



May 2021



EAA Chapter 1387 Newsletter

Greetings Chapter 1387! As I pen this note, it's May, but it sure doesn't feel like it! Come on Spring and Summer!

Finally — Time to have some fun with an in person EAA Chapter meeting! I hope many of you can make it but understand, if you cannot just yet. We think it's about time with reopening events happening everywhere and the Covid cloud beginning to depart. Looking forward to getting back together for an in person gathering and talking about our aviation livelihood and sharing stories.

To this end, we are meeting this month on Wednesday, the 12th at the Health Dept at 7pm. We have a lot to discuss with our first YE outing coming up in June and Air Venture 2021 gathering momentum. Although most people will probably have received their vaccine prior to our meeting, we plan to continue to follow the social distancing guidelines already in place. Feel free to bring a mask.

As noted in the April Newsletter, our special guest, Esther Grupenhagen is going to help kick us off in the right direction with talking about aviation, her stellar involvement with Civil Air Patrol, her life long career with the airlines and, training/instruction to many. Looking forward to her discussions and some of the life long lessons. I included her shortened bio within this letter again.

Speaking of progress too, the Chapter has been very fortunate to pick up our 2nd Ray Aviation Scholarship which was awarded in early March. Pat Donovan will bring us up to speed with the activity here and the involvement of Jonas Uthe & Tyler Young who we expect to benefit from this award.

We also have Conner Davis finishing up on his license and should hopefully hear soon on his progress. Conner has the finish line in sight. He will no doubt see the fruits of

his determination and studying soon. We wish him much success!

Many thanks for those contributing members this month and inputs. Special "Kudos" to Mr. Bill (one of our Flight Professionals) on his latest installment and and Learjet insight. Thank you also to Mr. Donovan on the latest from the OPS Group. Interesting reading on what's happening up North - the magnetic North!

It's been a little hard keeping the Chapter functions moving but we are making some progress. Looking forward to AirVenture this year and many other aviation related events as 2021 continues to unfold.

Be safe and looking forward to getting together for our in-person meeting on 12 May at the Health Dept.

Joe V.

EAA Chapter 1387 2021 Calendar of Events

Monthly Chapter Meetings

2nd Wednesday @ 7PM, exceptions noted*

1/13	7/14
2/10	8/11
3/10	9/08
4/14	10/13
5/12	11/10
6/12 *	12/11* 4-7p, Christmas Party

Meeting Location:

Lincoln County Health Department

SUN 'n FUN — 13-18 Apr

EAA - Learn to Fly date - May 15

Chapter YE Event at Washington - Sat 12 Jun

AirVenture Jul 26 - Aug 1

Night Fly Event — Sat Sept 18 @ 1200



NEWS FROM HQ

In May's Chapter Video Magazine, Charlie Becker reviews changes to the NOTAM, a new EAA contest, discounted merchandise, Project 21, and Jimmy Graham shares a message about International Young Eagles Day. Check it out!

EAA HQ CHAPTER VIDEO MAGAZINE

Meet Esther Grupenhagen

Esther has graciously accepted an invite to meet with us at our event in May. She has an exceptional background in aviation as you'll note in her short summary below. Please take a read of her outstanding accomplishments below and we look forward to meeting Esther in person!

Joe, Thank you for contacting me. Some info about me. I got my private in 1962 in a C140. I have ATP-SMEL, CSES, UAS, CFI A&I, AGI, IGI, with 4 type ratings- all turboprops. TT 30K plus some after I stopped logging it. Got lazy!

I started flight instructing in 1970 and am still current until the end of next month but don't have a current medical.

My airline experience started with Imperial Airlines in El Centro, CA and ended in Los Angeles with American Eagle. At retirement I moved to STL to teach at the Flight Safety Airline Center in the SAAB 340. After 9/11 that program ended but I became a contract instructor for several other SAAB operators until they all switched to RJs.

I joined CAP in the new Troy squadron as Aerospace Education Officer. Over time, I became a fully qualified, per CAP procedures, search and rescue crew member, flight instructor and check airman. I also was Wing Asst. maintenance officer for the Wing's 10 aircraft, 7-C182, 2-C172, and 1-GA8. The Troy Squadron has been inactive for several years.

I am no longer a CAP member but still remember all that I learned, all the missions I flew and the great folks, pilot or not, I met while I was a member. I was also a ground team member and leader.



Among other flight experience, I once was planning on being the world's aerobatic champ until I discovered -3 g's. I have flown many cross-country speed races all over the US and won the Air Race Classic twice in a C310, and have checked out in over 80 types of aircraft. I have also received the FAA's Wright Brothers Award for 50 yrs. of safe flight. I've flown aircraft in all 50 states and checked off one on my bucket list in flying across the Atlantic. Big deal if you're not an airline pilot. I really haven't decided what I want be when I grow up.

If you need any other info, please give me a call. If not, I look forward to meeting your group.

Esther

Esther Grupenhagen

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Resisting the Pull: Should We Still Be Using Magnetic North?

In recent years NAV CANADA has been leading a charge to **move the industry away from magnetic north to true north**. And it makes sense.

Modern technology has arguably rendered magnetic north obsolete. So why are we still using it? The simple answer is **because we always have**. Delve into ICAO Annex 4 and you'll see that bearings, tracks and radials must still be published in degrees magnetic. But this begs the question – **do we actually need it anymore?**

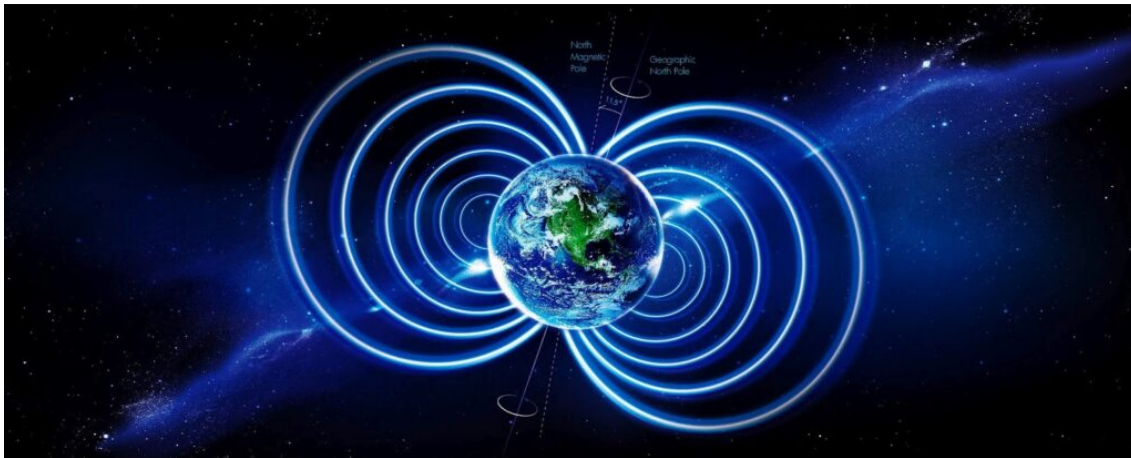
When humans first took to the skies, things were different. They needed a directional reference. Back in those days it had to be something simple and light – enter the **magnetic compass**. Nature was guiding the way because it had too.

With modern navigation systems these days all the magic happens reference to **true north**. Inertial and GPS systems both use simple conversions so that the information can be displayed to crew as a magnetic reference to match our charts and procedures.

But because we are still using magnetic north as a reference we are forced to deal with **magnetic variation** – the angular difference between the true and magnetic poles. It is an issue that costs the industry many millions of dollars a year to manage and can potentially lead to serious safety issues if things aren't handled properly on the ground and in the sky.

Let's get science-y.

The earth has its own magnetic field. That's because its outer core contains molten iron. Writhing lobes of magnetic flux surround the earth and meet near the top and bottom of the globe – the spots we know as the magnetic north and south pole.



The earth's ever changing magnetic field.

Open up a compass and the steel needle will align itself to the magnetic field lines around it and hey presto, it will point directly at the magnetic north pole.

But here's the problem – molten iron is a liquid, and it moves around. Which means the magnetic north pole does too. It never sits still. In fact in recent times it has put its foot down and is now moving close to 40 miles each year. As of last year, it was about **250nm away from the true pole** and headed for Siberia.



The constantly moving magnetic north pole over time.

The magnetic north pole is of no use to modern navigation systems because it is constantly on the move. Instead, they operate using a 'geodetic reference system' – a really fancy name for co-ordinates that may impress people at your next cocktail party.

Two variables, the ol' lat and long, come together and allow us to define any spot on the surface of the earth. All meridians



of longitude are anchored to the **true north pole** because it **never changes**. It is simply the northern end of the axis around which the world and that globe on your desk spins. Latitude on the other hand is reference to the equator which never moves either.

In fact, the only way either could change is if the earth's angle of tilt moved too in which case we'd have bigger things to worry about. So, when we combine the two we can divide the surface of the world into a grid and pinpoint exactly where we are – a process that both inertial and GPS systems use to stop us getting lost out there.



Lat and Long – anchored by the equator and earth's axis of rotation.

Here are the issues.

All of our procedures, bearings, tracks, VOR radials, even our runway designators are still presented in **degrees magnetic** because the regs say they have to be.

And because of that every time the magnetic north pole moves, magnetic variation changes and the industry has to get out there and re-jig everything. Literally every computer that references magnetic north in some way has to be updated.

Magnetic variation is constantly changing. Credit: NOAA

All our IFR procedures from enroute, to terminal and approach phases have to be changed and re-published. Our FMS's have to be programmed to match too. VORs have to be rotated and nav aids flight tested. Radars have to be realigned and airport signs replaced. Even runways have to be repainted. It literally costs ANSPs, airports, avionics manufacturers and operators millions.

Take KTPA/Tampa for example. In 2012 changes to variation forced the airport to renumber its primary runway, no less than

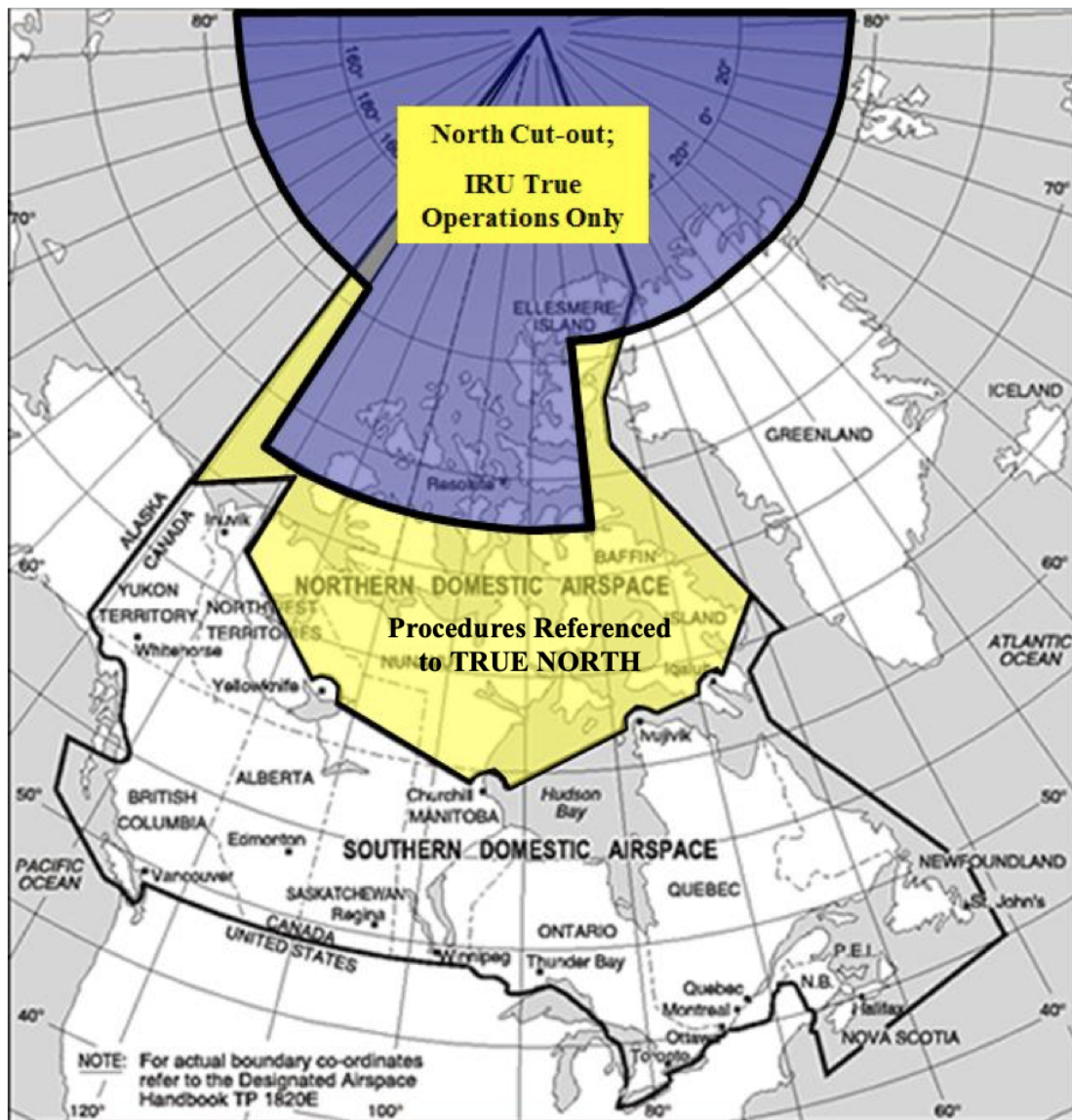


140 signs had to be replaced.

It is also a safety issue. The whole system depends on everyone updating everything at the same time which seldom happens. A small change can have a big impact too. The PBN systems we rely on to keep us safe can be compromised by changes to variation if not updated. Synthetic vision systems can begin to tell pilots lies.

Anchorage in 2012 serves as a cautionary tale. The FAA updated its magnetic variation of the airport. **Because operators didn't update their aircraft's avionics quickly enough, in some cases there was a mismatch.** Flight tests revealed that using the old value, Cat II and III approaches were no longer within lateral guidance limits – not what you want to hear when you're in the soup. The FAA temporarily changed procedures back to old value to allow time for operators to catch up.

We know that it works too – Canada has been using conventional and PBN procedures using **True North** for some time throughout a huge chunk of its northern domestic airspace successfully, where magnetic references become unusable.



True north operations in Canadian domestic airspace.



So why can't we just turn it off?

That's the beauty of it – we *can*. **Technically, it's as simple as flicking a switch.** Converting things from true to magnetic is just a process that we can just turn off. A lot of aircraft even have that very switch already.



As easy as flicking a switch?

Practically speaking though, the problem is the huge **legal, administrative and legislative implications** that would follow. Rome wasn't built in a day and neither would a huge change to aviation procedures around the world. It would literally take years to implement.

But that may be no excuse for change, otherwise we will **continue to expose ourselves to known risks**. Take Notams for example. We are still communicating critical safety information using a format that has existed since 1924 – an invention for teleprinters.

The industry is beginning to see that the status quo isn't necessarily the safest way forward. OPSGROUP have recently begun to work with ICAO and other partners on a global campaign to improve Notams, and it has only just begun.

No longer using magnetic north is no different – it is only a hurdle to something **better, more consistent and safer** for everyone.

**2021 05 MAY****LEARNERS AS WE GO****“GLORY DAYS!”****mr. bill**

With the music of “Glory Days” in the background, I was reading the last month’s newsletter article written by Ron Burnett. What an awesome story.

With the recent February 2021 announcement by Bombardier of discontinuing the Learjet Line of Business jets, I was sent back to the days of living one mile east of the Chicago Midway Airport. With low clouds and strong winds out of the west or southwest it was awesome watching the airplanes “crank and bank” as they were circling off the ILS runway 31 approach to Midway, twisting and turning for the approach and landing on runway 22 over my parents’ home. It was easy to determine if the jet was a Learjet with the big, 386 gallon fuel tanks hanging out there on the wingtips. Of course, it was a dream of mine to be able to do that same thing someday, flying the Learjet series.

My first Learjet experience was in college when the nearby cities Learjet Jockey came into the college town airport for cheap fuel and said he was flying to Canada the next day. So, we college kids showed up and got a ride in this Learjet 23-020. Oh boy! What a flight. That was ALL it took.

An old Preister Aviation Lear 23 owned by “Whatcha” McCollum Aviation in Danville, IL



(1979)



Well in February 1986 I was hired on by a company that was growing fast in the Banking Data Industry. I started out flying a Cessna 310R for the company scooping up 300 to 400 pounds of paper checks nightly at various cities along my route in the Midwest. Those checks written by you people, that had to be transported to a Federal Reserve Facility and cleared for payment, was my cargo. We would fly to hubs in Pittsburgh, PA in the early part of the evening. At 0200 we all met up in Chicago Midway for the late hub to distribute the checks.

When I arrived for my first day of Cessna 310R training the company had just acquired its first Learjet 35 turboprop aircraft. (It was mentioned that I would be a Lear Captain in five years. (It took 22 months. The airlines started hiring in 1988.) Until this time the company was flying a group of older Learjet 23, 24, and 25 models. The Learjet 20 series were the pure turbojet aircraft that turned jet fuel into a bunch of noise. In fact, here is a Learjet 25 takeoff view that you rarely see:

<https://www.youtube.com/watch?v=MI7bHDIWTVk>

(Anybody know what that white line is on top of the fuselage?) Answer below.

How cool is that. And the left turn after takeoff was how we flew the “Important Bank Data” at night. Cranking and Banking! YEE Ha! Cargo don’t complain! Back in the day those Learjets were the jet to have. You would call up William “Bill” Lear and tell him what you wanted. The early ones were used by Frank Sinatra, Elvis, and William Lear himself. But in the 1980’s the Cessna Citation Jet showed up on the scene with its nice flying characteristics, fuel tanks on the inside of the wing, quiet footprint, and a single pilot version, that made it the jet of the future. And speaking of future, here is that Learjet pilot today with his parting gifts from the night freight company.



mr. bill with his Lear 35/36 poster and his Learjet windshield paperweight (and airline mask.)



Yes, those were the glory days. I was flying eight legs a night to eight different cities. Logging almost 8.0 hours of Pilot In Command (PIC) jet time for that BIG airline job or a nice cushy corporate job.

As the stars aligned, right after getting 1,000 PIC jet time at the night freight jet job, Trans World Airlines called me and start the “Glory Days” with an airline career.

As for the Learjet, it went from corporation to corporation, but it would never regain its Glory Days. After 3,000 of the jets were delivered from 1966 to 2021, its history came to an end.

The Cessna Citation jets could keep up with the changing times in the corporate world. Cessna has 14 variations of the Citation. In fact, Cessna has manufactured over 7,500 Citation Jets, forming the largest business jet fleet.

So the days of me thoroughly pre-flighting my Lear 25 jet are gone. It was a great time zipping into to cities, shutting down the left engine, having big bags of cancelled checks falling into the laundromat carts that were pulled up along side of the left side of the airplane. The co-pilot would open the door, run around the jet for his pre-flight. After the off loading of thousands of pounds of cancelled checks in full plastic bags, the other cart of checks were rolled up to the door and tossed into the jet. With the words “CLEAR” the cart was clear of the jets left wing, the co-pilot would lock the door, and I started taxiing out to the runway while starting the left engine. The co-pilot would jump in his seat, buckle up the seat belts, run the litany of the check list, and I would turn the jet onto the runway. “Your aircraft!” He or she would hold the brakes, run power to 98% N1 (engine rpm’s), and let go of the brakes!



Mr. bill thoroughly inspecting Lear 25B, N 38DJ



So what happen to my favorite Learjet.....

https://reports.aviation-safety.net/1992/19920612-0_LJ25_N38DJ.pdf

Not a pretty ending to a beautiful jet. They were a handful to fly close to the ground. Lots of Dutch Roll.

Notice too that I was in black pants and shoes and nicely dressed. I quickly learned during this time that the airlines were hiring and scooping up corporate pilots. One day in the Denver Airport FBO a man yelled into the crowd of corporate pilots, "I need a Lear 35 Captain NOW! Any takers. \$70,000 a year (1988) in Salt Lake City!" I was dressed in dirty jeans and some type of shirt. I quickly realized that my appearance meant something.

As for the Glory Days right now? My Pilot In Command (PIC) time equals my Second In Command Time (Copilot SIC.) So, I would have to say life has been a good balance. With 30 more months to go before age 65, and the airlines hiring again as of today, LIFE IS GOOD!

Q? The Learjet 23/24/25 had the same engines as the T-38? What were those engines?

A: The military called them GE J-85's. We civilians called them General Electric CJ-610's. GE built 2,059 variants of the CJ-610.

The line on the top of the fuselage was the oxygen bottle line that was stored in the vertical stabilizer of the Learjet 20's series. You had to climb up on a ladder to open an access panel to turn ON and OPEN the O2 oxygen bottle.

There was a problem with the Learjet 35 series also. They put that oxygen bottle laying on its back in the front nose section of the Learjets nosecone with the ON/OFF indicators up. Get ready for these instructions. Because of the OFF/ON valve was on top of the bottle, when you did not see any words looking into the O2 side access panel, the bottle was in the OFF position, because the OFF position was at the top at the indicator. When you turned the valve 90 degrees (toward you) the valve was now ON or OPEN! But you saw the word OFF from your 90 degree point of viewing the bottle. So, seeing OFF through the access panel meant the bottle was in the OPEN position for the oxygen bottle.

Think Lear 35 and a famous golfer.

Also, the pointed part at the top of the vertical stabilizer of the Lear 20's series, and the first 12 Lear 25's, was a place for the ONE ANTENNA that Bill Lear had NOT designed yet but was going to make and place in that forward section of the top of the tail. After the first 12 Lear 25's being built, it was determined that the antenna thing was not going to work out and the tail design was made smooth.



EAA gratefully acknowledges the support of Aircraft Spruce and Specialty Co. for their generous sponsorship of EAA webinars.

Date	Time	Title	Presenter(s)
5/11/21	7 p.m. CDT	<u>The History of Air Racing</u> MUSEUM WEBINAR SERIES	Connor Madison
5/12/21	7 p.m. CDT	<u>IFR in an LSA: Is it Safe? Is it Legal?</u> Qualifies for FAA WINGS credit.	Prof. H. Paul Shuch
5/18/21	7 p.m. CDT	<u>Ultimate Aircraft Buying Guide 2021</u>	Scott Sky Smith
5/19/21	7 p.m. CDT	<u>Are you Stumped About Weather? Here are the Top Ten FAQs</u> Qualifies for FAA WINGS credit.	Scott Dennstaedt
5/26/21	7 p.m. CDT	<u>Flying to Meet the Challenge: Completing 5 Midwest State Flying Programs</u> Qualifies for FAA WINGS credit.	Michael Haubrich



6/1/21	7 p.m. CDT	<u>AirCam Kit Aircraft</u> HOMEBUILDERS WEBINAR SERIES	Phil Lockwood
6/2/21	7 p.m. CDT	<u>What Plane Should I Buy?</u> Qualifies for FAA WINGS and AMT credit.	Mike Busch
6/8/21	7 p.m. CDT	<u>Spirit of St. Louis</u> MUSEUM WEBINAR SERIES	Chris Henry and Ben Page
6/9/21	7 p.m. CDT	<u>Evolution of Flexwing:</u> <u>Weight-Shift Trikes</u> Qualifies for FAA WINGS credit.	Mike Hudetz



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Helpful Links:

<https://www.eaa.org/eea>

<https://chapters.eaa.org/EAA1387>

<https://www.faasafety.gov>

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