

### Club Meetings

Board Of Trustees: -  
7:00 PM 12/7/17  
Club House

General Meeting:  
9:00 AM 12/16/17  
N12 CAP Building



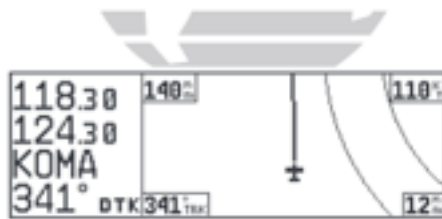
Editorial Staff: Charles Burke,  
Dave Pathe, Karen Barbagelata

### Crazy Magnetic Compass! by Charles Burke

It all started out with an innocent question that was posed to a CFI, when I look at the Garmin 3000 XL while on a course, is the number shown in the lower left corner labeled DTK measured from true north or magnetic north?

He quickly wrote back that it is magnetic north but some GPS units can be switched to true north. That answer triggered another question, does the reading take into account magnetic anomalies? To this, the CFI replied, DTK is essentially a compass course, constantly corrected by the GPS database, which includes local variation. Not sure how it handles itself in these extreme areas, but from what I've researched, it averages out between true and magnetic as needed. That's why you'll often see slight discrepancies between your different navigational sources: charts, VOR and GPS...

I am fascinated by geology and recall that the magnetic flux lines are impacted not only by structures such as metal buildings but also minerals in the ground. In fact, there are some locations in this country where the magnetic flux lines near the ground are twisted almost backwards from the normal isogonic lines that we see on a sectional chart. This means that walking along with a compass, it is possible to travel in circles!



While these localized anomalies fade as you move away from whatever is causing them, they can actually impact the accuracy of the compass in an aircraft when on the end of a runway. In a few rare cases, the anomaly is so great at the end of the runway a NOTAM is included in the airports data. But fear not, the Law of Inverse Square kicks in as you gain altitude and these variations quickly become inconsequential.

This map is from the USGS showing the charted anomalies in the continental USA (see <https://mrdata.usgs.gov/geophysics/map.html#>)

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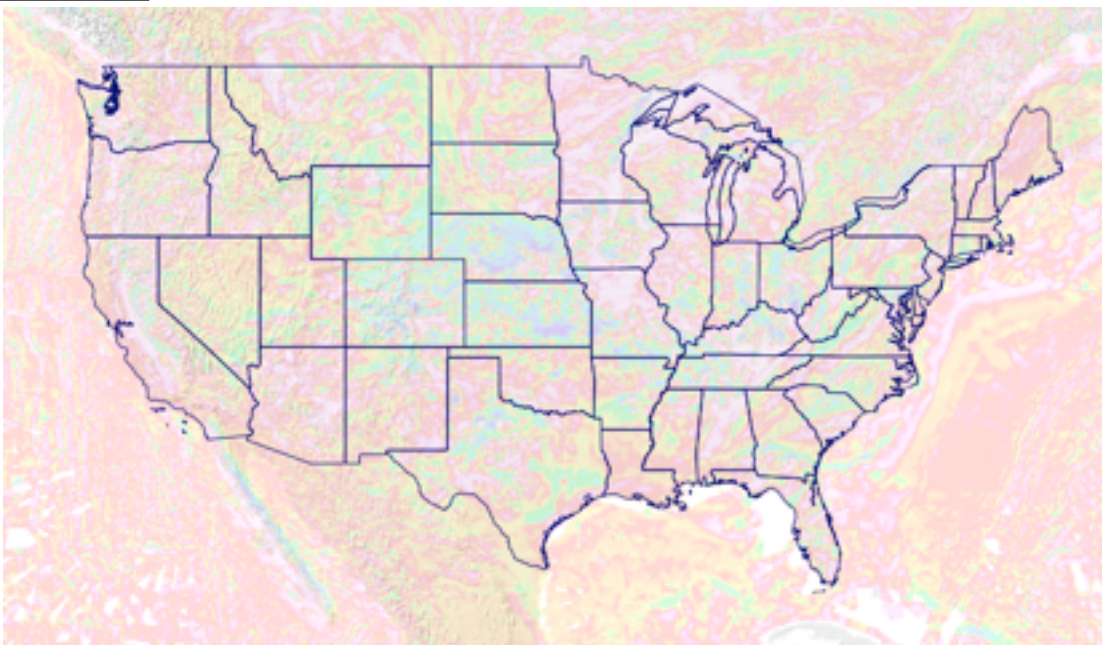
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Spotlight on: Hannah Umberger



*While Hannah is not a member of MAFC, she is regularly seen around the ramp and in the FBO often working on aircraft. Because her story is so interesting, it was decided to share it with the membership.*

.....  
Over the years, many people have asked me how I became involved in aviation and what are my goals in the field. My answer has remained essentially the same, "I am preparing to become a missionary pilot."

Missionary aviation can take on various forms, but it is basically the use of airplanes to provide Bibles, medical supplies, and transportation for needy ministries around the world. These ministries are often located in dangerous regions that require skilled and experienced pilots.

My interest in the field began sometime in high school. I grew up in a Christian home and attended church on a regular basis.

Living in the United States, we have the unique freedom to worship as we choose. Many places in the world lack that freedom, and many have no access to a Bible in their language.

With this burden on my heart, my goal upon graduating high school was to become a missionary overseas. During my years in high school, I also became interested in aviation. I believed that both goals could complement each other well.

With this focus in mind, I enrolled at West Coast Baptist College in Lancaster, California with a major in Missions. It was during my sophomore year that I began flight training at Edward's Air Force Base's Aero Club.

On March 12, 2015, I took my check-ride and earned my Private Pilot's License. Two semesters later, I graduated with my degree in Missions.

The next step on my list was to gain more experience as a pilot and mechanic. After finishing college, I had a special opportunity to work on an Indian reservation as a school teacher for one semester. Although I was not able to progress in my aviation training during this time, I was able to earn valuable experience doing missions work.

I am currently home in New Jersey and am working at Lakewood Airport as an apprentice under a skilled IA. I am excited to learn the science behind how airplanes work and the necessary skills required to maintain them. I also go flying as often as I can to maintain proficiency.

Going Around by Nick Billows

On an approach to an unfamiliar, tower-controlled airport with a 5,000' runway, I was on the base leg with 20 degrees of flaps, but a bit higher than I would have liked, and going a bit faster than I would have liked. But, hey, it was a 5,000' runway. No other traffic taking off or landing that I could see, so no problem. I could easily have everything slowed down, be at the right altitude and landing attitude, with a fully stabilized approach and landing...but only if I touched down at mid-field, with 2,500' of runway behind me, and 2'500' remaining for rollout.

No problem--it would be like hitting the numbers at N12--not elegant, not a landing I'd brag to anyone about, my old flight instructor would have smacked me on the head (they did that in those days!), but it was eminently doable. The only ones who would see this dog's breakfast of a landing would be me and the guys in the tower.

Then the tower called: "We need you to touch down on the numbers and take the first taxiway to clear the runway for a bizjet on final." Quick mental calculation: put out full flaps, cut power, do a heavy slip, a steep descent, and a quick flare--yeah, maybe I can do this. But then, maybe not. If I crossed the threshold with had too much altitude or airspeed and floated past the numbers, I'd probably miss the turnoff unless I sanded the tread off the tires, and possibly not even then.



I called the tower, "How far out is the biz jet?" "Eight miles", the tower said. The brain starts working the numbers. "Let's see: at a 150 knot approach speed, he's moving 2 1/2 miles a minute, and I'm still on base. By the time I get lined up on final and do my contortions to hit the numbers, he'd be less than 3 miles out. And if I don't hit the numbers and float down the runway, and miss the midfield turnoff, he will have to go around." Summary: I'd be creating a risk--however small--for making him go around, costing him time and fuel, and inconveniencing him and his passengers.

Easy decision time: "Tower, unable to land as requested. I'll go around and follow the bizjet." Tower:" Turn to a westerly heading, then turn downwind for the active, and follow the bizjet for landing." "Roger."

Needless to say, on downwind I got totally set up for a stabilized approach, at the correct altitude, with a controlled airspeed and rate of descent, and was cleared to land. While I may not have left tire marks on the numbers, I was able to make a slow and easy exit onto the midfield taxiway, with nobody burning up airspace behind me, and no stories for the tower crew to tell.

The moral of this story is, "Stop the downward spiral." If your approach and landing setup is not good, and it's too tough or too risky a job to make it good, go around. .

### **Lost and Found + Free Stuff**

They say that a picture is worth 1000 words but in this case there sure are a lot of people who must be lost for words when it comes to reading. If you are one of these unfortunate people, stop in the trailer and check out the Lost & Found box. Chances are pretty good that your glasses are in it.



In addition to the Lost and Found box, another one suddenly appeared with things that are being given away. Aside from sectional charts, old DVD/ tapes and misc documents, there are adapter cables, clips and mystery items. Let's keep this great idea rolling by cleaning out your pilot's gear drawer and passing along those items that you no longer need by sharing them with others!

### **Passing of the torch**

On May 15, 1918, the first official air mail service in the United States was set up between New York, N. Y., and Washington, D. C., with a stop at Philadelphia, Pa. The stopover was for the exchange of mail or planes. The total distance of the route was about 218 miles and the frequency of service was one round trip daily, except Sunday. This service was enabled with the cooperation of the War Department, which provided the aircraft and pilots and conducted the flying and maintenance operations, the Post Office Department handling the mail and matters relating thereto.



The cooperation with the War Department ended on August 12, 1918 when the Post Office Department took over the entire operation of the route, furnishing its own equipment and personnel.

### **Credit Card Charges** by Tom Smock:



For those who use a credit card to pay for flight time, the price shown on the billing slip that will appear of Flight Circle will reflect the correct rate amount but not the 3% credit card handling fee. This will be added on by the Flight Circle program and then will be reflected in your billing account. So if you charge \$2000.00 on your credit card, the bill will actually show up in your personal account at \$2060.00 Again, this add-on only applies to those using a credit card.

### **Preheater**

Instructions on how to use the aircraft engine pre-heater have now been posted on our website <http://www.flymafc.com> It is found by clicking on OTHER PAGES then selecting DOCUMENTS. Next, scroll down to OTHER USEFUL DOCUMENTS and it is listed at the bottom.. Keep in mind that to use the preheater, you will need to be approved by a club CFI. The instructions can be accessed directly by clicking on this link: <http://www.flymafc.com/docs/Pre-Heater.pdf>



At the November 18 General Membership meeting, a team led by Lt. Col, Kavanagh from McGuire AFB presented an extremely comprehensive program on the topics of Midair Collision Awareness and Local Airspace Navigation. Included in the team of presenters were Lt. Col. Christian Lawlor, Senior Airman Anthony Romeo and Lt. Col. Ben Robbins. In attendance were MAFC club members along with a number of guests from the GA community and other clubs.

Each presenter provided a different piece of the overall picture and those present were treated to many first hand accounts of situations where GA pilots ventured into harms way, many totally unaware of the peril that they were facing. Because of both the breadth and scope of the material presented, it would be impossible to try and relate it to you . However, at the onset, Lt. Col. Kavanagh listed four specific objectives for the program aimed at GA pilots and they were:

- A. Increase situational awareness.**
- B. Reduce risks.**
- C. Minimize hazards.**
- D. Eliminate near misses.**

While it was noted that the number of incidents has decreased, every effort must be taken to do much more to insure we can all fly safely.

While all of the topics were of significant value, one fact seems to be lost on a few GA pilots. The military regularly conduct maneuvers that have them flying aircraft at very high speeds at altitudes as low as a few hundred feet up to 10,000 ft and beyond. This means that they will not only be moving above and below us but also passing through our flight level.



Lt. Col. Ben Robbins      Lt. Col. Christian Lawlor  
Senior Airman      Lt. Col, Kavanagh  
Anthony Romeo

The one common thread that was woven into each of the four presentation was that YOU MUST TALK TO RAPCOM once you are in the air. No matter where you will be flying, it is imperative that you communicate with them. A second recommendation that was repeatedly mentioned was to monitor 121.5 Mhz at all times. If a situation arises and they must contact you, they will call on this frequency.

Bottom line ----TALK TO RAPCOM EVERY TIME YOU FLY!



**ELECTIONS!** by Tom Flieger

Please remember we have elections for officers in January and YOU need to think about who you want running the club for the next year. My wife is thrilled that I cannot run again, as per the club rules and regulations. BOT slots will be up for grabs as well. If you feel you can give up the first Thursday of every month for the BOT meetings and are willing to do so much for so little, then the job is perfect for you.

**Maintenance Corner** by Dan Coles



N66977-C152: The oil was changed by the Lakewood maintenance shop. We are looking for price quotes for a new interior.

N67818 C152: This aircraft was at Onsite aero for its annual inspection. Some of the items that were addressed are magneto overhaul, new oil cooler hoses, corrosion protection, oil change and replacement of the brake linings.

N4287Q-C172-L: The hinge pin on the cowling access door was sliding out unassisted. The tachometer was reported not recording the time accurately. Aircraft was been taken to BP air at VAY to have the tachometer removed and sent out to be repaired.

N93KK C-172 M: The 24 month pitot static, altimeter and transponder certification were done at Ocean Air. They found a broken static line and it has been repaired. The right main landing gear tire was flat at the tie down. A new tire and tube were installed by the maintenance shop at Lakewood.

N55804-PA28-200: R Copilot's and pilot's seats needs repair to the upholstery. Cabin door is leaking and rain water is soaking the copilot's seat. This will be addressed prior to installing a new interior.

N268BG-PA28-181: Pilots and copilot's seats upholstery were repaired by Bayside interiors at BLM. Glideslope antenna on the top of the cabin was loose. This antenna was not functioning and was removed. The mounting holes have been plugged. Ocean Aire avionics shop verified the glideslope in the aircraft is working normally. The oil was changed and a 50 hour service performed. The mechanics found one of the rocker box cover's leaking oil. They removed the rocker box cover and installed a new gasket.

N61WT: One of our members reported the plane did not pass the magneto check on run up. The maintenance shop at Lakewood could not duplicate the problem. Two members reported a brief unusual sound coming from the engine while flying. The aircraft was taken to Ocean Aire where it was inspected. It was returned to service. On 11/16/17 it was taken back to Ocean Aire for a 50 hour service and the fuel line A.D. inspection. This was taken care of on 11/17/17. Lastly, Ocean Aire avionics shop has started the installation of a Garmin GTX345R ADS-B unit.

**A Good Read: FUTURE CRIMES by Marc Goodman Submitted by Tom Russell**

From his experience working for the FBI and elsewhere Marc Goodman provides one example after another of how easily today's devices, apps and networks have been used by criminals, terrorists, hackers, and foreign and US governments agencies. Occasionally there's a funny story: bank robbers using Uber for get-away driver. Clever Mexican kidnappers using Facebook to identify targets and their travel plans. Scary--By remotely monitoring your electric meter, hackers can tell not only whether you are home or not, but even what TV program you are watching (because the instantaneous TV power consumption depends on the program.) Of special concern for pilots, GPS spoofers are cheap and readily available and have caused trouble at EWR and elsewhere. Goodman says ADS-B is not secure. I recommend you especially read the appendix, "Everything's Connected, Everyone's Vulnerable, Here's What You Can Do About It."



**Important Dates In Aviation for December**

December 4, 1991: A Pan American World Airways Boeing 727-200 lands at Miami International Airport to end 64 years of Pan Am operations.

December 5, 1960: Boeing announces it has orders from Eastern Airlines and United Airlines for its new medium range 727.

December 7, 1981: Lockheed announces the L-1011 TriStar is to be phased out of production.

December 8, 1965: Delta Airlines puts the Douglas DC-9 into service.

December 9, 1998: Trans World Airlines places an order for 50 Boeing 717-200's, 50 Airbus A318's, and 25 aircraft of the Airbus A320 series. Following the 2001 takeover of TWA by American Airlines, the orders are cancelled.

December 11, 1967: The first British Aerospace/Aerospatiale Concorde is rolled out.

December 15, 1996: Boeing announces that it plans to acquire McDonnell Douglas.

December 17, 1997: Southwest Airlines takes delivery of its first Boeing 737-700.

December 18, 1970: Airbus Industrie is formally established. It is made up of Aerospatiale, Deutsche Airbus, Fokker, and Hawker Siddeley.

December 19, 2000: The Airbus A3XX is officially launched. Renamed the A380, it has gained 50 orders from Singapore Airlines, Virgin Atlantic, Qantas, Air France, Emirates, and International Lease Finance Corporation.

December 22, 1976: The Ilyushin Il-86 wide-body jet makes its first flight.

December 23, 1963: New York International Airport is renamed John F. Kennedy International Airport.

December 26, 1974: The Airbus A300B4 makes its first flight.

December 31, 1966: Boeing is awarded a U.S. government contract to develop the U.S. Supersonic Transport.

**MAFC Rules and Regulations Part 8**



**8. Repair Charges, Fines, etc.**

3. Minimum fees are not considered fines. If you find it convenient, you may reserve an aircraft and keep it idle as much as you want. But if you fail to calculate and pay the proper minimum fee you will be charged a \$2.50 fine in addition to the minimum fee. Note that if another member sees an aircraft at its tie down for more than 15 minutes past its reservation, then the member is allowed to ignore your reservation and take the aircraft.

4. Dues are levied on the first of the month. Payment must be received on or before the first day of each month. Also, flying fees must be paid in advance ("block time") or at the end of the flight. If a member's debit balance equals or exceeds \$70.00 at any time, a \$10 fine will be assessed. If the balance equals or exceeds \$105, a \$20 fine will be assessed. Members who persistently fail to keep their accounts in good order will be grounded or expelled. Club policy is that we want to impose as few fines as possible the objective is to promote compliance with the rules. We are happy to rescind a fine if it turns out to be unfair or unnecessary as determined by the BOT.

5. In case of major violations, intentional violations, or actions that call into question a person's ability to operate MAFC aircraft properly, the person involved may be grounded by any Club officer at his/her discretion. In case of an Accident or Incident (as defined by the NTSB) the person responsible shall be grounded. Approval of the BOT is required to release a person from "grounded" status. The following will result in grounding or expulsion from the Club: a. Operating in substandard weather. b. Operating below reasonable and safe altitudes ("buzzing"). c. Operating under the influence of alcohol or drugs. d. Violating any of the FAA FARs. e. Violating minimum fuel requirements. The Club hasn't had a problem in these categories, but they show up in the NTSB records year after year as the leading causes of accidents.

6. Each member is required to notify the BOT if there is reasonable cause to believe there has been a major violation of these rules, an intentional violation, or any situation that calls into question the safety of MAFC operations.

7. If a member is responsible for damage to Club aircraft or property, then the member shall pay for the repair costs, up to \$1,000. However, if the damage occurs while the Club member is in violation of any FAA, Insurance, or Club rule/restriction (e.g., an expired medical certificate, currency in the Arrow), such that the insurance is voided, then the Club member is responsible for

the full cost of any damage that occurs to Club aircraft or property. The basic message here is that flying MAFC aircraft without the proper pilot currency could potentially cost the Club Member a very large sum of money (e.g., the Arrow is valued at \$80,000). The Club may offer a Deductible Insurance Fund (DIF) to cover the 2nd \$500 of the \$1,000 member responsibility. Details of a DIF can be found on the MAFC web site in the Members-Access Documents/Forms section.

**Of Special Note!**

**The editorial staff of the MAFC Newsletter would like to wish you all a wonderful holiday season!**



**Takeoffs are Optional, Landings are Mandatory-**

