THE WINDSOCK

JANUARY 2021

Editor: Frank Huber | Layout Editor: Deb Huber

The President's Flight Deck

Happy New Year! Welcome to 2021. I hope you all feel this is going to be a much better year than 2020. I am much more optimistic that we will be able to get together this year. To affirm this thought, the EAA 237 board has decided to begin planning for a one day fly-in event at the Anoka County airport for June 26, 2021. We are hopeful, but also cautious, that the pandemic will have subsided sufficiently to allow us to host an event. We plan to keep the event of sufficient size to easily allow us to postpone it at the last minute if Covid is still a concern. We are looking for assistance from members in planning this event. Please reach out to me if you can help.

We presented the chapter awards at the December chapter meeting. These awards recognize the contributions of our volunteer members each year. Since not everyone attended the virtual meeting, I would like to recognize the recipients here:

Vice President: Bob Henkes
Treasurer: Mark Heule
Website Editor: Dave Peterson
Eagle Coordinator: Michael Grzincich
Scholarship Coordinator: Frank Huber
Technical Counselor: Gary Laurich
VMC and IMC Coordinator: Frank Huber

Secretary: Lyle Peterson
Newsletter Editor: Frank Huber (and Deb)
Young Eagle Coordinator: Michael Grzincich
Membership Coordinator: Bob Henkes
Technical Counselor: Robert Eckstein
Flight Advisor: Robert Eckstein
Wally Swanson Award: Frank Huber and Dave Peterson

I would like to give a special thanks to our Wally Swanson award winners. This award is given to a member, who has volunteered their time above expectations. Dave has contributed many hours transitioning our website to the new platform, established the flight simulator, and performed many IT duties. Frank has taken on many coordinator duties this year that are quite time consuming and important to the chapter. Please thank them for their service the next time you see them. Also, a big thank you to all the members not recognized above who have contributed their time last year to keep this chapter vibrant!

Finally, if you haven't renewed your membership yet, please do so. This is very easy to do on our website. We transitioned to annual renewals based upon the calendar year to keep the membership workload a minimum. Thank you for your contribution! If you have questions regarding membership please reach out to Bob Henkes.

Wishing all of you a great 2021!

YOUR CHAPTER BOARD OFFICIERS

Kevin Sislo, President
Lyle Peterson, Secretary
Charles Jasicki, Director
Robert Henkes, Vice President
Mark Heule, Treasurer
Michael Grzincich, Director

Contact the Board at: board@eaa237.org

Because of Covid-19, we will not be holding IMC Club and VMC Club meetings. In the mean time, I will be providing links to articles that will cover areas of interest for both IFR and VFR pilots.

boldmethod Is Flying Through Snow Considered 'Known Icing'?

Safety Alert NTSB National Transportation Safety Board

Flight in Snow Assess the risk of flight in wet snow conditions, especially at low altitudes

AOPA AIR SAFETY INSTITUTE

The IFR PILOT PERSONAL MINIMUMS CONTRACT

Creating a personal minimums contract is an excellent way create standards for your flight operations in terms of acceptable weather, runway length, fuel minimums, wellness, training and proficiency. The key to successful use of this contract is to never compromise the on the terms you have agreed to with yourself and your passengers for any reason.

boldmethod Landing On A Snowy Runway? Here's How To Know The Braking Conditions.

AOPA AIR SAFETY INSTITUTE

The VFR PILOT PERSONAL MINIMUMS CONTRACT

Creating a personal minimums contract is an excellent way create standards for your flight operations in terms of acceptable weather, runway length, fuel minimums, wellness, training and proficiency. The key to successful use of this contract is to never compromise the on the terms you have agreed to with yourself and your passengers.

Electric Propulsion

by Ronald Borree

This newsletter article we will look at a Sonex Xenos electric conversion project completed by Gabe Devault of California and summarize the technology used. Information and data shown are taken from Gabe Devault websites, Sonex, Zero Motorcycles and Farasis Energy for the battery. The full web sites and links at the end of the article should be reviewed for detail as needed including testing and additional photos.

Prior to the Sonex conversion Gabe Devault converted an E-Gull ultralight to electric using the total technology package developed by Zero Motorcycles in California The Zero motor/controller/battery drive system was developed and designed for use in a variety of electric applications with the first application in their motorcycles starting in 2006.

Sonex Aircraft is based in Oshkosh, Wisconsin and the electric Xenos is a stock Sonex Xenos converted to electric power with a standard Zero Motorcycle electric drive system

Per Gabe DeVault's build site "….I really wanted a 2 seat aircraft, capable of operating in normal airspaces, and with decent gliding performance. The Sonex Xenos is just about the only aircraft that fits that description, electric or not, at an affordable price point."

Regarding the Zero drive system…"They are very powerful and robust drive systems and the batteries feature true "EV Grade" cells, good for thousands of cycles and ~10 years of service. You push the throttle forward and the system responds instantly, precisely, and smoothly. The power/weight ratio of this setup matches the 75HP ICE equipped version of this aircraft. And it will put out maximum power at any altitude, any temperature, humidity, etc… It will deliver 55kW/75HP until the thermal limits of the system are reached. The motor, controller, and battery all have maximum temperature limits that can be reached if you push the system hard. The drivetrain has been shown to deliver 55kW for ~1 minute before reaching max motor temperature. At this point the system automatically reduces power to keep the thermal and power settings in equilibrium. This equates to about 30 kW continuous power in standard conditions. Oh, did I mention, this is stock Zero 2018 SR drivetrain parts with no special modifications, and the new stuff performs even better. They even just released an 82kW/110HP drive system!"

"Due to the efficient airframe and drivetrain setup, this plane will cruise at 60mph on only 9kW power. This is less power than the Zero Motorcycle itself uses to go this fast, and we're flying! With the planned addition of the Zero Motorcycles "Power Tank" battery, flight times should reach a solid 90 minutes of powered flight, not counting any additional duration gained from environmental energy."

"If you are going to fly a lot, the financial benefits of electricity are just undeniable. We are looking at operational costs of less than ¼ of an equivalent ICE aircraft."

Sonex Xenos Electric Project

built by Gabe Devault

Electric motor and mounts

3.65 volt Individual battery cell pouch for 102 volt packs

Specs:	**Performance:**
Two Seat Sonex Xenos airframe	VNE: 150 mph
46' Wingspan	Max Climb: –1000ft/min
870 lbs Empty Weight	Cruise: 65mph
58" 2-Blade Propeller	Useful Load: 405lbs
55kW Zero motor ; passively air-cooled, high efficiency, radial flux, brushless, interior permanent-magnet (**IPM**) 3-phase AC motor , 3-phase controller with regenerative deceleration. The Interior permanent magnet radial flux motor has its magnets on the interior of the rotor instead of the typical placement.	Current Flight Duration: –1.25 hours
14kWh Zero Battery Pack -air cooled (cells manufactured by Farasis, cell type IMP06160230P25A). Lithium Nickel Manganese Cobalt chemistry 3.65 volt pouches wired 28 in series) with pouch dimensions of 230mm x 161mm x 6mm in 102 volt packs.	Current Range: – 75 miles

The following links and websites will take you to the Gabe DeVault total build write-ups, Sonex aircraft, Zero Motorcycles and Farasis Energy.

Gabe DeVault build link: https://sonexbuilders.net/viewtopic.php?f=4&t=5498
Farasis battery pouch: https://ibikes.wordpress.com/2020/10/27/ncm-811-pouch/
Sonex Aircraft: Sonexaircraft.com
Zero Motorcycle: zeromotorcycles.com

VMC Into IMC, A Dangerous Mistake *by Frank Huber*

VFR flight into IMC is the number one cause of spatial disorientation and loss of flight control. VMC-into-IMC accidents are almost always fatal. Data from the Nall Report between 2004 -2014 shows that of 290 VMC into IMC accidents, 84 percent that is 246 were fatal. The 2018 Nall Report data showed 13 of 14 accidents caused by VFR into IMC conditions were fatal, representing 90 percent of all 23 weather related accidents in that year.

Ninety percent of the information we use for point of reference comes from our eyes. Our vision overrides conflicting sensations from our other systems. The vestibular system is our secondary positioning system, that consist of motion and gravity sensing organs, that act as our internal gyros. But they only supplement our vision for maintaining orientation while airborne. VFR pilots flying into clouds, fog, haze, flying on a moonless night or underneath a solid overcast and over unlit terrain or water have no usable horizon for guidance. After entering one of these circumstances, the pilot is startled and flooded with adrenaline, loosing the thinking part of his brain. The pilot's senses are instantly confused, and their brain can't distinguish between up and down and left and right. The video, "178 Seconds to Live", shows the usual results of such an encounter.
https://www.youtube.com/watch?v=b7t4IR-3mSo

So why do pilots end up in these situations? The following are some of those reasons: Pilots have a "mission mindset", which can lead to tunnel vision to reach the destination for what ever reason they think is important. Pilots can be biased to continue from previous experiences, that is "it worked out ok the last time" or "I made it this far and only have 20 minutes to go". Just as likely, the pilot has no personal weather limits or a regular plan for such an encounter. Unfortunately, too often it turns out badly.

So how do we prevent ourselves from becoming a statistic?

- Establish personal weather minimums and refuse to violate them for any reason. Keep in mind that marginal VFR, 1000 ft and 3 miles, while legal to fly in, isn't necessarily safe. The miles of visibility doesn't guarantee a visible horizon. Remember, "marginal" could refer to the forecast of your chances of survival, as well as the visibility. To get an idea of how little that is, watch this video taken on a VFR flight into those conditions:Flying VFR into IMC - A Top KILLER of Pilots - My close call! https://www.youtube.com/watch?v=B56DoPDd6BM
- Always get a through weather briefing for every flight, whether with FSS or by using software like Foreflight. If the temperature-dew point spread is 2 degrees or less, be on the lookout for IMC conditions. Remember, as a sage flight instructor tells his students, "The weather isn't what the briefer tells you it is, the weather is what you're actually in when you're in the air." Sometimes the two can be very different.
- Hearing "VFR not recommended" during a weather briefing should be a big red flag that conditions are not conducive to safe VFR flight.
- Always have an alternate airport and a back up plan in mind, even for a local flight. Brief your passengers of your plan, so they can be a part of the decision making process as the flight progresses.
- With ADSB weather now available, monitor weather while en route to help maintain situational awareness. Don't hesitate to go to your back up plan if conditions warrant it.
- If the aircraft you fly has an autopilot, learn how to use it.
- If you are not IFR rated, get some recurrent instrument flight training, preferably into clouds and or on a low visibility day.

So what should you do if you somehow still manage to fly into IMC?

- Don't panic! Breathe! Get your instrument scan going and do not rush into any action. Fly the aircraft straight and level.
- Turn on the autopilot if one is installed.
- With the aircraft under control, make a very gradual 180 degree turn back towards better flight conditions. Keep your instrument scan going.
- Don't hesitate to ask ATC for help getting to an area of VMC conditions. If you were not using VFR Flight Following, use 121.5. Don't worry about being violated, worry about surviving!
- Don't rule out an off airport landing if that becomes your best option. For an excellent discussion on

what to do with a VMC into IMC situationwatch: Sporty's Pilot Shop Inadvertent Flight into Instrument Conditions and How to Get Out by Bret Koebbe (https://studentpilotnews.com/2020/02/12/video-tip-inadvertent-flight-ifr-conditions-get/

One final thought on the subject of VMC into IMC from a wise and experienced flight instructor, "Flying is all about decision making and sometimes the best decision is to stay on the ground!"

Material for this discussion came from the following articles: *January 2021 Flying Magazine, When the Music Dies VFR Flight Into IMC by Rob Mark*

AOPA, Weather Wise, VFR Into IFR Online Course

Air Facts Journal, *I Can't Believe I Did That, Bratburger-Itis: A Memorable Trip by Frank Ladonne*

To Go Or Not To Go? That Is The (Wrong) Question

Air Facts | JOHN'S BLOG | | *by John Zimmerman*

At its most basic, flying an airplane is a never-ending series of decisions. Is the airplane airworthy? What's the weather like? Where is that other airplane going? When should I turn base? Failing to ask these questions and make timely decisions is a serious mistake – one that will earn you a place in an NTSB report if you're unlucky.

But there's another decision-making error lurking out there, one that's simultaneously more common and rarely discussed: we falsely view most aviation decisions as binary. The language of decision-making subtly reinforces this, with exhortations to "keep it simple" or "be confident." What we end up with is a hopelessly unrealistic set of answers: yes or no, black or white.decision right and wrong
It's rarely so black and white in aviation. We should know better. Flying is all about subtle clues, 50/50 decisions and shades of gray.

The most important example of this fallacy is the vaunted "go/no go" decision, a topic that fills textbooks and flight lessons. A pilot looks at his airplane, his skills and the weather conditions, then decides whether it's safe to fly the planned trip. Most of the time, this is presented as a simple yes or no question. (Heck, we're as guilty as anyone here at Air Facts, with our interactive weather decision-making series of the same name.)

But making the go/no go decision is hardly that simple. If it's carefully considered, it's really a series of questions with a variety of possible answers, more an essay than a true/false question. Here are four ways to expand your concept of the famous decision point.

1. *Go now or go later/earlier?* A great example of this more nuanced philosophy is the estimated time of departure (ETD). Viewed as a binary choice, that line of storms bearing down on the airport looks like an easy no go. But what about leaving an hour earlier, before the storms get close, or leaving the next morning, when skies will be clear? That type of schedule flexibility is exactly what makes general aviation so fun and useful. While most pilots know this, many don't take advantage of it. Don't get so locked into your original plan that you fail to see attractive alternatives.
2. *Go direct or go around?* My multi-engine flight instructor used to occasionally challenge me during preflight planning by saying: "you have to go, show me a route that is safe." It was an exaggeration – we never have to go – but he was an airline pilot by day and wanted me to get a feel for his decision-making mindset. While we may not have a transport category jet at our disposal, it's amazing how often a flight can be completed safely and comfortably if you're willing to deviate. On a 400-mile trip, even a 100-mile detour will be quickly forgotten if you have a smooth ride and get to your destination. Especially in the United States, we have incredible freedom to make up our own route, and getting there is half the fun anyway.
3. *Go all the way or go part of the way and stop?* Go around the thunderstorm. Maybe you can't go direct, but you can still go. I believe the age-old approach of "taking a look" gets a bad reputation. Certainly, naively blasting off and hoping low IFR conditions will magically disappear is a bad idea. But flying as far as the weather allows and then diverting can be smart and effective. Some days the only option is to fly up to a line of rain, land, and wait for it to pass. That might mean an hour

or a day on the ground, but if it's done with firm limits in mind and plenty of backup options, there's no reason this can't be another useful tool in the savvy pilot's bag. Similarly, you can choose to go some of the way and turn around if it's worse than forecast. It takes discipline, but Richard Collins has written before about how practical this approach can be.

4. *Go solo or take another pilot?* Here's one that is especially neglected by newer pilots. Some days, especially when the forecast involves thin cloud layers or gusty winds, the safe answer is no go. But if you're willing to push yourself, it might be a valuable learning experience to go flying with another, more seasoned pilot in the right seat. This is a great way to get "on the job training" without scaring yourself. Just be sure to obey two rules: know and trust who you're flying with, and thoroughly brief who is pilot in command before starting the engine.

Make it deliberate

All of these strategies demand careful planning and discipline; they can't be used as shortcuts or excuses for poor decisions. But grappling with tricky decisions and expanding your personal skills envelope is the one of the real joys of being a pilot.

They're also an acknowledgement that one of the most powerful safety tools we have as private pilots is the ability to control when and how we fly. We aren't beholden to chief pilots or customers, and we can each make our own Standard Operating Procedures. If we give up that tool without so much as a second thought, we've made flying less useful, less safe or both.

Next time you're planning a flight, don't ask yourself "go or no go?" Instead, consider "under what conditions would this flight be safe and enjoyable?" At the very least, it's a valuable exercise for your decision-making muscles.

AVIATION EXPLORING

Post 237

Michael Miller

The Explorer Post held a virtual meeting in December to discuss the coming year. The youth have been in contact with the Fagen Fighters Museum in Granite Falls and are eagerly awaiting their re-opening so we can plan a visit. We discussed recruitment. We have a great core group, but would love to share our aviation adventures with even more people. If anyone knows a young man or woman between the ages of 14 and 21 with an interest in aviation, they are more than welcome to join us at our next meeting. I am very happy to say that the chapter building is open to the Post again for a meeting location. Please join us on Friday, January 22nd at 7:00pm at the chapter building for our January meeting. Beginning in February, we'll move back to our first and third Fridays of the month meeting schedule. More details to follow.

Thanks all! Please reach out with questions.

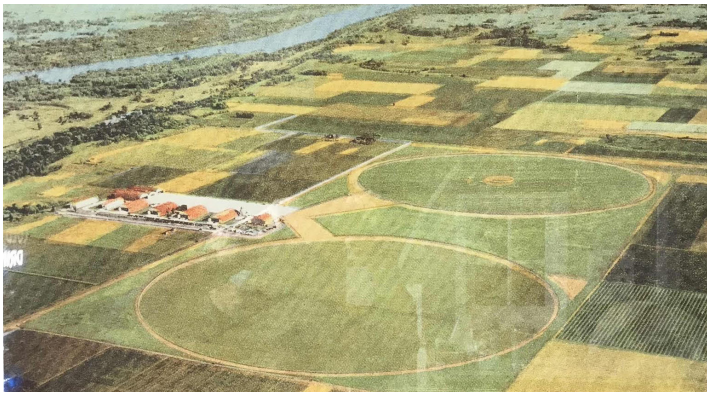
EAA237 COMING EVENTS

February meeting will be held on Monday, February 22. Details to follow.

AVIATION ADVENTURES
Out and About in Our Neighborhood *by Bob Henkes*

Hello Aviation history buffs. The question last month asked if anyone knew the airport in the picture and what the 2 round circles were. Although there were several guesses, only one person got both questions correct and that was Brian Huberty of the Lakeville EAA chapter. Several folks suggested the circles were for landing blimps and that is what Brian thought at first. But then he realized they were circular runways and identified the airport as Fleming Field in South St Paul.

Any airport is fun to visit, but usually having a purpose adds to the fun. My purpose to visiting was to see the Commemorative Air Force's (CAF) museum and operations. Pilots with float planes might want to visit WIpaire the maker of Wipline floats. Fleming Field is a general aviation airport, owned and operated by the city of South Saint Paul. It has a single paved runway 4002 feet long. Before WW II, it was known first as Hook-Em-Cow Field and used by a local flying club. In 1939, the airfield was little more than a mowed landing strip surrounded by farms. Adrian C. McInnis bought the airfield in 1940, and he started a flight school under the federally funded Civilian Pilot Training Program. McInnis Field had only one hangar when it was officially dedicated on September 29, 1940. At the onset of World War II, in September 1942, construction started on the naval auxiliary airfield. The airfield was quickly transformed into an auxiliary Primary flight school for NAS Minneapolis' Training Squadron 1B. Four wooden hangars went up immediately on the north side of the concrete apron as it was being poured, with two additional hangars being built later and two wooden barracks on Airport Road. One of the barracks housed WAVES (Women Accepted for Volunteer Emergency Service), which was the Navy's Reserve unit for women during World War II.



Two diagonal taxi strips led from the apron to both the north and south landing pads. Each circle measured 1,500 feet in diameter. Fleming's north land circle was a grass pad, and it could become packed with dirt, or snow in the winter months. The south landing circle was situated on very sandy soil, so was paved and received 200,000 square yards of a soil cement mix. In May 1943, the new Naval Auxiliary Air Field (McInnis Field) opened at South St. Paul, and it began operating as the B-Base for NAS Minneapolis. On July 20,1943, McInnis Field was renamed Fleming Field in honor of Captain Richard E.Fleming (USMCR), a local aviator who died in the Battle of Midway on June 5,1942. He was posthumously awarded the Medal of Honor.

Over the decade of 1950 to 1960, the airport was the main launch center for Winzen Research Inc., one of the most important companies devoted to the construction and operation of stratospheric balloons. Fleming Field was the site chosen to launch the first manned flight of the MAN HIGH program of the US Air Force, commanded by Lieutenant Joseph Kittinger.

The six hangars mentioned that were built are still there and one is the home of the MN Wing of the Commemorative Air Force (CAF). The Commemorative Air Force Minnesota Wing was formed in 1971.The Minnesota Wing was the very first charter unit of the national headquarters wing of the Commemorative Air Force and operated as a maintenance support arm to help the CAF's mission and its ever growing fleet of rare aircraft.Today, the Commemorative Air Force Minnesota Wing is home to five aircraft, a B-25, AT-6, BT-13, PT-22 and an L-5, a large motor pool fleet, and a unique collection of World War II artifacts that are on display at their museum hangar. The museum is open to the public Wednesdays and Saturdays from 9:30 a.m. to 5:00 p.m. Admission is free of charge, but the museum is currently closed due to the CCP Covid virus.

(continued on the next page)

I want to credit the MNDOT, Naval Historical records and members of MN Wing of the CAF for information in this article. Here are some links for more information on Fleming, Balloons Launches and the CAF.

http://flemingfield.com/670/Ballon-Launches
http://www.scharch.org/Ed_Scharch/06-nas-mpls-prim.htm
https://www.cafmn.org/

Now for next month. Can anyone tell me where the first commercial airport in MN was located? And for a bonus, have you been there? Send your answers to Bob Henkes at VicePresident@EAA237.org

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2020 Ray Aviation scholar Owen Larson has completed his last training flight in preparation for his PPL check ride. John Johnson, his flight instructor says he has one more review session for the oral portion of the check and is in good shape for that as well. Owen has a tentative date for his check ride later in January, that is of course dependent upon the Minnesota winter weather. Hopefully there will be good news later this month about Owen's successful completion of his training.

QUICK LINKS

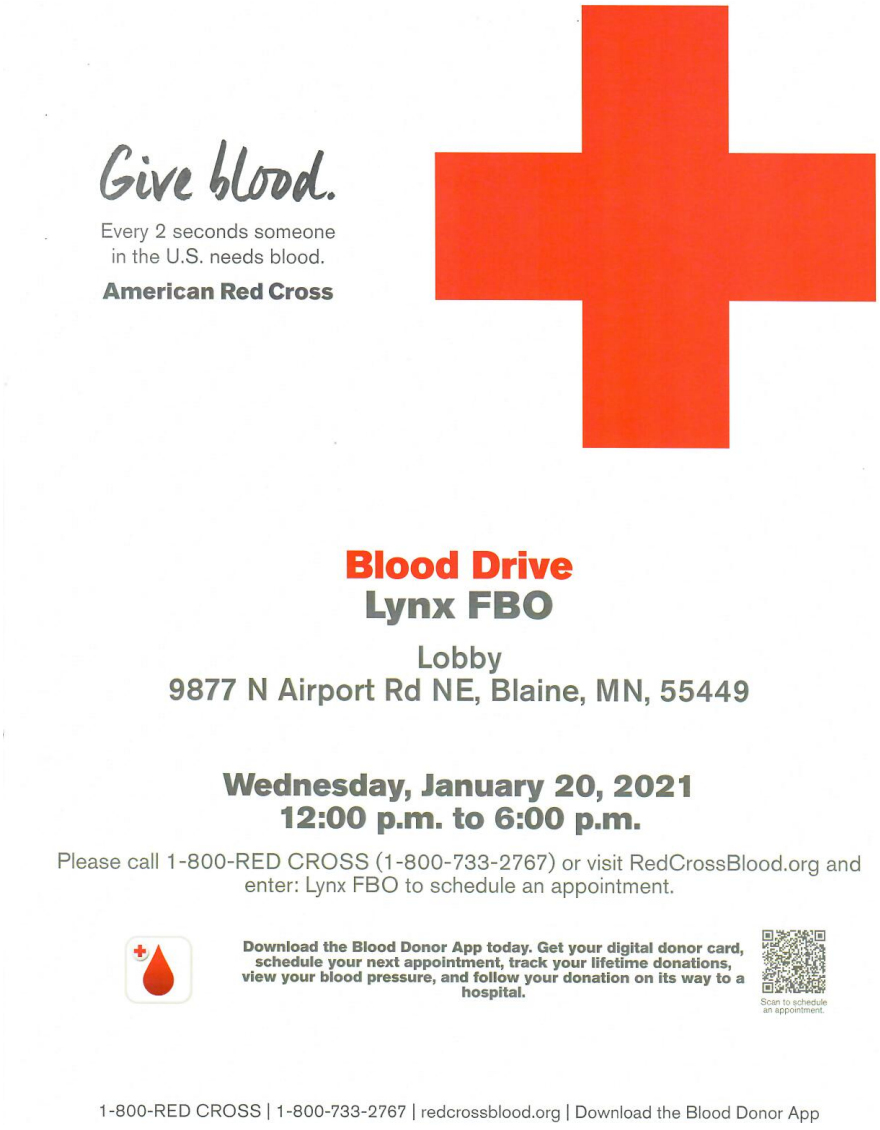
Amazing STOL video

GREAT READS for the Aviation Enthusiast

A Lonely Kind of War, Forward Air Controller Vietnam *by Marshall Harrison USAF (Ret.)*
Having already flown a tour as a fighter pilot in the Vietnam War, USAF Major returned to Vietnam to fly the OV-10 Bronco as a Forward Air Controller.

The Ravens The Men Who Flew in America's Secret War in Laos *by Christopher Robbins*

A Certain Brotherhood *by Colonel Jimmie H Butler USAF (Ret.)*
The story of the Cricket Forward Air Controllers flying the L-19 Birddog over Vietnam



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Financial and Property Donations

As an educational entity, Chapter 237 reminds you that we are a 501 (c)(3) corporation and gladly accept donations to promote aviation education to our members. For additional information please contact EAA 237 treasurer Mark Heule at treasurer@EAA237.org.

On The Lighter Side

In future Windsock editions, I plan to showcase aircraft that our members are building, restoring and flying. Please email me with the aircraft you are building, have completed building, are restoring or have purchased and are flying. I will follow up with you to provide a questionaire and will come out to take pictures to include with your article.

If you have a story or photo you would like to see in our newsletter, contact Frank Huber | eaap51@comcast.net | 763-245-0170

To view past issues of The Windsock, visit www.eaa237.org and select newsletters.

Articles and photos for consideration in our FEBRUARY issue are due on or before FEBRUARY 10.

There are 2021 EAA calendars for sale available at the chapter building.