The Mooney Flyer

The Official Online Magazine for the Mooney Community

www.TheMooneyFlyer.com

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Editors

Phil Corman | Jim Price

Contributors

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The views expressed in each author's article are their own.
The Mooney Flyer's goal is to educate, inform, and entertain Mooniacs.

From the Editor

Phil Corman

Our Second Donation Drive

We want to THANK everyone who participated in our second donation drive in our ten year publication history. It is enough to keep us vibrant for another year and we are extremely grateful to everyone. Remember, if you haven't donated, you can still donate. There is a button to do so on the Table of Contents page and here.

Jim & I look forward to our next ten years. In addition to making a donation, you can also submit an article. You don't have to worry about your writing skills because we will edit it to perfection. If you have a story that you feel other Mooniacs may like and/or benefit from, please consider writing. It will make the magazine even better.

Wings to Walla Walla

I cannot believe the number of people registered to come to Henry Hochberg's ***Wings to Walla Walla***. As of mid-May, 50 are attending. I'm impressed. Maybe it's because The Mooney Flyer will have a complimentary wine and hors d'oeuvres "Meet & Greet" on Friday evening at 6pm. Or perhaps it's the hanging out on the ramp with all those amazing Mooneys on Saturday morning. Or could it be the dinner on Saturday night with lots of wine? I know, it's the camaraderie, which always excites me.

Mooney Factory Update

In case you missed it, Mooney CEO Jonny Pollack announced this past month that the Factory will open and provide MSC-like services. This is a small, but positive step. Please consider using them to help them reboot. The company continues to seek a buyer, but as of now, they have not closed a deal. Parts availability remains an issue for existing Mooney owners. The Mooney Flyer spoke with Jonny and offered a way for third parties to help with the issue, but Mooney cannot pursue that path.

John Hillard, Australian Mooney Pilots Association, has suggested a way to move forward on some parts by teaming with The Mooney Flyer to buy some parts in bulk so as to be able to provide those parts. We are in early investigation of this and will apprise our readers of any progress.

My Significant Other

Will never fly but lets me fly	29%
Is a Pilot	28%
Loves to Fly and Participates	27%
Will never fly and doesn't want me to fly either	8%
Does not enjoy Flying	6%
Loves to Fly and enjoy the flight and destination	2%

back Voters: 320

Next month's poll: "I Reduce Power" **CLICK HERE** to vote.

I absolutely love this publication, and I'll continue to donate as I am able. You guys do a tremendous job, and I'd love to contribute from time to time if need arises. I just wrote Ron Blum complimenting his recent piece on spins. This kind of knowledge and awareness is an absolute must! I told Ron that it was quite timely, as I just last week completed Patty Wagstaff's upset prevention and recovery and basic aerobatics course. I flew the Extra 300L, which is the only airplane I've flown that comes even close to the Mooney in terms of responsiveness and positive control. Of course, these airplanes differ in purpose, but when it comes to GA aircraft performance, nothing comes close to the Mooney.

Thank you again, and I'll put the word out!
Take care, Mary M

My insurance was canceled two years ago at age 83. 3,400 hours, 2,450 hours in my Mooney, never a scratch, authored safety articles in just about every commercial aviation magazine, C.A.P. Command Pilot, 21 A.O.P.A. courses taken and passed, attended many safety classes....

My insurance broker suggested: 1. Sell my Mooney and instead fly a fixed gear A/C. 2. Give AVEMCO a call. I did, then sent my lengthy personal experience and A/C details, etc. Nice people, like working with them. Got coverage at $100 less than I'd been paying. At renewal, another $100 was knocked off.
Chet P

Sending a donation your way via PayPal.

With less and less content in the MAPA Journal, what you are doing becomes very important and I for one, as a Mooney owner appreciate your efforts. Keep up the good work!

John L

Love The Mooney Flyer, appreciate all your hard work. Question about your article Go Arounds. You mentioned a Mooney "pancaked" on go around after retracting the gear. I frequently will go around by first leveling off (small amount of power added to arrest descent), retract gear (because I have a J bar and it's easier when I'm slower), power up and then retract flaps after a positive rate of climb. Wouldn't retracting gear just make the airplane more clean and therefore faster and less likely to stall or cause a pancake landing? I feel retracting the gear only makes you less likely to have a bad outcome.
Thanks so much for all you do.
Brad P
Editor Note: *I encourage Mooney pilots to establish a "positive rate of climb" before retracting the gear to avoid a pancake incident. Having said that, I agree with you that cleaning up the gear as soon as practical is good for the airspeed and climb.*

PRESS RELEASE

SECOND RETIREMENT COMING UP!

Loewen's Mooney Salvage NEEDS A NEW OWNER!

Paul Loewen has enjoyed over 50 years in the Mooney family……first in the Los Angeles area as a Mooney Service Center at Whiteman Airport in Pacoima. He moved to Lakeport in 1973 and began Lake Aero Styling & Repair (LASAR) in 1975. The rest is history, as they say!

Paul sold LASAR in 2017, and he would love to see a "Mooney person" acquire the remaining salvage business that provides Mooney parts from a collection of more than the past 50 years. Paul has enjoyed selling parts from his collection that are no longer available new from the Factory to Mooney owners world-wide.

If interested, contact Paul by home phone 707-263-0462, text 707-489-6423 or email PaulL@sonic.net.

LOEWEN'S MOONEY SALVAGE (www.loewensmooneysalvage.com)

Hot Down Summer in the Airplane

Back of my neck getting dirty and gritty

We always see articles about winter flying, but with summer around the corner, we thought it might be useful to talk about the stuff we should be aware of as summer approaches with increasing temperatures.

Let's Start with the impact to our Mooney Engines

Let's face it, our engines run hot, especially in the initial climb. The warmer temperatures in the summer exacerbate the issue. If the ambient temperatures are warm/hot, my CHTs approach 390-395°F on the initial climb out. They always drop into comfortable temperatures once I get to cruise altitude and set the power/prop/mixture. But during climb you should pay close attention to your CHTs. There are several things you can do to mitigate these higher temperatures:

- Enrichen the mixture. This will help lower your cylinder temperatures (CHT)
- Dial back the propeller
- Flatten your climb
- If you can control the cowl flaps, open them

You can also ensure that the engine has the proper amount of oil. My engine runs the best at six quarts. More than that, and it throws it out the exhaust. Less than six, and my CHTs run a little hotter.

In the winter, we recommend multi-viscosity oil so that you can more easily start your engine when it's cold and have higher viscosity at cruise. In the summer, there is less of a need for this, so a higher straight viscosity might be more useful.

Next is Aircraft Performance

In the summer, takeoff, cruise, and land will be subject to a higher Density Altitude (DA). This means that compared to winter, takeoffs will require more runway. You should know the extent of this increase in runway required, especially when using a field with a shorter runway.
On departure, after you rotate, you can expect less vertical climb rate than in winter. Make sure you can clear those 50' FAA trees at the end of the runway. Climb out at V_x or V_y as you would at any other time.

In the summer, landing will also require more runway. Even though you will be at the same airspeed on final and into the flare, your actual airspeed will be higher due to the hotter and thinner air. You can mitigate the increase in runway required by performing a short field landing.

The Weather in Summer

In the winter, we are more aware of icing and snowy conditions. In the summer, our awareness switches to Convective Weather.
You can reduce your encounters with moderate or greater turbulence by flying in the morning or late in the afternoon. In the western USA, flying over mountains and deserts can produce significant convective activity.

It is wise to give thunderstorms a wide berth. I have found that 20 miles pretty much assures me that I won't get any strong turbulence from a thunderstorm.

ADS-B Weather (FIS-B) helps but remember that it is already old information by the time it makes it to your display. Therefore, a visual separation is better.

What About the Summer Effects on You?

The physical demands in summer may be the most important since the heat does not work well on your body. Combine that with the workload and vibrations and you *will* get tired. This is never a good thing for a PIC.

To fight this, you should stay hydrated. Water is the best, but any drink with electrolytes is also useful. I know what you are saying, "But then I will have to pee." So what? Bring an empty Gatorade bottle with a wide mouth. It's better than the alternative which is reduced cognitive effects and possible dehydration.

Oxygen is another extremely useful tool for summer flying. In the summer, I usually start using Oxygen at 9,500' – 10,000' MSL and it works wonders. On long legs, I stay more alert and more refreshed than when I'm not using it.

Most of us do not have air conditioning, but in truth, it's most useful while taxiing to the runway on a hot summer day. At altitude and at cruise speed, things are much more comfortable. Opening the passenger door while taxiing always helps, but you can also invest in a Kool Scoop Vent or a B-Kool portable cooling system.

Wrapping a wet bandana on your forehead can also help.

Starting a Warm Engine in the Summer

When it comes to hot start procedures, our POH is marginally useful. The best procedure source is other pilots with the same engine. Every engine is slightly different. Don Maxwell has an excellent video for starting a fuel-injected Lycoming. Just click on the picture below to view it. Hot Starts for fuel-injected Continentals require a different technique. We haven't found a *Method that works for all Continentals*, but giving it a lot of fuel seems to be helpful. Also, don't forget to cool down the fuel pump by pulling the mixture to idle cutoff and running the fuel pump for 30 seconds or longer. Here is one technique offered by Don.

HOT Start TCM IO-550

1. Throttle full forward
2. Mixture at idle cut-off
3. Boost pump on high for 5 seconds.
4. With the Boost pump still on, move mixture to full for 3-5 seconds.
5. High Boost pump off
6. Crank engine and move throttle slowly back and forth
7. If the engine does not start, I do the same again, but just prime a little longer
8. Most times, if a Continental engine will not start, it is not getting enough fuel. It is just the opposite of a Lycoming
9. If this fails, I use a flooded start procedure

Protect Your Mooney on the Ramp

You may hangar your plane at your home airport, but when your away, it probably sits on a hot ramp. Heat is deadly for your panel avionics, but there are two things you can do to increase their happiness:

- My wife made window coverings made of a reflective material (sold at most RV stores). She cut them to size, put a border on them, and they attach with suction cups. These have a significant effect on keeping the cockpit temperatures low. Their only drawback is that they do not protect your plexiglass.
- Cover your Mooney with a Bruce's Cover, It will cover the cockpit and most, if not all of the plexiglass.

We hope you found these ideas helpful for Mooney summer flying.

Complacency and "Multitasking"

The most dangerous time for pilots isn't when they are students, but long after they have obtained their license. The longer we fly, with nothing going wrong, the more confident we become. Complacency sets in, and one can become just a little too confident.

The following are comments and statistics derived from Avemco Insurance claims:

- Taxi losses seldom happen to pilots with less than 50 total hours. Typically, new pilots are extremely cautious. They are on alert for everything, not wanting to bend some metal. Plus, they are often in the airplane with an instructor and if the student gets distracted, the instructor is there to stop the airplane before there is a problem.
- Once pilots pass the 50-hour point, and until they have about 2,500 total flight hours, this group's taxi mishaps account for about 11% of all claims. At around 50 hours, many pilots are able to pass the Private or Sport Pilot check ride. Now on their own, without a CFI in the right seat, the feeling of self-satisfaction or contentment starts to replace anxiety.
- *The taxi mishap rate increases to 13% for pilots with more than 2,500 hours total time*. Most likely, that is because they have become more comfortable and complacent. Experienced pilots may try to run checklists while they are taxiing, causing a division of attention that leads to a collision or taxiway excursion. Someone who has flown this long might be flying an airplane equipped with a GPS or even a full glass cockpit. The distractions of advanced panel equipment may cause the pilot to focus *inside* the airplane. If the aircraft is in motion at the time, and no one is looking outside, the aircraft is far more likely to run off the pavement or collide with an object.

Time in Make and Model

Likewise, pilots who have less than 50 hours in make and model have the lowest rate of taxi mishaps. Why? Perhaps because they are not yet comfortable in the airplane, so they don't let their eyes and minds wander during taxi. The rate of taxi claims goes up when the pilot has 50 to 100 hours in make and model. The pilot who logs more than 100, but less than 500 hours in type, has a moderate, but still reasonably low rate of taxi claims. With more than 500 hours in type, pilots may fall into the trap of multitasking, such as programming a GPS while trying to taxi.

Avoiding Taxi Mishaps

You can make it *your top priority* to pay attention to keep your head out of the cockpit, and continuously remind yourself to focus on taxiing and nothing else. Insurance statistics show that pilots who try to program the GPS or run checklists while the airplane is in motion, have a far higher rate of taxi collisions.

Every time you step into the cockpit, think about your mindset when you had less than 50 hours, and when you were a cautious pilot. Back then, you checked and even double-checked everything. Continuing to be careful will help you avoid the avoidable.

As we increase in confidence, we begin to think we can address multiple issues at the same time. We might think that we are invincible.

You only have One Brain

I remember my parents pleading with me to study without the TV or radio blaring in the background. Of course, I ignored their counsel. I was such a smart "know it all." Present day teenagers not only listen to music while studying, but they also text multiple friends while surfing the Internet. A computer brain can perform multiple tasks simultaneously. However, that is not the way the human brain it works.

Multitasking or Task-Switching?

The word *multitasking* first emerged in the 1960s in reference to computer technology in an IBM report. We somehow ended up using *multitasking* to describe human brain activity.
Most people are highly skilled in the art of sending a tweet, whilst cooking up dinner, and watching the TV. I have lost count of the number of times I have repeated a TV scene because I had become distracted by a ridiculous Facebook post!

We never really relax. We're always on the go, and the myth of multitasking is that this is ***good*** for us. **Well, it isn't.** For most people in most situations, multitasking is not possible. In fact, one study found that just 2.5% of people are able to multitask effectively. For the rest of us mere mortals, we are just task-switchers.
According to neuropsychologist Cynthia Kube, PhD, "We are really wired to be monotaskers, meaning that our brains can only focus on one task at a time. When we think we're multitasking, most often we aren't really doing two things at once, but instead, we're doing individual actions in rapid succession, also known as task-switching."

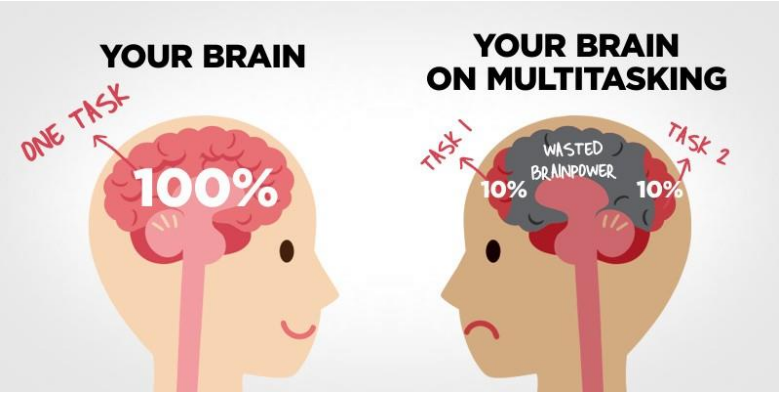
Stanford University Study

Stanford Professor Clifford Nass led a Multitasking Study to investigate what it was that gave multitaskers the ability to do what they do. The study assembled two groups of people. One group included **those who regularly multitasked**, while the other group was made up of **people who avoided multitasking**.

The first experiment evaluated the subjects' ability to ignore extraneous information and focus only on what was important. While the non-multitaskers had no problem successfully completing the exercise, those who *thought* they were great multitaskers, were distracted by extraneous information.

Next the researchers decided to test whether multitaskers were better at storing and organizing information. Once again, the multitaskers failed miserably, while the control group of non-multitaskers did fine.

Lastly, they figured that if multitaskers were not good at filtering out extraneous information and could not organize their memories better, perhaps they were better at switching between tasks faster than other people. Again, the control group that was unaccustomed to multitasking outperformed the subjects with *multitasking* experience.



In addition, when presented with multiple sources of information, the multitaskers found it difficult to filter out irrelevant information, focus in on certain information and or keep things separate in their minds. Additional research revealed that multitasking results in a strong negative impact on performing even simple tasks, and that it slows people down and results in more mistakes.

Taxiing

Sure, you can do two or three things at once. Heck, you do it every day. But what you cannot do, is actually ***concentrate*** on multiple things all at the same time. Have you ever tried writing an email while talking to someone else on the phone about something entirely unrelated? It is scary when you consider what it takes to taxi or fly an airplane. The "simple" task of manually controlling the airplane involves taking in multiple streams of information through our eyes, ears and other senses, and then sending out the proper signals to our hands and feet so they all work together to make the airplane do what we want.

Instrument Flying

A pilot must switch rapidly between diverse sources of information to construct a mental picture of what the airplane is doing and how to get it to go where he or she wants it to go. Now, let's add air traffic control instructions, often delivered at machine-gun speed. The pilot, while flying, needs to interpret the instructions from ATC through the use of paper or electronic charts. He or she must also fly, while programming the autopilot to fly the desired route. At the same time the pilot has to keep track of the weather at the current location, along the route, and at the destination. Finally, let's add questions from nervous passengers and personal needs like eating, drinking and bladder relief. As one pilot responded when queried by ATC about his varying altitude, "It's OK, I'm done now."

There are lots of items a pilot needs to track and control, often simultaneously. In high-traffic areas and/or challenging weather, the tasking can become intense.

The first step is to avoid the need to address multiple tasks while taxiing or while flying, by carefully planning the flight. Every piece of information accessed ahead of time is one less task that needs to be performed in flight. In a critical multitasking situation, this one piece of information may be the requirement that overloads the pilot to the point that he or she loses track of something that is critical to flight safety.

Another step that can reduce the need to address multiple tasks is to try to accomplish as much as possible during times when there are fewer things going on. This means getting everything set up and checked before starting to taxi, and then focusing on controlling the airplane, watching for traffic and following the taxi clearance while in motion. The same goes for the before-takeoff checks. The first few minutes after takeoff can be one of the busiest times of the flight, so it is important to take the time to get everything set up before lining up on the runway. In some unfortunate accidents, it was found that the pilot was trying to take care of multiple items immediately after takeoff and lost control.

Cruise flight provides a time to relax. However, some pilots become too relaxed and fail to take advantage of this down time to check the weather and get ready for the approach at the destination.

After landing, do not perform any after landing chores, such as raising the flaps, opening the cowl flaps, or setting the trim to the takeoff position. Instead, clear the runway and when stopped, perform those items. Then, call ground control and ask for taxi clearance.

Multitasking is a concept that is hard to blame as a cause of an accident or incident. Because flying involves tracking multiple sources of information and managing numerous systems and controls, it does not take much to be overwhelmed to the point that critical information is missed, or critical actions are either neglected or done incorrectly. A conscious effort to reduce multitasking to the minimum necessary by meticulous planning, and by accomplishing everything possible before taxiing, takeoff or approach, can pay huge dividends in safety and peace of mind.

Texting and Taxiing

This is as stupid as texting while driving. Don't do it! You can wait until you are stopped. Also, if you have an iPhone, you might want to employ Siri. This way, you can continue to maintain awareness and vigilance. You can thank me later.

Fly Safe,
Jim

First Actual IMC – Post Check ride

by Richard Brown

On September 19th, 2021, I passed my Instrument Rating checkride. Eight days later, I experienced in my first solo flight in actual Instrument Meteorological Conditions (IMC).

The marine layer in Southern California can offer some great practice in actual conditions. It's typically not very thick and the ceilings sit around 800-1,500'. This means you won't spend a lot of time in it and will break out early. The forecast for the evening was overcast at 1,200' which would be great for some IFR approaches. My plan after work was to file an IFR plan and fly some approaches at Fullerton (KFUL). Having just passed my checkride the prior week, I wanted to get up there and log some time on my own before flying with anyone else.

As so often happens, the forecast did not cooperate. The KFUL ceiling was broken at 4,500', which was not enough to count for anything. I looked at the weather at the other airports in the LA Basin and the only one showing any clouds was Torrance (KTOA) with a broken ceiling at 1,200', broken at 2,100', and 10 miles visibility. I thought to myself, "That will be perfect. I can file and get an approach into Torrance as well as some actual IMC on departure." I had previously flown that exact same thing with my CFII while training, so it would be familiar.

I had a short debate with myself as to whether I really wanted to go fly some IFR. I think it is probably a common thought process when the training wheels come off. This was going to be very different than five years ago when I confidently flew my first flight after getting my Private Pilot License. In addition to all the procedures you must be able to fly, and the radio calls, there is the very real added danger of flying in the clouds while relying only upon your instruments.

The internal debate didn't last too long before I decided, "You are very capable of doing this and you really should get some instrument time before taking someone up with you, so just do it". Upon reaching my decision to fly, I received my briefings, filed the flight plans, and then completed the pre-flight on the plane.

I was still battling a little bit of nerves as I pulled the plane out, closed up the hangar, climbed in, and with checklists completed, started up the engine. As I progressed through the ATIS weather, taxied to the run-up area, and went through the engine run-up, my nerves were slowly calming down. There is nothing quite like a routine to calm your nerves.

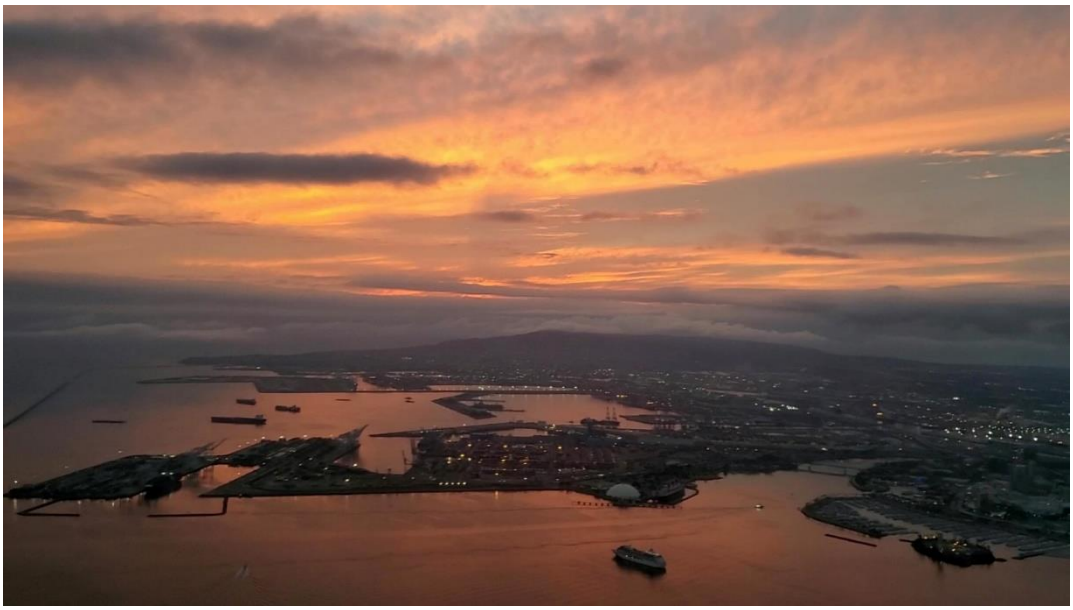
Me: "Fullerton Ground, Mooney 78878, southeast runup with Lima, ready to copy IFR."
Ground: "Mooney 78878, Fullerton Ground, cleared to Torrance Airport, on departure turn left heading 230, radar vectors to Seal Beach, direct, maintain 2,000, expect 3,000 one zero minutes after departure, departure frequency 125.35, squawk 4601."
Me: "Cleared to the Torrance airport, on departure left turn heading 230, radar vectors Seal Beach, direct, climb maintain 2,000, expect 3,000 one zero minutes after departure, frequency 125.35, squawk 4601, 878."
Ground: "Mooney 878, readback correct, let me know when you are ready to continue taxi."
Me: "Roger, just a moment."

Based on the clearance, I set the G5's heading and altitude bugs and entered the squawk code in the transponder.

Me: "Fullerton Ground, Mooney 78878, ready to taxi."
Ground: "Mooney 878, runway two-four, taxi via Alpha."
Me: "Two-four via Alpha, 878."

Holding short of the runway, Ground advised me it would be about a 2-3 minute delay, waiting on SoCal Approach, and then about 8 seconds later, with what sounded like a smile, the controller said, "And that 2-3 minutes has ended," and he cleared me for takeoff.

I was given the handoff to SoCal who kept me at 2,000' while giving me vectors to the final approach. I could see the Torrance airport, and while there were clouds over and to the west of the airport, the approach was clear so there wouldn't be any actual IMC on the way there. The sun was beginning to set, and the sunset just got more beautiful as the flight progressed. I grabbed my phone to take a short video, put it away, and then got it out again as the colors became even more vibrant.



ATC: “Mooney 878, five miles from ZILBA, turn right heading 270, maintain 2,000 ‘til established on the final, cleared RNAV two-niner right approach.”
Me: “Right heading 270, maintain 2,000 ‘til established on the final, cleared RNAV two-niner right, 878.”

I disconnected the auto-pilot and hand flew the approach under visual conditions. After landing and taxiing back, I stopped in the run-up area to reconfigure for departure and pick up my IFR clearance for the flight back. I knew that on the departure, I would be going into the clouds, but as the flight progressed, the nervousness I had experienced earlier had dissipated, and I was feeling good.

Ground: "November 878, Torrance Ground."
Me: "Go ahead, just getting configured, 878."
Ground: "Did you want me to keep this IFR flight plan on file?"
Me: "Affirmative."
Ground: "Roger."

I finished going through the pre-takeoff checklist and then called up for my clearance.

Me: "Torrance Ground, Mooney 78878, ready to copy IFR."
Ground: "Mooney 78878, Torrance Ground, you're cleared to Fullerton airport via fly runway heading, intercept the LAX 170 degree radial to LIMBO, Victor 64, Seal Beach, direct, maintain 3,000 expect 4,000 one-zero minutes after departure, departure frequency's 134.9, squawk 4675."
Me: "Say again the radial off of LAX?" ***(I had heard there was a radial but in writing everything out I missed the radial number.)***
Ground: "LAX 170 degree radial."

Me: "Cleared Fullerton airport, on departure fly runway heading to intercept the LAX 170 degree radial, LIMBO, Victor 64, Seal Beach, Direct, climb maintain 3,000, expect 4,000 one-zero minutes after departure, frequency 134.9, squawk 4675, 878."
Ground: "November 878, readback correct. Hold in the run-up area, advise tower you're IFR. Good Day."
Me: "Thanks for the help, we'll hold here." ***(I have often wondered why pilots, including myself, use a plural like 'we' instead of a singular like 'I' or 'me', even when flying alone. Perhaps it is just habit, or maybe we are including the plane as a member of the flight...I don't know.)***

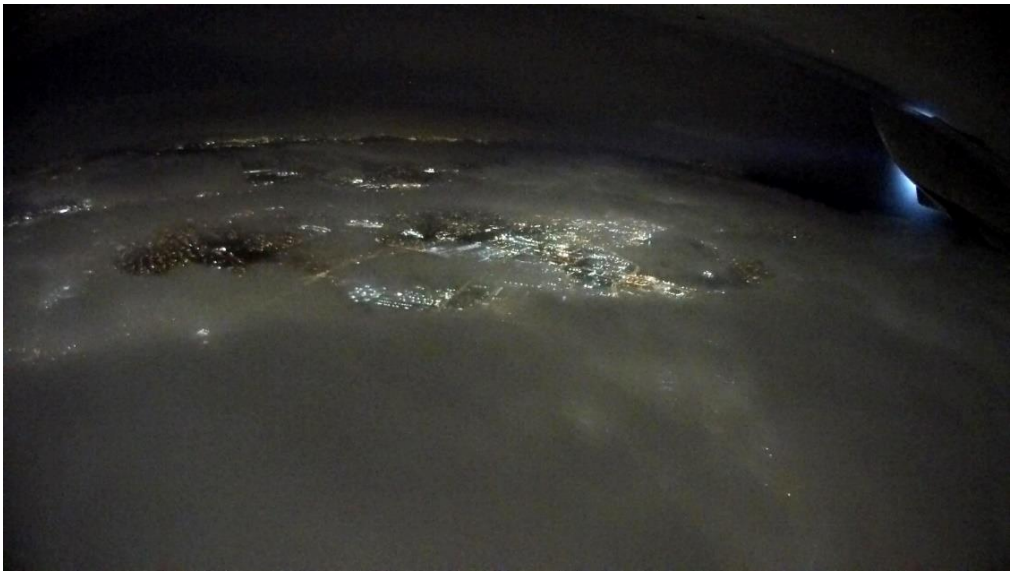
I finished programming the GPS as well as the heading and altitude bugs, then called up Tower.

Me: "Torrance Tower, Mooney 78878, ready to depart IFR."

The tower cleared me for departure. I lined up on the center-line, pushed the throttle in, and was rolling down the runway. Shortly after lifting off, I was handed off to SoCal Approach and never flew any of the IFR clearance. Ninety seconds after lifting off, I was in the marine layer and getting vectors from SoCal.

After a couple minutes in the clouds, I was on top, and then back into a few puffy clouds that were a little higher than the rest of the layer. It was dark, I had turned the strobes off, but had left the landing light on. With the auto-pilot engaged, I glanced up from the instruments and saw the landing light shining off the clouds as I zipped by. It felt like I was driving along through the fog at 150 mph, and I quickly went back on the instruments. I thought, "That could mess you up really quick!"

Breaking out of the last of the clouds, I was treated to a smooth flight just above a thin, patchy marine layer, with the city lights glowing up through and blinking in and out of the cloud openings. I watched as the beacon at KFUL would appear and disappear off my left side. I thought about how previously I would have had to try and find a hole in the clouds to make a safe VFR descent, but now I could just cruise right along and fly the approach, clouds or no clouds.



ATC: "Mooney 878, turn left heading 260 intercept the final."
Me: "Left heading 260, intercept final, 878."

ATC: "Mooney 878, three miles from AKTAQ, maintain 3,000 till established, cleared RNAV two-four approach."
Me: "Maintain 3,000 till established, cleared RNAV two-four approach, 878."

Again, I clicked off the auto-pilot to hand fly the approach. There were a few clouds between my current location and the airport, but before I reached the Final Approach Fix (FAF), I was through them and could see the Precision Approach Path Indicators (PAPI) and the runway lights lit up in front of me.

All total, I spent about five minutes in the clouds during the 20 minute flight, which isn't much. However, it was nice to "Get my ticket wet" and get over that hurdle.

As always, thank you for taking the time to read. If there are things you would like me to write about (or not write about), or if you just want to say hello, drop me an email at richard@intothesky.com.

They Fly Among Us

This is an excerpt from a report made to the **Aviation Safety Reporting System**. *The narrative is written by the pilot/CFI. Details, such as aircraft model or airport, are often redacted/scrubbed from the reports. Reference* ACN: **1855701**

I was performing landing training with a student. On the upwind leg of the landing pattern there was a garbled call on the radio which sounded like somebody asking about traffic at ZZZ. I asked [the] calling aircraft to repeat. The aircraft came back and asked if there was any traffic at ZZZ. I responded, "One aircraft in the traffic pattern, currently on upwind."

My student and I saw the traffic at our two o'clock traveling in the opposite direction to us, parallel to Runway XX which we had just taken off from. We continued to fly our pattern, left downwind followed by a left base. We made our traffic calls on downwind and base.

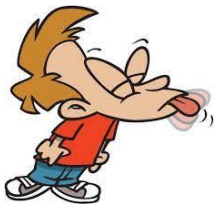
When we were on base, we heard a call saying Aircraft Y base to final. We looked around and could not see another aircraft, so proceeded with caution. We turned final and called the final, still looking for the traffic but did not see anything.

We landed and at the end of our landing roll we saw a Cessna exiting the runway. The Cessna did not have a functioning rotating bacon or white tail navigation light. The green navigation light was functioning. The pilot of the other aircraft replied, "So you landed while we were still on the runway."

I responded with, "Do you know that your beacon and your white light are out? We could not see you."

The other pilot repeated, "You landed while we were on the runway."

I asked, "Did you hear that your lights are not working? We did not see you and you were not making radio calls."



The other pilot followed up with a rude response, so I did not engage him any further. I wanted to tell him that ZZZ has a left pattern to Runway XX and he had flown what seemed to be a right pattern, without a functioning beacon or white light and not making radio calls.

What we can learn: Check your ego & recognize that you could make a mistake +

- Some runways have non-standard right traffic. Before flying to an airport, study the Chart Supplement, Sectional Chart, and if available, your Electronic Flight Bag.
- This isn't 1922. At pilot controlled airports, use your words. Talk/announce your position so others can find you. Likewise, if you are looking for an aircraft that is the pattern and you can't see it, ask them to report their position.
- During the preflight, consider checking the lights. If your aircraft lighting is not working properly, don't fly at night.

Wisconsin Aviation Expands Aircraft Interiors Service with the Acquisition of Jaeger Aviation & Its Spatial Interior

Wisconsin Aviation, Inc., announces the expansion of its aircraft interiors department with the acquisition of Jaeger Aviation, based in Willmar, Minnesota.

With its roots stemming back to 1945, Jaeger Aviation's sixty-four years of specializing in Mooney Aircraft sales and service made a new interior design for the vintage Mooney a natural. The "Spatial Interior," as this new design was labeled, allows for a simpler and better way to increase cabin space and expedite service while giving the Mooney a look it deserves. The Spatial Interior, now 15 years in the making, is recognized worldwide.

For more details, visit:

www.WisconsinAviation.com or www.JaegerAviation.com

Wisconsin Aviation's aircraft interiors department, located in Watertown, Wisconsin (RYV), accommodates all types of general aviation aircraft. Its services include minor repairs to complete customized interior replacements. The Jaeger Aviation products and experience will help continue to grow this department.

Wisconsin Aviation offers a complete line of general aviation services including air charter, aircraft maintenance, avionics repair and installation, flight training and aircraft rental, aircraft management, aircraft brokerage, and fueling services. The corporation has locations in Madison, Watertown, and Juneau, Wisconsin.

For more information about Wisconsin Aviation, send email to Interiors@WisAv.com or call 920-261-4567.

What's All the Flap About?

Twenty Fourth in the series by Ron Blum

I am sure you have heard about all the different types of airplane flaps, but do they all make sense? Why do some people argue about the type of flap that is on an airplane? Does the type of flap really matter? What if I said that different flap types are designed for different reasons? Let's start with a few ground rules and then we'll go through the different flap types and their characteristics.

To begin, let's keep this discussion limited to flaps located on the trailing edge of the wing. Yes, there are many, many more flap types. Some airliners even have "Krueger" flaps on the front of the wing! All flaps change the camber (curvature) of the wing (airfoil), at least in the flap section of the wingspan.

As we will find out, rarely can a flap be defined by a single characteristic or type. In addition, all design is a compromise or tradeoff: simplicity versus complexity, inexpensive versus cost-prohibitive, gain of 90% of the possibilities versus 95% or even 97%, etc. It's not always simple, but we're going to keep it that way in this article ☺.

The purpose of a flap system is two-fold. First, to lower stall speeds, and as a direct result, lower takeoff and landing speeds. This helps both performance and safety … especially in higher speed airplanes. The second is to add drag. Drag allows steeper approaches and allows airplanes to quickly lower drag in a go-around situation. Enough of flapping my gums. Let's get going!

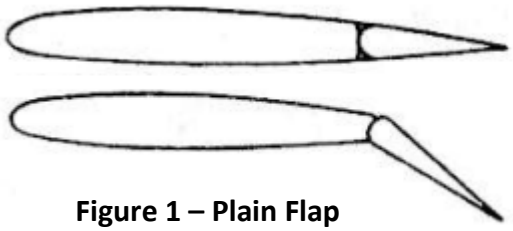


Figure 1 – Plain Flap

Figure 1 is an illustration of a plain or simple flap. The small, 2 and 4-place, Grumman series of airplanes use this type of flap. In that particular installation, the flap and aileron use the same hinge line ("co-axial" but that's too technical), and the aileron torque tube (flight control system) actually goes through the middle of the flap! The hinge lines of simple flaps are typically the center of a leading-edge radius, but can be at the very leading edge and/or moved up or down within the flap surface. The main characteristic of a plain flap is that it is a simple, fixed hinge line that the flap rotates around to change the aft portion of the airfoil camber. Plain flaps are typically not very aerodynamically effective, but they are simple and cost effective.

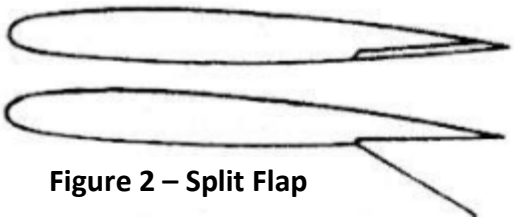


Figure 2 – Split Flap

Figure 2 is an illustration of a split flap. The main characteristic of a split flap is that the aft portion of the airfoil is split into two sections, an upper section and a lower section. The upper section stays in place as the lower section pivots down to change the aft airfoil camber. A split flap is utilized to add drag and/or to change the pitch attitude of the aircraft. The Cessna 190/195 series of aircraft utilize a split flap. In addition, many light twins use a split flap on the inboard section of the wing simply because there is no room for a more complicated flap system. Both the plain flap and split flap are not very aerodynamically effective, but they are simple. Remember, everything in design is a compromise. In the case of the C190/195, the split flap allows the pilot to see over the big radial engine to land the airplane. It is a good compromise.

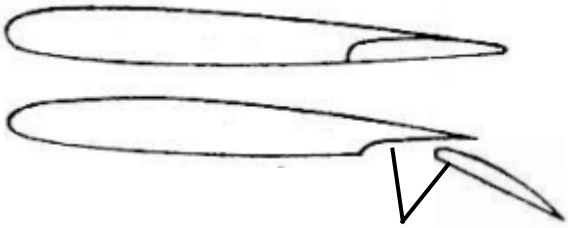


Figure 3 – Dropped Hinge Flap

Figure 3 is a typical dropped hinge flap. The dropped hinge flap is considered a simple flap, but it adds some of the characteristics of a single-slotted flap and the area increase of a Fowler flap. More on both of those flaps in just a bit. The Cirrus airplanes use a dropped hinge flap on the SR-2X series of airplanes, and that hinge is dropped a LOT – like 12" or so!

The Mooney M20 series also uses a dropped hinge flap system. As mentioned above, there are advantages of simplicity with partial advantages of both Fowler action (wing area increase) and a single-slot advantage of controlling boundary layer on the aft section of the airfoil. However, all this is a compromise. The hinges are always in the airflow and should be faired to reduce some of the drag. In addition, the position of the flap must follow the radius of the hinge line.

Figure 4 illustrates a single-slotted flap wherein a gap has been opened between the main wing and the flap. This gap allows the boundary layer to be re-energized over the flap. Single-slotted flaps are typically much more effective than simple or split flaps. The Cessna series of single-engine airplanes use this type of flap. As one can see, it's hard to define a flap system as one type. The Cessna flaps also have some Fowler action, which increases the wing area.

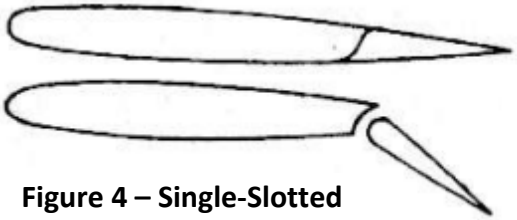


Figure 4 – Single-Slotted

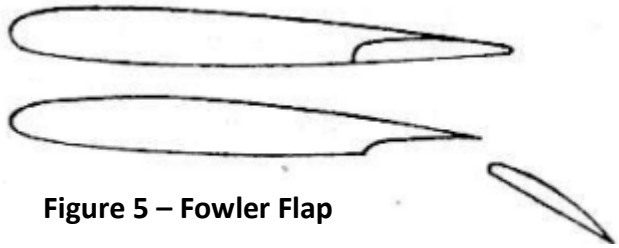


Figure 5 – Fowler Flap

Figure 5 is a drawing of a typical Fowler flap. The word "Fowler" or "Fowler Action" simply means that in addition to the rotation of the flap, the flap is also moved aft to increase the wing area. Fowler type flaps are defined by percentages of the wing chord for both the length of the flap and the amount of aft movement of the flap. The slot shape, the flap leading edge shape and location and the slot gap are all extremely critical for this type of flap to produce maximum lift. Fowler flap systems require expensive tracks and drive mechanisms.

As we can see here, we have just touched the tip of the iceberg. Flaps can be quite simple or very, very complicated. Airliners have extremely complicated flaps, which are typically, Fowler and double or even triple slotted! That allows them to land on “shorter” runways. Yes, runway distances are all relative 😊.

Got a topic? Email me at solutions@blueontop.com. Until next time keep the blue on top.

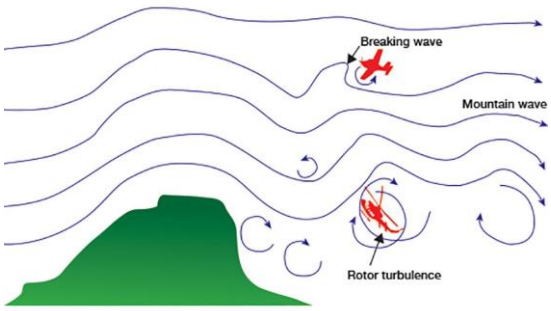
Ron Blum is an aeronautical/astronautical engineer with a 35+ year career managing general aviation Flight Test and Aerodynamics departments from shore to shore and border to border. He was Chief Engineer of the Mooney M-10 in Chino, CA. He founded Blue on Top LLC, providing engineering and management consulting, Flight Analyst DER services and keynote speaking.

How do you know there's a pilot in the room?

He or she will tell you.

These are Turbulent Times

It seems that turbulence always hits a little harder in the summer. There are several different conditions that cause turbulence aloft and understanding each type can help you anticipate and deal with the bumps. In this article, we will deal with the different types and also how to provide an accurate PIREP.



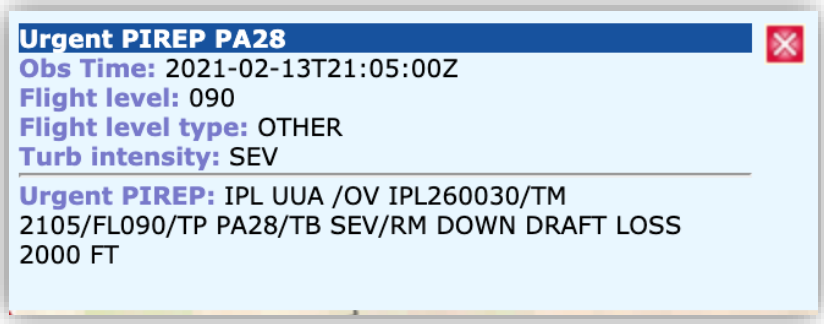
Flying Over Mountains

If the wind is blowing perpendicular to a mountain ridgeline, the wind smoothly rises on the windward side and then breaks in rotors on the leeward side causing some interesting mountain wave turbulence. You can expect turbulence on the leeward side, potentially for tens of miles.

Flying from Dark to Light Terrain or Vice Versa (Thermals)

This one is obvious and is much more pronounced in the summer. In the west, if we transition from a darker, perhaps forested green area to a lighter “desert” terrain, we can expect some healthy updraft. When terrain varies, flying higher can mitigate this type of turbulence, but not always. It’s worth a try.

PIREPs



When flight planning with ForeFlight or Garmin Pilot, pay attention to PIREPs (Pilot Reports). Then, during the flight, continue to pay close attention to PIREPs. PIREPs are far more useful than AIRMETs. I have found AIRMETs to be a forecast and not always accurate. If turbulence is forecast in an AIRMET, I usually choose to fly. Sometimes, the forecast turbulence does not manifest itself, or vice versa. I find it very helpful when other pilots report these discrepancies to FSS.

Cold Fronts

Cold fronts provide inherently unstable air, so passage across a cold front or near a cold front will usually provide some turbulence.

Temperature Inversions

We don't think of a temperature inversion as a source of turbulence because usually, it is not. But when you climb through or descend through the temperature layer, you may get a bit of turbulence.

Mitigating Turbulence

There are two things you can do for your Mooney and its passengers in uncomfortable turbulence:

- Slow down. You should slow down to V_a. Slowing down will also help you ride out the turbulence.
- If you have Speed Brakes, consider deploying them as it makes the ride a little more stable.

Reporting Turbulence Correctly

Intensity	Symbol	Aircraft Reaction	Reaction Inside Aircraft
Light		Momentarily causes slight, erratic changes in altitude and/or attitude (pitch, roll, yaw).	Occupants may feel a slight strain against seat belts or shoulder straps. Unsecured objects may be displaced slightly. Food service may be conducted and little or no difficulty is encountered in walking.
Moderate		Changes in altitude and/or attitude occur but the aircraft remains in positive control at all times. It usually causes variations in indicated airspeed.	Occupants feel definite strains against seat belts or shoulder straps. Unsecured objects are dislodged. Food service and walking are difficult.
Severe		Causes large, abrupt changes in altitude and/or attitude. It usually causes large variations in indicated airspeed. Aircraft may be momentarily out of control.	Occupants are forced violently against seat belts or shoulder straps. Unsecured objects are tossed about. Food Service and walking are impossible.
Extreme		Aircraft is violently tossed about and is practically impossible to control. It may cause structural damage.	
Chop is a category of turbulence which causes rapid and somewhat rhythmic bumpiness without appreciable changes in altitude or attitude. May be reported as light chop or moderate chop.			

One day we were descending from Calaveras Reservoir to Concord Airport in Northern California. We heard a Cherokee report “Severe” Turbulence ahead and got ready for it. Northern California Approach (NorCal) called me and asked me to give a report. “We had constant light with occasional moderate.” That level of turbulence continued all the way to the ground. It is extremely helpful when you give an accurate report.

Mooneys seem to handle turbulence better than Cessnas, Pipers and Cirri. That might be due to the higher wing loading. I don’t know, but my Mooney seems to handle turbulence quite well.

"Oops! Sorry! I should've said, 'buckle your seat bealts'!"

Brilliant Engineering = Bright LED Lights

by Kevin Knight

For 20 years, I've avoided night flying. One of the main reasons was aviation lights. Filament bulbs in my M20F's cowl consumed lots of energy while producing more heat than light. Worse, the weak beam seemed more grey than white. Also, bulbs failed frequently because plane vibrations are hard on filaments. Halogen lights were far brighter. However, they cost a lot more, are not energy efficient, and required complex installations. When every switch and component was activated, the power draw occasionally tripped breakers, making for interesting night flights.

Thankfully, a glimmer of hope pulsed in 1962 when a GE scientist invented the first LED (Light Emitting Diode) that could produce visible light. Then, as now, light resulted from an electric current passing through semiconducting material (the "diode" in LED) resulting in electroluminescence.

An LED light has no filament to burn out, they sip 90% less energy than incandescent lights, and can last 30,000 or more hours. For instance, a 60-watt incandescent bulb at home generates between 750-900 lumens, (a measure of brightness). An LED bulb sips a mere 6-8 watts for a similar output.

Steady progress has led to extremely bright, highly efficient, long-lasting lights that transform the way the world and sky are illuminated. They aren't cheap, but neither is limiting my plane's utility to day trips only.

As more airplanes at my home airport displayed LEDs with super nova output, I began reconsidering my night flight policy. A friend who flew for the Air Force and has logged thousands of hours, pointed me to Boise based AeroLEDs, (pronounced "arrow ledz"). He said, they have "great products and great service." That is high praise from that cranky veteran.

AeroLEDs is a classic "Made In America" success story. In 2005, a trio of engineers, who were passionate pilots, decided planes, jets, helicopters, spacecraft and military vehicles could benefit from clean sheet LEDs. They would be designed to the highest standards, produced by craftspeople in Idaho, and backed by a five-year warranty.

In the beginning ….

Boise native Nate Calvin got his pilot's license in 1994, two years after earning a mechanical engineering degree from the University of Idaho. He was originally planning to work for Boeing, but they postponed those jobs indefinitely, so he started doing contract work in the agriculture industry. He quickly learned his passion was the nuts and bolts of design.

In 1995, he teamed up with two partners and started Sierra Flight Systems. It was one of the first companies to create synthetic vision technology for general aviation, predating Garmin's wildly popular G3 EFIS (electronic flight information system) by 20 years.

After selling Sierra in 1999 and doing some contract engineering for Hewlett-Packard and the nuclear energy industry, the writing and lighting were on the wall: Calvin knew that LED technology was maturing quickly and could compete with legacy lighting.

Once again, Calvin joined two other engineers and sold their first landing light in 2006 for experimental planes. These were followed by wingtip lights. Experimentals were a good starting place, since FAA regulations weren't cumbersome, but certified planes were a corporate priority.

"The federal government doesn't work at the same rate as private industry," said Calvin, who has built or rebuilt several experimental planes. "It can take two months to produce a product, but two years to get it certified. If a light fails, the plane won't quit flying, but the hurdles the FAA has in place are an 800 pound gorilla."

Not that he's complaining about aviation or his love of flying. Calvin has logged more than 2,200 hours, earned instrument, commercial and multi ratings, and considers pilots "his people."

"I've commonly referred to aviation as a defective, recessive gene that's often dormant and doesn't come out until later in life.

"As a career, this is a difficult business to make it in. You have to want to be here. But there's no better industry, in my opinion. You get 16-year-olds and 85-year-olds having peer-to-peer conversations."

Distinct Designs, Positive Feedback

Calvin and his colleagues knew success depended on making products that could easily replace existing lights while vastly improving them. They wanted their LEDs to enhance a plane's looks and gave them catchy names like *SunSpot* and *SunBeacon*.

They also made sure that form followed function, creating sealed lights like Equinox, the industry's first dual-function landing and taxi light. Like all AeroLEDs lights, they can run during every phase of flight, remain at full output regardless of engine RPM, turn on and off continuously without degrading, and aren't affected by vibrations. Plus, unlike the halogens I once had, they don't require remote power supplies.

"I knew we were doing something right when planes being advertised for sale noted they had AeroLEDs lights," said Calvin. "For the first time I'm aware of, lights were being mentioned in a plane's features. They were no longer an afterthought but added value."

They also enhance safety in distinct ways. First, as we age, the muscles controlling our pupil size get weaker. People in their 60s need three times more ambient light for reading than folks in their 20s. AARP members like me also benefit from higher contrast and certain parts of the visible spectrum being enhanced.

Second, while ADS-B is a great tool for identifying other planes in flight, I still can't see a lot of the planes my bright, 10 inch Dynon screen identifies even though I know where they're located in the sky.

That's not an issue if a plane has pulsing AeroLEDs lights. I can see them from miles away, particularly when the "wig-wag" feature is active.

Finally, ground operations are significantly safer for pilots and ground personnel if a plane is lit up like the Christmas tree in NYC's Rockefeller Center. The Pulsar NSP (Navigation/Anti-collision Strobe/Position) wingtip lights alone offer a trifecta of benefits with navigation, position and strobe lighting.

The holy trinity of LED performance is their combination of lumen output, candela and beam angle. What are those? The best explanation is in a 2019 **Aviation Consumer** article you can find online at https://www.aviationconsumer.com/accessories/led-landing-lights-worth-the-investment/

I encourage you to subscribe to Aviation Consumer. It is a terrific publication and an invaluable source of information for every plane owner and pilot.

Since I've owned and flown Mooneys and Pipers, I tracked down some pilots of each and asked about their experiences with these lights. Here are a few of the many comments I heard:

Spirit Airlines captain and M20C alum Mark Pensenstadler, who now flies a Zenith homebuilt, told me, "My Mooney had Whalen nav strobes, but the power supply caused interference with the radios. Once I changed to the AeroLEDS – problem solved.

"It doesn't pay to use cheap lights. I think AeroLEDS are the best you can get. I talked with the company's founder at Oshkosh. He said their philosophy is to create their own designs and build everything themselves. I like that." (https://www.youtube.com/watch?v=nk6O3LyV25Q)

FedEx captain and Encore owner Aaron Peterson, who has logged more than 17,000 hours, told me he added two AeroLEDs for taxi and landing. "The beam fans out to 30 degrees rather than 10 degrees so you can see more. My amperage draw is also way down. It used to be six or seven. Now it's two. Plus, the longevity of these lights is extraordinary."

Many of AeroLEDs landing lights are designed for easy self-installation and are minor modifications requiring only a logbook entry from the owner. However, any light that has a built-in pulse or wig-wag feature should use shielded wire and a dedicated ground at the main buss. Otherwise, there's possible radio interference or loss of ground contact.

Piper Turbo Arrow IV pilot Bob Marks has been flying 43 years and worked in air traffic control for 43 years. He helps produce training videos for King and did a deep dive into the LED market before selecting AeroLEDs for all his external lights.

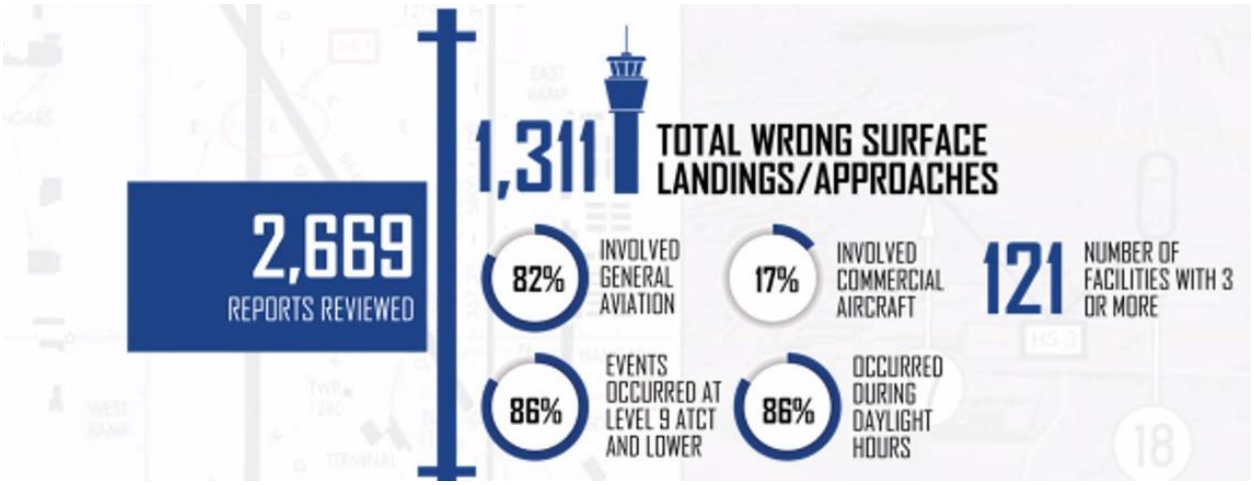
"It's pretty amazing at night," he said. "When I come into my home field in San Diego at night and hit the lights, I'm hard to miss. I was nervous about flying after sunset since you lose 30-40% of your night vision as you age. This is 33,000 lumens of age reduction for the eyeballs. You can see the runway for 300 yards.

"Another thing for me is single engine flying. Gordon Baxter wrote that if you're flying at night and lose your engine at 200 feet, turn on the lights. If you don't like what you see, turn off your lights. If you must make an emergency landing at night, AeroLEDs will give you a fighting chance."

New Hot Spots and Arrival Alert Notices

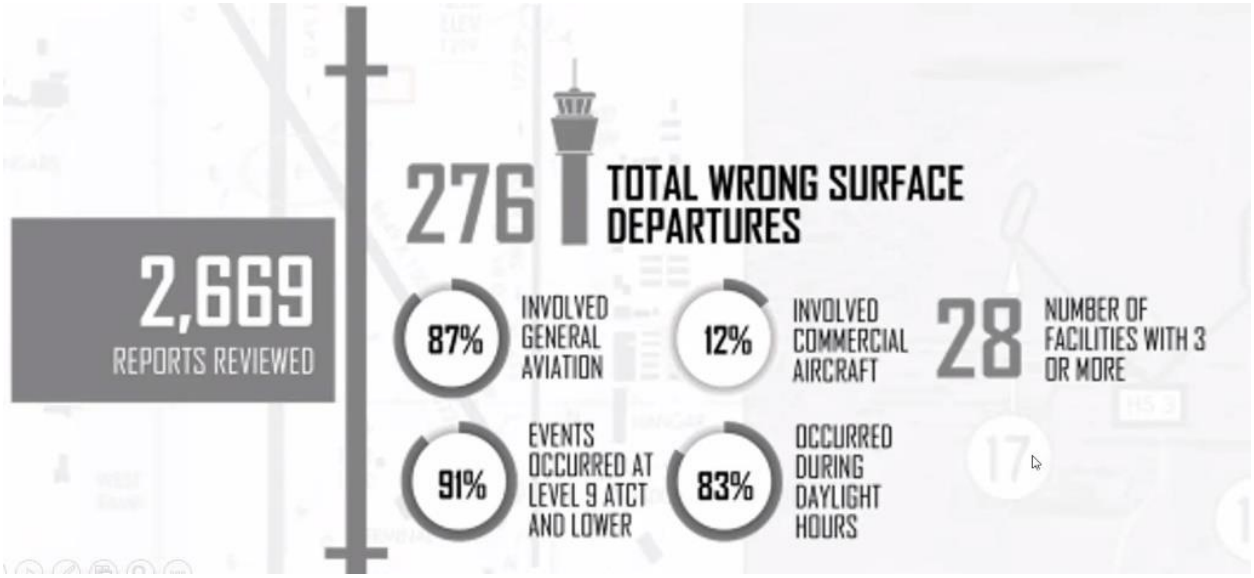
Wrong Surface Landings, Approaches and Departures continue to be a problem at many airports. As you can see by the graphics below, over 80% of these are caused by GA pilots.

ARRIVAL



When it comes to Wrong Surface Departures, there are fewer of them, but the data looks similar, with 87% caused by GA pilots.

DEPARTURE



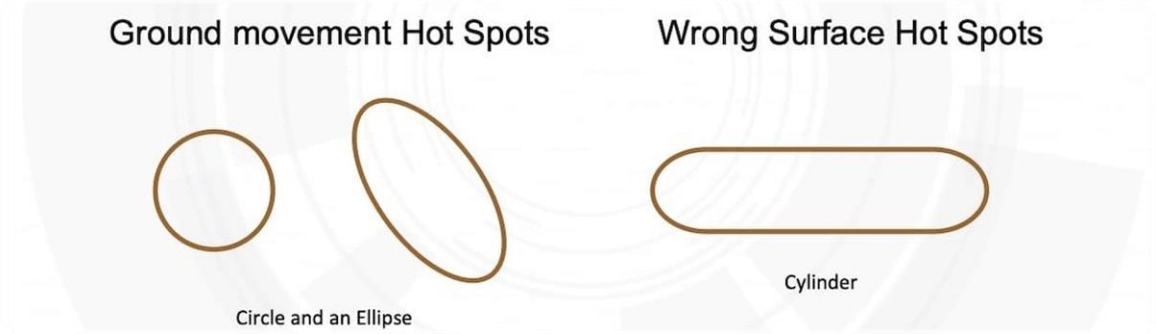
What are Hot Spots?

Hot Spots are Location(s) on an airport movement area with a history or potential risk of collision or runway incursion, and where heightened attention by pilots and drivers is necessary.

Common Causes:

- Airport layout
- Traffic flow
- Airport marking
- Signage and lighting
- Situational awareness
- Training

The FAA is taking several proactive steps to address wrong surface events, reduce the potential for pilot confusion and help improve safety in the National Airspace System (NAS). Below are the new, standardized Hot Spot depictions:



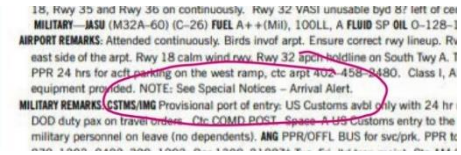
These 11 US airports have a history of aircraft lining up for takeoff on the wrong runway, or landing on the incorrect runway, taxiway, or airport. (See map)

In the past, those alignment Hot Spots were indicated by a brown circle on the approach end of the runway or a brown box around the entire runway.

Starting May 29, 2022, all Airport Diagram Charts will depict runway alignment Hot Spots with a brown cylinder at the approach end of the applicable runway(s).

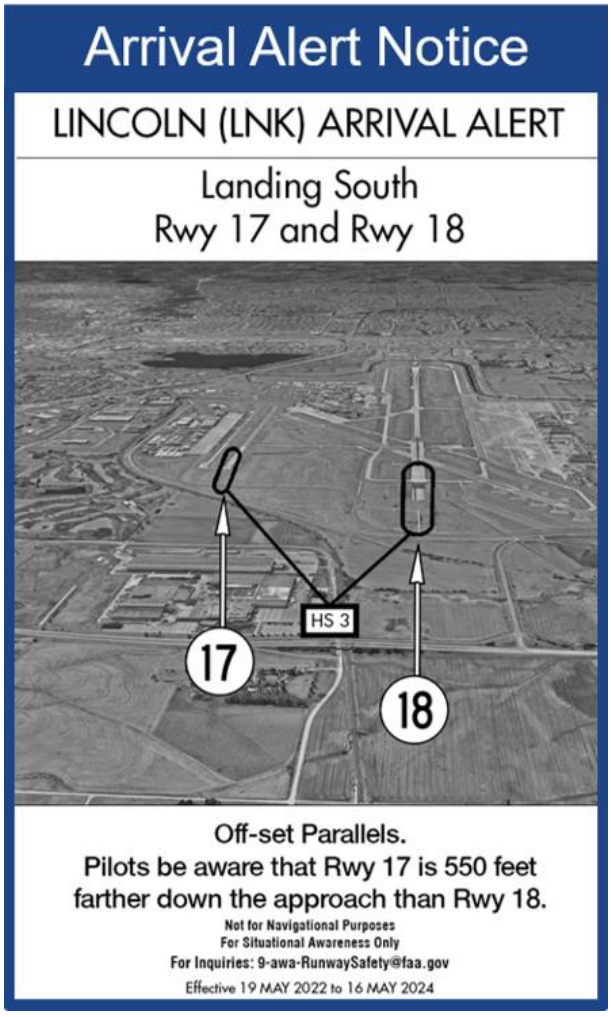
Also on May 29, instead of brown squares, rectangles, circles and ellipses, **ground movement Hot Spots** will be depicted by a brown circle or ellipse.

The FAA Chart Supplement will indicate if an Airport has an Arrival Alert Notice.



The New Arrival Alert Notice

In addition, for these 11 airports, the FAA has released **Arrival Alert Notices (AAN)** in the appropriate FAA Chart Supplements. These AANs are to be used for preflight planning.



The new AAN graphics will visually depict the approach to these 11 airports and a description of the AAN can be found on the AAN and the Special Notices Section of the appropriate FAA Chart Supplement.

The AAN depictions will describe the misalignment risk and the AAN graphics will incorporate the new standardized hot spot symbology.

The FAA will continue to monitor wrong surface events at US airports to determine if additional Arrival Alert Notices need to be created.

https://www.faa.gov/airports/runway_safety/

Flyin' the Bird

By Jerry Proctor

Last month, I reported that Santa was compelled to send me a Redbird TD2 Sim. Santa is one great guy! I also wrote about how to put the whole thing together. So, now, it's time to FLY!!!

When the last cord was connected, I got up off the floor, dusted myself off and pulled up the chair. This is more exciting than I thought. I turned on the hidden CPU button, started to hear the computer hum . . . all good. Then, as I stared at the panel, I saw a starter switch. Well, the plane hasn't been built that I can't fly, so turn the key! Hmm, NOTHING! Oh, I see the mixture control is out. Ah-ha, that will do it. I pushed it in, turned the key and . . . nothing. This scenario continued for about ten minutes and, dang, it was time to read the directions again.

Well, duh, it seems the Bird needs to know where she is sitting. So, I programed it for my home port, KFHU, Ft Huachuca, AZ. I progressed, but I wasn't there yet. Frankly, I was impressed. The "out the window view" is pretty accurate. However, the prop still wasn't turning. Then, as I looked in a corner, I saw, "Press Pause to begin" Ahh, that is the ticket!

I'm going to digress a bit here. Back in 1977, I was introduced to the Pause, or in this case the Freeze button. The Army helicopter flight school had a truly groundbreaking Huey full motion Sim for IFR flight training. There was no video, but it was a heck of a realistic instrument trainer. Well, more than once my virtual butt was saved by that freeze button. Just when I was about to break the sound barrier in a Huey while diving for the dirt, the instructor screamed enough and hit the button. At times, I thought it at least more noble and dang sure less painful to let me bury the thing 40 feet deep. I regret the instructor didn't have his own pause button as I am sure he would have worn it out.

Back to the Bird. So, I hit the pause button, and turned the key. Rurr, rurr, varoom! YESSSS! I had life! So, I checked the panel, and the gear was down, mixture and prop were in the correct position. (I forgot to mention it has little speakers, so you can hear a virtual engine). It was time to pour the coals to it and down the runway we went. OMG, I was going down the virtual runway like a drunken sailor. Geez those rudder pedals are sensitive. I finally got enough speed, (60kts) and thankfully pulled out of this snake trail.

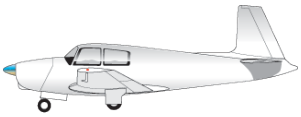
About now, you are probably asking, where is Jerry going; what was he going to do, hmm? I should have thought about that before I flew. I was impressed that the virtual terrain (Ft Huachuca has LOTs of terrain) was well represented. I porpoised up and down, but mostly up, managing to miss the mountains. The Redbird controls are quite sloppy compared to a Mooney. To get it to turn, one must apply about 20 degrees of turn on the yoke and you really have to almost overdo the rudder control. In fact, the rudder helps you slew the plane around. It would take several flights to learn how to fly it. So, on this first flight, I decided to just do a traffic pattern and land.

One would grade the pattern I flew as a horrible mess. It was! Up and down, guessing where the runway was, because I didn't spend the bucks to have lateral view panels. As I turned base, I was surprised to see a potential runway to my right. I would have been worse than 90% of the first ever flight students, but I managed to slide the thing onto some part of the runway. The Redbird indicated that I didn't crash, but realistically I would have walked away with just a yoke in my hand with little pieces left behind. BUT I landed it. This was way cool!

There is a big inventory of serviceable airframe parts, including wings for M20C, E, F, G, J, K & R models, empennage assemblies, fuselages, rebuilt controls, rudders, elevators, ailerons, flaps, cowls, engine mounts, landing gear and small parts.

Paul Loewen is offering them online, or by phone. The website is www.LoewensMooneySalvage.com, and he can be contacted in Lakeport, California at **707 263-0462** or by cell at **707 272-8638.** Email is PaulLoewen98@gmail.com. The used inventory is also still available through LASAR Parts at 707. 263-0581

Mooney Maintenance



Search Mooney's new website for Service Bulletins (SBs) and Service Instructions applicable to your Mooney

Click here

Download and search LASAR's Airworthiness Directive (AD) Log – all models

Click here

LASAR
Fanatically Mooney. Exceptionally Fast.

Ask the Top Gun

Tom Rouch
Founder of Top Gun Aviation, Stockton, California

Send your questions for Tom to TheMooneyFlyer@gmail.com

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

Tom's Answer

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

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

FLY SAFE

again for '60 Mooney sets the pace

. . . luxurious comfort . . . unmatched economy . . . easy flying? Never has an airplane dollar bought so much speed, safety and comfort as in the 1960 Mooney. Continuing its leadership in the high-performance and economy concept of aircraft, Mooney's Mark 21A for '60 offers new advancements and greater opportunities for both business and pleasure use.

Teamed with Mooney's unmatched economy is the luxurious comfort of quality-tailored interiors and all-new seat styles.

No airplane is easier to fly than the Mooney. Both beginners and experienced fliers call the Mark 21A "a pilot's dream airplane."

The Mooney standard of excellence for 1960 includes:

- Speeds up to 190 m.p.h. and dependable 180 h.p. Lycoming engine.
- Easy-maintenance retractable landing gear with new downlock system, including position lights.
- Noise-free cabin with added soundproofing, thicker windows and new maintenance exhaust system.
- Airliner-type ventilation system.
- Retractable landing fan for easy entrance and exit.
- Wide tricycle landing gear for security control on the ground.
- New and improved braking system.
- Lowest full-coverage insurance rate.
- Fully shock-mounted instrument panel, designed for easy, accurate reading and utility.
- New and original lifetime maintenance warranty.

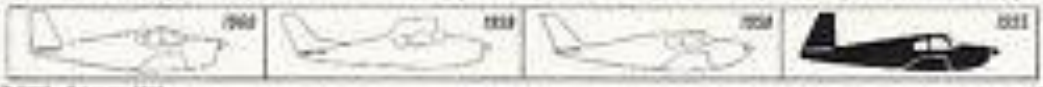
See and fly the 1960 Mooney at your dealer's . . . enjoy the feeling of quality and a sense of craftsmanship which are "take-flight" engineered in every detail.

Plush new interior featuring rich new fabrics and completely redesigned seats provide a new era of elegance for the Mooney. Personalized comfort is assured in soft, contoured seats, individually controlled with reclining positions and adjustable headrests.

MOONEY AIRCRAFT, INC. Kerrville, Texas

Since 1931 Mooney has manufactured its unique style of executive aircraft with clean aerodynamic design combining economy with high performance and retractable landing gear.

Its proven success by public acceptance and millions of flight miles has caused three other leading aircraft manufacturers to follow along with models utilizing the Mooney concept.



STC Approved to Install BendixKing Autopilot in Mooney M20

Duncan Aviation has exclusive rights to a Supplemental Type Certificate (STC) developed to install the BendixKing AeroCruze 100 Autopilot in Mooney M20-series aircraft.
Working with a launch customer from Seattle, the Duncan Aviation team at the company's location in Denver, Colorado, worked with an engineering team from Peregrine Aviation to develop the STC.

The digital, two-axis, standalone autopilot system incorporates features such as Track Select Mode, GPS Nav Mode, GPS Steering Mode, Altitude Hold, Pitch Trim Annunciation, and Emergency AP Level Mode, among many others, according to company officials.

Mooney M-20 owners can contact Business Development Manager Chris Gress of Duncan Aviation's Parts & Rotables Sales Team for information about ordering the STC kits, which include the computer, servos, hardware, and wiring: Chris.Gress@DuncanAviation.com or 402-479-1664.

Would you rather have Duncan Aviation do the installation? Contact Matt Nelson manager of satellite operations at Matt.Nelson@DuncanAviation.com or 402-479-4202

FAA Begins Investing $1 Billion into ATC

WASHINGTON, D.C. — The FAA has started spending the first $1 billion of an allocated $5 billion on the nation's air traffic control system.

FAA officials said, "The funding — made possible through President Biden's Bipartisan Infrastructure Law — will "sustain, repair or replace hundreds of buildings and pieces of equipment that make flying in the United States the safest in the world."

The FAA controls more than 5 million square miles of airspace in the U.S. and more than 24 million square miles over oceans. The air traffic system includes hundreds of towers at airports and terminal approach control facilities. It also includes 22 centers handling aircraft at high altitudes, FAA officials explained.

"There's a great deal of work needed to reduce the backlog of sustainment work, upgrades, and replacement of buildings and equipment needed to operate our nation's airspace safely," said FAA Deputy Administrator A. Bradley Mims.

So, What's Planned for the $1 Billion?

Replace Towers: Pay for design, site evaluation, and preparation for the first air traffic control towers that will be replaced over the coming years. Many of the towers selected will be located at regional and smaller airports, FAA officials noted.

Improve Towers and Approach & Departure Facilities: More than 50% of the FAA's towers and TRACON facilities are over 40 years old. Funding will pay for new elevators, plumbing systems, and supporting infrastructure.

Reinforce Navigation, Weather & Tracking Equipment: The FAA uses a host of communications, surveillance, weather and navigation systems to guide aircraft safely. It will complete the backlog of supporting infrastructure sustainment projects to keep these systems reliable.

Long-Range Radars: Renovate or replace the supporting infrastructure at long-range radar sites, which are critical to tracking flights between airports.

Enroute Flight Centers: Update and repair the country's 22 Air Route Traffic Control Centers that handle aircraft flying at high altitudes.

Security: Upgrade security systems at all FAA staffed facilities. Upgrades include those for guardhouses, visitor parking, fencing, perimeter hardening, window blast protection, and lighting.

For more information go to **FAA.gov**.

FAA: Some Radar Altimeters Need to be Replaced

In early May, the FAA met with airlines and cellular service providers to plan the eventual replacement of the 10 percent of radar altimeters considered susceptible to interference from 5G C-Band signals. The news agency got a look at a letter to those invited to the meeting and the agency isn't interested in hearing any other opinions on the topic. Reuters quoted the letter as saying the purpose of the meeting was to set "an achievable timeframe to retrofit/replace radar altimeters in the U.S. fleet." It further directed aviation representatives "to offer options and commit to actions necessary to meet these objectives."

In the frenzy that followed the fractured rollout of 5G in January, the FAA quickly cleared about 90 percent of the fleet for operations where 5G is available, but the remainder are restricted in the types of instrument landings they can do. As an interim measure, some of the altimeters might be fitted with filters that can suppress the interference, but the agency seems determined to get rid of the offending equipment. There was no mention of who will be paying for the new equipment, but it's bound to come up. It's also unclear what will happen after the July 6 deadline set by the telecoms to end the restricted operation of 5G near 50 airports that was part of a deal struck with them by the FAA in January. In May, Transportation Secretary Pete Buttigieg said issues with 5G would linger for years.

GA's Unleaded Fuel Problem is "Solved"

After a 12-year quest, **General Aviation Modifications Inc.** (GAMI) has created an unleaded fuel that is a drop-in, fleet-wide solution that can be used in every spark ignition piston engine in the FAA database.

On March 2, 2022, the Wichita Aircraft Certification Office determined that GAMI "completed all necessary showings and findings of compliance and provided type design data and documentation required for the substantiation of the requested expansion" of the STC.

That was followed on March 3 with another finding that GAMI met all the requirements to expand the Approved Model List (AML) to all aircraft "approved for operation on 100LL fuels, lower octane unleaded aviation gasolines, and mogas."

The only thing holding things up is FAA headquarters in Washington D.C.

The Big Questions

How much is it going to cost? The best estimate is that it will cost between 60 and 85 cents more a gallon than 100LL.

Will it work in my airplane? The STC covers all spark ignition piston engines in the FAA's Type Certificate Database, "without exception," Braly said. The STC is 18 pages long and includes more than 1,800 engine makes and models.

What if I fly a warbird? It will work in your airplane as well. The STC includes all of the World War II engines and all of the post-World War II radial engines.

What changes will I have to make to my airplane? You'll have to attach a small placard to the engine and add a short supplement to the Pilot's Operating Handbook. That's it.

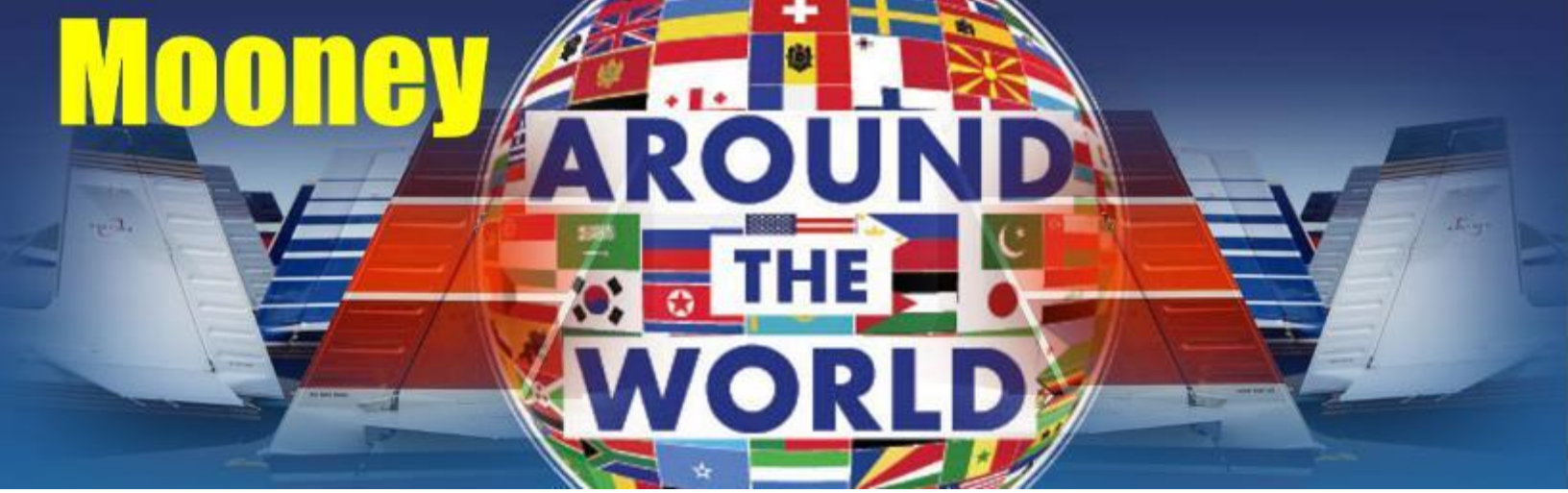
What is the octane of G100UL? During FAA-approved detonation testing, G100UL was the same — and in some instances exceeded — 100LL, according to GAMI officials.

Other than being lead-free, are there other benefits to G100UL? Spark plug maintenance and replacement intervals will improve with the absence of lead, while it is likely that over time oil change intervals will double. Without lead, it is also likely that synthetic oil will become available that will further increase oil change intervals, GAMI officials said.

Meanwhile, the Avgas Coalition delivered a letter petitioning the Department of Transportation and the FAA to maintain availability of 100LL during the transition period to unleaded fuel.

The coalition—consisting of more than 110 members of the general and business aviation community—delivered the letter to DOT Secretary Pete Buttigieg and Acting FAA Administrator Billy Nolen on May 6 in response to recent moves by airports in California to ban the sale of 100LL effective immediately, with no broad mitigation for the prohibition in place.

"The need to remove lead from aviation fuel is something everyone is behind," said Aircraft Owners and Pilots Association (AOPA) president Mark Baker. "What's happening at Reid-Hillview Airport in California is having a chilling effect in moving forward with a safe and smart transition."



Florida Mooney Lunch Group	*Contact Dave at daveanruth@aol.com or (352) 343-3196, before coming to the restaurant, to have an accurate count. Events begin at 11:30* Jun 11: Winter Haven (GIF) Jul 9: Williston (X60), Pyper Kub Cafe
MOONEY SAFETY.COM	**2022 Events** Jun 3-5: Denver, CO Sep 16-18: Oshkosh, WI (OSH) Oct 21-23: Redding, PA Sign Up at https://www.mooneysafety.com/ppp-registration/
MOONEYSUMMIT	**Learn more at** https://www.mooneysummit.com/
Australian Mooney Pilots Association	September 9-12: Spring Fly-In to Merimbula – More details later **Learn more at** https://www.mooney.org.au/
EMPOA	**Learn more at** https://www.empoa.eu/index.php/en/
Other Mooney Events	June 3-5: Walla Walla Fly-In by Henry Hochberg. Wine, Food and Fun. Hotel room block at Whitman, 866-826-9422. Contact Henry if you need any additional info at aeroncadoc@comcast.net. **CLICK HERE** to register for free. To get FREE food on Friday, please register before May 25th

TMF PRODUCT REVIEW

Bush Pilot Survival Kit

An emergency situation can happen at any time, and because you are smart, you are always prepared. If you find yourself in an off airport landing situation, a survival kit can be invaluable. The Bush Pilot Survival Kit provides all the essential items to keep you safe in an emergency. This 30-item kit comes in a rugged, compact, lightweight, and easy to stow carrying case —perfect for larger flight bags or under the seat.

Includes:

- Water resistant case
- Multi-tool
- Flashlight with AA battery
- Fire starter with ignition rope
- Blow tube
- Paracord survival bracelet
- Wire saw
- Carabiner
- First aid kit
- Water purification tablet
- Fishing kit
- Signal mirror
- Emergency blanket

https://www.flightoutfitters.com/product/bush-pilot-survival-kit/

Parts for Sale

Sun Visor set for 1968-1999 Mooney (my is a 1966) never used, in original packaging asking what I paid Purchased From Chief Aircraft Search results for: 'Mooney sun visor' - Chief Aircraft Inc. $459.00Sunvisor Mooney, 1968-1999 Models, Rosen 13" x 7"

The Rosen "NSA" Sun Visor system is fully FAA PMA'd and STC'd for many single and light twins. Distortion free dark gray lens tint reduces 94% of the glare, filters out most harmful UV light, and reduces 70-80% of the infra-red heat rays. Visors have multimotion capability and follow early morning or late afternoon sun.

Brackets are machined aluminum and are anodized black. Oversized visors also increase safety margin while in close proximity to airports and heavy traffic areas.

Contact: dingramkc@icloud.com



This Cowling was removed from a M20E and replaced with a M20J (201) cowling. The cowling is located at Fullerton Airport (KFUL) and is in excellent condition. Offers accepted.

Contact: Bernard Lee – leebern@msn.com (562-865-2547)

P/N 310309-501
P/N 310309-502

These fairings are new and priced @ $280.00 each or $525.00 for both. Priced elsewhere @ $362.69 each.

Contact: Bernard Lee – leebern@msn.com (562-865-2547)

Bushing P/N 914007-003 - 2- Bushings in the original package @ $35.00 each. Priced elsewhere @ $45.00 each.

Bushing P/N 914007-005
1-Bushing in the original package @ $59.00
1-Bushing loose @ $50.00
Priced elsewhere @ $69.00 each

Contact: Bernard Lee – leebern@msn.com (562-865-2547)

Access Covers P/N 3000-901 (2-available) - 1-without nuts attached.
Make offer. Contact: Bernard Lee – leebern@msn.com (562-865-2547)

1990 M20M Mooney Bravo N756TB 27-0047 for sale

• Garmin G600 • Garmin GTN750 (with PTC Switch) • Garmin GTN650 • Garmin GTX33ES • Garmin GMA35 • Garmin GDL69A • Garmin GDL88 • STEC 55X Autopilot with optional remote annunciator • EDM930 • L3 Avionics ESI2000 • L3 Communications SKY497 • P2 Audio Advisory System TTAF: 2874 TSNEW:1291	• Davtron M803 • CO Guardian model 452 • Precise Flight Pulselite • LoPresti Boom Beam for both Landing and Taxi Lights • Gami Injectors • ACK Technologies E-04 ELT • Monroy Extended Fuel Tanks • Painted 4/2008 • AeroDynamics Vortex generators • Prop Overhauled 9/2016 • Turbo Overhauled 2/2014

Eric Trehus
RHV – San Jose CA
etrehus@gmail.com
(408) 644-2238
$260,000.00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