The Mooney Flyer

The Official Online Magazine for the Mooney Community

www.TheMooneyFlyer.com

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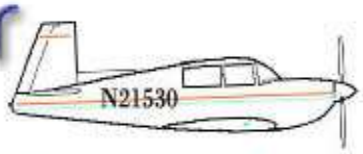
From the Editor

Phil Corman



Where have all the Mooneys Gone?

Even though the economy seems to be picking up, I ruminated this month regarding the amount of flying Mooney pilots are doing. One way to measure this is based on the number of fly-ins and the number of attendees. There are several Mooney flying organizations in the US including the Vintage Mooney Group, The Florida Mooney Lunch Group, the Mooney Ambassadors, and MAPA usually sponsors an convention.

The Florida group seems to be alive and kicking with a fly-in every month, which are scheduled each calendar year. The attendance is good and seems to be getting a steady flow of planes. The Ambassadors had a fly-in last month to Hayward, but no Mooney attended. MAPA has cancelled their 2013 convention. And the Vintage Mooney Group has only had 2 fly-ins this year, although the turnout for Lake Tahoe was high. The lake and mountain venue is just a wonderful draw. The VMG South Central has been re-invigorated by Bucko Strehlow with 1-2 fly-ins per month including a very successful fly-in to Don Maxwell Aviation. In this case, Don & Jan are the attraction… fun to be with and you always learn more stuff about your Mooneys from them.

So we're wondering if it's the price of 100LL or the aging of the Mooney pilots that is reducing the amount of flying. Perhaps measuring attendance at fly-ins not an indicator of the amount of flying folks are doing. Let us know… Send us a Letter to the Editor and set us straight.

Expert Mooney Instructor Compilation

The Mooney Flyer is going to compile a list of expert Mooney Instructors. If you are such a CFI or CFII and would like to be listed in The Mooney Flyer magazine and the website, just send us a Picture of yourself, your location, and a brief (150 words or less) bio. We will list your name/location at no cost. A picture and bio is $1/month for a year. We are reaching 3,300 Mooney pilots per month, new and old, and even wannabes… Give it a try. Click Here to send us your information.

We had the pleasure of a visit from **Tony Rees, from the Australian Mooney Pilots Association.** Back in the early spring, we heard that Tony was planning a visit to the US in June. We invited him to join us at our home in Paso Robles and he accepted. Then he actually showed up. What a pure delight. If Tony is representative of either Australians or Mooney Pilots, he is off the curve. He's a pilot, a professional journalist, professor, and even an accomplished guitar player, plus an all-around wonderful guy.

After having lots of Paso Robles wine and beer, telling tall Mooney tales, we turned in early to rest up for the big event! Friday, Tony, my wife Linda, and I jumped into the Eagle and headed to Lake Tahoe for the Vintage Mooney Group Fly-in. Tony was like a little boy on Christmas morning. Things we take for granted. First was the services provided by Oakland Center and Norcal. Then he was amazed by the accessibility of Flight Watch and the valuable Wx information exchanged. We take a lot for granted, here in the US. Tony did not. At the fly-in, we had an incredible dinner party on the shores of Lake Tahoe with about 25 Mooniacs. Tony fit in like a glove to hand. He had an exorbitant amount of patience as he retold Australian tales 24 times to each person. He regaled us all with flying stories down under and I'm pretty sure he convinced about 4 couples to travel to Australia.

We all appreciate that our Mooneys are time and travel machines. Tony reminded everyone of another valuable contribution our Mooneys make to our lives. That is, we get to meet incredibly wonderful people that would otherwise be impossible or improbable to come in contact with.

Reduce High Blood Pressure without Medication – Keep your AME at Bay

Eat Celery

- Celery consumption reduces high blood pressure and makes you feel calm.
- Celery clears uric acid from painful joints and may help treat arthritis and rheumatic problems.
- Celery is good for the kidneys.
- It also acts as an anti-inflammatory and antioxidant.
- Another benefit of celery is that you can eat a lot of it without it affecting your waistline. Celery has almost zero calories.

Appraise Your Mooney's Value

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

M20C M20E M20G M20F M20J updated September 2012

Global Plane Search

http://www.globalplanesearch.com/

So you want to buy a new Mooney. You probably have your favorite website to search. ASO isn't bad. Controller is another good one. Want to save time? Go to Global Plane Search. Here are two reasons:

First, it searches a lot of listings online so that you don't have to. Secondly, it has an amazing search capability. For instance, type "M20J US Canada" and it will find all J's in both countries. Want something for less money and closer to your home in CA? Type " M20J CA NV OR after 1985 100000" for all J models in California, Nevada, and Oregon manufactured after 1985 for less than $100,000. Want only those J's listed in the last 5 days, just add "last 5 days" to the end of your search. You can also specify how you want the listings sorted. I like to see them by price, so add "by price" to your search line. Only want to see US planes with prices and photos? Just add "US with price photos" and voila. Give it a try. But there will be no looking at inferior planes… only Mooneys.

There is an NPRM from the FAA that affects CFIs. It alters the Practical Test Standards and Airman CertificationStandard. Click Here for details and please get your comments into the FAA by July 8.

I loved Bob Kromer's article keeping your cool in Mooney emergencies. My wife thinks the Cirrus parachute is cool. I showed her Bob's article and emphasized the cage and the Mooney wing. It gives us an edge if we ever need to make an off airport landing. Just one more reason I love my Mooney
Tom G

I enjoyed Jim Price's article on aircraft tires. I'd like to add that a tire remains airworthy even if it has an area with no tread left. From a regulatory standpoint, the tire is airworthy until there is fabric showing.
Bob A

Editor's Note: This does not mean the tire is safe. It just means it is airworthy.

I'm not happy that Linda Corman did not provide a Mooney Tales adventure in this issue. I use the Mooney Flyer to get my wife more interested in flying. Her articles are helping me to do that. Please keep these going.
Greg E

Regarding the article on the Seven Habits of Effective Pilots, the most important one was left out. That is that pilots are committed to lifelong learning about all aspects of flying a Mooney. This is key. My flight instructor use to tell me that your Private Pilot Certificate is nothing more than a license to learn.
Frank K

I am still reeling from the wonderful welcome I was given by the Mooney mob (VMG) at Lake Tahoe. I had an absolute ball, and I thank you one and all. Particular bouquets go to Phil and Linda Corman for their generosity and hospitality, and to Jim and Gerry Price, who accompanied us to the lake. It was a great fly-in, and I'll be telling them all about it when I get back to Oz. Please let everyone know that we love Yanks in Australia and we'll even lend you our Mooneys!

Cheers and thanks,
Tony R, Australia

Mooney Maintenance with LASAR Precision

By Paul Loewen, Owner of Lake Aero Styling & Repair (LASAR)

Magneto Systems and Upgrades in the Mooney

LASAR ELECTRONIC IGNITION SYSTEM BY CHAMPION

LASAR®, which stands for Limited Authority Spark Advance Regulator, is the first microprocessor based engine control system approved by the FAA for general aviation piston aircraft. With the system operating in its automatic mode, cylinder head temperature, manifold pressure, and engine speed (RPM) are monitored by the LASAR controller to establish and command the optimum ignition timing and spark energy to produce maximum torque from the engine. LASAR has an inherent mechanical magneto backup system that automatically assumes control if electrical power is interrupted or if the microprocessor detects a system fault. STC approval has been granted for most 320, 360 and 540 engines. Installation requires replacement of standard magnetos with Lasar magnetos, a LASAR Control Box, which is mounted to the firewall, a low-voltage control harness that carries the electronic signals between the system components.

ElectroAir Receives STC For 4-Cylinder Ignition System

EIS-41000 Lycoming 4cyl Electronic Ignition Kit - Direct Drive (non-impulse coupled) Magneto Replacement

The EIS-41000 Electronic Ignition Kit is a fully STC'd kit for most Lycoming 4cyl engines. Replacing one magneto with the EIS-41000 will typically improve fuel economy on average by 10-15% (many operators have reported consistent fuel savings of 1gph or greater). Additionally, there will be an improvement in horsepower, smoother engine operation, and improved high altitude performance. The EIS-41000 adjusts spark timing automatically by way of our MAP Sensor - timing is adjusted with altitude. Most parts on the EIS-41000 are not life limited (the MTH is recommended to be changed when the engine is overhauled; spark plug wires on a regular interval) - this combined with reduced spark plug fouling means lower maintenance costs. This kit can be used on either 12V or 24V systems.

Kit includes: all the required parts to replace the direct drive magneto (typically, the right hand mag) in most 4cyl Lycoming engines. (Please refer to the eligibility schedule to verify the system can be installed on your engine - Note: engines are being added regularly).

SLICKSTART™----- DESIGNED TO REPLACE ALL TCM/BENDIX STARTING VIBRATORS

The FAA-PMA approved SlickSTART™ magneto booster system integrates solid state electronics with conventional ignition hardware to deliver optimum spark energy for improved engine starting under all operating conditions. SlickSTART™ delivers over 400% more spark energy during start than conventional impulse coupled or retard breaker systems. This added energy enables the magnetos to fire partially fouled spark plugs, ignite less than optimum fuel mixtures, improve hot engine restarts, and improve starting performance during extreme cold weather operations. SlickSTART™ is designed to replace all TCM/Bendix starting vibrators used in conjunction with Slick Aircraft Products magnetos. SlickSTART™ is also approved for use with Slick impulse coupled magnetos to enhance engine starting performance. SlickSTART™ is not approved for installation on any airframe equipped with TCM/Bendix 20, 200, D-1200*, D-2000*, or D-3000* series impulse coupled or retard breaker magnetos.

SlickSTART™ can be installed with either impulse coupled or retard breaker magnetos and can be used with either 12 volt or 24 volt electrical systems. Fits all Slick impulse coupled and retard breaker 4200/6200 Series and 4300/6300 Series magnetos.

How it Works

When starting our Mooneys the ignition switch is turned to the far right. The starter vibrator is activated in this position and can be heard as a buzzing sound. The ignition key is pushed inward to activate the starter. At the same time, the ignition switch internally grounds the right magneto so it will not operate. The right magneto is set at the same 25 degrees as the left for normal operation, so we do not want it to fire and cause the engine to “Kick Back”. So during the starting process, only the left magneto is used for starting. The ignition switch also selects the “retard points” and disables the normal points in the left magneto.

The vibrator switch is now supplying interrupted aircraft battery power to the left magneto coil thru the retard points. When the piston reaches TDC on the compression stroke, the retard points open allowing the magneto coil to charge and discharge as rapidly as the vibrator points can open and close. The result is a continuous spark that resembles a lightning bolt igniting the fuel/air mixture. This event continues for a few degrees of rotation on each cylinder until the engine starts and the switch is released to the “Both” position. In the Both position, the right magneto is enabled as well as the left magneto’s main set of points.

THEORY OF OPERATION– Shower of Sparks VIBRATOR

This Starting System was used on most early 1960s through 1970s Mooneys --- Shower of Sparks

Symptoms of a failing SOS system

1. Engine kicks back during starting
2. Hard starting
3. Engine starts when the key is released to the both position

With the combination ignition and starter switch in its "START" position the right magneto is grounded. Starter solenoid is energized, closing its relay contact. Battery current flows through vibrator points, plus resistor in Shower of Sparks vibrator, through the switch and main and retard breakers of the left magneto to the ground. A magnetic field built up around coil causes vibrator points to open. Current ceases in the circuit, causing the magnetic field to collapse and the vibrator points to reclose. Current flow resumes and re-energizes the coil. Vibrator points again open. When the engine reaches its normal advance firing position, the main breaker assembly opens. However, the vibrator current is still carried to the ground through the retard breaker assembly which does not open until the starting retard position of the engine is reached. On all systems with Shower of Sparks vibrator, when the retard breaker assembly opens (main breaker assembly is still open), the vibrator current flows through the primary of the transformer, producing a magnetic field around the coil. As the vibrator points open, current flow through the primary of transformer ceases. This causes a high voltage to be induced in the secondary which fires the spark plug. A stream of closely spaced sparks is thus produced at the spark plug due to the opening and closing of the vibrator points while the main and retard breaker assemblies are open. When the retard breaker opens (main breaker still open), vibrator current flows through coil to ground producing a magnetic field around the coil. Each time vibrator points open, current flow from the starting vibrator through the coil is broken. This allows the magnetic field around to collapse, producing a surge of current through the primary winding of transformer assembly. The surge of current through the primary winding causes a rapid flux change to take place. The rapid change in flux in the secondary of the transformer assembly produces the high voltage necessary to fire the plug.

When the engine fires and begins to increase speed, the ignition and starter switch is released and automatically returns to the "BOTH" position. This opens the vibrator and starter circuits, rendering them inoperative. The right magneto is no longer grounded and thus both magnetos are simultaneously firing in full advance.

The Dual Magneto is Standard Equipment on the early Mooney M20J-201

As of February 23, 2010 TCM will NO LONGER support the Dual Magneto with Parts, Harness Assymblies, and Complete Magnetos.
Some aftermarket parts are available and your particular magneto may be repairable. However at this time Aircraft Magneto Service is not accepting ANY DUAL MAGNETOS for repair. We anticipate that sufficient aftermarket parts will become available in the near future. We will update this website when such parts become available and offer service at that time.
Due to the numerous SERVICE BULLETINS/ AIRWORTHINESS DIRECTIVES for the D-2000 Series Dual Magneto, we advise you to exchange all D-2000 Series for the updated D-3000 Series.

Lycoming engines with a TCM (formerly Bendix) Series D2000 and D3000 Dual Magneto

For various reasons, several incidents of TCM Dual Magnetos separating from Lycoming engines during flight have occurred. One failure occurred on the first flight after installation of a newly overhauled magneto. The failure occurred due to cracks in the magneto housing mounting flange area that were present as a result of the magneto's prior operation. During the overhaul process, the overhaul manual only required visual inspection of the magneto. Another failure mode has been due to the use of the wrong gasket between the magneto and the engine accessory housing. Lycoming Service Instruction (SI) 1508B clearly shows that the gasket must be circular and no part of the gasket can extend beyond the flange of the magneto housing. To be more specific, using a gasket with extensions on the outside diameter that allows the stud from the accessory housing to go through

the gasket, and position the gasket between the magneto clamp and the accessory housing, is unacceptable.

When a gasket is located between the magneto clamp and accessory housing it will compress and in time result in a loose magneto. A loose magneto will result in the magneto clamp wearing into the Magneto mounting flange. Ultimately, the flange thickness will be reduced and the flange will fail. Improper maintenance usually occurs when magneto maintenance is performed in the field and the nuts holding the magneto clamps in position are removed or loosened. When these nuts are reinstalled, new lock washers must be used because they lose their locking ability with repetitive usage. The ability to obtain the proper torque on the nuts securing the magneto clamps or even make them adequately tight depends on the accessibility of the nuts when the engine is installed in the airplane. Magnetos are more accessible on some airplanes than on others and obtaining the correct torque is easier. However, on some installations, the working room is limited and the magneto clamping nuts are inaccessible making proper torqeuing difficult. As stated above, most of the problems have occurred on Lycoming IO-360-A1B6D and IO-360-A3B6D engines installed in Mooney M20J-201 and Cessna 177RG aircraft because of inaccessibility of the nuts securing the magneto clamps.

History of Top Gun Aviation

by Tom Rouch

To start at the beginning, I entered the Air Force in 1953 and initially trained as a B-29 gunner. When the truce was signed in 1953 I went into retraining as an Aircraft Mechanic for B-29/B-50s. Since it was an 18 month school, before I finished they were retiring most of the piston engine bombers so I was sent to Amarillo to go to Jet Engine school.

Finally, when I was finished, I was sent to Castle Air Force Base to work on B-47s. Within a year, we transitioned into the first B-52s to enter service. Starting as just a ground crew member, within a year I was a Crew Chief on B52, 52-0006, the third production B-52 and after a couple of years was given a new 1953 model. Some of the best years I have had. As a Crew Chief, I also flew with the plane many times in case we had to divert to another base. I logged over a thousand hours doing this. To get through my 26 years total, I moved from Crew Chief to Flight Chief and finally to Line Chief of a 15 B-52 Wing at Mather AFB in Sacramento where I still live.

Some hi-lights of my Air Force career

Just before the Cuban Missile crisis, myself and 29 other Crew Chiefs were pulled from that job and sent to Texas for an accelerated Missile Maintenance course, and when finished, sent directly to Lowry Field in Denver to “crew” 30 Titan ICBMs to get them combat ready. I spent about 2 and a half years doing this and was able to transfer back to B-52s at Beale AFB, CA. I was only there a couple of months when the SR-71 arrived, so it was a good time. For the next 8 years I shuttled between the US and Southeast Asia. I spent two years flying as a flight mechanic and Line Chief on C-140s and a week a month in-country. I have landed at every airbase in Vietnam, Thailand, and Laos during those two years. My next tour was in Vietnam as a Line Chief on forward air control planes, O-1s, 0-2s, and OV-10s. My final tour was also as Line Chief on AC-130 gunships at Ubon, Thailand.

As a Maintenance Superintendent my last 10 or so years, it was expected that I could step into any aircraft organization to supervise the maintenance. As a Line Chief, which I preferred, my jobs were always on the Flightline with the planes and not in some shop somewhere.

When the “war” finally ended I requested and received an assignment to the Bomb Wing at Mather AFB near my home in Sacramento. I spent the next four years there and retired as a Chief Master Sergeant. I had just turned 46.

After a few months of loafing, I found a job at Performance Aircraft in Hayward CA as the Director of Maintenance, (Maintenance Superintendent).

Performance Aircraft was one of the most successful Mooney Dealers in the country, and that is how I became introduced to Mooney. Performance sold 57 new moneys in 1981 alone, so you can see how times have changed. We were also a Grumman, Lake, Piper, and Maule dealer so I was able to get a lot of good experience in a few years. We also had about 30 planes on the rental line plus a couple of Cheyenne’s and Mojaves for charter operations, so I had a considerable sized maintenance operation.

About 1989, I wanted to get into a maintenance only operation, so I started looking for a location of my own. **In July, I found an available hanger in Stockton and that's when Top Gun Aviation was born.**

Not having much money, I talked my wife into letting me borrow money on our house.

I then talked Gordon Wooley and Rick Brisby, who worked with me, to be my partners in the business. Then I convinced Mark, my youngest son, to quit his job and come with me. He had worked a summer at Performance Aircraft and, like me, fell in love with airplanes and what makes them tick.

I leased a hangar at the Stockton Airport, about 4000 square feet. All we needed now was a name. Because I am retired military, and a fan of the movie Top Gun, I came up with the name. It represented the very best in aviation and that is what I wanted my shop to be. **We got our first customer on August 1st, 1989**. I wasn't really ready to start, but the 201 ran out of Annual on July 31st, so we got it in on the last day of the month and started Top Gun the next day. At the same time, I was able to sign an agreement with Mooney to become a Service Center. I started Mark on OJT (on-the-job-training) to get his A & P license. It takes three years on-the-job to be able to take the tests. I also got him started on his private pilot license.

The first year was really tough. I didn't draw a penny for myself for over a year. Remember, I was a retired Chief Master Sergeant, I had my retirement income to live on. This saved Top Gun. In 23 years, I have always made payroll and am proud of that fact. It was ironic, but Performance Aircraft went out of business within six months after I left, so I had a good source of customers after that happened.

Performance Aviation didn't close because I left. In 1987, Mooney Aircraft decided to sell new planes direct and eliminated the dealer network. It was the death of the sales based aircraft dealers. By going direct, Mooney was able to lower prices, but the dealers with new planes in stock were really in trouble. Their new aircraft inventory had cost more than Mooney was selling newer aircraft direct from the factory. I remember that we had 4 new 252s in stock and eventually sold them at about cost. Since Mooney went direct, I saw the handwriting on the wall and started to look for somewhere to start my own business. That is when I found an available hangar in Stockton.

We needed more room, so in 1995, we built our current hangar, which is 14,500 square feet.

Something that might be of interest. Since it is on County land, I had to agree to a thirty year ground lease and the hanger belongs to the county in 2025. I did manage a five year option to rent it back so it will take Mark to a retirement age.

As the years went by, Rick wanted to move to Oregon, so I bought him out, and Gordon decided to retire, so I bought him out. Mark went into on the job training for his A&P license, which takes three years. He has accomplished that and more. Since the start he has become a single and multi-engine pilot, and an IA. (Inspection Authorization). He is now the majority owner and as I slowly retire, is running the business full time. We are also a Cirrus Service Center and when Rockwell was alive, a Commander Service Center.

Since 2009, like everyone else, business has fallen dramatically and we have cut back from twelve full time to only six full time. Four of us are IAs, so I feel we have maintained quality service.

Mooney Tunes

Jim Price

A monthly review of abnormal and emergency procedures

It's hard to make the effort to review your airplane's systems and emergency procedures. So, the Mooney Flyer would hope that we can encourage you to study a system each month. ***July's focus is Electrical Problems.***

ELECTRICAL PROBLEM ANNUNCIATIONS

ELECTRICAL, ALTERNATOR – Undervoltage:

Indication depends on your model and year of manufacture. "VOLTS" annunciation may be a flashing light. You may not have an Annunciator to indicate low voltage; your model may simply use the ammeter to indicate trouble. Low voltage would be indicated by a negative indication on the ammeter – drawing upon the battery for electricity.

ELECTRICAL, ALTERNATOR – Overvoltage:

Indication depends on your model and year of manufacture. "VOLTS" annunciation may be a steady light, or you may have an Annunciator marked "OVER VOLTAGE".

Should a system or unit be the recipient of an overload, the alternator breaker will "break" the current flow.

ALTERNATOR 101

The alternator CB on the main beaker panel provides an emergency OVERLOAD break between the alternator(s) and the main buss. A tripped Alternator CB normally indicates a fault within the alternator.

The alternator field is protected by the ALT FIELD CB on the main circuit breaker panel. This provides an emergency break in the alternator field excitation circuit in the event of an alternator or voltage regulator malfunction. If the regulator output voltage exceeds limits, this will produce an OVERVOLTAGE annunciation.

PROCEDURES VARY WITH EACH M20 MODEL

You should have a very good idea of what you should do, if you encounter an Undervoltage or Alternator Failure and an Overvoltage. Procedures for several models are presented on the next two pages. If your model is not represented, tell *The Mooney Flyer* at Editor@TheMooneyFlyer.com

AMMETER NOTES: The **ammeter** will indicate whether the battery is charging or discharging. A malfunction in the generator/alternator or the voltage regulator will be indicated by a discharge. A low battery will cause a charging indication.

LOAD METER NOTES: M20E 1964 & 1965 aircraft, S/N 1001-831 have **load meters** rather than ammeters. Load meters are not associated with the battery circuit. Therefore, a load meter will not indicate whether the battery is discharging or charging. In normal flight, the amp reading will be proportional to the power required to run the electrical equipment and charge the battery.

Procedures, M20C through M20S

M20C thru M20F and M20K, OVERVOLTAGE PROCEDURES

OVER VOLTAGE ANNUNCIATOR (Voltage light illuminated STEADY

All radio equipment – OFF. (Avionics Master switch, if installed – OFF)
MASTER Switch – OFF, then ON. (This resets the voltage regulator).
IF OVERVOLTAGE ANNUNCIATOR IS STILL ILLUMINATED:
Alternator Field CB – PULL .
All non-essential electrical equipment – OFF.
Land as soon as possible and correct malfunction.

HIGH
LOW
VOLTS

M20J, OVERVOLTAGE PROCEDURES

ALTERNATOR OVERVOLTAGE (Voltage light illuminated STEADY and ALT Field CB tripped)

Avionics Master – OFF.
Master Switch – Off, then ON.
IF THE WARNING LIGHT IS STILL ILLUMINATED:
Alternator Field CB - RESET
IF THE ALTERNATOR FIELD CB WILL NOT RESET:
Alternator Field CB – Leave it OPEN .
All non-essential electrical equipment – OFF.
Land when practical. Correct malfunction.

M20 C thru M20F, LOW VOLTAGE PROCEDURES

ALTERNATOR POWER LOSS (Low voltage)

Main Alternator CB – RESET and check the ammeter for a positive charge.
IF AFTER ALLOWING THE CB TO COOL AND RESETTING IT A SECOND TIME DOES NOT ACTIVATE THE CIRCUIT:
ALT Field CB – PULL (This breaks the alternator excitation circuit)
All electrical equipment not essential for flight – OFF.
Land as soon as possible and correct malfunction.

M20J , LOW VOLTAGE PROCEDURE

ALTERNATOR OUTPUT LOW (Voltage warning light illuminated FLASHING and ammeter showing a discharge)

Nonessential electrical equipment – OFF to conserve battery power.

Land when practical. Correct malfunction.

Battery endurance depends on battery condition and the electrical load on the battery.

NOTE: A tripped main ALT CB can only be caused by a shorted alternator circuit and cannot be corrected by resetting the CB. This should be verified by attempting to reset the CB not more than one time. If this fails, turn the alternator Field Switch OFF. Turn OFF all non-essential electrical equipment and terminate the flight as soon as practical.

M20K, LOW VOLTAGE PROCEDURE

ALTERNATOR LOW VOLTAGE (Voltage warning light FLASHING)

ALT Field Switch(es) – OFF then ON. (This resets the voltage regulator)
IF THE VOLTAGE LIGHT IS STILL FLASHING:
ALT Field CB – PULL
Nonessential Elec equipment – OFF
Land as soon as practicable. Correct malfunction.

M20R Ovation and M20S Eagle, OVER/UNDER VOLTAGE PROCEDURES

OVERVOLTAGE (ALT warning light STEADY & ALT Field CB tripped)

Reset the ALT Field CB
IF THE ALT FIELD CB WILL NOT RESET:
Nonessential Elec equipment – OFF
Land when practicable. Correct malfunction.
NOTE: The only source of Elec power is from the selected battery.
Monitor batt voltage (min. 18V) and switch to the other battery when necessary.

ALTERNATOR OUTPUT LOW (Alternator warning light FLASHING)

Reduce Elec load
IF ANNUNCIATOR LIGHT STILL FLASHES:
Alternator Field Switch – OFF.
Reduce electrical load to only essential systems
Land when practicable. Correct malfunction.

IF A STANDBY ALTERNATOR IS INSTALLED (M20S & M20R, Continued)

"Standby Alternator/Emergency Bus" switch – ON. (Activates the emergency bus circuitry and Standby ALT system). The most efficient RPM for Standby Alternator operation is 2,500 RPM.

Verify:

- The AMBER "EMERG BUS" Annunciator illuminates, and
- The RED "ALT VOLTS" flashing Annunciator extinguishes

IF THE ANNUNCIATOR IS STILL FLASHING:

The Standby Alternator has failed, and only main battery power remains. Reduce Elec load by pulling the BAT CB. This sheds the nonessential buss.

NOTE: The Autopilot will disconnect without annunciation.

M20M Bravo, OVER/UNDER VOLTAGE PROCEDURES

ALTERNATOR OVERVOLTAGE (Voltage warning light STEADY and ALT Field CB popped on affected alternator)

ALT Field CB – RESET

IF CB WILL NOT RESET:

Monitor ammeter for discharge

Reduce Elec load, if needed, to maintain a buss voltage of 28 VDC and to eliminate a discharge indication on the ammeter.

Continue flight on remaining alternator and land when practical. Correct malfunction.

ALTERNATOR OUTPUT LOW (Alternator warning light FLASHING)

Affect ALT Field Switch – OFF, then ON

IF ANNUNCIATOR LIGHT STILL FLASHES:

Reduce Elec load, if needed, to maintain a buss voltage of 28 VDC and to eliminate a discharge indication on the ammeter.

Continue flight on remaining alternator and land when practical. Correct malfunction.

DUAL ALTERNATOR FAILURE

IF ALTERNATORS WILL NOT RESET:

Nonessential Elec equipment – OFF. This will conserve battery power.

Land as soon as practicable. Correct malfunction.

Battery endurance depends upon battery condition and the electrical load on the battery. If one battery becomes depleted, switch to the other battery.

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Why We Pick a Mooney to Own?

It's no surprise to most Mooniacs why we selected a Mooney to own and to fly. It's obvious. It's because they look sooooo cool! My wife says that they even "Look Fast" when sitting on the ramp. All kidding aside, but they sure do look cool, the main reasons are no surprise to any Mooniac. Simply put, they fly faster and on less 100LL than most any other production plane in the world. And did we mention that they look cool.

But to delve deeper, we asked several Mooney owners why they fly Mooneys. You'll get a lot of your thoughts reinforced but you'll also find some interesting details…

Cliff Biggs writes: Efficiency! I wanted the most speed for the least amount of fuel for the least cost of entry. A **Mooney M20C** met the bill.

Knowing that my flying is mostly cross country travel and not just boring holes in the sky on Saturday mornings, I wanted to get where I was going and use as little fuel as possible doing it. Back when I bought it (13 years ago) I was working and needed to "get there and back" without wasting time so I could go back to work. Speed played a part in the decision. Cost of entry was second. MPG third. I ran numbers on lots of airplanes (Ps, Cs. Bs, and others and wound up with a C model Mooney as the most efficient/cost effective airplane out there. Sure you can go faster in a good C210 Turbo or a N model Bonanza but look at the cost of entry and the cost per mile. I get 16 nautical miles per gallon (zero wind) at 135 kts TAS(Just did KEYQ to KPGA, 895 kts, in 7+15 with 1 stop, burning 61 gallons, averaging 123 kts TAS and 14.6 MPG with a 35 kt HW the last 2 hours, 8.4 GPH). Now, run the time saved against the cost per hour and find out just what that extra 20 or 30 knots cost you and just how little time you save on 80% of your trips in the other makes. If your doing 800 to 1,000 mile trips all the time then look at going faster (a good twin engine Mooney would do it, can we say Twin Comanche? But that's another efficiency discussion). 300 to 500 mile trips, you aren't saving that much time and at a much higher cost for the time saved. The cost of entry on anything else is 20 to 40% higher and the MPG aren't that close. With low horse power (180) I'm limited to about 13,000 ft as the highest usable altitude BUT I don't usually need oxygen either. Even out west where I do all of my flying, 12,000' gets it done with a little planning. I had to do IFR at 14,000 during the 9/11 shut down and it would do it but not very well. A little rerouting and 12,000' is possible most anywhere out west. The E and F models do better on speed and altitude but their operating costs are higher and their overhaul costs are more. Over all, compared to other makes, the "vintage " Mooney line including the best of the bunch, the 201, are hands down a better buy and more efficient than anything else.

Ivan Petrzelka writes: When we were looking for an airplane, we considered the usual suspects (various models of Cessna, Piper, Beech), primarily in the context of what our expected mission would be. We wanted a plane capable of cross-country missions for two persons in reasonable comfort with sufficient cargo capacity that would not break the bank in operating costs.

The predominant factor in deciding on a Mooney was the relatively high fuel efficiency at reasonable speed that Mooneys offer. While there is some trade-off in terms of relatively low cargo capacity, the low operating costs seem to outweigh this minor shortcoming of our Mooney.

Larry Brennan writes: Before selecting a 201 fifteen years ago, I had owned and operated Piper and Grumman aircraft and like most GA pilots, had a lot of time in Cessnas (150 through 340). I picked the Mooney 201 because it was the most efficient: Not only fastest on the power, but furthest traveled per gallon. When you consider the airframe and wing strength, simplicity and ramp appeal (I think it's a great looking bird), it becomes hard to justify buying something else, unless you needed to carry more people. Over fifteen years, I have often discussed with other pilots the upgrade path from a Mooney; it is interesting that almost uniformly the only aircraft viewed as viable "upgrades" include pressurization or turbine engines.

There are other fine choices for the same mission, just as a BMW 7-series and a Porsche 911 will both get you to work pleasurably and speedily. But for the Porschephile, the experience will be different. The Porschephile, like the Mooniac, relishes the differences. Design quirks, whether rear-engine weight bias or rubber donut-based gear springs, are embraced and ultimately emphasize the importance of good technique; sloppiness that is unnoticed in each make's respective competition can have immediate and unforgiving consequences. In common is the emphasis on performance over comfort, on efficiency over conformity. Mooneys appeal to those who share those biases.

Kelly Couch writes: We own a FIKI Bravo. We purchased this fairly late model Mooney to replace a Beech Baron. Probably like you, Phil, we no longer needed the 2 additional seats nor the load carrying of the Baron. Fuel burns for the twin average 30 GPH compared to 20 on the Bravo. Speed is comparable or 20 kts faster if we operate the Bravo in the high teens. The Baron (non turbo)operated well in the low teens with abilty to climb to high teens with low performance. The main change was, unlike the Baron, the Mooney had the ability to handle known ice and has probably doubled completion of our IFR trips. We have found we can operate in icing conditions for an hour or more (90 min max)before we get too excited. Don't get me wrong; while flying IFR in icing conditions we are on full alert but not in panic mode like with the alcohol equipped props on the baron. The rest of the reasons ,digital autopilot, Garmin radios,glass etc we could have gotten at a higher cost on a newer twin or a Cirrus single...but in the end I simply liked the looks of the Mooney longbody...

Jeff Mirsepasy writes: When I was shopping for my first airplane, I had experience with Cessna partnerships (C172, C177, C182). I wanted the most bang for the buck in terms of speed. I looked at Mooneys and rode in one. I was struck by the wide open view of the horizon. The Cessnas keep you continually under a dark roof. The Mooney lets you see 300 degrees around you. I then narrowed my search for the simplest and fastest for the money, and found that a 1967 C model Mooney was the model for me. Manual gear and flaps (simple, safe, no motors to need rebuilding). Fast wing (flush rivets, not "twisted"). Short body, 180 HP normally aspirated (cheaper overhauls).

I push my C to limit. I fly it long distances, and up high when necessary. It has served me very well for 13 years.

Dave Eneboe writes: We wanted to upgrade to a cross country airplane and my basic requirements were 500 NM range, 150 knots cruise, and the ability to cruise at 9,000-12,000 in the intermountain west. I considered Bonanzas (overpriced and too expensive to operate,) Comanches (some recurring AD issues), and Mooneys. The Mooneys had a great reputation for safety, efficiency, and performance and since 99% of our missions would be me either alone or with my wife, we settled on the M20E as the top contender.

Since I'm 6'4", my next concern was about leg and headroom. The first time I sat in a friend's E model, I found that the Mooney's seats, with it's Corvette-style seating, gave me much more leg and headroom than either the Bonanza or the Comanche. Once I had a chance to fly my friend's plane, the Mooney's performance and crisp and responsive handling convinced me that the Mooney was the plane for me. Of course it took another two years to find one that was "just right," but that's another story.

Jeff Ingram writes: I have been the happy owner of a 1967 Mooney Executive (M20-F) since 1993. I had previously owned a Cessna 172, and when I realized that the Mooney would go about 35 kts. faster than the 172 on approximately the same fuel burn, it became a "no brainer." My average mission is 350 - 500 miles.

I cut my travel time by approximately 33% by purchasing the Executive. It has as much if not a bit more room than the 172 did. Annuals are about $700 plus repairs, owner assisted. I flight plan for 140 kts, and usually come within 5 minutes of my eta. The Executive has extremely long legs, 6 hours with legal reserves, at 140 kts TAS, which can be extended to well over 9 hours (if using extreme fuel saving measures).

About five years after acquiring my Executive, I started looking at larger, faster,

Greg Jacobs writes: My initial flight training included about 7 hours in a Mooney. The flight school believed in some high performance, retractable landing gear training to complete the flight school.

This first introduction sold me on the Mooney as a fast and sexy aircraft. After that introductory training, I started looking at other airplanes and SAW nothing else that I thought looked like a REAL airplane.

I had the opportunity to fly in many Cessnas, Pipers, Beechcrafts, American Yankees of the production aircraft and various experimentals. There was clearly nothing that compared to the Mooney.
Adding to the sexy aircraft appearance was the fast and economical nature of just flying this bird. The flight characteristics of being in this airplane give you a confidence of SOLID, "I won't fall out of the sky" feeling and who doesn't like that.

If Cessna is the Chevrolet of airplanes, Cirrus is the new “hybrid”, Beechcraft is the “upscale and comfort” food, then Mooneys are the Porsche or Ferrari of the air! The major rub we hear from non-Mooney cult pilots are “well, I’m a big guy and don’t fit in a Mooney”. First of all, we never hear Porsche drivers complaining about the fit. It’s slick and it’s fast and you wear a Mooney for sure. But the cabin is within ½ inch of a Beechcraft or Cessna cabin, so width isn’t an issue.

I think, in the end, we own and fly Mooneys because they are as cool in 2013 as they were back in the 1960s. Did we mention the pilot cage and the wing on the Mooney? Well, now we have. That cage gives every Mooney passenger an edge you won’t find most anywhere else if you find yourself making an off airport landing. How about that retractable gear for off airport or ditching… ditto. And the wing… well there’s nothing stronger.

So why do I own a Mooney? Because I feel “One” with it once I leave the surly bonds of earth. And it looks soooo cool. And that’s the Zen of it.

The Engine Spoke to Me, But Was I Listening?

by Cliff Biggs

So there I was - Where have I heard that before?

Flying along just as pretty as you please, scanning the panel every few minutes just like I did in the Boeing (but only then, I had more panels to occupy my time) and I notice that the oil pressure seems to be about 7 pounds lower than it always has been. Hmmmm?

Oil temp seems normal. Cylinder head temp is normal. Mag check is normal, well maybe the left mag is slightly rougher than the right, but nothing a passenger would notice and in reality, nothing to take note of. The mag check at T/O was fine.

Nothing seems out of place except the oil pressure indication. It remains at a slightly lower level all the way home. Once on the ground, another mag check is done and all seems well. The oil pressure remains OK for idle and taxi in. Could it just be an indication problem?

Once parked, a walk around and look under is done with nothing to note but slightly more breather tube oil than normal BUT not really much more. There's a slight indication of more breathing, maybe a cylinder is going bad?

With no flight scheduled for a few days I do a warm compression check with no bad indication in either the exhaust or intake. All the compressions are above 74 with no valve leakage. Seems good here.

Another trip is flown and the lower oil pressure is noted again (it really looks like a gauge problem) but it is well within safe parameters. After this trip it's 50 hour oil change time.

OK, pull the cowl, snap the quick drain and start to remove the filter. A good visual check of the engine reveals nothing unusual. The oil is out so off comes the filter. It gets cut open (you all cut open your filters for inspection every oil change-correct?) and as I gaze in on the folds I see what looks like aluminum paste (very little) in the folds. Now I've never seen anything in the engine before. It's always as clean as a whistle. Not anything to scream a problem, just a very, very, small amount of material. I look down into the drained oil and I see what looks to be aluminum powder floating around in the oil. Hmmmm again! OK, now we send an oil sample in and it comes back as "normal". No indications of anything wrong. I'm not satisfied. Now I send in part of the filter for analysis. It comes back as nothing out of normal limits!!! I go to the engine manufacture's book and it says to fly it for 5 hours and recheck the filter. Now I'm in a quandary, what to do? The oil analysis company says there is nothing wrong. The manufacturer says to fly it, but I'm not so sure. I call my wife and tell her we're grounded until I figure out what's up. I've got 450 hours to overhaul so I'm not too keen on tearing the engine down. I let it sit for two weeks as I cogitate.

What would you do? The engine is talking!

OK, decision made! Tear it down. Let's see what's wrong, if anything.

Once I get the engine on my bench I start to methodically tear it down. First the cylinders come off and each one gets a very close inspection of the piston and aluminum wrist pin plugs. Pistons sometimes fail and wrist pin plugs can come apart. Cylinder 1, nothing appears wrong. Cylinder 2, again, nothing seems amiss. Cylinder 3 comes off, still nothing. Now I'm feeling #4 is going to be the one. Wrong! It comes off and all is well.

Next up the oil pan comes off. Of course nothing in the pan assembly moves so nothing is out of order here. I see what remains of a few very fine flakes of aluminum powder in the remaining drain oil in the pan but nothing more. Nothing in the suction screen. The mystery deepens.

Next, the rear case assembly is removed. This holds the magneto drive gears along with the oil pump assembly. Old oil pumps have had a bad history on these engines with many ADs. As I unbolt the rear case and the final bolt comes out I carefully remove the case. THUMP! I look down and see the left magneto drive idler gear lying on the bench along with the bolt-on stud that it spins on and the two bolts that hold it on the crankcase! Yikes! That's not right.

The idler gear is driven by the gear on the rear of the crankshaft and it, in turn, drives the magneto gear on the magneto. The idler gear spins on a shaft that is bolted onto the rear of the main crankcase and is held in place fore and aft by the close fitting rear case. As I look at what has fallen off, I see that the ¼ X 20 bolts that hold the idler gear shaft onto the crankcase have loosened over time and have wallowed out their threaded holes in the crankcase to twice their normal size. This is where the aluminum flakes are coming from!

Not only that, there is more. In order to lubricate the spinning idler gear the shaft that it spins on is bolted over a main oil galley tube in the crankcase so the oil can flow to the gear shaft. Remember the suddenly low oil pressure early on? Well, when these bolts came loose and the seal was broken between the shaft mount and the oil passage it sits over, lots of oil was blown out into the rear case. Aha! That's why the oil pressure went low. The oil pump couldn't keep up with the volume demanded but it still had enough to "seem" normal.

Now, does anyone remember where the breather tube comes from on our engines? It comes off the top of the rear case cavity. Hmm, an increase in breather oil out the breather tube all of a sudden. Could it be that so much oil was being sprayed around the inside of the rear case that some (more than normal) found its way out the breather tube? You bet your sweet bippy it did!

Now the final nail in the coffin. Remember the comment on a slightly "rougher" left magneto? What do you think would happen to magneto timing if the idler gear was moving around a little as the engine ran? Think maybe the timing would be changing slightly all the time? YUP! Thus the slightly rougher magneto.

So let's recap what happened (just as I did the day the gear fell out of the case).

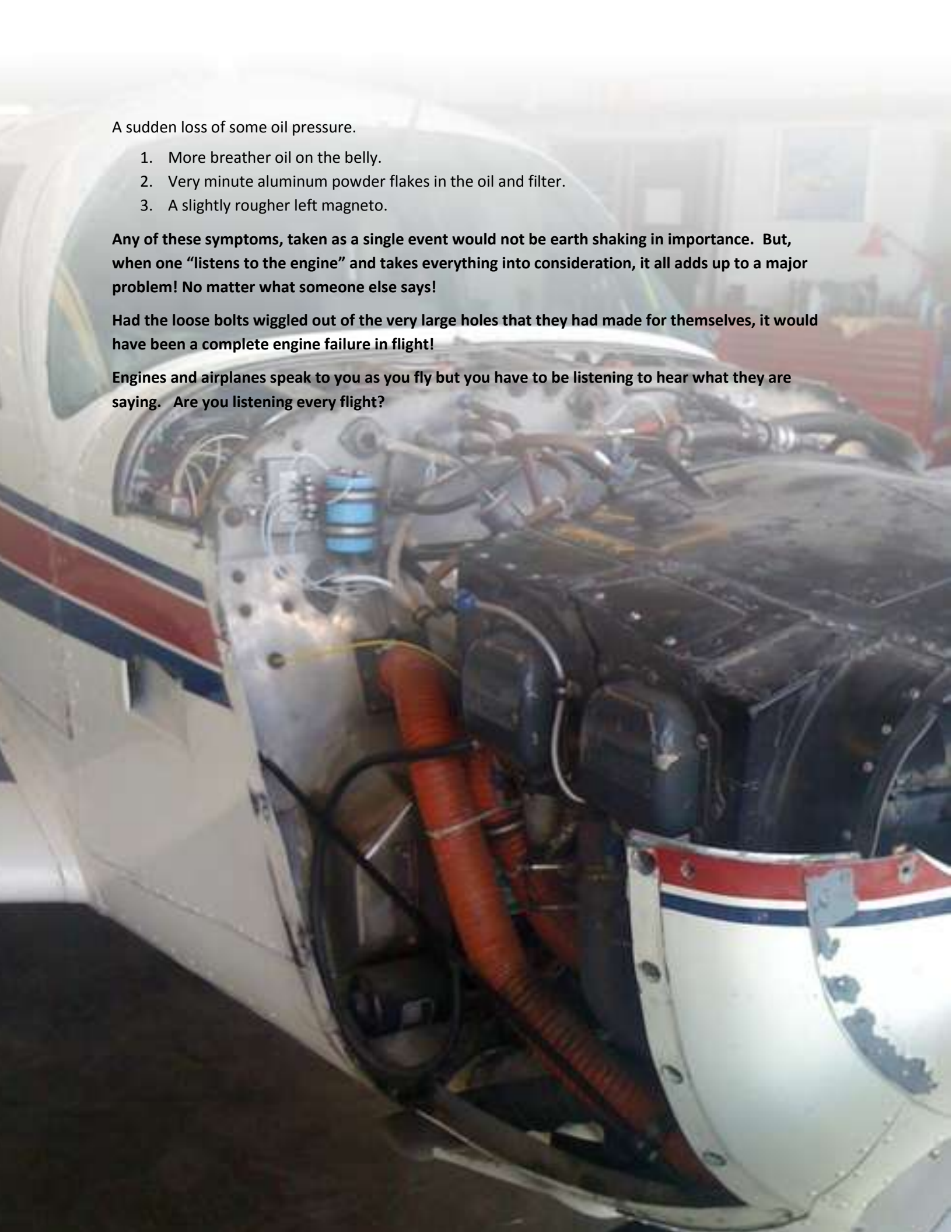
A sudden loss of some oil pressure.

1. More breather oil on the belly.
2. Very minute aluminum powder flakes in the oil and filter.
3. A slightly rougher left magneto.

Any of these symptoms, taken as a single event would not be earth shaking in importance. But, when one "listens to the engine" and takes everything into consideration, it all adds up to a major problem! No matter what someone else says!

Had the loose bolts wiggled out of the very large holes that they had made for themselves, it would have been a complete engine failure in flight!

Engines and airplanes speak to you as you fly but you have to be listening to hear what they are saying. Are you listening every flight?



Water in the Fuel Tanks by Jim Price

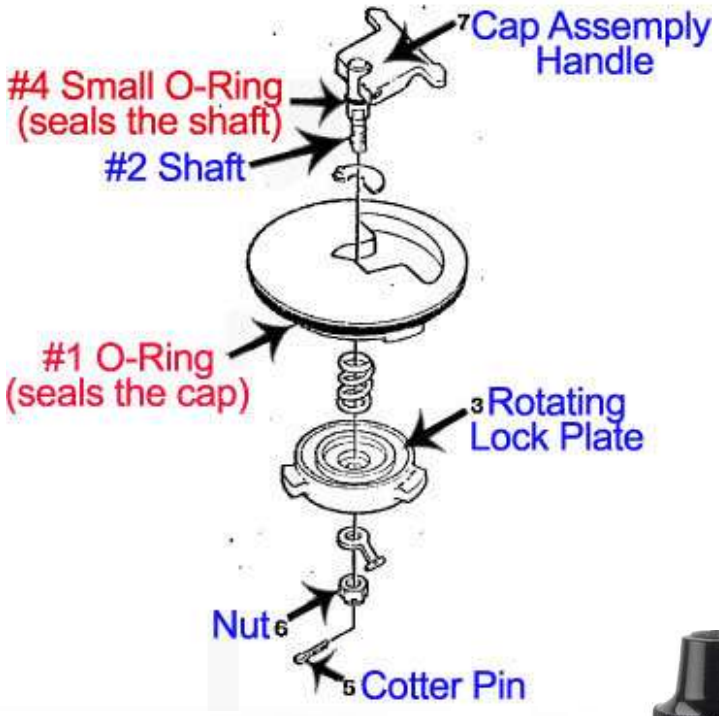
In February, **1986**, Mooney published Service Bulletin M20-229A. It outlines the fuel cap adjustment and test that should be accomplished every 100 hours or at each annual.

It applies to the M20 C, D, E, F, G, J, K and the M22 (Mooney's pressurized Mustang).

M20	M20A	M20B	M20C	M20D	M20E	M20F	M20G	M20H	M20J	M20K	M20L	M20M	M20R	M20S	M20TN	M22
			✓	✓	✓	✓	✓		✓	✓						✓

The L, M, R, S, & TN models were not in existence in 1986. However, **M20-229A applies to these later models. (They have the same fuel cap)**

Over time, weather, fuel fumes and fuel can deteriorate the effectiveness of the fuel cap O-ring's sealing power. A cracked or otherwise compromised O-ring can allow rain to contaminate the fuel.



There are two O-rings: **the small ring (#4)** that prevents water from leaking through the shaft (#2) and **the large ring (#1)** that seals the outer perimeter of the cap.

During each annual inspection, replace the large O-ring (#1) surrounding each cap.

SB M20-229A also includes a recommendation that owners can easily accomplish by lubricating the O-rings using *Tri-Flow Oil*. It can be purchased online or found locally at most bicycle shops.

Do you keep your aircraft in a nice, dry hangar? No threat from the elements, right?

Unless you hangar your aircraft when you travel, you're still exposed to precipitation threats.

Play it Safe!

(**#** references apply to the graphic on the previous page). **Every 30 days, to ensure healthy O-rings:**

- Put a few drops of *Tri-Flow Oil* around the shaft **(#2)** . Turn the Cap Assembly Handle **(#7),** several times. This not only helps prevent binding when opening and closing the cap, but it also lubricates the small O-ring **(#4)** that seals the shaft.
- Wipe clean the large O-ring **(#1**) and wipe the inside of the filler opening; removing any dirt or grime that may have accumulated.
- Lubricate the large O-ring **(#1)** with *Tri-Flow Oil*.
- Replace the cap and lock.

Here's are excerpts from several NTSB reports involving Mooney fuel contamination **accidents**:

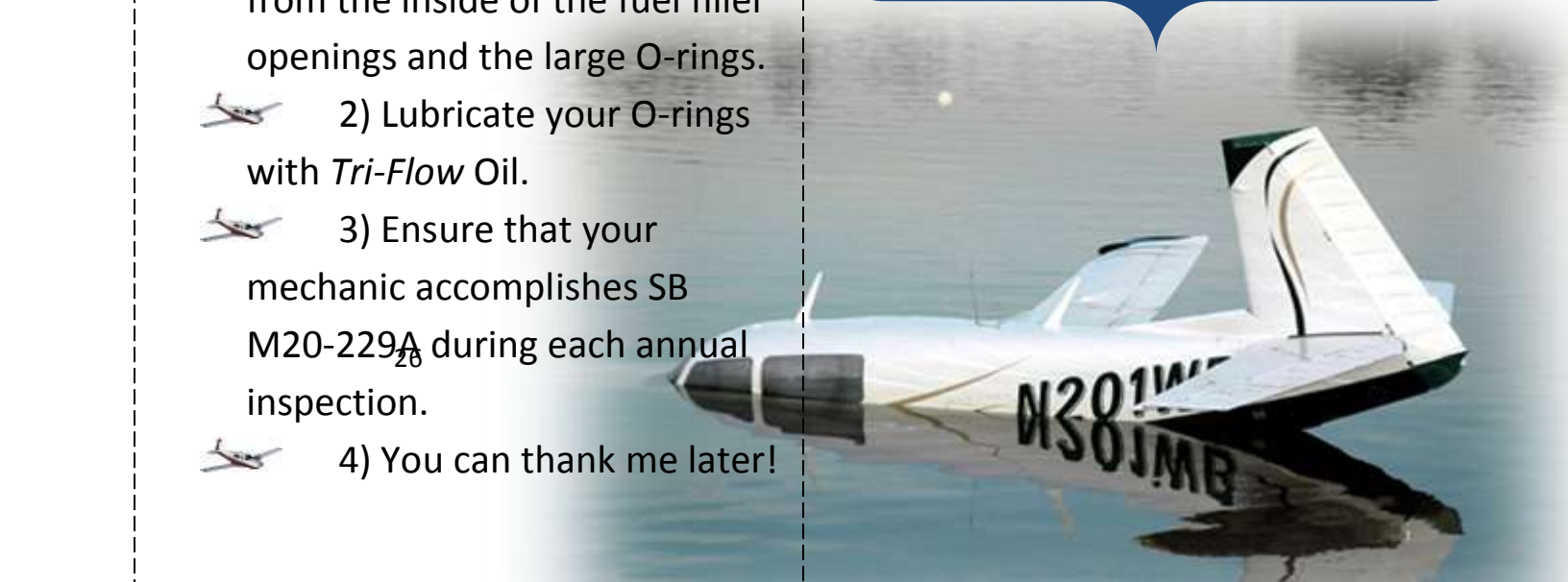
Water contamination was found in the left wing fuel tank and in the carburetor. . . . Approximately 1/2 inch of rain fell 4 days prior to the accident. . . . Contributing factors were the deteriorated fuel cap o-ring . . . The pilot's failure to adhere to the airplane manufacturer's published preflight inspection procedures, enabling water to remain undetected in the fuel system . . . water was observed in the engine driven fuel pump, flow divider and gascolator.

1) Every 30 days, remove dust and other contaminats from the inside of the fuel filler openings and the large O-rings.

2) Lubricate your O-rings with *Tri-Flow* Oil.

3) Ensure that your mechanic accomplishes SB M20-229A during each annual inspection.

4) You can thank me later!



An Angel on my Shoulder

by Geoff Lee

I have done quite a few engine break-in flights over the years, for myself and FBOs. On one occasion I performed a break in flight in a Mooney 231.

The basic plan was to fly a roughly race track pattern having an airport at each end of the path at a distance apart and at such an altitude such that should engine issues occur, (failure in particular), I could reach a decent landing point with the power off. The route would be 36nm from Stockton (SCK) to Rancho Murieta (RIU) at 7,500 outbound to Rancho and 8,500 back to SCK. There are about 9 airports along that route, all on the West side. Most of them are private except Lodi . I figured, in the event of any failure, I could easily land, welcome or not.

I arrived at the SCK FBO in time to see the mechanic putting the top cowl on the 231.

The flight duration would be about 3 to 3.5hrs at power settings at 75% or greater, the power settings would vary between 75% and full power every 20-30 minutes. This action maximizes the side load of the piston rings against the cylinder walls, thus “scraping” and seating the rings such that their sealing effect is optimized. It also avoids creating a “ridge” on the cylinder wall at the top of the piston travel. The piston will reverse direction at a different point each time the power setting is changed.

“Babying” an engine by continuously operating it at power settings less than 75% with freshly overhauled cylinders or just new rings will expose the walls of the cylinders to a condition termed “glazing”. This occurs where the rings are not thoroughly seated or scraping the cylinder walls and there is minimal, if any, sealing accomplished by the rings. This causes low compression and allows excessive lubricating oil to enter the combustion chamber, resulting in excessive oil consumption. The piston rings scrape the cylinder wall on one side travelling up and on the opposite side during the downward travel. The piston actually tilts from one side to the other at the top of the stroke, describing an imperceptible arc.

As I taxied out to the run up I did notice a very slight odor of either gasoline or solvent coming into the cockpit via the open wind window, but dismissed it thinking the engine bay had probably been washed down just prior to my arrival. There was no odor in the cockpit with the window closed.

Cleared for takeoff, I contacted departure control and informed him of my task, the intended route and requested an altitude of 7,500 ft. He kindly volunteered to keep an eye on me for the duration of the exercise. I had full throttle and cowl flaps open. The 231 and climbed nicely with air speed at the end of the White arc, oil temp just above mid green, cylinder temp about 330-340 F. One can observe a definite temperature change on the cylinder temperature readout when the rings seat so one eye is always on that gauge. I reached 7,500 a few minutes before the turn at Rancho Murieta. Starting the turn, I reported to the controller that I was descending to 6,500 ft. He suggested that I could stay at 7,000, if I wished because he had no traffic in the vicinity. Reducing power to 75% I proceeded to Stockton. All the needles looked normal and my mind was settling in for the next 3

hours of mild boredom. Each leg of the flight consumed about 12 minutes of time so I had figured on changing power settings each complete circuit. The next waypoint would be SCK, which was 5 minutes away by now. I was chatting with the controller when I realized that the plane was very quiet. A quick glance at the RPM gauge revealed that the engine was losing revolutions. I advanced the throttle with no effect. The fire had gone out and the engine had simply stopped! I switched tanks and engaged the boost pump. Nothing. I did check the ignition key. Speed was rapidly diminishing so I started trimming nose up a little to save altitude as speed bled off, waiting to attain about 80 mph for the best glide. I told the controller that the engine had gone quiet and I was intending to land at Stockton which was clearly in sight and easily in dead stick range. The controller asked me what the problem was and if I was declaring an emergency. I declined, indicating I had no idea why the engine was not co-operating and asked him if I could have a runway priority at SCK. The landing looked like a no brainer at over 6,000 ft and 4 to 5 NM out. The tower cleared me on either runway. The propeller was in coarse pitch making it easier for wind flow to rotate it, mixture off, throttle full, allowing the cylinders to clean out. I then slowly advanced the mixture and reduced the throttle, trying to find that happy mixture combination. Still no luck. That blessed glide ratio of the Mooney was only allowing a 400-500 fpm descent at 80 mph so it looked like I had nearly 10 minutes to figure this thing out. By now I was circling like a buzzard above the approach end of both runways. I did not want to flood the engine but I did try the boost pump a couple of times in combination with a normal start procedure. Having tried most of the power control combinations that I could think of with no effect, I committed to land on 29 left and quietly rolled ignominiously off the runway; switches off. The mechanics had been informed of my predicament by the tower and came out with a tug to retrieve the plane. Upon exiting the cockpit I was greeted with the really strong stench of fuel which was dripping from under the cowling. I stepped well clear of the plane and waited for the tug.

Upon removal of the cowling, it was readily apparent that the engine had been emanating fuel from the flow divider (*spider*). On top of the engine, there is a tapped hole in the edge of the flow divider that is normally sealed with a threaded screw at the factory. It was absent on this engine! I had been blithely pumping raw fuel all over the engine at about 24 lbs pressure each time I actuated the fuel pump. Also, the engine driven pump had been continuously squirting fuel through that hole throughout the whole flight. I cannot understand how I managed to get to 7500 ft and cruise for about 10 to 15 minutes – almost all the way back to Stockton – with all that fuel escaping from the divider, thoroughly washing the engine down as it did so. One leaky ignition lead or glowing turbo charger, and I would have been a flaming spectacle. No one could explain that missing screw.

I had an angel on my shoulder that day. Keep your nose low . . . and sensitive.

Santa Barbara, California

By Linda Corman

Recently we decided to visit one of my favorite cities on the California coast, Santa Barbara. We flew to Santa Barbara from our home base which is a short flight for us, but it is always beautiful flying along the coastline. Departing Paso Robles, we soon flew over the wine country in Los Olivos, covered with ranches and vineyards. You can spend a few days there, enroute, in Santa Ynez. The airport is across the way from a cute downtown with hotels and restaurants and more than 30 wineries nearby. **Solvang**, pictured to the right, is also a cute Danish town only 3 miles away. If you are a gambler, there is a free shuttle to the Chumash Casino, only a mile away.

On this trip, we flew over Santa Ynez, then over the mountains that separate Santa Ynez from Santa Barbara. Santa Barbara is a Class C airport with parallel runways heading to the Pacific and a westerly runway that parallels the coastline. Santa Barbara tower is very GA friendly and most people tiedown at Signature.

We rented a car to get into town as it is a little distant from the airport. We stayed at a cute seaside hotel right next to the only Sambo's Restaurant left in the world. If you were around in the sixties and seventies, you will know what restaurant I am talking about. The hotel is called the Oceano located on West Cabrillo Blvd, across the street from the harbor and walking distance to Stearns Wharf and of course the beautiful beaches of Santa Barbara. It was sort of fun to relive the old days and have breakfast at Sambo's. A few of our favorite restaurants are on State Street which is the main road running through the middle of Santa Barbara and the shopping district. I love eating at the Enterprise Fish Company. They had a dinner special the night we were there which included a whole Maine lobster. It was wonderful and, of course, we had to take pictures to send to

family on the East Coast. We also like to eat at Eladios located on the corner of W. Cabrillo and State St. But you really can't go wrong with any restaurant on State Street or at the Marina. If you were born with the shopping gene like me you, will love State Street. Any shop you can think of is on this street. You will need at least most of a day to see all there is. When sunset arrives there are many places to enjoy an evening cocktail on State Street. We like to drop in and try a new lounge every time we visit.

The next day you should visit the zoo. It surprised us that Santa Barbara really has a world class zoo and it is large enough that you need to spend several hours to see it all. The Zoo is located on Ninos Drive and is easy to find. Of course you can't leave Santa Barbara without seeing the beautiful mission. It is located on Los Olivos and is really one of the finest missions I've seen in all of California.

The mission was built on a high area above town where it could be seen from the harbor. The mission is fully restored and has a lovely church. We were lucky the day we visited because they had

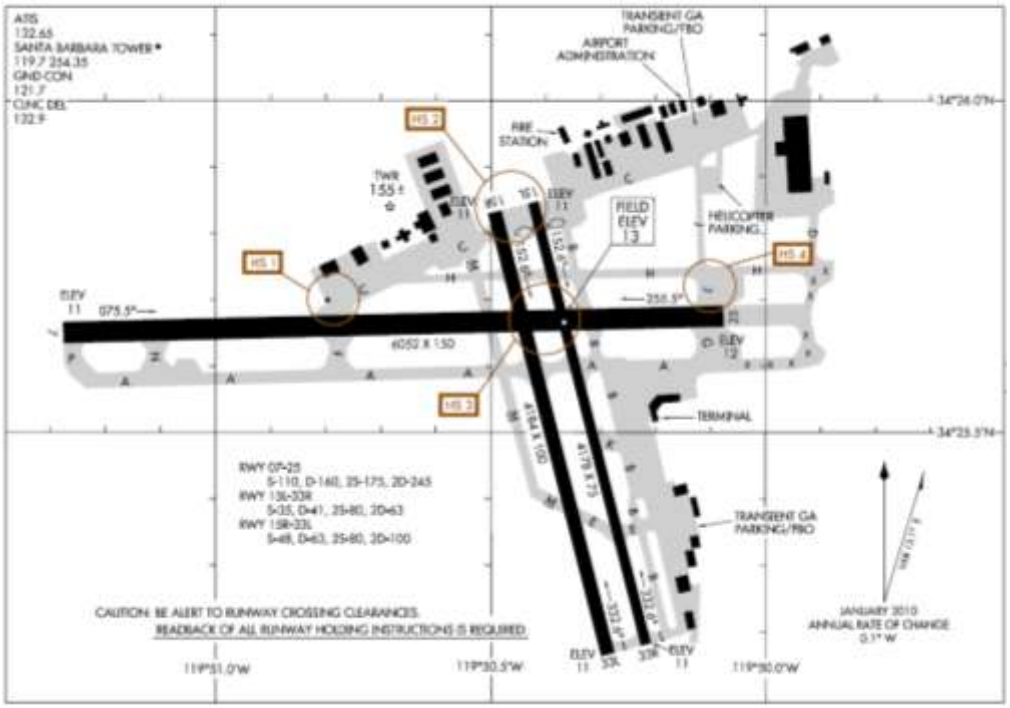
choirs from all over California competing. It was very moving and astounding to hear the music these young people make with their voices.

Santa Barbara is also known for fine wines. To taste some, you need to drive over the San Marcos Pass to a couple of small towns called Los Olivos, Santa Ynez, and Solvang where you will find some of the best wines in California.

With the beautiful Pacific Ocean at your back door, if you want to be on the water, there are many boat tours, kayak rentals and surfboard shops to choose from. But, I've always found lying on the soft white beaches of Santa Barbara is as close to the water as I need to be.

The beaches in Santa Barbara are the best maintained and groomed beaches I have ever seen. A tractor racks the beaches every day and they are always free of trash and clutter.

So to enjoy beautiful Santa Barbara all you need is a few days, a camera to save the awesome scenery, and be willing to endure soft balmy days with a cocktail in one hand. Of course the best way to get to Santa Barbara is by Mooney. As you fly there, you can enjoy the scenic wonders of the coast of California.



Flying to KSBA

From the North

I like to call the tower over the Gaviota VOR which gives me a leisurely descent to the airport. Just follow US 101. Expect a right base to 15L or 15R.

From the LA Area

Fly over Oxnard (KOXR) and start a leisurely descent up the magnificent coastline.

If you are not concerned about flying over the ocean, you can overfly the Channel Islands after departing Santa Barbara. They are quite remote and quite beautiful from a Mooney.

Send your questions for Tom to TheMooneyFlyer@gmail.com

I turned 80 this month and besides being glad to be old and not cold, I appreciate that fact that someone still wants to ask me questions. By the way, I am still in the shop at least one or two days a week, but if I am not there, Mark will be glad to answer questions and he is better than his old man.

What should a pilot look for or be aware of regarding landing gear between Annuals?

First, there is AD 73-21-01, that covers lubing the landing gear, and flight controls every 100 hours.

After 1972, Mooney used grease fittings on rod ends so they did not extend the AD past the G model.

What I recommend for all models is buy a can of Tri-Flo and about every few months, walk around and spray every rod end you can find and wipe off the excess. Especially those that attach to the flight controls. It is rare that a rod end will break, but I have seen some "frozen" by corrosion or rust. I remember one flap rod end that broke and dumped one flap on short final. Very exciting, I'm told.

Those with electric gear should be aware of the "normal" sounds your gear makes during extension or retraction. If you have any problem, popped CB, partial retraction, get your gear checked. Leave it down until you do. While the manual gear has less problems, I have fixed quite a few that had the handle pop out of the downlock on landing and the gear collapsed. Make sure the handle fits tight in the socket - which does wear out.

Visually, just try and see if there is anything that looks different from your last flight, gear door scraped, shock discs cracked, nose gear angle different, etc.

The most common repair job we do is gear up landings and even a couple on takeoff.

While most are due to forgetful pilots, there is a percentage due to gear problems. Worn out gears on a Dukes actuator, broken no-back clutch spring on the78 or later models, worn out downlock on the manual gear aircraft , are some examples of part failures.

What symptoms would I see if my Mooney is not rigged properly?

Easy, find smooth air, Set up a nice cruise speed, take your feet off the rudder pedals and let go of the yoke. Your Mooney should just keep flying straight and level. If it doesn't, it is out of rig.

We have rigged hundreds of Mooneys and it is fairly easy for us and really doesn't take much time except for the test flying to check our rigging. There are exceptions that do take more time but not many and most of those were due to some mechanical problem. We will put travel boards on and check that the flight controls have the correct travel.

That takes a few minutes. Mooney flight controls are the best design possible and with a little care, (remember the Tri-Flo), will make flying a pleasure.

July 13: Williston (X60) Pyper Kub Cafe
August 10: St. Augustine (SGJ) Fly By Cafe
September 14: Lakeland (LAL) Air Harts Cafe
October 12: Flagler (XFL) High Jackers
November 9: Winter Haven (GIF) Pappy's Grill
December 14: Punta Gorda (PGD) Skyview Cafe
E-mail DaveanRuth@aol.com by Thursday night of the week of the event so we have a head count for the restaurant on Friday.

October 5-6: California Capitol Airshow & Mooney Fly-In, Sacramento Mather Airport (KMHR) http://www.californiacapitalairshow.com/

July, 2013

New AOPA Finance Company

AOPA is expanding its presence in the aircraft finance market with a new service for its members. The AOPA Finance Company aims to make getting money for airplanes and upgrades easier. Adam Meredith, who is heading up the new company, said in an interview with *AVweb* that AOPA has been helping members with financing for about 20 years but always through a single lender. The new company will deal with a multitude of lenders that have stuck with aircraft financing through the recession and are looking for new business. READ MORE

Interested AOPA members can find more information online or call **800/62-PLANE**

iFlightPlanner has been enhanced

June 13, 2013 by General Aviation News

All iFlightPlanner.com maps, including the VFR and IFR charts available at iFlightPlanner.com/AviationCharts and those found in the Flight Wizard, now feature vertical airspace profiles and a redesigned mapping interface with full-screen viewing capability. Special Use Airspace, (NSA, MOA, Alert, Warning, Prohibited and Restricted Areas), as well as Class B, C, D and E airspace information is accessible by a point-and-click method . . . READ MORE

Serengeti refines the classic aviator sunglasses

June 13, 2013 by General Aviation News

Sortie, the newest addition to Serengeti's selection of aviator sunglasses, is the result of an effort to refine and update an iconic sunglass style. READ MORE

AFSS'S NEW SPIDERTRACKS ACTIVE FLIGHT TRACKING, AND MORE

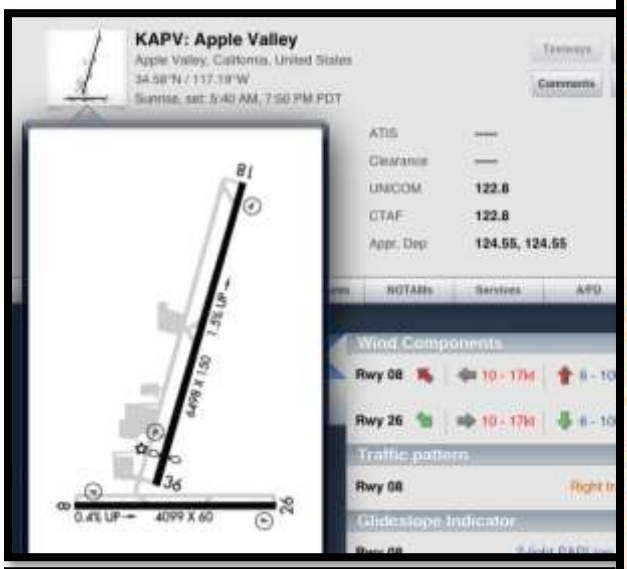
For over two years, Lockheed Martin has been investing heavily to develop new applications to bring to its Flight Services, seeking to create what it hopes will be a significantly more useful platform for pilots, but pilots are no longer the only direct users the company targets. READ MORE

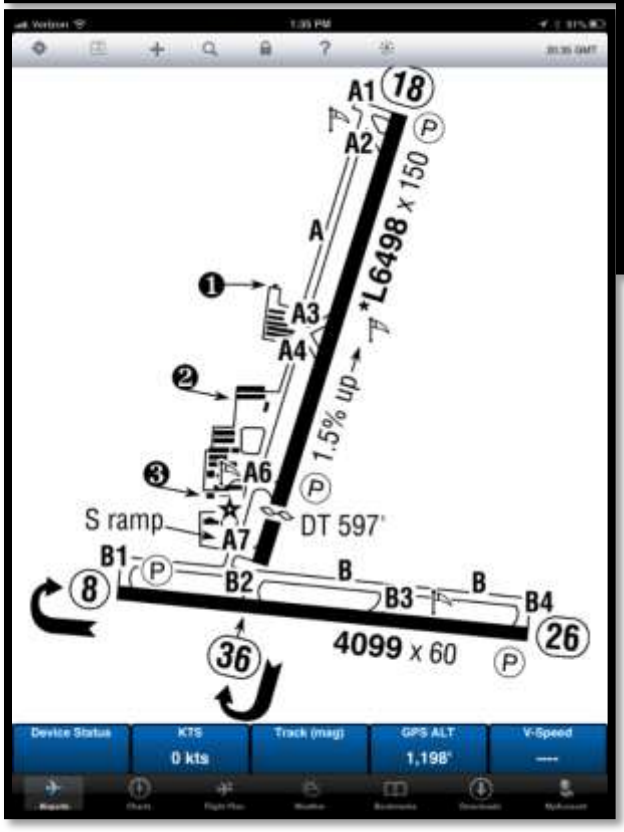
Product Review

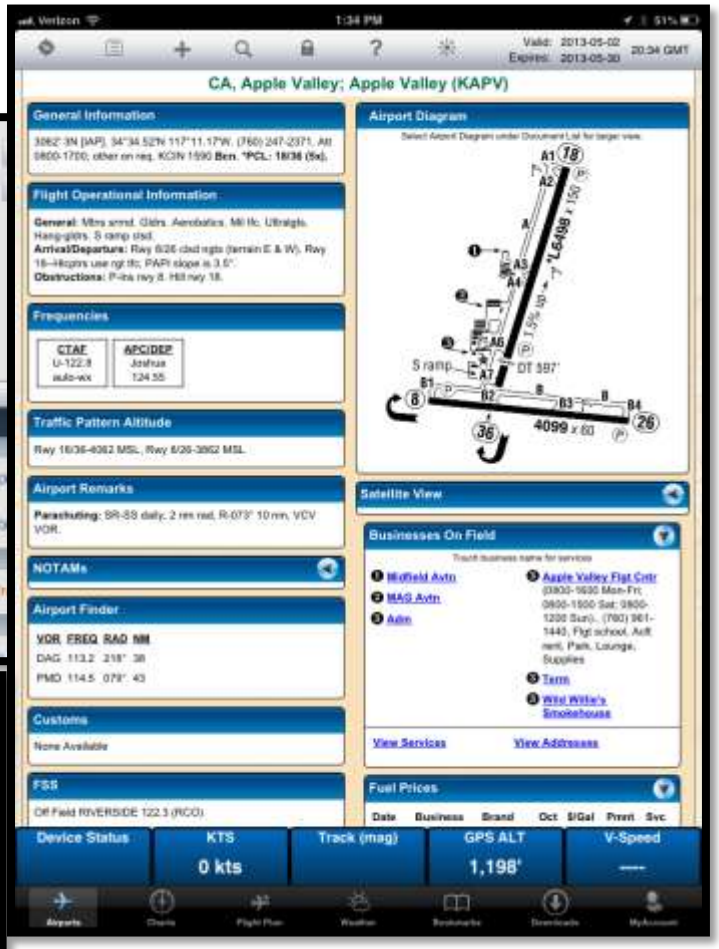
The NEW Flight Guide SOLO

What does it have that ForeFlight can't deliver?

If you fly to an airport for which the government doesn't publish an airport diagram, ForeFlight will display the AF/D diagram, as shown below. It lacks a few things, like taxiway designations and the location of the FBO, restaurant and other businesses. This is where SOLO shines. Their detailed diagrams show business locations.







<< You can also display the SOLO diagram in the full page mode.

SOLO has almost **5000 Geo-referenced airport diagrams** (with taxiways identified & right-hand traffic pattern depicted). With a GPS connection and a SOLO **Plus** subscription, you can see your plane's position on the + airport diagrams.

Back to Table of Contents

In comparison, **ForeFlight** features approximately 750 Geo-referenced government diagrams and 3,000 non-Geo-referenced diagrams.

With SOLO, you can see on one page, frequencies (navigation & communication), flight operations information, FBOs (services, location and contact information), current and nearby fuel prices, food, transportation, lodging, recreational information. SOLO also indicates which hotels offer Pilot discounts and free pickup.

In addition, you can display detailed Class B, C and selected D airspace graphics.

Flight Guide Solo provides Weather Charts & information including: Infrared Color, Infrared B&W, Water Vapor and Visible Satellite images. Prognostic weather chart profiles are also included depicting: High and Low Temperature, Precipitation, Dew Point, Predominate Weather Forecasts, Sky Cover, 12-48 Hour Forecasts, Winds, Icing, PIREPs and more! All downloaded weather charts are automatically saved and display a time and date stamp.

A SOLO subscription can be purchased in either the monthly or the discounted Annual Data Plan. **Flight Guide Solo** is available for FREE through the Apple App Store. Monthly Data Plans can be purchased through the **Flight Guide Solo** App itself on the My Account page. Discounted Annual Data Plans are purchased through the ***www.flightguide.com*** website.

The standard plan includes all airports in the United States, Alaska and the Pacific, plus Sectionals, Terminal charts and “Seamless Charts”.

Visit https://www.flightguide.com/flight_guide_solo.html for more information.

Two Bose Headset cases, both for $20. Free shipping.

Send $20 to my PayPal account - jimpriceaz@gmail.com

Don't forget to send your mailing address to jimpriceaz@gmail.com

FAA Aviation Safety
Special Airworthiness Information Bulletin
SUBJ: Propeller Spinner Section
SAIB: NE-13-32
Date: May 9, 2013
This is information only. Recommendations aren't mandatory.
Applies to Mooney M20 airplanes EXCEPT the M20J, equipped with **Hartzell Propeller spinner assemblies, part numbers (P/N) 835-54(P) or 835-58(P)**

There is the potential for cracking of the spinner dome which could lead to failure and liberation of the spinner. The airworthiness concern is not an unsafe condition that would warrant airworthiness directive action under Title 14 of the Code of Federal Regulations (14 CFR) part 39.

We have received reports of Hartzell spinners, P/N 835-54(P) and 835-58(P), installed on the aircraft listed above which have developed cracks. These cracks will propagate with use, eventually leading to spinner liberation and damage to the airplane.

The reported failures have caused in-flight vibrations resulting in premature landings. Many of these spinners were newly manufactured and had a relatively low amount of time-in-service.

Hartzell Propeller conducted testing and analysis on the spinner failures and noted that during some flight operations a resonant vibratory condition was present. Hartzell Propeller has developed a replacement spinner configuration that mitigates the vibratory environment. T**here are approximately 380 airplanes affected by this condition. Spinners installed on Mooney M20 (J) airplanes in accordance with Hartzell STC SA02414CH-D are not affected by this condition because they do not have the subject spinner assembly installed.**

Recommendations

If a crack on the spinner is discovered during pre-flight inspection, we recommend replacement of the spinner before further flight. **If a crack is not found, then, within 50 flight hours** we recommend replacement of the spinner assembly. Guidance may be found in Hartzell Service Bulletin HC-SB-61-311, Revision 5, dated December 13, 2011 and Hartzell Alert Service Bulletin HC-ASB-61-332, Revision 5, dated December 13, 2011, or later FAA approved revisions.

For Further Information Contact

Christopher Richards, Aerospace Engineer, Chicago Aircraft Certification Office, FAA; phone:

847-294-7156; fax: 847-294-7834; email: christopher.j.richards@faa.gov.

For Related Service Information Contact

Hartzell Propeller Inc., One Propeller Place, Piqua, Ohio 45356; phone: 937-778-4379; fax

937-778-4391; email: techsupport@hartzellprop.com.

*Also applies to Piper PA-24, Piper PA-28R-180, Piper PA-28R-200