull insurance would go down. Granted, there is little, if any, impact on the rest of your Mooney insurance plan.

Fuel is another cost prohibitor for flying. We have no apparent recommendation here. The cost of AvGas is driven, in the US, by a few refineries. It's a relatively low volume, and almost a boutique fuel. The answer here may lie in diesels and/or electric/battery powered. The latter is definitely not a short term fix, but will become viable over time. It is too bad that inexpensive and abundantly available natural gas is not an option… Sigh.

Coaches & Mentors

Those are the big contributors to the high cost of flying. If those rising trends can be reversed, then existing groups and programs will begin to have a higher impact. Clearly exposing young kids to aviation and planting the joy of flying would have tangible results. But even those programs still need to be beefed up. Here's how. Giving kids free membership and free rides is great. However, it should be coupled to "mentors" who are willing to adopt potential flyers and guide them into pilot training, through pilot training, and after they earn their certificate. Why do we say this? Simply because a 1-day event is not enough. The quitting rate of student pilots is unacceptably high. This is due to money, but also frustration. It's not a walk in the park to get a pilot certificate. An instructor is not enough. In such a challenging training environment, a coach or mentor, who supports the budding aviator, is key. It's similar to having your Dad/Mom tell you something versus a Coach. I always listened to the coach. But it may be more. The coach is supporting the student out of pure love of flying. There is no financial gain.

Lastly, another step that could be taken at the national, state, local and individual levels is to introduce more scholarships for people who want to learn how to fly. Imagine a coordinated effort between

Liability insurance costs are something that the manufacturer rolls into the pricing strategy. It's a fixed cost that must be recovered, unfortunately on the backs of new airplane purchasers. Typical new aircraft product liability insurance for a company similar to Mooney would run about $5,000,000 per year. Spread over 100 new airplanes, that's $50,000 per airplane. Over 50 airplanes, that's $100,000 per airplane.

AOPA, EAA, EAA Chapters, and in my state of California, Cal Pilots Association and then individual Type Clubs and individual pilots. Just a thought… do you have any? Please let us know.

Additional Info:

AOPA Chart of Pilots by Year Starting in 1929: http://www.aopa.org/About-AOPA/Statistical-Reference-Guide/FAA-Certificated-Pilots.aspx

Airfacts: Declining Pilot Population: http://airfactsjournal.com/2012/10/mayday-the-declining-pilot-population/

AOPA: http://www.flightglobal.com/news/articles/aopa-launches-programme-to-reverse-decline-in-us-pilot-population-377674/

Forbes: http://www.forbes.com/sites/businessaviation/2012/08/29/did-economics-and-politics-cut-the-heart-out-of-personal-aviation/

January 11, 2014: The tenth anniversary of the Florida Mooney Lunch Group will be hosted by EAA Chapter 534 of Leesburg (LEE). They will cook lunch for us in their hangar.

February 8: Sebring (SEF)

March 8: Fort Pierce (FRP)

April 12: Flagler (XFL)

February 7-9: **Mooney Summit** - Because of the generosity of Dr. Ron Dubin, we are holding the first Mooney Summit on Feb 7-9th in Panama City. The purpose is to help better the breed and a social event for Mooney pilots and their spouses. Wings credit seminars will take place along with scheduled IPC's or BFR's, shopping, dining, pampering and beach activities are available for the non flying partners. The cost of the event is free, but the space is limited. If you would like to participate, please send an email to sillyquestions@aviating.com. I look forward to seeing some of you! **Mike Eliott**

CLICK Here for details at TheMooneyFlyer.com

Send your questions for Tom to TheMooneyFlyer@gmail.com

Question: Which is better for engine longevity, lower % HP or WOT?

Interesting question. Of course, "Wide Open Throttle" only applies to aspirated engines. You wouldn't go WOT on a turbo. My answer will apply to all. I feel that using 65% - 75% is best in the long run. It keeps operating temps up in the green and loads the rings so you have good ring seating and compressions for good combustion and reduced oil consumption. I do not have records, but I do have extensive experience with Mooneys that I have maintained from zero time to over 2000 hours. I know how each owner operates his engine. The TSIO-360 on the K models is probably the most sensitive to operating conditions. The ones that have been run in the 50-55% HP range tend to cylinder repair at the lowest total time, 800-1100 hrs.

There are a lot of variables that affects the life of the engine. Regular operation, short flights, running too rich or too lean, etc.

Question: My engine, IO550, for about 15-20 seconds after starting, runs rough. "Morning sickness"?

The IO550 is one of the best engines on the market today and that is a common condition with the IO550. The problem you describe is even more prevalent in the early version of its smaller cousin the TSIO-360.

Being a six cylinder, it just takes a few more seconds for the fuel to get through the system to get all six firing equally. On the 360, we would "pump' the primer to get the fuel to the rear cylinders. That problem was greatly improved with the addition of a tuned induction system, which is much like the IO550.

The original "morning sickness" was related to Lycoming problems due to valve guide wear. This valve guide wear would create a gap between the valve guide and the valve stem. The oil would "bake" into a hard carbon and the valve stem would stick until some heat would expand the metal enough to allow the valve to free itself. This could also happen on a long letdown when the engine cooled too much. The corrective action was Lycoming's SB 388B. On later Lycomings they used a different material for valve guides. On the TLS Bravos, they oil cooled the exhaust valves.

Question: The question was about trimming the flight controls after maintenance. This was on an M20J. He still has a small amount of rudder input at cruise.

This is a "situation" we have encountered hundreds of times so I will go through how we do it. If needed, we will go through the flight controls with our travel boards just to insure we have the proper travel for all controls.

We will then fly the aircraft. In most cases, we'll have the owner do it. Hopefully, this is flown in smooth air. The pilot will check for hands/feet off the controls. Every Mooney should fly straight and level for some distance with the ball centered. If the ball is not centered, we tell the pilot to center the ball and let us know which way and how fast the plane rolls. Then we tell the pilot to take the controls, level the plane, and tell us how far off the ball is.

We try to get the ball centered first by rudder adjustment; using the rod end at the rudder, but this only allows a small adjustment. We can also trim the trailing edge of the rudder skin.

Once the ball is centered, we trim the trailing edge of the aileron skin, starting at the outboard end. We use a wide (three inch) vise grip-like plier, putting tape on the flat part so we don't scratch the paint.We usually do about six inches on the first adjustment. Trim only down, so you only trim the aileron on the wing you want to lower. We make small adjustments because you are not supposed to bend the edges back. It may take several flights to get it right.

All of this is in the maintenance manual. A related question we get that is: How should the ailerons should look in flight? Generally, both are slightly loaded to be slightly up. If your plane flies straight and level then leave it alone.

Note: The ailerons and rudder are "connected" by springs in the belly and some were installed incorrectly some years ago, when there was a Service Bulletin on the aileron control rods. This causes one aileron to be "higher" than the other, affecting level flight. Those "bad adjustments" should have all been corrected by now.

What If! IFR in a Single Engine Mooney

Some things to ponder before you step into this realm

by 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

Some things to ponder before you step into this realm-

The ubiquitous backward tail Mooney! With C, E, F and 201s being the majority backbone of our favorite airplane, some thoughts have come to mind when IFR flight is contemplated. Risk vs. reward; Safe vs. unsafe; Comfort vs. concern. All these play into our decisions before every flight we make, whether it is a CAVU VFR day flight or a night, low minimums IFR ordeal.

Many, if not most of us, have a basic C, E, F or J model, which may have a rudimentary autopilot and legacy IFR equipment. Some have the finest in Garmin TVs and digital autopilots that cost more than my old C model. Quite a range of airplanes to consider and I'm not going to cast stones here; just bring up what comes to mind as things to ponder before your next IFR Mooney flight..

Autopilots

There can be no question that if you don't have a good three axis autopilot and you fly IFR, your work load is increased, perhaps significantly. If this is the case, maybe your IFR flights need to be modified, with higher personal mins and better overall weather. Maybe less flight time per leg? One might consider that having just a PC system or wing leveler (roll mode only), about the same as not having a autopilot.

Are you an autopilot dependent?

As has been recently talked about, demonstrated in San Francisco and currently being investigated by the FAA, many pilots demonstrate excellent flying skills with the use of their A/P, but they fall apart when that crutch is taken away, even in VFR conditions. I've seen it happen among high time ATP big jet Captains. Hand flying skills diminish very rapidly if not reinforced with constant practice.

It's a two edged sword. You need a good autopilot to lower your work load in single pilot IFR but you still have to hack it when the A/P fails. Another “What if?” to ponder.

Let's look at the A/P from a different perspective. What keeps it alive? Most will be electrical, some only vacuum.

On the electrical side, if power is lost to only the A/P, then you only have to deal with hand flying. Do you really want to consider going all the way to your destination and shoot an approach down to minimums, maybe in a high density traffic area? How about cutting it short and going to a closer, better weather airport?

How about loss of all "generated" electricity? Most of us have 1 generator/alternator and 1 battery. This situation gives us many avenues to explore.

How long will your battery last if you need it?

Let's say you lose the alternator. Do you know how long your battery will last with everything in the airplane running? How about at night with all the lights added to the mix? What would you do? Let's take a longer look at the battery and electrical system before we get back to the autopilots. Has your battery EVER been run down to dead flat and you had to recharge it to start your engine?

You can bet that the true capacity of that battery has been compromised and it will hold a lot less power, if needed, than a new battery or one that's never been run dead. It's been dead a few times? Let's now figure very little capacity is left to power all your electrical items if your alternator dies. Just because your battery starts your airplane doesn't mean much. Starting uses less than 5% of a good battery; so a low capacity battery can and will start your engine. It just can't be counted on to run your electrics for very long if needed.

How often have you had to buy a new battery? Every two or three years maybe? All batteries have a life limit. They get old, loose capacity and die. You come out to fly and you get two blades into the start and then nothing but "click, click". Your A&P comes out to fix it and tells you that you need a new battery. And now this flight you are about to embark on has a three year old battery? How much is left in your "old" battery if you should need it in hard IFR with your all electrics functioning?

How wise would it be if you show up at the airport and you have to jump start your airplane and then leave on an IFR flight? What happens if the alternator quits right after takeoff and you're IMC? How much did your battery recharge? How long will it last now?

Let's consider winter time flying and cold to very cold conditions. We all know that batteries have way less capacity when cold, compared to a battery at room temperature. Is your hangar heated all the time in winter, keeping your battery warm? Are you parked outside in the cold? Is the battery mounted in the back where it stays cold or gets cold in flight? Is it in the engine compartment where it will warm up after a while? How old did you say your battery was?

Now here's a good question! What about the battery ICAs?

Every new battery has something called "Instructions for Continued Airworthiness" as part of the approval basis for that battery to go into your airplane. You, as the owner, are responsible, by FAR Part 91.403, to maintain your airplane in an "airworthy" manner and that means following all the ICAs that pertain to your airplane. Those ICAs will specify a "Capacity Check" at a given interval to show the true condition of your battery. Remember, it's your life line; a safety item and not something just used to start your engine!

I will bet $100 right now that not 1 in 100 airplanes that go through an annual inspection, (as you do every year), that is performed by someone outside of a full repair station, has ever had this complied with! 99.9% of our airplanes, when in annual, will have the battery water level checked and the battery box condition noted – and NOTHING more!

Chances are your battery is not in prime condition and will not last as long as you may want. Maybe you should consider that if you ever get down to battery power alone and you are IMC, declare an emergency immediately and divert to the nearest suitable airport and/or get out of IMC conditions and land. This is just as big an emergency as an engine failure when in IMC conditions.

NOW tell me, what condition is your battery in? Do you really know?

Here's another question: Is your Mooney straight stock configuration, just as it came from the factory, or has any radio equipment been changed out over the years? When the work was done, was there an electrical load analysis done to check total aircraft electrical demand vs. alternator/generator capacity, per AC 43-13 2A, Chap 2, Sec. 27d? This is done to learn if the alternator output is sufficient to cover what the airplane needs? Oh, you can't find that anywhere in your logs? Maybe you need to have that looked at by your mechanic?

I bring this up because we just had a Cessna 172 drop into our airport that had a complete electrical failure, AT NIGHT. The pilot had no generator, no battery power, no lights, no radio, no nothing. Here's another thought about night flying: Without a radio he couldn't turn on the airport lighting system! When was the last time you practiced night landings at a dark airport? What was the cause? The airplane had a 20 amp generator; yes, a very old 172. Looking at the panel, a quick check showed an electrical load drawing 25 to 30 amps at night. Obviously no one made a load capacity check when radios were added.

The pilot indicated that the "GEN" light was on the entire flight. Hmmmm! Turns out that the generator fuse was blown so the generator never worked, so the battery went down and everything went dark. Sure, pilot error, but why did the generator fuse blow? If the battery was very low, but enough to start the engine, do we see a trend here? Now, all the electrics are turned on for a night flight and the load is beyond the capacity of the generator as it tries to charge the battery and power the electrical equipment. Do you think it could exceed the fuse rating of 30 amps?

There is a record of a Lear 60 that had the same problem, with the generators not working and they didn't see the battery going down. They belly landed after everything went dead, at a major international airport no less!

This is why I keep my volt/temp gage on voltage whenever I am flying. Would you notice if your alternator circuit breaker popped before your battery went down? If you have a voltage gage, do you know what the proper voltage should be with the alternator working? What should it indicate with just battery power in flight? Do you even check it during flight or just when you start up? It should be part of your in-flight scan shouldn't it?

This stuff happens, will it happen to you? Are you prepared?

So, as we can see, your battery is your lifeline both for IFR and night time. You have to make sure it is in tip top shape. Your life might depend on it!

Back to our all electric A/P. Now, if you are smart, you'll down-load the electrical system to the bare minimum. But, you still need to get on the ground and, you're hand flying to boot. BECAUSE your nice new digital autopilot really shouldn't be used – you downloaded the electric system, right? – because the A/P uses battery power and runs the battery dead even faster!

Consider also that you have to dig out new plates, talk on the radio and plan your approach. Those with TV screens may have an edge here as long as, and, only as long as, the battery lasts. What if I lose my TV screens and have to go to the standby instruments? OOPS, no electronic charts! Gee, maybe I should still have paper plates with me? Hmmmm!

OH, and by the way, you may need to use your emergency gear extension procedures if you have an electric gear. Your battery may not be up to it by the time you get down. Expect it and don't be caught by surprise as you throttle back and flare. Don't forget this little detail!

USE YOUR "BEFORE LANDING CHECK LIST".

How about a look at our older fleet with vacuum pumps and huff and puff PC systems or A/Ps (Brittain)?

We have one vacuum pump on most of our fleet. It has a life of 700 to 800 hours on average. How old is your pump? Have you tried to fly recently on your Turn and Bank only? It's tough. Of course you know your T&B is electric powered right? I think maybe I'd better confirm that as soon as possible? What do you think? Maybe hard IFR cross-country with low ceilings all the way may not be a good idea. What do you think? Lose your vacuum pump and not only do you lose your gyros, but you lose your A/P also!

You say you have a standby vacuum system? Pull the knob and everything is OK? Think again. Using the engine intake vacuum for your gyros may not work above 9,000 feet. Have you done a flight check of the standby vacuum system to see how well it works at altitude? Do you even know how and why it works? Have you ever looked at the operation placard for the STBY system to see what is contained therein? I can almost guarantee that you will be descending from above 9,000 or 10,000 feet when you have to pull the throttle back to maintain vacuum pressure. Try to think of what area of the country you are flying in. Out here in the west we have some MEAs of 12,000 to 14,000 feet. Sure the airplane can do it.

Even my C model can do it, but what about a vacuum pump failure while IMC? You can't get your vacuum back at that altitude so **your entire flight is predicated on your vacuum pump staying alive**. How old did you say your vacuum pump was? Hmmmmm! DON'T EVEN CONSIDER STARTING A FLIGHT WITH A DEAD VACUUM PUMP AND RELYING ON THE STANDBY SYSTEM! It's illegal and dangerous!

Now also consider that the huff and puff A/P cannot be used, even if you have the correct vacuum on the gauge. Maybe a gyro app on your iPad?

If the vacuum pump fails THIS might be a very good way to survive. It might work for you BUT only if you practice ahead of time. If you have an iPad gyro app, try it under the hood. See if you feel confident using it. Don't wait until you really need it to try it out. Stay ahead of the safety curve!

Now let's look at the BIG one-engine failure. Obviously if we can't restart it, we're going down. Sure, it's a long shot to happen but happen it does. In clear weather, any field 500 feet long will do if we land off airport. You won't roll farther than 500' in soft dirt. Touchdown as slow as you can and under control and you'll probably live through it.

But, what happens when we are IFR. It doesn't matter if we are IMC or IFR on top, We still have to fly through the soup going down. Those with "electric" airplanes may have an edge as their gauges will be working for the short flight down. Those of us with vacuum gauges have an issue to contend with - T&B, airspeed and altimeter only. The long vaulted Standby Vac System won't be working when the engine quits. I say again, your T&B is electric, isn't it? Maybe you might rethink your limits on IFR flying in a vacuum Mooney? What do you think?

Wait. Now we break out below the clouds. We had no problem with IFR and low ceilings along our route because the destination weather looked good. Now, at 200 feet, as we break out, our options are limited on where we can put it down. If we're in the Midwest with mostly level farms, we're probably going to be OK. If we're over Santa Fe, NM, we've got a problem.

What if it's night time?

Here in the west we have vast areas with little or no ground lights. The demarcation line between sky and the horizon disappears on a moonless night. Huge mountains can not be seen! Now factor in IMC conditions and you have another issue adding to your pile of problems.

Try taking off from Page, AZ (KPGA) on a moonless night from runway 33. I will guarantee that you go complete IFR and on the gages just after you pass the end of the runway. It is that dark out there and this is on a CAVU night!

Years ago I did a study of all the single engine night time accidents for a ten year period. There were 263. Of those, 260 were nothing more than running into a mountain, or what the reports called a CFIT accident.

Now, something else to ponder that is insidious but deadly – Icing!

The vast majority of our fleet has no anti-icing capability. None of us have true "FIKI" (flight into known Icing) capability, like I had in Boeings. With FIKI, winter weather that will ground our Mooneys is not a real big problem. With jet engines, climbing above icing conditions isn't a problem. Now, in our Mooneys, it's a real factor.

The next time you go out to your Mooney, take a real good look at the stall strips on your leading edge. Their position was set after a flight test by a factory pilot, before they released the airplane to the sales department. Someone actually went up and did full stall tests, and if the airplane did not meet specs,

the strips were moved until it did. Now, let's say that we go up and get ice on the wings. Say just a 1/4 inch, not all that much, on the leading edge. Now the stall strips are double their normal size and the entire wing has a full span stall strips. What do you think the stall characteristics are now? At what speed will it stall? Will it snap roll violently, as one full wing stalls and the other doesn't? Will you use your normal approach speed? Will you slow down prior to the runway threshold, as you always do? Will you fly it at a higher speed? Will it hop down the runway and ding the prop on the third bounce at the faster speed? This is a classic Moony accident, by the way. How long is the runway? Maybe even 5,000 feet is too short now.

How are you going to see the runway with your windshield covered in ice? Have you ever tried to land by looking out the ice window on the side? With winter here, flying may mean more weather issues. Perhaps you should rethink your personal minimums. What do you think? Hmmmmm!

Now let's visit the biggest variable – you, the pilot! By far, most of us are conscientious and careful pilots. But when we are careful and legal, are we really "safe"?

How much IFR have YOU done in the last 3 months? I bring this up because of a report I recently read, that detailed the correlation between recency of experience and accident rates. In that report, the graphs were very clear. It didn't matter how much total flight time one had, if a pilot didn't fly more than 10 hours in the last 90 days they were at a much higher risk of having an accident by a factor of 3. No wonder that the insurance companies, on every application, ask for your last 90 days flight time! That works out to be 40 hours per year, spread around the clock. Another study showed accident rates as determined by total flight time. On that chart it showed that from a new pilot to about 1,200 hours, the accident rate rose steadily. It wasn't until after the 1,200 hour point that the rate started to taper down with the peak at around 1,000 to 1,200 hours total time. Where do you fit into these charts? Now, think in higher terms of IFR proficiency and currency. You do your "6 and a hold" every 6 months to stay IFR legal, don't you? But that is all you do and even your VFR time is *maybe* 10 or 15 hours in the last 6 months. Are you really ready and qualified for an IFR trip? Six and a hold twice a year may make you legal but are you safe? Maybe it's time to rethink this situation? Hmmmmm! Where's my instructor?

My point here, is not to chastise anyone for flying IFR in their Mooney. I fly at night at times out West and I fly IFR at times. I just wanted to to bring up points of interest that perhaps might not be sufficiently considered before a flight.

Many of us fly IFR in our Mooneys and never have a problem. Hopefully, good flight planning, good judgment and skillful flying will prevail on your next IFR flight. However, it never hurts to say, "What If?" once in a while, and think ahead to a more difficult day. Then, it may not be such a surprise, if or when it happens.

Lots of things to consider when we go IFR in our Mooney!

Some Additional Reading

Single Pilot IFR

AOPA: http://www.aopa.org/-/media/Files/AOPA/Home/Pilot%20Resources/ASI/Safety%20Advisors/sa05.pdf

Flying Magazine: http://www.flyingmag.com/pilot-technique/instrument-flight-rules/how-safe-single-pilot-ifr

AvWeb: http://www.avweb.com/news/system/183181-1.html?redirected=1

Battery Information: http://www.concordebattery.com/otherpdf/IFCA3.pdf

“Whale” vs. Russian Trawler

During the Vietnam War, Russian "Trawlers" (NATO designation: AGI for Auxiliary General Intelligence), with what looked like one thousand "fishing" antennas, plied the Gulf of Tonkin on a daily basis.

They played a cat-and-mouse game to see what havoc they could cause with our two carriers who operated there 24 hours a day.

The Rules in International Waters

Since the U.S. government had proclaimed the waters of the Gulf of Tonkin three miles off the coast of North Vietnam and Hinan Island – property of the People's Republic of China – to be international waters, American ships in the Gulf were bound to obey the international rules of the road for ocean navigation.

This meant that if the Russian ship maneuvered herself into the path of an aircraft carrier where she had the right of way, the carrier had to give way even if she was engaged in launching or recovering aircraft.

The navigation officer was constantly trying to maneuver the ship so that the trawler wouldn't be able to get into position so that it could abuse the rules of the road and gain the right of way.

Sometimes he was successful in sucking the trawler out of position, but the room available for the ship to maneuver was limited by our on-station requirements, and sometimes the trawler interrupted our flight operations.

The Red Baron

The pilots of the air wing were strictly forbidden to take any action against the Russian ship, but one day CDR John

to Table of Contents

Wunche, the commanding officer of the heavy tanker KA-3B detachment, had finally had enough of the Russians' antics.

John Wunche was a big man with bright red hair and a flaming red handlebar mustache. He was a frustrated fighter pilot whom fate and the Bureau of Naval Personnel had put into the cockpit of a former heavy bomber now employed as a carrier-based tanker.

CDR Wunche flew the tanker like a fighter and frequently delighted the tactical pilots by rolling the "Whale," as we all called the KA-3B tanker, on completion of a tanker mission. Consequently, John's nickname was "*The Red Baron*."

On 21 July 1967 John Wunche proved just how appropriate his nickname was.

Crop Dustin' in the Gulf

The UNS carrier, Bon Homme Richard, had nearly completed a recovery. The Russian trawler had been steaming at full speed to try to cut across our bow, and the bridge watch had been keeping a wary eye on the intruder. For a while it looked as if the Russian would be too late and we would finish the recovery before having to give way to the trawler. But a couple of untimely bolters (go-arounds) extended the recovery and the Bon Homme Richard had to back down and change course to comply with the rules.

The Landing Signal Officer (LSO) hit the wave-off lights when The Red Baron's "Whale" was just a few yards from the ramp.

John crammed on full power and sucked up the speed brakes for the go-around. The Bon Homme Richard began a sharp right turn to pass behind the Russian, causing the ship to list steeply, and there, dead ahead of John, was the Russian trawler.

He couldn't resist. He leveled the "Whale" about a hundred feet off the water and roared across the mast of the Trawler with all fuel dumps open like a crop duster spraying a field of boll weevils.

The Russian disappeared in a heavy white cloud of jet fuel spray, then reemerged with JP-5 (Navy's brand of jet fuel) glistening from her superstructure and running lip-full in the scuppers, (the openings in the side of a ship at deck level that allow water to run off).

The Russian trawler immediately lost power as the ship's crew frantically tried to shut down anything that might generate a spark and ignite the fuel. She was rolling dead in the water in the wake of the Bon Homme Richard. The Russians broke out the fire hoses to wash down the fuel, as the Bon Homme Richard steamed out of sight and completed the recovery of John's "Whale".

The "Red Baron" was an instant hero to the entire ship's company.

"You only live once. If you do it right, once is enough." *Mae West*

January, 2014

Shell Announces Unleaded 100-Octane Fuel

Shell Oil announced on Tuesday [December 3, 2013] that it has developed an unleaded 100-octane piston engine fuel to replace 100LL and, presumably, the fuel will enter the FAA's recently established fuel testing and certification process. In a press release, Shell said the fuel is a culmination of 10 years in R&D and initial testing has been done with two OEMs, Lycoming and Piper. None of the companies offered any information on what the new fuel might cost. READ MORE

Can't afford a GoPro Camera? Try the DEOHAKO PROPSHOT SMARTY MOUNT WITH LENS

This has a filtered lens to remove propeller distortion from in-flight videos and photos.

Adjustable Lens Positioning - Adjustable lens compatible with most smart phones (iPhone, Android, etc.).

Universal Smartphone Grip - Spring action grip adjusts to securely hold iPhones, Android Phones, and other mobile phones.

Rotating Ball Head - Position Smartphone at any angle to capture in the amazing flight footage.

Quick Release Suction - Press fit suction with quick release for easy removal within seconds.

Strong, Wide Suction - 4" base diameter that ensures a strong suction for use at high speeds.

Available at Sporty's, $78.95

Product Review: SkyGuard TWX

Affordable ADS-B is Here - Almost!

If ADS-B talk is confusing to you, you might want to read/view:

August Issue of *The Mooney Flyer*, "ADS-B Choices", page 8
(http://www.themooneyflyer.com/issues/MooneyFlyerAugust2013.pdf)

Garmin ADS-B Academy (http://www.garmin.com/us/intheair/ads-b/)

Are you all up to speed? Great, let's dive into Affordable ADS-B!

In October, if you had told me that I could get a portable ADS-B Out system for under $1,000, I would have rolled my eyes and thanked you for your "wonderful uninformed" information. But, it's true. Portable ADS-B is almost here.

In the past, you would have needed a panel mounted WAAS GPS and then either:

For high performance aircraft operating in the flight levels, an Extended Squitter Transponder like:

Garmin 330ES ($4,200 + 10 hours to install), or
Honeywell/ Bendix King KT74 ($3,200 + 2 hours to install) (expecting certification in Feb)

or

For the rest of us operating below the flight levels, a Universal Access Transceiver (UAT) like:

A Garmin GDL 88 ($4,000 for the basic or $5,500 for the WAAS model + 24 hours to install), or
A NavWorx ADS600-B UAT, which includes a WAAS GPS ($4,600 + 24 hours to install)

SkyGuardTWX has introduced the Vision Pro line of ADS-B UATs. This is how it works.

To enter the ATC assigned transponder code:

Enter it into you Mode C Transponder, and then -
Plug the code into The SkyGuardTWX Vision Pro via Wi-Fi, using either:
The iFly GPS app, (iPad), or
An iFly 720 GPS (shown at right).

NANOSECOND - Time delay between the Low Fuel Warning light and the onset of carburetor icing

ADS-B "Out"

If you just want to meet the Jan 1st 2020 mandate for ADS-B "Out", you can buy the Vision Pro 987 MHz UAT ADS-B "Out" model for $975. You'll also need an iPad for the iFly GPS app, or an iFly 720 GPS (portable GPS)

ADS-B "In" (receive weather and traffic information) and "Out" (transmits position)

If you'd like to be ADS-B "In" and "Out", you can buy the Transceiver for $1,475. It transmits your ADS-B position using 987 MHz, and receives Traffic (TIS-B) on both the 1090 987 MHz bands and Weather (FIS-B) on the 987 MHz band.
Once again, to plug your ADS-B transponder code into the Vision Pro, you'll need an iPad and the iFly GPS app, or an iFly 720 GPS.

Displays for Weather and Traffic

You'll need an iFly 720 GPS or an iPad with either of these apps:

iFly GPS app
WingXPro 7 app

Set up

The unit is powered on by plugging the provided DC power adapter into any aircraft power socket that provides either 12v or 24v DC. The Transceiver (ADS-B "in" & "out") setup instructions are HERE
The Transmitter (ADS-B "out") setup instructions are HERE

SkyGuard TWX is accepting orders NOW for immediate delivery. FAA certification is anticipated "soon".

Transciever model orders

Transmitter model orders

Shown here, is the Transceiver "In" & "Out" model

Mooney Instructors Around The Country

California

Chuck McGill (Master CFI) located in San Diego, CA 858-451-2742, Website: Click Here

Florida

Mike Elliott (CFII) located in Tarpon Springs, FL, Contact 317-371-4161
Quality instrument & commercial instruction, transition training, ownership assistance, plane ferrying

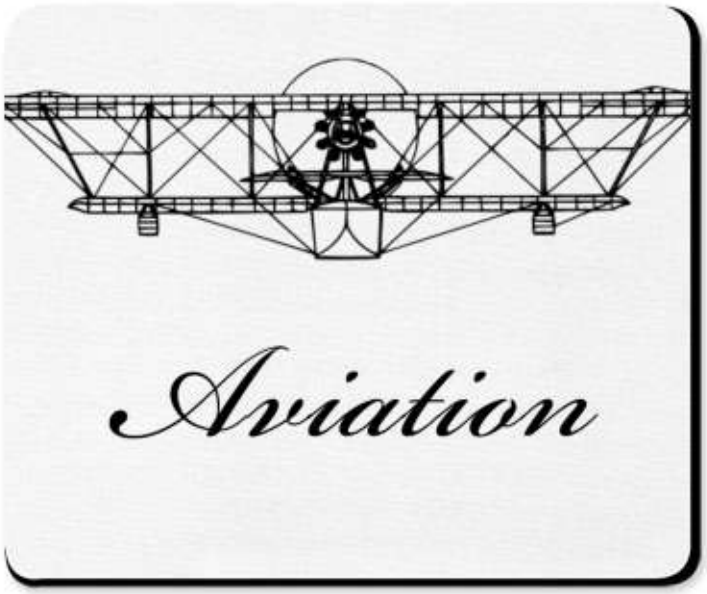
Georgia

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

South Carolina

Wallace Moran – Charleston SC, 843 822 9725, Email wallace.moran@gmail.com

A NAFI Master CFI with extensive Mooney experience. He is also an FAA Designated Pilot Examiner and has been awarded the FAA Wright Brothers Master Pilot Award. Wallace is a retired airline pilot and Mooney owner.



L/G Meets Airplane

On January 16, 2004, about 1415 Pacific standard time, a Cessna 180K, N61691, and a Beech 95-B55, N555RD, shown at left, collided about 6.5 nautical miles west of Tehachapi, California. The Cessna was destroyed, and its airline transport certificated pilot was fatally injured. The Beech was substantially damaged, and its private pilot received minor injuries.

Less than a second prior to the collision the Beech pilot observed the right landing gear of an approaching airplane in his 1 o'clock position. He then ducked in a reflex-like manner and the collision occurred. The Beech pilot observed a dirt airstrip near his location, and he made a precautionary landing.

Ref:
http://www.beechcraft.org/vtail/midair/

Keep your eyes outside and stay safe!