The Mooney Flyer

The Official Online Magazine for the Mooney Community

www.TheMooneyFlyer.com

July 2019

Editors

Phil Corman & Jim Price

Contributors

Bruce Jaeger | Bob Kromer | Tom Rouch | Geoff Lee | Linda Corman

Departments

Features

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From the Editor

Phil Corman

Summer Flying

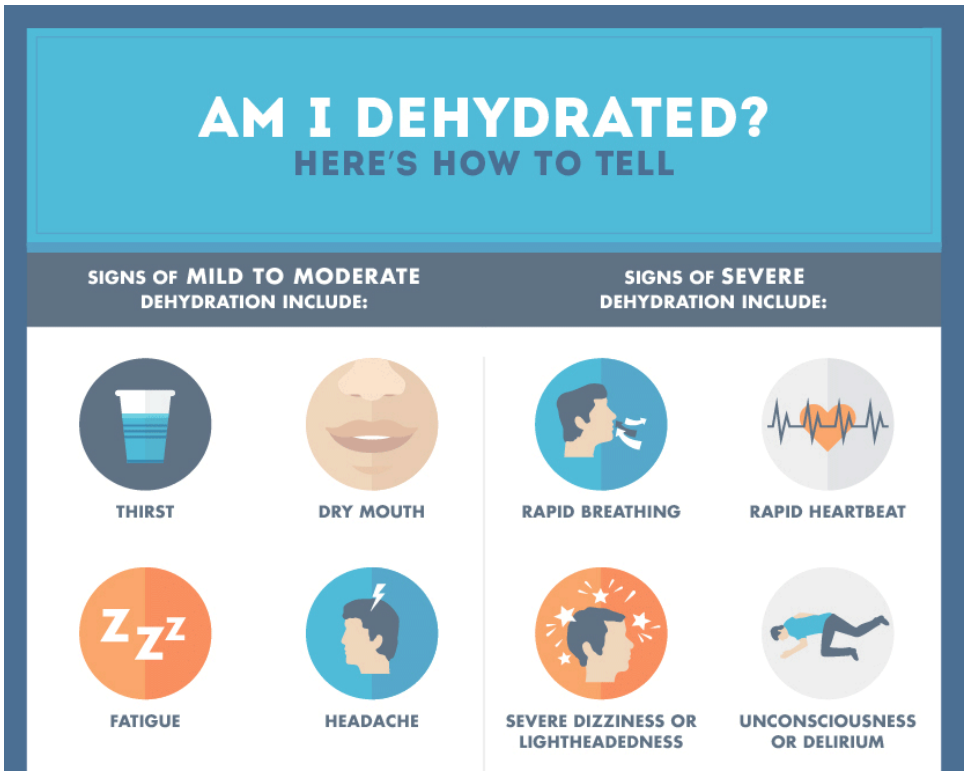
I absolutely love summer flying. The weather is warm and generally mild, except for those passing thunderstorms which are mostly avoidable. But with warmer weather, there are different things to think about when flying your Mooney.

Density Altitude

The first thing to remind yourself about is Density Altitude (DA). Often, in the winter, DA can be less than actual altitude. In the summer months, this is definitely not the case for most of us. Pull out your Pilots Operating Handbook (POH) and give the Density Altitude Takeoff data a good review. My main response to high DA, especially in the mountains, is to perform takeoffs and landings in the morning when the weather tends to be cooler and the mountain turbulence seems to be gentler. But even then, I take DA into account, perhaps by taking off with less fuel. Adjusting the mixture for takeoff is another key "to do". Taking off too rich reduces power; power that you need. There are two easy ways to adjust the mixture. One is to set it where it was when you landed. The other is during run-up. I add more RPM and then lean to max EGT, then enrichen a bit. On my takeoff roll I check the EGTs at full power and adjust them slightly to duplicate the EGTs that I normally see at or near sea level. No matter how you set the mixture, you need to lean at higher Density Altitudes.

Dehydration

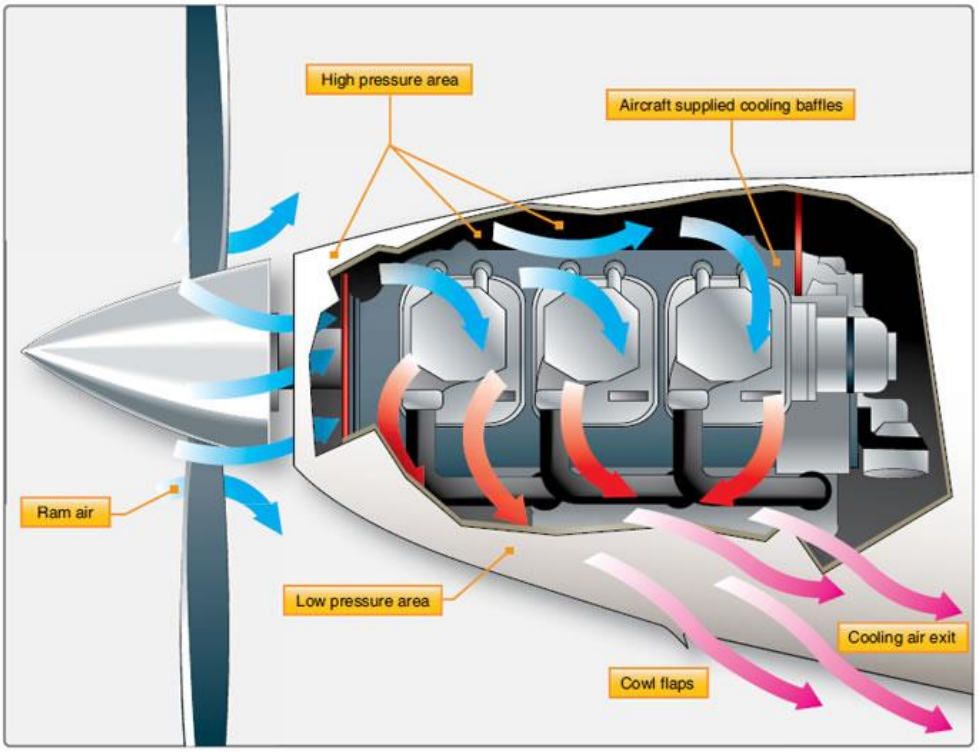
I absolutely hate to drink too much before departure, especially before a long flight. I am also reticent to drink water enroute. My Mooney's Endurance simply outperforms my bladder's capacity. The truth is, as with most things, extremes are bad at both ends and moderation probably rules. Not drinking before or during a flight can easily lead to dehydration in the summer. It's hotter and you sweat out.



If you drink before a flight, you'll need to stop enroute or use the Sporty's inflight bladder relief device. Either choice is better than dehydration. Symptoms of dehydration are sometimes similar to hypoxia and there have been accidents caused by dehydration. Please consider hydration before hot summer flights, especially for longer segments.

Engine Cooling

Mooneys seem to run hot. I don't know why. Some models are equipped with Cowl Flaps for cooling during climb out. My Eagle does not have cowl flaps. In the summer, my best response to higher CHTs and/or higher Oil Temps is: 1) Flatten your climb to allow more airflow cooling, and 2) Enrichen the mixture a bit so the fuel can help cool your cylinders. Before you take a hot weather flight, it's also important to check your "baffling". Even a slight mis-adjustment to your baffling can significantly reduce the cooling effect.



The other thing you can do is to select the correct oil for your engine. A multi-viscosity oil is the usual go-to oil for varying flying temperature conditions. But, if you live and fly where it is predominantly warmer/hot, then consider a single viscosity 50W oil. Mineral or synthetic is your best choice.

Avionics

In the summer, when your Mooney will be outside during the heat, it's imperative to protect your Avionics investment. You essentially have two choices: 1) A cover for your Mooney, or 2) Reflective material attached to all of your windows from the inside. I have found that the latter provides a cooler cockpit when the outside temperatures are at or above 100°F. Heat and Moisture are electronics killers, so either method is significantly better than leaving your avionics unprotected from the sun and heat.

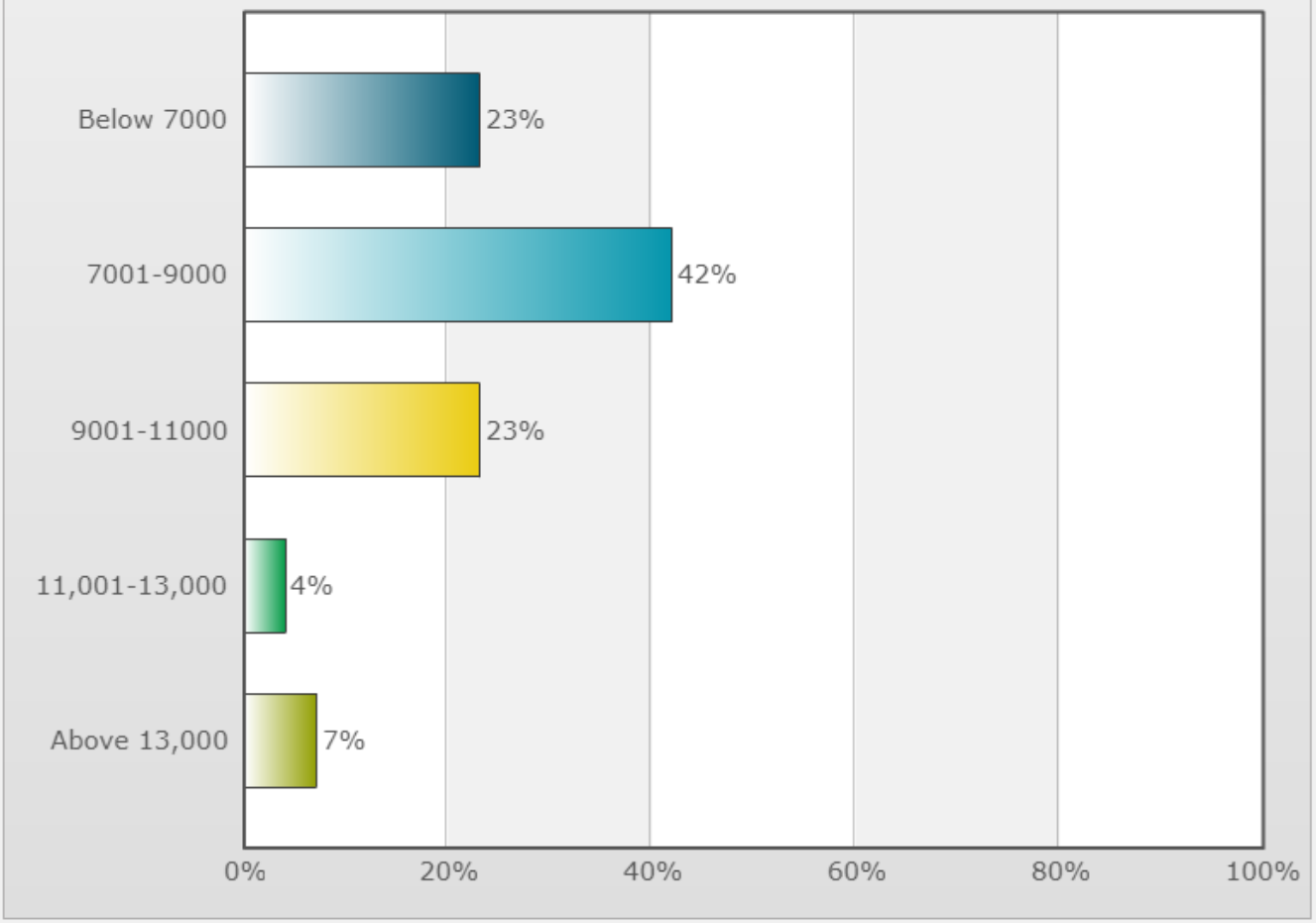
Summary

You are probably aware of most of the items here, but I still think it's worth reminding all of us to remember and to take heed of them. Please send us any other things that you do to be a safer summer Mooney Pilot. *Fly Fast, Fly Safe!*

I do most of my Mooney Flying at:

Poll created by Phil Corman on 04/03/2019

Poll Results



Next month's poll: "Regarding Flap Settings": **CLICK HERE** to vote.

Send your comments to editor@themooneyflyer.com

RE: Cleaning Your Mooney -- Nice article. I have one more tip for keeping the plane clean. Every time I go flying, I grab a clean car wash mitt. I soak it with water and put it in a gallon sized Ziplock bag. That keeps the mitt wet and my plane dry. After I'm done flying for the day, I use the mitt to remove all the bugs I've killed, put it back in the bag, and take it home to wash it for the next flight. Bugs come off much more easily when they are fresh than after they've had days or weeks to bake. Even better, when my wife comes along, she grabs the mitt and does it for me while I'm securing the airplane!
Bob P

I am not a Mooney owner, though I have flown in a couple and like them very much. But, I peruse your newsletter every month, following the lead of my predecessor, scanning for tidbits of information that I can add to the (very) small newsletter that I create for our little RV owners group, the Sacramento RVators.

On page 26 there is a photo accompanying an article about flap usage. I recognized the airport immediately as Santa Paula Airport (KSZP), the Mooney is landing on runway 22. I'm originally from Santa Barbara and flew to and hung out at KSZP a lot and know that hill in the background. Cool place.

What really surprised me about the photo though, is realizing that I recognized the little Cessna barely visible just to the right of the pilot's side wingtip. That is N7257S, I have about 300 hours in that thing. Belongs to an old friend, in fact the one that finally tipped me over the edge to earn my PPL oh so long ago. If you do a Google Image search on that tail number and compare any photo to the one on page 26, I think you'll see what I mean. That, and I happen to know it lives at KSZP.

So, perhaps the subject line of this email should've been "6 degrees of separation" or something like that. In any case, I always enjoy and admire your thoughtful and well-prepared newsletters, and this one was no exception.
Best, Lars P

RE: Technical Help from The Mooney Flyer -- Thank you very much... I do have the POH.... I like your ideas. Yes, the Mooney was abused. I got it from an old pilot in Fresno.

He was so glad I got her looking good before he died.... [picture attached]

Thanks again and if you need anything in Tucson let me know...
Brian C

RE: Tech in The Cockpit

First off, let me say what a fantastic magazine you provide. I look forward to each edition. However, in your June 2019 article "Tech in the Cockpit" Phil says: "Remember when you first used ForeFlight/Wing X/FlyQ? I spent hours playing with it in my home office. But, with a GTN-750/G-500/Aspen/etc., you don't have that luxury. Instead, you might have a device simulator or an inch-thick user manual." Fortunately, this type of unsatisfactory learning method is not the only option".

For a little over 2 AMU's you can set up a multi-screen simulator in your cave and by utilizing a flight simulator software package like X-Plane and adding avionics packages like those provided by Realty-XP, you can learn exactly how your avionics work in practically all environments. Avionics packages are available for GNT 650/750; GNS 430/530, for all of $49.50 each. (Half off if you buy 2). They are currently developing the G500/600 PFD/MFD. X-Plane is $60.

From between $20 and $40 you can choose the aircraft that most matches your own. I use an M20 Ovation mostly, but also a Cessna T210 since it has a 225 autopilot. Both integrating with a 530/430 panel.

My brother, who has about 6000 hours in Mooney's and currently has a Bravo DX, took some convincing to take the plunge, but now is a most vocal advocate of this type of simulator. He thinks it's the best deal in aviation and even after logging almost 2,000 hours in his DX, now says that he no longer worries about what his AP and GNS will do. He's done it all at home, so there is none of the, "I hope this does what I think it will do". He knows it inside and out.

Additionally, the simulator can be used to try many other things you might never do in actual flight, like how accurate are those glide rings on my ForeFlight? Try it and see. Yes, ForeFlight integrates seamlessly into the simulator.

I pre-fly almost every flight I take on the simulator first. It's fun and when you do it for real, it all looks familiar. And for you IFR types, you can even get live ATC from a mob called PilotEdge for $20 a month and they'll really keep you on your toes with clearances, STAR's and approaches. If you mess up, they'll tell you so without giving you a number to call.

This is transformative stuff but be warned, it's highly addictive. The next thing you know, your dinner will be scraped into the trash because you're working on transiting the airspace over Anchorage.

David B

RE: Tech in The Cockpit - Just wanted to compliment you on the recent article in The Mooney Flyer about Tech in the Cockpit. We had discussed this a few times in the past and the recent 737-MAX crashes stirred up the conversation again. I've always said that pilots rely too much on automation and electronics. The trend today is that people are reliant on technology that they don't even understand, to a point where they have actually forgotten how to do things manually. Technology is great. I love it. But we endanger ourselves if we don't have a clear understanding of what to do when technology does what it does best: It Fails.

Nothing is sadder than to hear about people dying because they did not know what to do when their tech stopped working, especially when the solution could be as easy as turning the tech off and flying manually.

Your article hit the nail on the head. I hope all of the readers took the time to consider what skills they have allowed to stagnate, and to perhaps establish routines for when the automation and technology systems fail in their aircraft. (And maybe, make it a point to fly with all of the tech turned off every once in a while, to keep the skills sharp)

We don't all fly Mooneys, but no matter what we are flying, we need to Aviate, Aviate, and Aviate. We need to know how to navigate even when the GPS quits, we need to know how to maintain course and speed even when the autopilot fails. We need to know how to see & avoid traffic without using collision avoidance systems. We need to know how to take it safely to the ground when the big fan stops spinning.
Tech should assist, but it should never replace the basic skills.

Great article. Perhaps it's a wake-up call and it could very well save some lives!
Keep up the great work.
Don C

Thought you might be interested in what happens when someone does not check the truss. In this case, an Acclaim was attempting to power out of a parking place while apparently using high RPM and possibly full left rudder.
Rae W
Editor Note from Tom Rouch: *Obvious to see previous cracks from the rust shown. It would be interesting to know the history that caused the previous damage. These are very expensive repairs. It's also possible that there is crankshaft damage*.

After 2023, Equipping to fly in Canadian Airspace will be Co$tly

Jim Price
Co-Editor

According to Nav Canada, when Canada mandates their satellite based ADS-B Out in 2023, unless your aircraft is equipped with an Extended Squitter transponder with both a top and bottom antenna (known as the Diversity model), you will not be able to operate in Canadian controlled airspace. Nav Canada, a not-for-profit corporation, is also majority owner of Aireon, a recently activated space-based ADS-B tracking system.

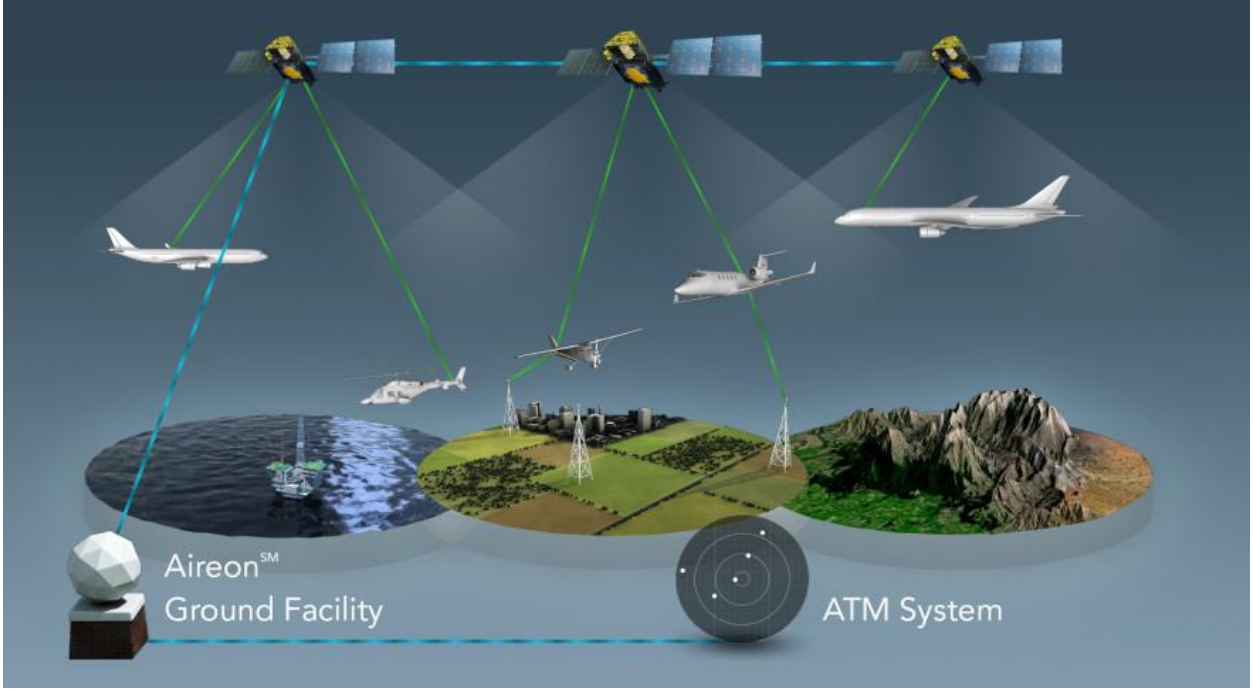
The U.S. uses a ground-based system that only requires a belly-mounted antenna. Aireon has tested belly-mounted antenna with its satellite-based system and they don't work. Nav Canada has advised the Canadian pilots that its system will be exclusively based on the satellite system and they should be making their equipage decisions accordingly.

It's not as simple as adding a second antenna to be able to fly in controlled airspace in both countries. The 1090 ES transponder must be what is called a Diversity transponder, meaning the transponder antennas are mounted on both the bottom and top of the fuselage.

So, what's the difference in cost?

US Airspace model with antenna on bottom	**Satellite based ADS-B Diversity (antennas on top and bottom)**	**US Airspace model with antenna on bottom**	**Satellite based ADS-B Diversity (antennas on top and bottom)**
GTX 335, $3,000	GTX 335D, $6,500	GTX 345, $5,000	GTX 345D, $8,000

The *Diversity* GTX 335D is a Mode S transponder that provides ADS-B Out, while the *Diversity* GTX 345D adds ADS-B In traffic and weather that can be displayed on compatible avionics and mobile devices. Remote-mount versions of both also are available.



The Aireon system uses transponders on a constellation of more than 60 low-orbit Iridium satellites and can track any properly equipped aircraft anywhere in the world every second. The company intends to use the system to make air traffic management more efficient and accurate and is already using it in remote areas, like the North Atlantic, to reduce spacing between aircraft.

MOONEY and PROFICIENT

WE LOVE TO FLY. FAST.

The Mooney Safety Foundation presents

Pilot Proficiency Program

KOGD – Ogden, UT

October 3-6, 2019

WHAT IF...

- You see streaks of oil on the windshield?
- You're in solid IFR and you experience a failed gyro?
- You're in solid IFR and ATC doesn't hear your radio calls?
- You detect a subtle increase in vibration?
- The #3 cylinder EGT goes noticeably high?
- The low voltage light activates intermittently?
- The landing gear chatters during extension?
- The landing gear does not retract?
- Oil is dripping from the tail?
- You really need to fly today and it is snowing like crazy?
- You're flying in winter and you and your passengers complain of headaches?
- The kids say they are cold?
- Your spouse will not fly with you?

For More Information or to Register visit:

http://www.mapasafety.com/proficiency

http://www.mapasafety.com/registrations

E-mail: tedc@corsones.com

Mooney pilots can expect to:

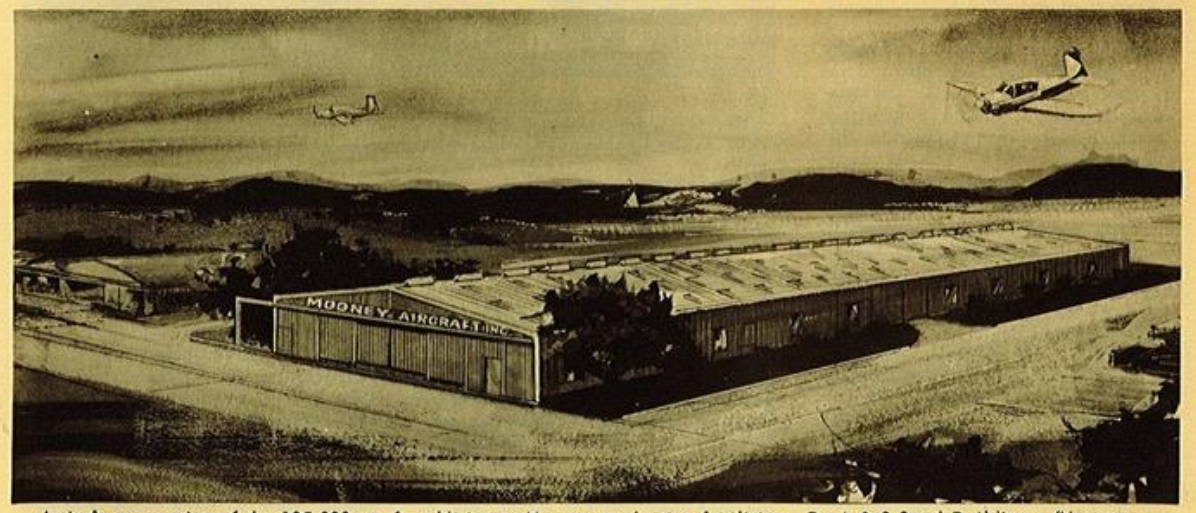
- *Improve piloting skills*
- *Improve decision-making skills to ensure flight safety*
- *Increase awareness and decision-making skills to deal with maintenance issues*
- *Improve skills to handle emergencies*
- *Obtain information relating to Mooney airplanes and their safe operation*

MOONEY

MOONEY Mirror

PUBLISHED FOR EMPLOYEES OF MOONEY AIRCRAFT, INC., OF KERRVILLE, TEXAS

MAY 3, 1963 EXTRA! MAY 3, 1963



Artist's conception of the 105,000 sq. ft. addition to Mooney production facilities. By A & S Steel Buildings, (Houston, Texas), this will be the nation's widest clear span, rigid frame structure.

MOONEY EXPANSION GETS IMMEDIATE GO-AHEAD

GROUND BREAKING CEREMONIES MARK BUILDING START . . .

The beginning of construction on the Mooney expansion program in Kerrville, Texas, was marked by ceremonies held at the construction site Friday, May 3. President Hal Rachal, assisted by Jack Peterson and Harry Dietert, two local businessmen who played an important part in keeping the Mooney expansion in Kerrville, turned the first earth to signify the beginning of construction.

Civic leaders invited to attend the ground breaking ceremonies were Arthur Stehling, founder and president of the Security State Bank and Trust of Fredericksburg, Texas; Jim Weatherby, President of the Kerr County Industrial Foundation; City Manager Dellie Voelkel, Mayor Glenn Petsch and Councilmen R. H. Holekamp, F. H. Swayze, C. R. Toler and V. Clouse; County Judge Julius Neunhoffer and County Commissioners W. C. "Cade" Schwethelm, Prentice Witt, Adolph Bartel and Roger Stone; Jasper Moore, President, and Whit Zander, Executive Secretary of the Kerr County Chamber of Commerce.

Work is starting immediately on the 105,000 square foot addition to Mooney production facilities. Some preliminary work is already underway. Completion of the three-phase project is set for twelve weeks.

Hill Construction Company, Ingram, Texas, successful bidder on the first phase, or grading and site preparation contract, is moving in men and machines to begin face lifting the construction site immediately.

Immediately following the grading project, the second phase, or slab and foundation contract, is scheduled for completion. Hill Country Construction was also awarded the foundation and floor contract.

The 150 x 700 foot building, the third phase, will be installed on the slab, ready for occupancy, approximately six

(Continued on Page 2)

MOONEY EMPLOYEES FIRST TO KNOW

Through this special issue of the Mooney Mirror, Mooney employees are receiving word of the actual start of expansion construction prior to release of the information to the press.

Final word was delayed until the property on which the construction will rise had been secured by the Industrial Foundation. The Foundation took possession of the land this week. Construction will begin immediately.

❷ LOCAL FIRM TO PREPARE SITE

Hill Country Construction Company and Associates, Ingram, Texas, was the successful bidder on the site preparation and foundation contract for Mooney expansion. A beehive of activity signaled the start of their work. Men and machines are moving onto location and work will begin immediately to rearrange some 16,000 cubic yards of earth.

The equipment in use, a few dozers, a sheepsfoot and some blades, sounds like the ingredients for a late, late movie. However, when you add to the list such items as pneumatic rollers, tractors, water tanks and many miscellaneous items, you come up with a sketch closely resembling the Hill Country Construction Company.

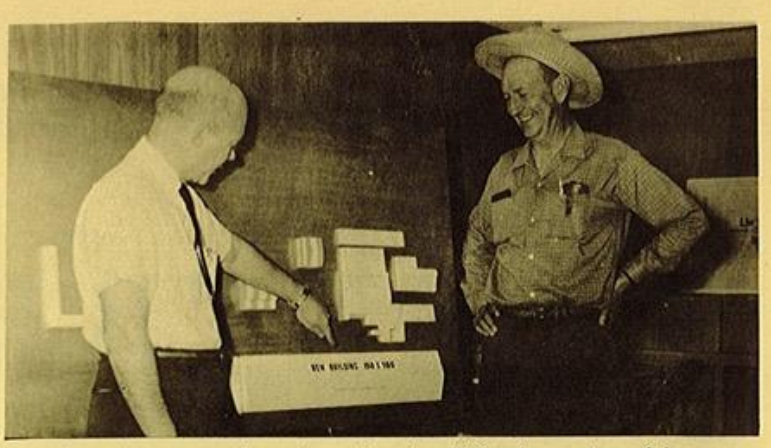
The picture becomes clearer when you top it with years of experience in the earth moving business. John Hill, President of the Ingram, Texas firm, has chalked up 17 years; associate Anthony Pitts, Tivy grad, adds another 5 years and associate Walter Lott, native of Kerr County, contributes another 10 years to the total. This represents more than 30 years of progress in the construction business.

The skill of the operators on the many pieces of earth moving equipment can best be appreciated when the exacting tolerances governing their project are known. The building will be 150 feet wide by 700 feet long – a total of 105,000 sq. ft. In preparing the site for concrete, Hill Country Construction is faced with a tolerance of only 1" in the 700 foot length! Less rigid controls govern the making of fine watch parts.

Experienced in handling all kinds of earth moving equipment, Hill, Lott and Pitts view the close tolerances as "all in a day's work". Their company has done extensive work with Humble and Magnolia throughout Texas.

Included in their preparations of the building site is a complete drainage system and a new parking area for employee's cars. The parking area will be 145 feet wide by 400 feet long. The entire site preparation project is expected to be completed within 30 days.

On the heels of the grading and drainage project, Hill Country will immediately undertake the foundation and floor construction. This will follow a system of piers to support the building structure; a perimeter foundation and a floor over the 105,000 square foot area. Over 1600 cubic yards of concrete will be spread over the area before the project is completed.



Gene Leas, Mooney manufacturing engineering chief and supervisor of the expansion project, discusses the expansion program with John Hill whose company – Hill Country Construction will prepare the site for the modern new production facility.

(Continued from Page 1)

weeks after the erection crews are able to get on the concrete. A & S Steel Buildings, Houston, Texas, will erect the structure. This building, containing 105,000 square feet, will be the widest clear span, rigid frame structure in the United States.

Financing for the entire project was accomplished by the extension of an existing Small Business Administration loan and with the participation of the Security State Bank and Trust, Fredericksburg, Texas. Repayment of the SBA loan will not appreciably increase payments on the existing loan but will extend it over a longer period of time.

The Mooney expansion project marks a giant step forward for Kerrville and the surrounding community. The new facility will provide sufficient space to build the present employee roster from 460 names to over one thousand. On the basis of current figures, this can mean a payroll of about four million dollars annually.

Mooney employees face the greatest job opportunities in the history of the company. The increase in employment can mean more job security, more chances for promotion for everyone on the Mooney payroll. Officials of the company state that current employees will be observed closely for the traits that lead to supervisory positions or jobs of greater responsibility. Mooney management suggests that every employee consider a program of self improvement to better equip himself to take advantage of the opportunities which will occur. Study along the lines of industrial leadership, personnel relations and management techniques is recommended. One source of instruction in job related training is the International Correspondence School program which offers a wide variety of home study material. Mooney reimburses its employees with 60% of the cost of such training upon successful completion of the course.

The company faces its most significant progress since its organization in 1954. At no previous time has there been space or financing available to the production of more than one model. Every man and every machine has been struggling to keep up with sales demands. Now, with the prospect of new models in the line and the ability to produce them, the company can penetrate even deeper into the light aircraft market.

With only one model, the Mark 21, Mooney has accomplished what no other manufacturer has ever approached. The Mark 21 wound up 1962 in firm possession of first place in its category. Not only did the Mark 21 beat the combined sales of any comparable model produced by any other manufacturer, but it placed fourth on the list of the ten most popular models of *all* categories. Here's the record:

INDUSTRY'S TOP 10 MOST POPULAR MODELS

	Model	*1962 Sales*
1.	Cessna 172	877
2.	Cessna 182	824
3.	Piper Cherokee (160)	410
4.	Mooney Mark 21*	387
5.	Piper Colt	333
6.	Cessna 150	331
7.	Piper Comanche (250)*	293
8.	Cessna 210*	281
9.	Piper Aztec	272
10.	Cessna 185	229

* Competitive Models

(Continued on Page 4)

ALL OF AVIATION EYES MOONEY RISE

Behind every successful marketing venture lies untold hours of planning and decision making. The ability of Mooney Management to cope with modern merchandising in a highly competitive market has drawn appreciative comments from industry on-lookers and painful gasps from Mooney competitors.

Here is the story of how Mooney, with a brand new airplane, entered a fast running market and wound up in top position in only three production years.

The Mooney M20, through 1960, was a wood wing plane. President Hal Rachal, in 1959, realized that with wood, Mooney could not hope to compete successfully for a major share of the market. His decision to add the all metal model was implemented by Ralph Harmon, Vice President, Manufacturing and Engineering, who, in the fall of 1960, introduced the all metal Mark 21.

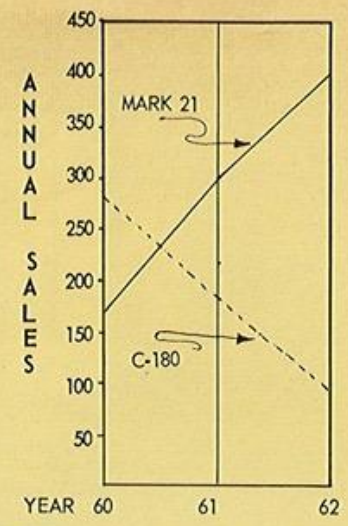
The introduction of this model was, by itself, a major feat, in that the switch from wood to metal design was accomplished in a matter of months. Going to metal with its complex research, engineering and tooling in such a short time, is a tribute to the skill of the management, engineering and manufacturing team.

But metal, by itself, was not the whole answer to the marketing strategy. Decisions had to be made regarding pricing of the aircraft. There is a trite expression that you "get what you pay for". In order to gain a foothold in the market, management decided to give the flying public *more* than it paid for with its new Mark 21.

By comparison with other models in its category, the Mark 21 offered more efficiency, less operating costs and lower depreciation than any of its competitors. How successful this has been is shown in the accompanying information which depicts the history of a competitor against that of the Mark 21. It is easy to see that the competitor's model has been nearly absorbed by the increase in sales of the Mark 21.

Here are two airplanes of similar size, both retractables, both using the same 180 h. p. Lycoming engine. One, the Mark 21, outstripping the other in sales when the flying public learned that they got more for their money with a Mark 21.

In 1960, these two airplanes sold at a comparable base price. In 1961, the competitive aircraft increased its price over six hundred dollars. The Mark 21 held firm. In 1962, the competitor went up more than nine hundred dollars and again, the Mark 21 held firm. The graph shows the results. The competitor was losing sales while the Mark 21 forged ahead.



Public reacts unfavorably to price increases on competitive model. During the same period, with prices firm, the Mark 21 set new sales records.

Holding firm with its suggested retail price was a difficult decision for company officials. In almost every direction, costs were rising. Refinements to the airplane added costs; material costs were going up. But management knew that its long range objective of market leadership demanded that the selling price be stabilized. As an incentive to prospective plane owners, the price line was held.

How easy it would have been to follow the lead of competition – but how potentially disastrous. A price increase could well have forced a closer parallel between the Mark 21 and the competitor mentioned earlier. With a Mooney toe planted firmly in the open door to the aviation market, company officials chose to be satisfied with lower per unit profits. A precedent has been established which will govern Mooney production – every Mooney product, its advances and refinements, will represent the greatest possible value to the prospective Mooney owner. How well is this strategy paying off?

In 1962, the Mark 21 led all competitors in unit sales. This included the combined Beech Bonanza and Debonair; sales of the Cessna 210 and the combined sales of the Piper Comanche 180 and 250. No other manufacturer has achieved this result. Not only did the Mark 21 excell in the field of retractables but it proved to be the fourth most popular airplane in all categories in 1962.

What about this year? During the first three months of 1963, Mooney production and sales set new records for the company. Through March, 328 airplanes in the Mooney category were sold. Mooney accounted for 111 of these units, or 33.84%. Piper sold

(Continued on Page 4)

MODERN METAL FOR NEW MOONEY HOME

A & S Steel Buildings, Houston, Texas, successfully bid for the Mooney expansion facility.

As soon as construction crews can get on the concrete, a modern metal, rigid frame building will begin to take form. In six weeks or less, the building will be ready for occupancy.

The width of the Mooney building makes it unique in the United States. Its 150 foot span makes it the widest clear span, rigid frame structure in the country.

Its colorful self cleaning metal panels will require only a minimum of maintenance and will assure a long service life while providing eye pleasing contrast to the standard manufacturing plant.

The length, more than two football fields, will provide for maximum efficiency in production flow.

Metal buildings are the modern approach to a variety of building needs. The past fifteen years has seen a rapid rise in their use. Some of the many applications of the metal building are found in supermarkets, automobile showrooms, movie studios, recreational centers, storage facilities, warehouses, schools, churches, auditoriums and, of course, manufacturing plants.

The widespread use is understandable when you consider the versatility, expandability, economy and speed of construction of the metal type building. Mooney and all of its employees will be proud of their new production home.

YOUR CONTRIBUTION IN ANY AMOUNT WILL BE GREATLY APPRECIATED BY THE KERR COUNTY INDUSTRIAL FOUNDATION.

4 ALL OF AVIATION . . .

(Continued from Page 3)

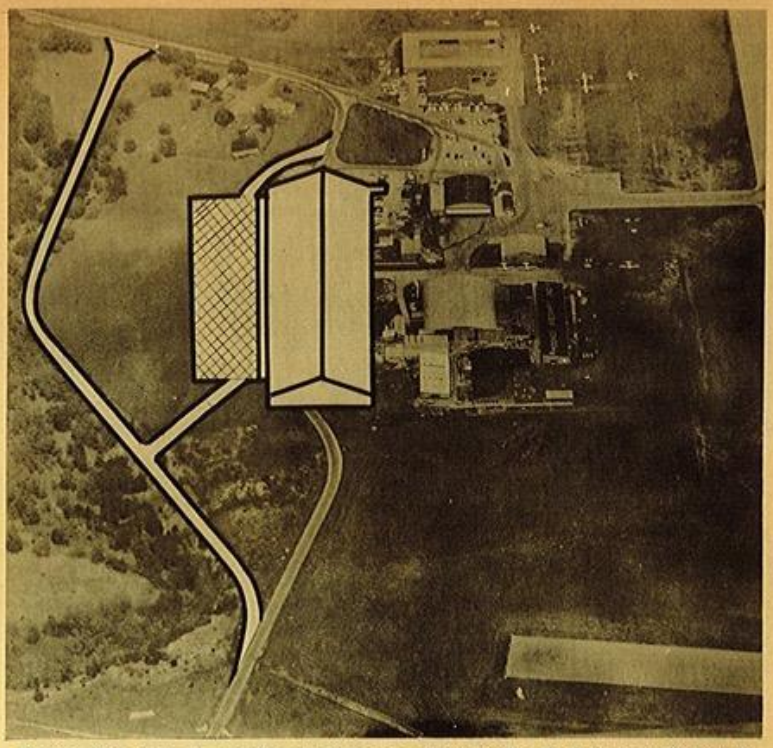
100, or 30.94%. Cessna sold 45 units, or 13.72% and Beech sold 72 units, or 21.95%. Indications are that by the end of 1963, Mooney will have assumed a dominant leadership in its category with not less than 35% of the total market.

How will this be accomplished? Through aggressive selling matched to a progressive production. Never has the demand for our product been so great and never has our production capacity been so well fortified. The expansion to the new production facility schedule by mid-summer, is a key to Mooney leadership in the future. Mooney production can now be stepped up to meet the rising sales demand. For the first time in this young company's history, there will be space to accomplish a production flexibility which has not been possible in the past.

Efficiency in production control and scheduling will reach new highs. New models can be placed in production without interfering with current models. The new facility will make it possible for Mooney to achieve a multi-model capability which will broaden the company's sales horizon and eliminate its dependency upon one model aircraft.

The new production facilities will open many doors for Mooney. It will lead to increased production efficiency and capability, increased market penetration and substantial opportunity for every Mooney employee.

Mooney is ready, is willing and is able to meet the future.



New parking area planned for employees is shown in the shaded area adjacent to the expansion site. Pending completion of the project, a temporary parking area south of the present paint department is ready for use.

MOONEY EXPANSION. . .

(Continued from Page 2)

With the capability of producing more than one model, new and wider horizons open up for Mooney and its employees. Additional models in the product line minimize the company's dependence on immediate sales of the Mark 21, its prime source of income. New models mean greater penetration of the market and increased financial flexilility. Previously faced with production space limitations, the new building offers a complete change in scheduling. Up to three separate production lines for different models can be handled at a rate best suited to marketing conditions.

More planes appealing to more people indicate an unprecedented growth pattern in Mooney's immediate future.

Important News From

MOONEY

FIRST CLASS
PERMIT NO. 53
KERRVILLE, TEXAS

light Following is one of the most useful services a Mooney Pilot can utilize when flying VFR. It's easy and it provides several benefits. The first benefit, and the one that most pilots think of, is traffic advisories. ATC will advise you of VFR and IFR traffic that might be relevant. This is a good and solid backup to "See and Avoid".

A second benefit is that if you are heading towards a MOA, Restricted Airspace, or TFR, ATC will advise you. Because you are on Flight Following and ATC knows your flight path intentions, it might make it easier to be cleared through restricted airspaces. This happens to me often when flying to and from Death Valley and flying near China Lake NAS. ATC is great and often clears me direct. Sometimes, you must fly the Trona Corridor, which is easy, but not direct.

A more subtle benefit, and one that I particularly appreciate, goes like this: If I encounter an event or emergency, I am already in contact with ATC. I don't have to immediately switch to 121.5Mhz or squawk 7700, but I can tell center or approach that I have an issue. This seems like good insurance.

When to Utilize Flight Following

Clearly, you can utilize Flight Following at any time. But I find it most useful for longer trips, i.e., greater than two or three-hour segments, or when I intend to penetrate or land in Class C or Class B. In the latter case, I'll be talking to ATC long before entering Class B or C and they know my intentions up front. This always seems to smooth my arrivals or flight through these airspaces.

I cannot prove it, but I always seem to be smoothly integrated into the heavy aluminum traffic at San Jose International when I've been connected to Flight Following.

Longer trips are also good, especially if you are flying in remote areas. One can become a little lax far out into the mountains or deserts looking for traffic, and flight following is a nice backup.

Another time to use Flight Following is if you plan to do a fair amount of maneuvering, like a photo mission, flight review, or VFR sightseeing. While you are concentrating on your maneuvers, you have ATC covering your back. ATC also advises other traffic approaching your area for maneuvering, so it's a win-win.

Finally, if you need to fly through a Class D and you're with Flight Following, then you don't need to dial up a new frequency since you are assured that you will be talking to the correct controller. Often, you will not be asked to switch to a tower if you are enroute with flight following.

How to get Flight Following

If I encounter an event or emergency, I am already in contact with ATC. I don't have to immediately switch to 121.5Mhz or squawk 7700, but I can tell center or approach that I have an issue.

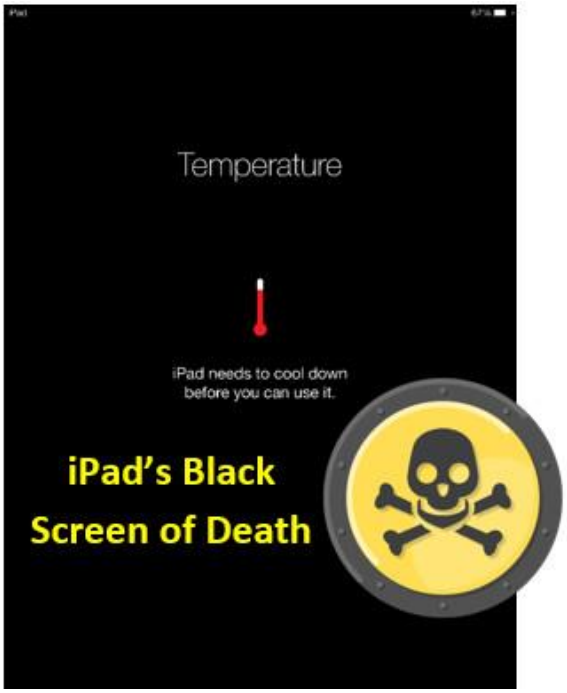
Getting Flight Following is simple. I suggest that you tune to the appropriate Center or Approach/Departure frequency and wait for some silent opening. Then, on the first call, say: "Center, Mooney xxx, location, VFR Request". This is short and gives ATC the ability to respond when able. Much of the time, ATC will know that you are requesting VFR Flight Following and will respond with a Transponder Code, and maybe a request that you IDENT. Later, when they see you on radar, they'll simply give your location and altitude or request your current altitude. I then give ATC the following info: "Center, Mooney xxx is M20P/G, destination xxx". Now you're in business.

You can terminate Flight Following by saying, "Cancel Flight Following" or "Destination Airport in sight".

Summary

VFR Flight Following is a great tool. It is not a substitute for a filed Flight Plan, but it is easier and you cannot forget to close it.

Don't let your iPad Overheat



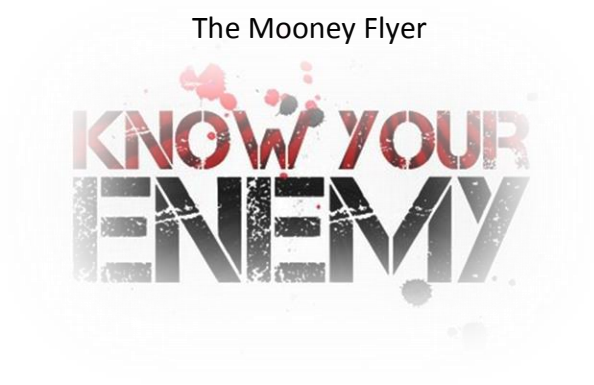
Based on an iPad Pilot News reader survey, over 70% of respondents reported that they have had the iPad shut down on them at least once in flight due to overheating. I'm not sure why the other 30% haven't experienced an overheat. Perhaps, they don't fly in the summer or they prefer to fly at night.

Because I fly primarily in the very hot Southwest, I have had several overheating episodes.

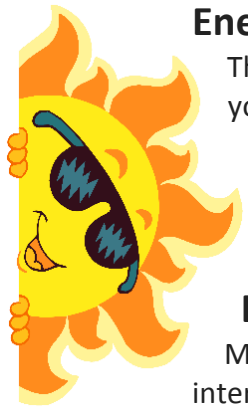
If you're a VFR pilot who carries paper backup, it might not be a big deal if your iPad overheats. But, if you're on an instrument approach in the soup, it's frightening to have your only source of data disappear.

Apple lists the normal operating temperature range for the iPad as 32° – 95° F. If the iPad is subject to temps below freezing, this may cause the screen to lag, but it will still function.
On the other end of the temp range, if the internal temperature exceeds 95°F, the iPad will try to protect the internal lithium-polymer battery and eventually, it will go into a survival thermal protection mode and:

- The screen will turn black
- The screen will display the "Temperature" message (shown above), &
- The iPad will cease to function until the temperature is reduced



There are several situations that will elevate the iPad's internal heat. When left unchecked, these situations can be an enemy to your beloved iPad.



Enemy number 1: Too much Sunlight

The Mooney low wing looks cool, but it provides zero shade from the summer sun. When you're at a cruise altitude and the sun shines directly on your iPad's screen, even though you're comfortable and the ambient temperature may be well below the 95° F limit, the iPad's internal temperature will quickly elevate and soon, you'll have the dreaded black screen with a "Temperature" warning.

Enemy number 2: Kneeboard + Sunlight

Mounting the iPad on a Kneeboard will increase the internal temperature of the device. When using the iPad with a fully enclosed case or Kneeboard, this restricts airflow around the rear of the iPad, limiting its ability to dissipate heat.

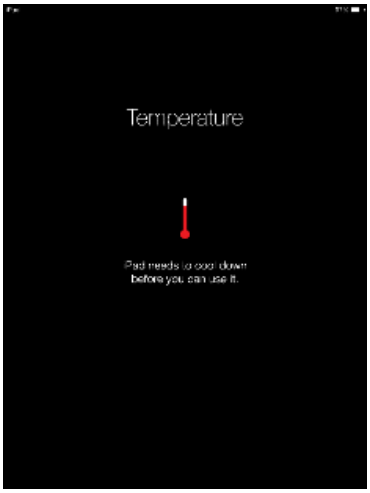
Enemy number 3: Charging + Sunlight

Charging the iPad from a USB port in the airplane or from a backup battery will increase the internal temperature of the device. Add some direct summer sun and you have a great chance of overheating.

Enemy number 4: iPad "trapped" in the Cockpit after shutting down

On a hot summer day, after you park your Mooney, get out and shut the door, the temperature inside the cabin will quickly rise. If you leave your iPad in the cockpit, the poor little thing will begin to boil. Sometimes pilots, out of habit, put the iPad on the glare shield. If you really don't like your iPad, atop the glareshield is the perfect place to put it. Try to always take your iPad with you.

What can you do if your iPad overheats?



When the temperature warning appears on the screen, your only option is to get it to a cooler environment and lower the internal temperature.

- Remove it from direct sunlight and aim air vents at it.
- If you had it in a Kneeboard or case, remove these to aid the cooling process.
- Remove it from any charging sources.
- Once the iPad's temperature lowers, it will automatically switch back on.

Mounting and Cooling Solutions

Allow cool air to reach the back of the iPad. Either a yoke or suction cup RAM or Robust mount can help. These provide plenty of flexibility to pivot the iPad screen away from direct sunlight while exposing more of the front and rear surfaces of the iPad to ambient air for continuous cooling.

The X-Naut mount has built-in fans to keep the iPad cool. Another option is to use the X-Naut Cooling Case along with your iPad. This mounting system features built-in fans to circulate cool air, specifically targeted at the iPad's main hot spots to prevent it from overheating. The mount can be powered by typical alkaline batteries or a USB/Micro cable (not included) with a power bank or backup battery. The Mini X-Naut uses four AA batteries and the Air/9.7" and Pro X-Nauts use Eight. The batteries provide over 10 hours of use. In addition to **working with the RAM mount system**, you can also turn it into a Kneeboard with this accessory kit. The X-Naut is available for the iPad Mini 1-5, the iPad Air 1-2 and 9.7", and the iPad Pro 10.5" / iPad Air 2019 models.

sporty's pilot shop

Pilots' X-Naut Mount Reviews:

"I run it from a 12 volt to USB adapter and it works perfectly; it even cooled to usability an already overheated iPad (left exposed to the sun) in less than a minute."

Customer Reviews

"Outstanding! Works very well in the Las Vegas heat. iPad used to shut down regularly on a normal kneeboard. Battery life is good. I use rechargeable ones and charge them after each day's flying."

"I consider [the X-Naut] a mandatory piece of safety equipment for any pilot using an iPad as their sole source of inflight information."

"I purchased this device when it first came out. I had three iPad failures and I even purchased a mini to have as a backup; however, since I started using it my iPad Air2 it has never overheated."

Flying IFR with FlyQ

by Norman Elliott

The Mooney Flyer has been a great resource to me, and although I've never asked the editors their reasons for producing this great little magazine, I think it is mainly out of their love of Mooneys. To hopefully make their job a little easier, I thought I'd write an article on flying IFR with FlyQ EFB.

I've flown Mooneys since I first started flying. But, I have owned only three, two M20J 201s and one M20K 252. I've never owned a new Mooney, but I would like to if I could figure a way to pay for it. Mooneys are great machines for flying IFR, and I usually file an IFR flight plan for trips of 300 miles or longer, regardless of weather conditions just to make things simpler if I run into unexpected weather, need to enter Class B airspace, or just for the reassurance of having ATC looking out for me.

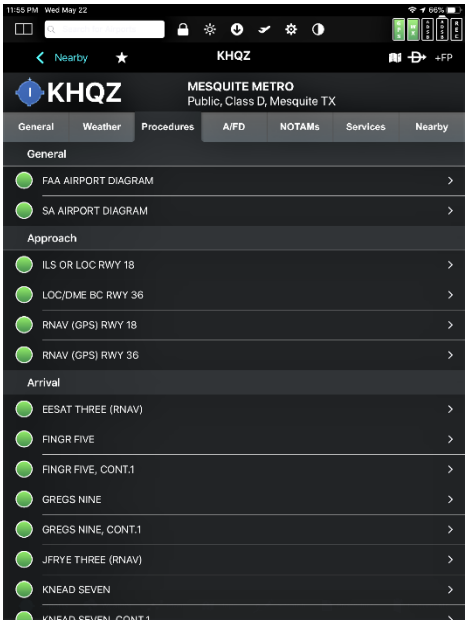
When I first started using an ADS-B In capable EFB about six years ago, I settled on Foreflight on an iPad mini with a Stratus ADS-B receiver as my platform. I had flown exclusively with Foreflight for a couple of years and then decided to give FlyQ a try. For about a year I used both systems, initially using mostly Foreflight but gradually I found that I was using FlyQ more. After that first year with FlyQ I dropped my Foreflight subscription and have just used FlyQ for the last few years. I don't remember enough about Foreflight to make a good comparison of the two systems. New versions of both Foreflight and FlyQ are frequently released and my information would be out of date. It's enough to say that my experience using both systems has satisfied me that they are both capable and reliable systems for the type of flying I do.

I started writing this article a few months ago and dropped it because I've been pretty busy. I read a commentary in the May issue of the Mooney Flyer on the expected consequences of the acquisition of Foreflight by Boeing that spurred me on to finish writing. The author of the

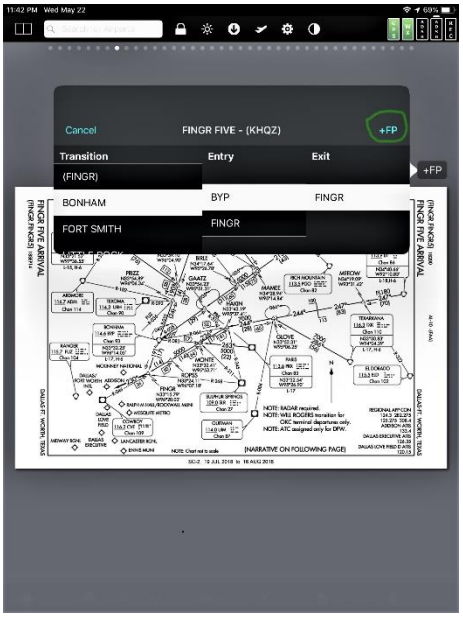
commentary indicated that he expected that the cost of Foreflight would not increase due to the acquisition by Boeing and that new innovations in Foreflight would likely continue at a steady pace. I had three thoughts about that commentary. The first, was that it was very interesting and well done. The second was that competition is most likely the best assurance that innovation will continue and that subscription costs will stay low. Without a viable competitive product there is no reason for Foreflight, (or any company making a successful product), to not to raise their price. That's just a statement based on everyday experience and common sense; no insider knowledge there. While there's no way to know for sure that innovation won't continue at its current pace without a competitor, it's probably true that having a competitor would encourage innovation to continue. FlyQ is currently the most serious competitor to Foreflight based on sales, even though Foreflight controls about 90% of the market. My third thought was that I personally don't care a lot about innovation unless it improves my ability to make a safe and trouble-free flight. I want an easy to use EFB that is reliable and performs all the necessary functions required to plan, file, and execute a flight. Foreflight, FlyQ, and probably other EFBs provide that capability.

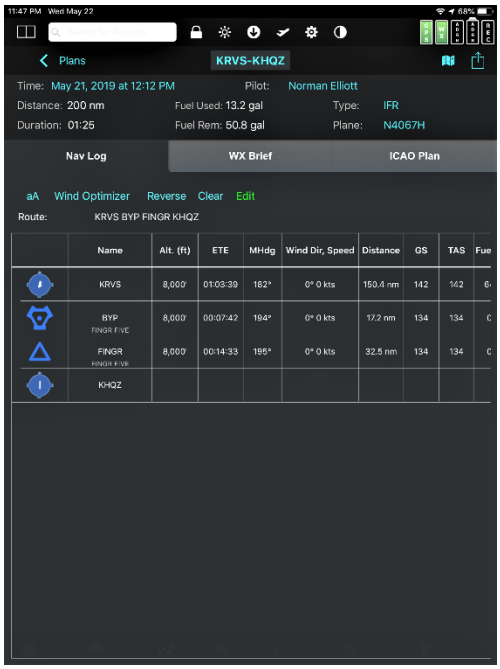
Getting back to the topic of this article, I make several trips each year from northern Oklahoma to the Dallas-Fort Worth and Kansas City areas to pick up or drop off Angel Flight passengers. I also fly to Michigan and Colorado several times a year to visit family. I always file IFR for those flights and I'll describe one of them as a way to discuss the features and characteristics of FlyQ.

One of the most useful aspects of FlyQ is that you can download all FAA VFR and IFR charts and instrument procedures for the whole United States, Mexico, Central America, and the Caribbean, to your iPad and/or iPhone on the renewal cycle (28 days for approach plates) as part of your annual subscription. Seattle Avionics reminds you every 28 days that it's time to update with an email and a red alert marker on the download button in the software. I carry two iPad Minis with me when I fly, just in case one goes kaput. So, I download data to each of them. It's no big deal, I just turn on the iPads, open FlyQ, set them to downloading and walk away. I don't use FlyQ on my iPhone for flying because the display is obviously pretty small, but FlyQ works exactly the same way on an iPhone as on an iPad. I do use my iPhone a lot for flight planning, so I keep FlyQ updated on it. Incidentally, with your subscription you can download FlyQ to all the personal iOS devices you use. For me, that's three.



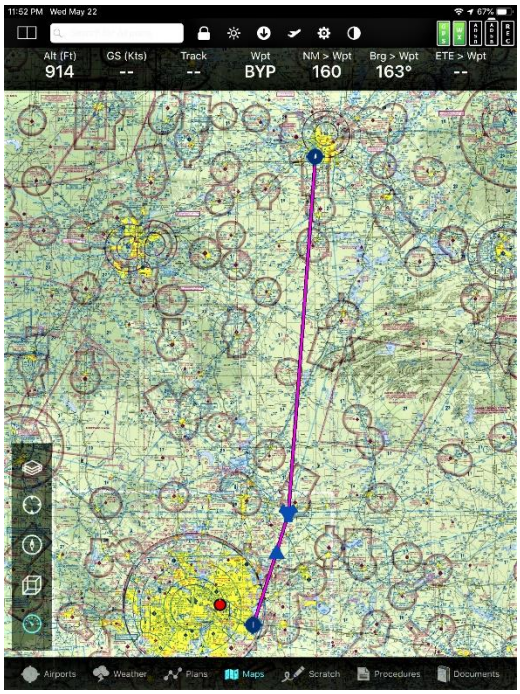
On a recent trip from my home airport to Tulsa Riverside Airport (KRVS) to pick up passengers and then on into the Dallas area, Mesquite Metro (KHQZ), conditions

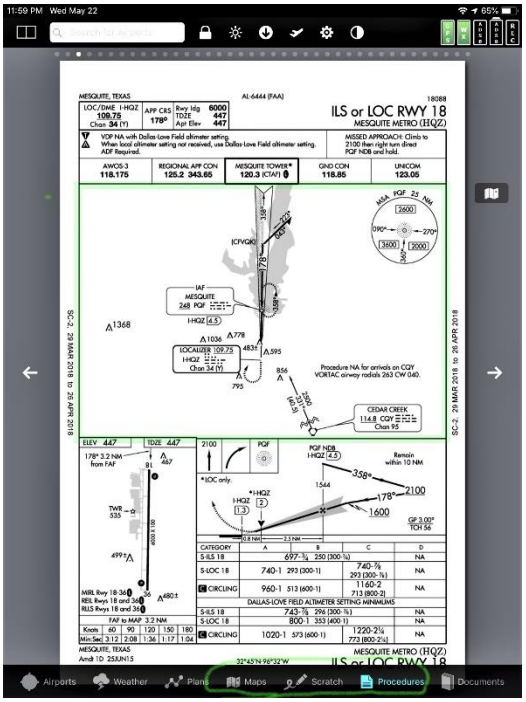




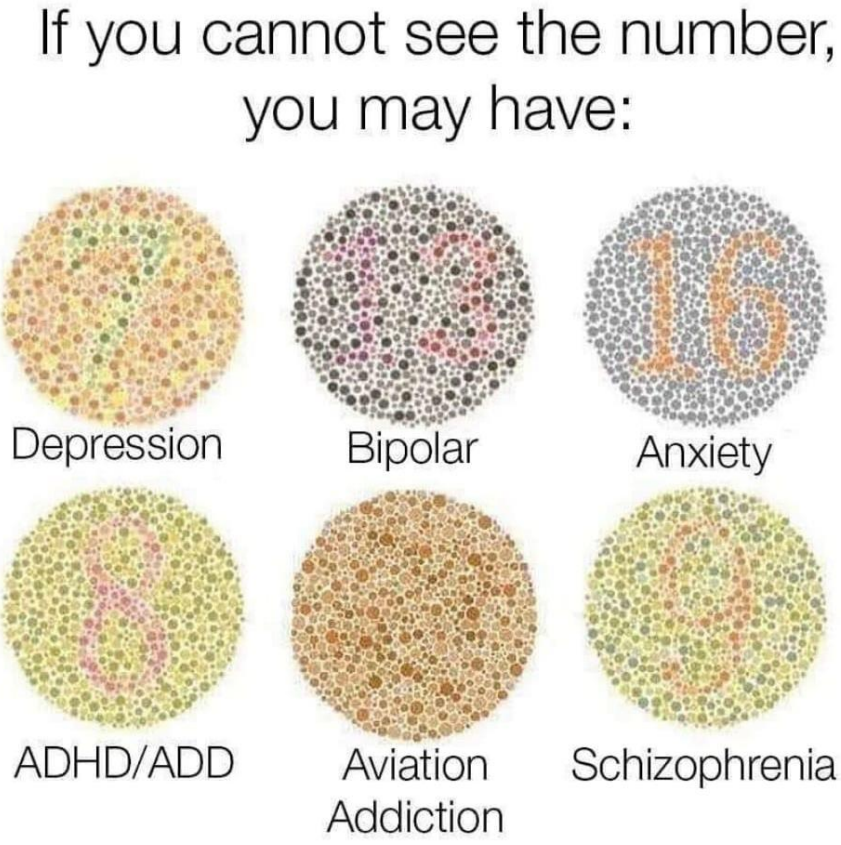
were expected to be VFR when I left Tulsa, but were expected to be IFR from southern Oklahoma on into Mesquite Metro where I was handing off. I planned a flight direct to KHQZ and then added the Finger Five STAR. That is easy to do. Just click on the airport symbol on the flight plan window and an airport information page opens. On that page, click on "Procedures" and scroll down to the Finger Five arrival. Then, select the transition, entry point, and exit point. Finally, click on the +FP icon and the STAR is added to the flight plan. As you can see, the waypoints of the arrival are entered into the flight plan. It's probably obvious, but I entered the same flight plan into my panel mount GNS 530W, but it wasn't nearly as easy to do. The next thing was to check the flight plan and file it. That's a one tap operation. On the flight plan page (below) I tapped on the ICAO Plan tab and the flight plan page was displayed, which I scrolled through and checked for accuracy. The plan can be edited on that page, but in this case, I didn't need to make changes, so I tapped "File" to file it with the FAA. For reference, I emailed a copy of the plan to myself by tapping on the Send icon on the top-right hand corner of the page.

The next morning, I got ready, headed to the airport, checked out my M20J, and headed for Tulsa Riverside. I landed, met with the passengers, and we loaded up. I got my IFR clearance in the air and continued on an uneventful flight. I talked to the passengers and got to know a little about them. Like many Angel Flight passengers in that area, they were headed to MD Anderson, where one of them was receiving treatment, and the other was there to lend support. By the time we made it to the Red River we were in IMC, so I quit talking so much and paid more attention to flying. We made it to the Bonham VOR, but





from then on, received vectors. About 80 miles out I checked the METAR at Mesquite in FlyQ. The ceiling was about 800 ft and the wind was from the south. From the wind direction, I knew that I would be given the ILS 18 approach, so I went to the airport page again by tapping on the KHQZ airport symbol on the flight plan page, tapped on procedures, and selected the ILS 18 approach. I like to keep the approach plate on the procedures page so I can toggle between the plate and the map by tapping on the map icon (for the moving map) or the procedures icon (for the approach plate). The approach plate is georeferenced so you can see your progress on the approach. Of course, I set the Nav frequency from the approach plate and entered and activated the ILS 18 approach into the GNS 530W. From there we were ready to make the approach, and I locked the approach plate onto the display so I wouldn't accidentally toggle back to the moving map. ATC vectored me onto the ILS 18 approach, and I broke out at around 800 ft. We landed, met the second leg pilot, and I said goodbye and good luck to the passengers. I then filed a flight plan for the flight home. That flight was uneventful too, but kind of lonely, so I was glad I had ATC and my faithful Mooney to talk to.



Electroair Ignition:
It's Like Having Thor In a Tiny Box!

by Kevin Knight

If anyone is unclear about the headline, Thor is the Norse god of lightning and thunder. If you've seen any of the Avengers movies, or read Marvel comic books growing up, he's the big, muscular guy with a hammer that has lightning bolts shooting from it. Thor always has power to spare!

With that historic and cultural reference point out of the way, let us begin this deep dive into Electroair's unique electronic ignition system.

The Mooney Flyer is 100% digital. For this article, we're leveraging your internet connection to provide information from multiple sources. They were found with Google searches and should be easily accessible.

If you just want an overview, this story hits the highlights with input from some of our fellow Mooney pilots. However, anyone clicking the links will be richly rewarded. https://www.youtube.com/watch?v=1f5kMJQM77I

In the beginning…

I keep a bicycle in the hangar near my 1967 M20F Executive. It's a steel frame, single speed "bomber" that's perfect for pedaling across flat pavement to the FBO, or a friend's hangar on the far end of the field.

When I'm biking for exercise, however, I ride a carbon frame Felt F1 racing bike with electronic shifters that let me easily change gears when climbing or descending hills. That dramatically reduces my workload and the calories and fluids I must consume.

Proven, innovative technology that enhances efficiency is a beautiful thing. Michigan-based Electroair exemplifies that in aviation.

This hyper-focused company was founded in 2005 to refine and proliferate an electronic aircraft ignition system conceived for airplanes in 1992. Systems in more than 5,000 certified and experimental planes consist of a coil pack, wiring harness, spark plugs, magneto timing housing (MTH), and manifold pressure (MAP) sensor to measure air volume within an engine. A controller, with custom circuitry, adjusts the timing of 70,000 volts of spark. That's between five and ten times more powerful than that which is generated by conventional magnetos.

Detonating fuel with precisely calibrated high energy sparks, is proven to yield more power, improved performance and better fuel economy. That was obvious in 1996 when the altitude record for normally aspirated engines was broken with help from an earlier system. (http://www.electroair.net/our_history.html)

More recently, an Electroair system helped IBM network engineer Spencer Suderman set the world record for inverted spins with a total of 98. His new goal is 125.
https://www.youtube.com/user/ssairshows

Spencer lives in St. Augustine, Florida, where it's easy to fly year-round. In late June he told me, "When I first got involved with the effort to break the record for inverted flight spins in 2014, I had a Pitts S2B with a six-cylinder Lycoming. I was struggling to get the performance and altitude I needed. Our only modification was the ignition system. With two magnetos, it would only go to 21,000 feet. With Electroair's ignition system I reached 23,000 and spun faster with more horsepower."

Spencer now has a Pitts S1C with a 4-cylinder Lycoming IO-360 designed to produce 180 horsepower. Various modifications have jacked it up to produce 240 horses.

"You get loads more energy from Electroair's high energy spark," he said. "It's a much more efficient fuel burn at all altitudes and settings because unlike magnetos, the MAP sensor continually adjusts timing. I'm operating at the extreme end of performance, but most pilots who replace one of their mags with this system will enjoy higher speeds at the same RPM and get better fuel economy.

"The six-cylinder guys are saving around two gallons per hour at eight or nine thousand feet. Four-cylinder pilots are saving around one to one and a half gallons per hour.

"Plus, you only have to overhaul one mag every 500 hours. It pays for itself over the engine's TBO in fuel savings and reduced maintenance."

Spencer added his Electroaire'd engines run smoother, reducing vibrations undermining the longevity of alternators, magnetos and other components. He recommends every plane owner get their prop dynamically balanced, particularly after installing an Electroair system because it will improve engine harmonics.

M20K owner Michael Dymond is a 4,500-hour pilot living in Taos, New Mexico. Retired from architecture work that took him all over the world, he has owned a 1981 231 for six years and enjoys mountain flying. When we talked in June, it was obvious he pays attention to the smallest details.

Electroair's electronic ignition system consists of, from top left to right clockwise: Controller box calculates spark timing; Magneto timing housing measures crankshaft position and RPM with a trigger wheel; Coil pack which sends 70,000 volts to spark plugs.

"I installed the Electroair ignition three years ago because I got tired of having 1920s technology on my airplane. We've only had electronic ignition in cars since the 1950s!

"I never had any problems with my magnetos, but they can be a source of trouble, along with vacuum pumps. I figured if I was getting rid of my vacuum system, I might as well do my ignition first.

"The plane was never rough, but it's really a smooth-running ignition. Even after it's been sitting for a while, it starts in less than one blade. Bang! It's going. I've never had any problems with it. None! It's very dependable. I'd do it again in a second…. or less."

It's worth noting that Electroair president Mike Kobylik told **Aviation Consumer** they don't expect turbocharged engines to enjoy the same fuel savings as normally aspirated engines. That's because their system's MAP sensor adjusts ignition timing for manifold changes. There's less need for that in turbo'd engines. However, high altitude wears on magnetos since they're pushing a spark inside a distributor through low density air. That's a non-issue for this electronic ignition.

To see what an installation involves, 15,000 hour instructor Alexander Wolf posted several YouTube videos featuring his Cirrus: (http://www.alexanderwolfcorp.com/about) The fourth video (link below) really stands out because he compares spark plugs connected to the plane's magneto with spark plugs connected to the Electroair in the same big bore Continental 550. The difference after 50 flight hours is dramatic.

https://www.youtube.com/watch?v=wqTZkyQ4QFc

https://www.youtube.com/watch?v=TOl1fML-UU0

https://www.youtube.com/watch?v=J_3aElmbEj4

https://www.youtube.com/watch?v=DMiJIFOuO7Q

M20F owner Michael Meyer lives in Scottsdale, Arizona, and installed his system in a couple of days during his 2014 annual, mounting the coil on the firewall's center.

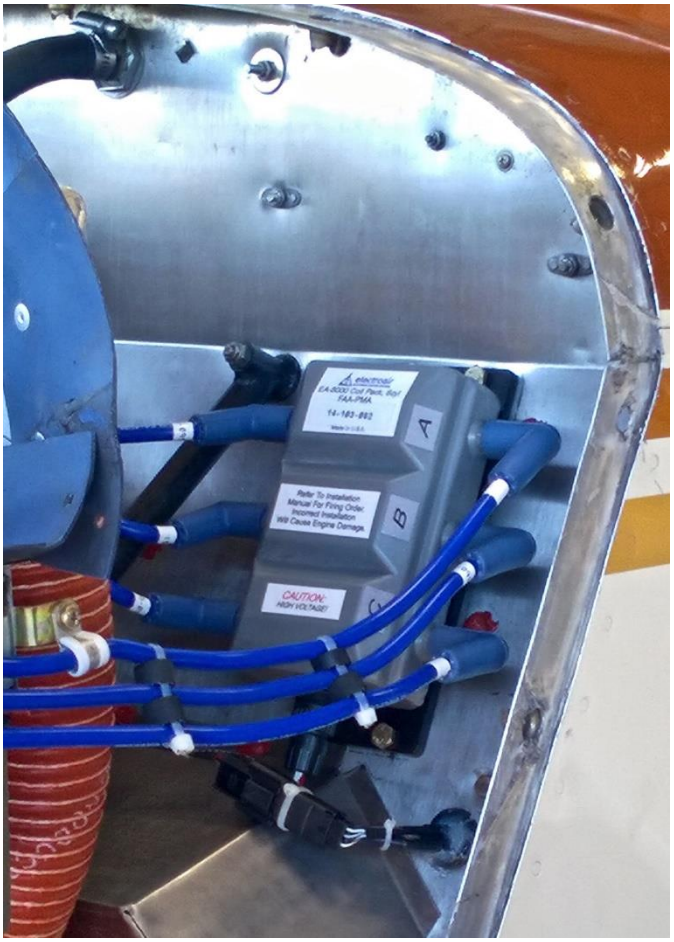
I spoke with Electroair president Mike Kobylik at an AOPA meeting. "After pouring over all the technical data, I was convinced their system was a smart upgrade because of the extra efficiency, added power and new technology.

"It definitely runs lean of peak now, which it wouldn't do before. The ignition and timing are much better. I've never had any problem with the system. If I had it to do over again, I would."

How much? Depends on your engine

Four Cylinder pricing – CLICK HERE, 4

Six Cylinder pricing – CLICK HERE, 6



The coil pack sends 70,000 volts to spark plugs. It's typically mounted on the engine firewall, as Michael Dymond did with his six cylinder 231. The control unit (not pictured) is typically mounted beneath the instrument panel since it's more temperature sensitive.

Electroair's hybrid magneto will occupy the single magneto port available on D engines like the Lycoming used in Mooney 201s. Like regular magnetos, it will generate its own energy when running, while providing the electronic ignition system with position sensing information needed to automatically adjust engine timing. The company hopes to have this system approved in late 2019.

That mirrors the experience of Carroll, Iowa, car dealer Kevin Wittrock who flies a 1982 M20J which he has owned since 2013. He replaced the engine in 2014 because the block was cracked. In the process, he converted to a Lycoming IO360-A3B6 to get away from the "D mag" which houses both magnetos in the same case. (More about that later.)

"I started reading about the Electroair and the efficiencies, spark advance, fuel savings and other benefits stood out. Since installing it, I've been nothing but happy. The most noticeable thing is when I'm taxing. It just purrs. It's so much smoother than when it ran on just mags, and it's easier to start, whether cold or hot." https://www.youtube.com/watch?v=-MD1OEryZ8s

To "D" or not to "D," that is the question

The 201 is to Mooney what the 911 is to Porsche. It's the plane that embodies the brand's reputation for speed and efficiency. The problem – at least for me – is the plane's engine was spec'd with an ignition that has both magnetos in the same housing. That's a big reason I went with the M20F. I wanted separate magnetos, just like I appreciate having separate kidneys, lungs, ears, eyes, arms, and legs.

For some perspective on this, engine expert Mike Busch wrote the following in 2013. https://www.savvyaviation.com/wp-content/uploads/articles_eaa/EAA_2013-05_the-redundancy-trap.pdf (I strongly recommend his book "Mike Busch on Engines" which costs $28 on Amazon. It can save an owner thousands.)

Lycoming alum Paul McBride provides additional insights.

https://generalaviationnews.com/2007/01/19/are-dual-mags-reliable/

https://generalaviationnews.com/2016/12/28/how-reliable-is-my-magneto/

Not surprisingly, Busch and McBride advise following the prescribed maintenance recommendations to reduce the possibility of D magneto failures. Of course, that applies to all components on our planes.

My feeling is, if a better solution is available that doesn't involve changing the entire engine, take advantage of it. Mike Kobylik recently told me he hoped to have an approved solution for D mags at Oshkosh 2019, but the government shutdown and technical tweaks slowed down their hybrid magneto program. Winds currently favor a late 2019 or early 2020 approval. . J owners, stay tuned! https://www.eaa.org/en/airventure/eaa-airventure-news-and-multimedia/eaa-airventure-news/eaa-airventure-oshkosh/07-26-2018-new-mag-takes-aim-at-bendix

"When you remove the weak link – the ignition system, you start to see what these engines can really do," Mike told me in late June in a wide ranging discussion. "You can run leaner lean of peak with our system, since the peak EGT point occurs later in the mixture control with the variable timing. And that's just one benefit."

This winter, I'm building a new IO-360A1A for my M20F and will be upgrading the ignition system with Electroair's technology. When flying over long stretches or water or mountains, having interactive ignition system components that are not merely redundant, but also independent, will be comforting. Plus, my carbon footprint gets a bit smaller through fuel savings.

Anyone who wants to learn more should read this soup-to-nuts article by IA/A&P Steve Ellis in the June 2017 **Piper Flyer**. His hands-on insights are invaluable. https://www.piperflyer.org/maintenance-technical/item/974-modern-electronic-ignition-for-a-vintage-comanche.html

I've been a subscriber to **Aviation Consumer** for many years since its opinions aren't colored by advertising considerations. I think every pilot should be a subscriber. This May 2018 article provides loads of insights into the Electroair system.

http://www.aviationconsumer.com/issues/50_5/accessories/Electroairs-Electronic-Ignition-Performance_7200-1.html

The final section of that article references SureFly's ignition module. It costs less than Electroair's system, but does less since it doesn't have a MAP sensor and all the benefits provided by that. In my plane, less isn't more. More is more.

Finally, Electroair's website has some good FAQs worth reviewing. If you have specific questions, call the company at 248-674-3433. http://www.electroair.net/faqs.html

MooneyMAX 2019, The Trip

by Donald E. Kaye

It was getting close. We had made plans several months earlier to fly to Texas to attend MooneyMAX 2019. We had attended the first one last October and had a great time in Longview. However, we had to fly Commercially due to the airplane being down for several months while a new engine was being made for it.

The Maxwells' put on a great conference last year with many interesting speakers. They stepped up and seem to have taken on the load from MAPA, who I am told will not be putting on any more Homecomings after years of doing so. We always planned on going to the yearly event to meet old friends, visit the Home to our Mooneys, and generally have a great adventure.

This time we were planning on flying ourselves. After several months of getting quotes on the installation of the GFC 500 Autopilot, AccurateAero in Minden, Nevada gave a reasonable quote with a promise to complete the installation before our trip date. They made it with no days to spare. In fact, Top Gun worked overtime installing two new tires late in the day before we were to leave.

We were up early the next morning, checked weather, loaded the plane and were off on the longest leg of the trip, three hours, from San Jose to Chandler, Arizona. Weather wise it was uneventful, but after an hour, the new Autopilot began having issues with pitch. I almost decided to cancel the trip because hand flying for 18 hours round trip would not be a lot of fun. Instead, I tried to troubleshoot the problem, and found that if I turned the Autopilot off and then back on again, I could stop the oscillations – for a while. In the end, over the 18-hour trip, the issue arose maybe 7 or 8 times. I'm currently working with Garmin to resolve it.

We had lunch at the Hangar Café in Chandler and were off on the next planned leg, with an overnight in El Paso.

One of the great things about flying yourself is having the ability to adapt to circumstances. Right around Lordsburg, NM, turbulence went from light to moderate. Things were getting convective, and while nothing was showing up on the Stormscope, XM weather ahead dictated that it would be prudent to stop. I was right over Deming, NM, so made the decision that we would stay overnight there. I circled down, landed, and was met by Tony at Desert Aviation. I asked him about hangar availability. He said it was available and immediately towed me into their big hangar. He gave us the crew car (no keys required), and as we headed to the Hampton Inn, a big dust storm blew through. Thank goodness for the Hangar!

We were up early the next day. We like to fly in the early morning and be done flying shortly after noon. We had lost one hour the day before and we would lose another hour this day. To bypass the White Sands restricted area, we flew to the Newman VOR and then direct to Andrews, E11, where we could pick up some reasonably cheap fuel. From there it was 2 hours to Longview. This trip we had no help from Mother Nature, with what usually is a tailwind going East. All the bad weather from the previous week in Texas had moved East, but we still needed to fly an instrument approach into Longview due to obscuring clouds. Thank goodness for the GTN 750, as ATC changed our approach type three times.

Home base for the weekend was the Hilton Garden Inn. A buffet breakfast was provided for all attendees each day. Most seminars were conducted there, and the variety was great. Mike Bush gave two seminars, Bob Kromer, as he did last year, gave another outstanding talk. Captain Mike Jesch spoke on "*What is a legal Briefing?*", as it related it to Foreflight. Dr. Chuck "Cowboy" Crinnian gave two seminars, one on the Mooney Caravan and the other on pertinent medical aspects of flying. Carl Sharon from Houston Tank Specialists spoke on tank resealing and Don Grunke from Concorde Batteries spoke on batteries. Bob Minnis spoke on engine development and other historical design aspects and was a wealth of knowledge. During Jimmy Garrison's talk, he surprised us all by announcing that All American Aircraft Sales was merging with Maxwell Aviation and Paul Maxwell would be handling the short body sales out of Longview, while he would be handling long body sales in his present location.

On Saturday we all met at Maxwell Aviation where Don and Paul discussed maintenance issues. Alfred "Lucky" Louque, whose credentials are too numerous to mention, discussed at length many accidents he has investigated and the reasons they happened. It was eye opening.

In the afternoon, I spent some time working on landings with a participant. Luckily, our weather was good. The event concluded with a great dinner that evening at the Lake Cherokee Country Club.

Sunday dawned sunny and bright, and we decided to stop by Kerrville on our way home. It was a beautiful two-hour flight, and for fun, I flew the whole RNAV 12 approach to test out the new autopilot.

We reminisced of days gone by when we attended Homecomings where 250 airplanes showed up. The airport was a shadow of those times. We stayed at the YO and just had to have lunch at the Cracker Barrel. (California finally just got one in Sacramento). We spent the next day in Kerrville and, of course, Shirley had to go to James Avery. The pocketbook is a little lighter now, but they have, on site, some of the most beautiful jewelry made by artisans.

It looked like about 50 Mooneys and 100 Attendees showed up.

The flight the next day could be challenging for the first part due to enroute weather. Usually, I'll do my own briefing, but if there is weather enroute, I want a full briefing from an FSS briefer. It would not be convective, but there would be plenty of rain. We took off and it was not long before we were in it. Usually I won't fly in "yellow" precipitation, but with no convection, that just means heavier rain. And that was what we experienced. Looking at the XM weather display, it looked like we could avoid most of it by flying northwest. Before I had the chance to ask for a deviation, ATC came on and asked me if I wanted to deviate. I said, "Thanks, I would", and we proceeded Northwest, and shortly we were out of the worst of it. Since we like to only fly a couple of hours at a time, I picked Fort Stockton as a stopping point. As shown on the GTN 750 map, all clouds ended about 10 miles short of KFST. We popped out in the clear and landed in beautiful conditions. There would be no more weather to deal with for the rest of the trip home.

After fueling in KFST we were off to Deming, NM where Tony met us again. We fueled up and were off to Chandler, AZ where we planned to stay overnight.

We landed at 1:00 PM in 105° heat. We needed Oxygen, so I stopped by Chandler Aviation, a Mooney Service Center, where Frank said we could stay in his hangar overnight. Shortly thereafter, we heard of the Acclaim Accident near Dear Valley that occurred at about 3:00 pm. That was a shock because Mark had, just a few days earlier, taken me over the Sierras to pick up my plane in Minden. We did a few landings there and I had agreed to continue to work with him later. I was supposed to do his initial training (he had purchased the airplane just a few weeks earlier), but due to insurance issues could not do it.

Up early the next morning, we headed to Minden, NV where I was going to have the Autopilot looked at. After a stop at Jean, Nevada, we headed for Minden. One of the reasons we took the long route to Texas via El Paso was due to the inhospitable terrain and often bad weather along the great circle route. The route, Chandler to Minden, is indeed inhospitable, but the weather was excellent, and by the time we arrived in the vicinity of Minden, the panoramic view of the snow-capped Sierras was breathtaking.

Minden is surrounded by beautiful mountains, and while the autopilot was being looked at, we had lunch at the Tailgate café, and then drove down to the Carson Valley Inn where we stayed the night. From clear skies to massive thunderstorms, it was a wild night in Minden.

Morning brought clear skies, and with the settings and cable tensions checked, we were off to San Jose and home. The East side of the Sierras drop off dramatically, so it really helps to be turbocharged when heading West from a town like Minden, directly at the base of the Sierras.

We landed in San Jose 50 minutes later, having completed the round trip in 17.9 hours flying time.

It's hard to explain to non-pilots the fascination of having a magic carpet to go on a trip like this. We had a great time at MooneyMAX 2019. Don, Jan, Paul and all the folks at Don Maxwell Aviation, went to great lengths to put on a fabulous program. We look forward to the next one.

FLYING LOW

Phil Corman

Co-Editor

Most of the time that I choose to fly at low altitudes, I'm worried that I'm busting the "catch all" FAR 91.13. But that is not always the case unless, or until you have an incident. Making unwise decisions to fly low is a violation of that FAR. But let's face it, there are times that it is needed or it's simply enjoyable, if and only if it's safe!

Remaining VFR or Flying SVFR

Weather can force you to fly at a lower altitude than you would otherwise select. Low ceilings are generally the driving factor here. If you know the geography and you know the general traffic areas, then this can be a safe, and quite enjoyable flight. We don't generally recommend "scud running", but done safely under known conditions, following FAR VFR cloud separation and person/vehicle/vessel/structure altitude separation works.

Another reason would be when flying Special VFR. Generally, you are low and avoiding clouds. The same caution is required.

91.13 Careless or reckless operation.

(a)*Aircraft operations for the purpose of air navigation.* No person may operate an aircraft in a careless or reckless manner so as to endanger the life or property of another.

(b)*Aircraft operations other than for the purpose of air navigation.* No person may operate an aircraft, other than for the purpose of air navigation, on any part of the surface of an airport used by aircraft for air commerce (including areas used by those aircraft for receiving or discharging persons or cargo), in a careless or reckless manner so as to endanger the life or property of another.

Enjoying a Flight Segment

We never support "buzzing" or "maneuvering flight" below 500'AGL. It's just plain dangerous to those onboard and on the ground. Also, how many of us have received low level training?

We live near the Pacific coast and a spectacular flight includes flying up the coast from Paso Robles to Monterey. It's a short Mooney flight and we throttle back to enjoy the view. We have dropped down to 500' to enjoy the view and look up at the coastal range. The view is breathtaking.

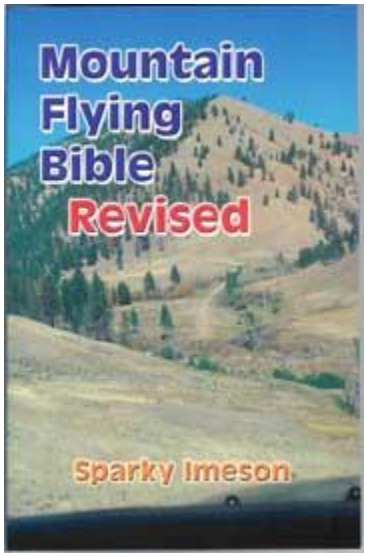
Is it safe? Well, it's not as safe as flying at 6,500', but done sparingly, it's a part of VFR flying. It's safe when 1) The pilot is safe, (i.e., IMSAFE), 2) The Mooney is safe, and 3) the weather is safe.

It's not totally comfortable since there aren't any good landing zones except for a narrow winding Pacific Coast Highway. However, if you know your Mooney, it can be a fantastic flight. It's just important to make sure that you, your Mooney, and the weather are all "Go". Even then, you need to have a plan when something out-of-the-ordinary occurs.

Over Mountains and Through Canyons

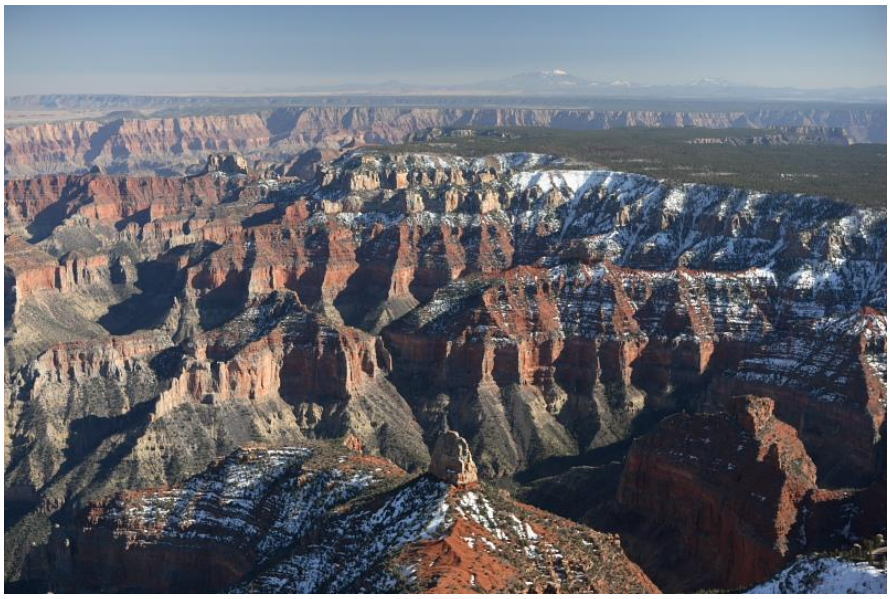
In a normally aspirated Mooney, it is sometimes a little more challenging to get high over the mountains, so you are forced to be at a lower above the ground. This can also be an exhilarating flight and it can be conducted in a safe manner. I don't have any problem scaling the Sierra Nevadas or Rocky Mountains in my Eagle, which is a non-turbo.

If you are planning to fly at a low altitude, at any time, you should review the potential obstacles/hazards, including powerlines, towers, bridges, and even canyons.



I enjoy the view, but select smart flight paths. These typically include flying near highways and transiting the mountains, and/or mountain strips for emergencies. I pass ridge lines at a 45° angle and select days when the Winds Aloft are less than 20 knots. The best book for Mountain Flying ever printed is Sparky Imeson's "The Mountain Flying Bible". A useful website is https://www.mountainflying.com/. We have had some excellent mountain transits in our Mooney life, and it is an amazing part of VFR flying.

One day, Linda and I were flying to Page, AZ and crossed the length of the Grand Canyon at the lowest legal altitude. The view was stunning. Linda knows that I am always subconsciously scanning for a landing site in the event of an emergency. At about mid Canyon, Linda turns to me and asks over the intercom, "If we had an engine out now, where would you land?". I looked at her and said without hesitation, "We'd just enjoy the view down to the Colorado River!"

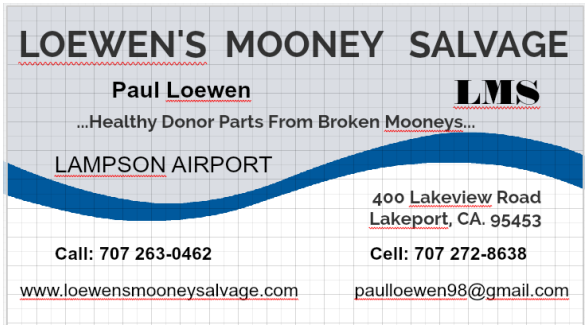


Power Lines

These are not always charted. In fact, the FAA charts them, it's usually for "landmark" value, or if they are more than 200' AGL. To us, the most dangerous places for these are over rivers or canyons. Sometimes there are "red balls" to highlight them, but not always.

Summary

There are 3 things that are less valuable to a pilot: 1) The runway behind you, 2) The fuel back at the airport, and 3) The altitude above you. Flying low can be dangerous, but as with everything else involved in flying your Mooney, it you plan and execute, you can manage the risk. Just ensure that you, your Mooney and the Weather are all A-OK.



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

The Mooney Maintenance Puzzle

Click here

Download Mooney's 100 Hour Inspection Guide

Search Mooney's Service area for Service Bulletins (SBs) and Service Instructions (SIs) applicable to your model

Click here

Search the FAA database for Air Worthiness Directives (ADs) applicable to your model

Click here

Click here

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

Ask the Top Gun

Tom Rouch

Founder of Top Gun Aviation, Stockton, CA

Send your questions for Tom to TheMooneyFlyer@gmail.com

Question: I'm a new Mooney owner. Could you share what mods you like? I have an E, but maybe you could also comment on the medium and long body Mods.

Answer: That is a big question and I have been trying to think about how to answer it for a couple of days. I think I'll start by separating the types of mods.

Most mods have been developed for the A thru F model and have been almost exclusively aerodynamic. The basic original Mooney was considered the most efficient single engine built, but in the 60s and 70s, the cost of fuel was small, so most mods were designed to reduce drag and increase efficiency. Our F model incorporates almost every mod available and the true airspeed increased from roughly 140 knots to about 165 knots. There are two ways to approach doing mods. One is to get the most speed regardless of cost, and the other is to get the most speed for the least cost, which is a real challenge.

I am not going to go thru every mod since it would be a long list, but I will try to give my best suggestions. All mods are designed to reduce drag to increase the speed of the A through the F models. The J and K models came with all the speed mods, so their mods were designed to increase horsepower. The K was the first turbo model, so it opened a new era for the MOONEY. There were modes to refine different engines to increase speed and, I might add, increase cost.

Now, to go back to the early models, where we did the most mods, there is one fact we have always talked about and it is that for every mph increase, the mod costs about $1,000 per mph. I don't know if that is true, but I'll bet it's pretty close.

So, for the best increase at the lowest cost, my suggestion would be the ARI nose cowl mod. It is a kit to close up the wide gap in the nose cowl and install a M20J spinner. Our first ARI install was on a 1970 C model and it reported a gain of at least 7 mph. We later installed an M20J windshield on the same airplane and it gained about another 7 mph. So, that combination would be my choice, regardless of cost. There are other ways to do it. On our F model, we used actual J model cowling which cost a lot more than the ARI kit. There are a lot of other mods, like wing tips, gap seals, gear door mods, etc., that reduces drag and there are many planes out there with these mods So, if you're looking for a used Mooney, research the mods on it. On our F model, we still have the original engine, but have gone to a three blade MT composite prop, which I really like, and it reduces weight.

On the J and K models, the big mod is the install of a big block engine and the most popular has been the “Rocket” conversion of the K model. The Rocket hasn’t much useful load, but it goes really fast and is a great cross-country airplane.

For your E model, you have the best model to modify, since you have the 200 HP engine on the short body and lighter fuselage. We modified the F model which provided the larger cabin area. Once you get to the long body planes, like the Ovation and TLS, there’s not much to do to increase speed. However, the Ovation has a prop mod that is very good at increasing HP and speed. On the Eagle, if it still has the original prop, I would get rid of that right away; big mistake, real doggy on takeoff. However, with a three blade, it performs well.

I am sure there will be dozens of other ideas on mods, but that is what makes it interesting. I hope I have even answered your question. Enjoy your new airplane!

***Aspen Avionics** has received FAA approval to install its E5 Electronic Flight Instrument (EFI) into aircraft without a panel mount GPS*

The Evolution E5 EFI is approved for IFR flight when installed with a panel mounted IFR GPS. When installed without a panel mount GPS, the E5 EFI is approved for VFR flight only.

"Starting at only $4,995, the Evolution E5 offers an easy and economic path for aircraft owners to remove outdated and high-maintenance vacuum systems and air-driven gyros," said Scott Smith, director of sales." Additionally, owners will have the opportunity to streamline their panel with Aspen's patented retrofit display technology which substantially lowers installation costs."

Aspen Avionics' Evolution E5 EFI is also upgradable to a full TSO'd MAX display. This demonstrates the company's commitment to developing an avionics platform that can grow with a pilot's needs.

"Aspen's unique approach to designing and engineering new products for the general aviation community gives our current customer base a path to cost-effectively upgrade to the latest Aspen displays without investing in a new cockpit installation."

E5 Dual Electronic Flight Instrument Non-TSO | Pro MAX PFD with optional ADS-B | Pro Plus MAX PFD with AOA and Synthetic Vision

The Aspen Evolution E5 dual electronic instrument can be upgraded from the basic VFR version to include IFR capability, and IFR capability with synthetic vision. Photo courtesy of Aspen Avionics.

Appareo buys Aerovie Electronic Flight Bag

Appareo created software to enhance the capabilities of the Stratus line of Automatic Dependent Surveillance-Broadcast receivers in 2018. Recently, Appareo's president went flying with the Aerovie EFB app and decided to purchase more than a subscription.

While the company continues to expand on the hardware features and capabilities of Stratus receivers and transponders, it has had to rely on third-party flight apps to interface with the information provided by Stratus receivers, company officials said. The first three generations of Stratus receivers — Stratus 1, Stratus 2, and Stratus 1S/2S/2i — were integrated with ForeFlight Mobile. The latest model, Stratus 3, was designed with "Open ADS-B Mode," which means it integrates with any EFB app using the GDL 90 protocol.

The Aerovie suite includes AHRS and synthetic vision, VFR sectional, IFR low/high, and Geo-referenced approach charts. Some of the planned enhancements to the Aerovie app will be the inclusion of features that Appareo developed for its own app, including backup AHRS, Radio

Playback, and Radio Transcription, which converts ATC communications into text that's displayed directly above the audio playback line.

With the Aerovie acquisition comes good news for pilots who own older models of Stratus receivers. The first enhancement planned for the Aerovie app is support for Stratus 2, 1S, 2S, and 2i.

Overview currently offers two subscription plans — $6.99 each month or $69.99 annually. Current Aerovie app users will not experience a disruption in their service during the acquisition by Appareo, company officials said.

Once additional features are added to the app, current and new subscribers will be able to select from various plan levels. Those subscription options, as well as the app naming and branding, will be revealed later.

What's new at Flight Service?

Our goal has been to deliver those services and capabilities the general aviation community needs in order to continue to make flying safer than ever. Our hats off to all those who have offered great suggestions and feedback along this journey, and we look forward to paving the path to future flight services with you.

Here's a peek at the latest updates resulting from your input. Please keep sharing your ideas!

- ***New mobile website*** – mobile friendly website with interactive graphics, ICAO flight planning tools, and more
- ***Automated voice services*** – get weather and adverse condition updates on Google Assistant or Amazon Alexa
- ***Web site enhancements*** - including interactive flight planning, new Airport Information pages, and much more
- ***Other advanced services*** – new pre-flight summary e-mail, receive weather and adverse condition updates via text message

CLICK HERE TO LEARN MORE

Mike Busch's "Airplane Ownership" available now

Volume 1 of *Mike Busch on Airplane Ownership* has been published! Across a two-volume set, Mike plans to distill his wisdom from more than 50 years as an aircraft owner. The 452 pages of Volume 1 cover everything involved in selecting, purchasing, insuring, and maintaining a GA aircraft. As always, expect to find a healthy dose of common sense mixed with some outside-the-box thinking!

Available on Amazon and Kindle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Jaeger Aviation

Email: bruce@jaegeraviation.com

320-444-3042

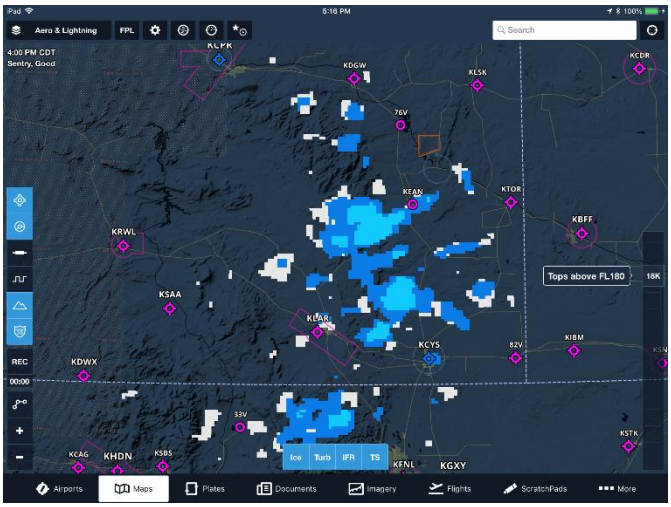
Florida Mooney Lunch Group	***Contact Dave at daveanruth@aol.com or (352) 343-3196, before coming to the restaurant, so we can have an accurate count. Events begin at 11:30*** July 13: New Smyrna Beach (EVB) August 10: Williston (X60) September 14: Winter Haven (GIF)
Mooney Caravan	July 20, 2019: AirVenture Caravan (KMSN)
MAPA Safety Foundation Mooney Pilot Proficiency Program	September 6-8: Atlantic City, NJ October 4-6: Ogden, UT
Mooney Summit	September 27-29, 2019: Mooney Summit VII, Panama City www.mooneysummit.com
Australian Mooney Pilots Association	September 6-9: Spring Fly-In to Mt. Hotham Go to https://www.mooney.org.au/ for details
EMPOA	TBD
Other Mooney Fly-Ins	July 7: Lunch Fly-In to Sunriver, Oregon (S21). Arrive anytime, with lunch around 12:30 – 1:00 pm at the Lodge

New ADS-B FIS-B Data Available

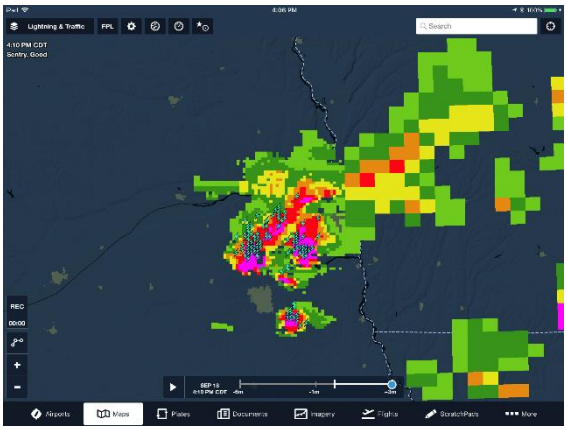
At The Mooney Flyer, we have been an ardent supporter of ADS-B FIS-B information. It competes with Sirius XM, which has had an advantage in resolution and amount of varied info. That margin is narrowing with the latest additions to the FIS-B data, and FIS-B continues to have a huge advantage because it's FREE.

Here are some of the new products on FIS-B:

- **Center Weather Advisory** - These unscheduled bulletins warn of conditions that meet or are approaching not previously forecast AIRMET, SIGMET, or convective SIGMET criteria, including moderate or greater icing, moderate or greater turbulence, heavy or freezing precipitation, conditions at or approaching low IFR, surface winds or gusts greater than 30 knots, low-level wind shear (2,000 feet AGL and below), and volcanic ash, dust storms, or sandstorms. CWAs are valid for up to two hours and if a forecaster determines it's warranted, they may be issued hourly for convective activity. Transmission interval: 10 minutes.

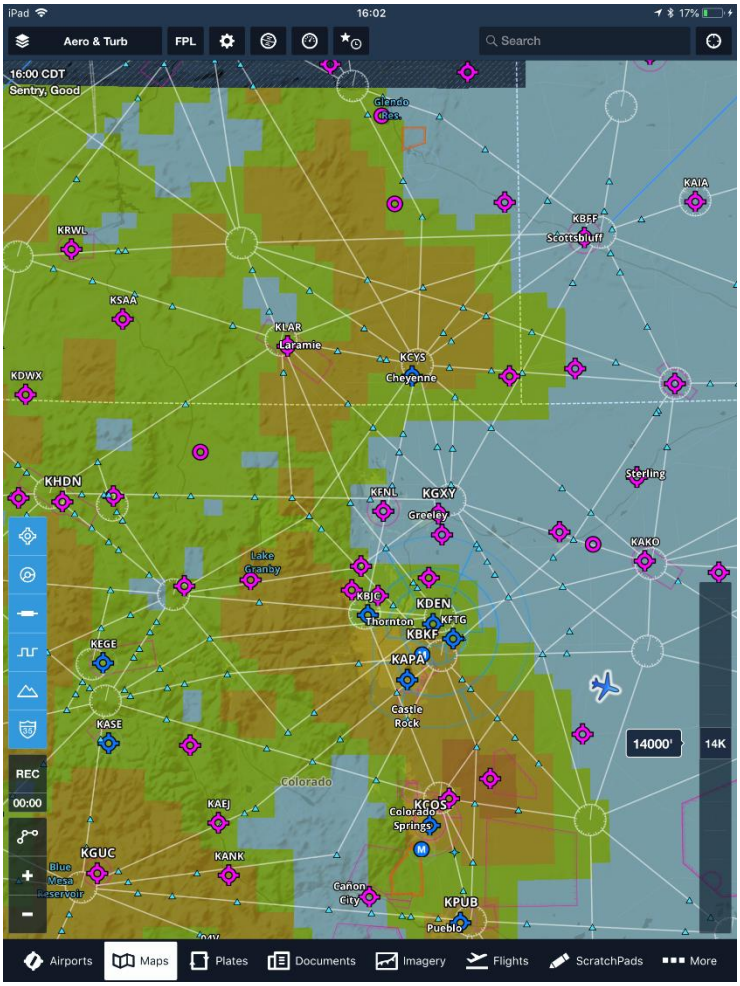


- **Cloud Tops** - The forecast altitude of cloud tops will be received from the National Weather Service's High-Resolution Rapid Refresh (HRRR) model. This information is available only in the continental United States. The HRRR is run every hour. Transmission interval: 15 minutes.
- **Graphical AIRMET.** This is a graphical advisory of weather conditions that may be hazardous to aircraft, but are less severe than a SIGMET. It is issued by the Aviation Weather Center at 0245, 0845, 1445, and 2045 UTC and updated as necessary. Graphical AIRMETs are available only for the lower 48 states and adjacent coastal waters. Transmission interval: five minutes.
- **Icing, Forecast Potential -** The icing product provides forecast icing probability, icing severity, and anticipated presence of supercooled large droplets at 12 altitude levels—every 2,000 feet, from 2,000 feet MSL to 24,000 feet MSL. This information comes from the NWS Forecast Icing Potential model, which is available only in the continental United States. This model is run on an hourly basis. Transmission interval: 15 minutes.



- **Lightning Strikes -** The lightning product shows recent cloud-to-ground lightning strikes, using lightning data provided by Vaisala. This information is available only in the continental United States. Transmission interval: five minutes.

- **Turbulence** - The turbulence product provides the forecast maximum intensity of turbulence at 12 altitude levels—every 2,000 feet, from 2,000 feet MSL to 24,000 feet MSL. These are the same altitudes for which icing forecasts are provided. This information comes from the NWS Graphical Turbulence Guidance model, which is available only in the continental United States. This model is run on an hourly basis. Transmission interval: 15 minutes.



For now, most of these products are available only in the continental United States, so that eliminates availability in Alaska, Hawaii, Guam, or Puerto Rico.

Parts for Sale

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)

Parts for Sale

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

Wanted

Time on your Mooney. Hangar available. I only need 20-30 hours yearly. I have an empty hangar in Cartersville, GA for your Mooney or Cirrus @KVPC. 3500 hours, 3000 Mooney INST CML no accidents. Please email to: mooney201@gmail.com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