LOOKIN UP

The EAA Chapter of Modern Explorers
November, 2020

EAA CHAPTER 1093
MIDLAND,MI

CHAPTER 1093
Experimental Aircraft Association

President
Dave Fick

Vice-President
John Sorg

Treasurer
John Haag

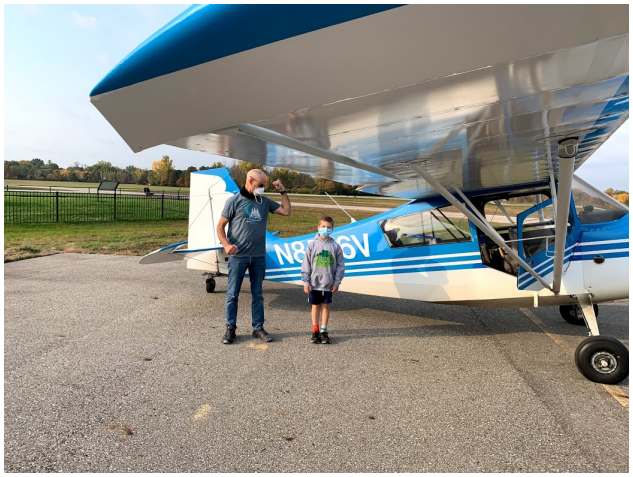
Secretary
John McPeak

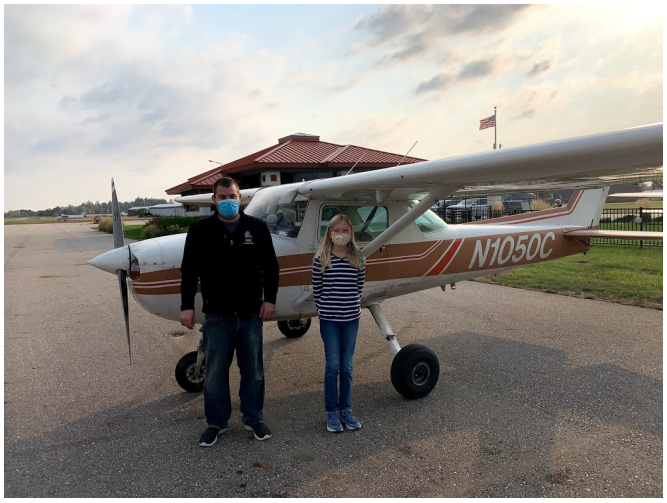
Past President
Mike Woodley

Young Eagles Coordinator
Jeff Gallant

2021 Board Elections to go Virtual

Due to the ongoing pandemic, the 2021 Board Members will be elected via a virtual survey. Please watch for an email from Sarah Pagano with the voting survey. Voting will be open through November 13.



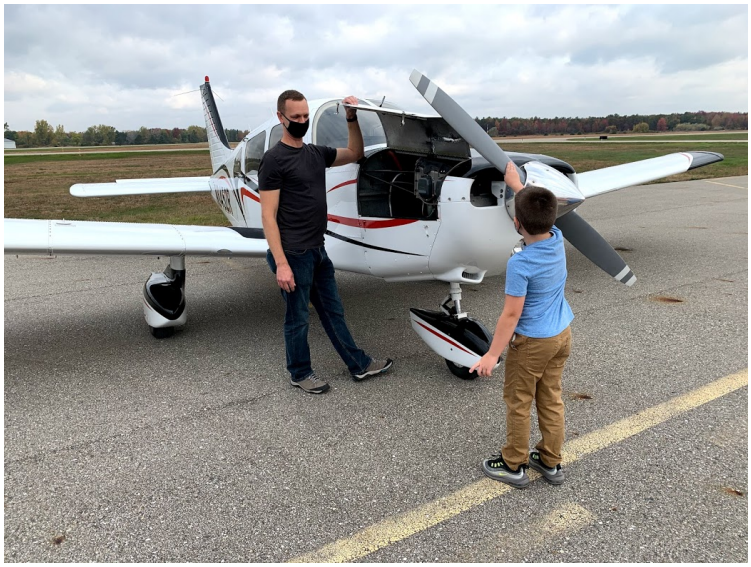


Young Eagles Flies 8

In the first Young Eagles Day since the beginning of the pandemic 8 enthusiastic youngsters were given Young Eagles flights from the MCADA area.

Pilots Dave Bickmore, Kyle George, Brandon Marks and Bryan Martin and ground crew Sarah Haskett, Brandon Haskett and Sarah Pagano guided by Young Eagles Coordinator Jeff Gallant made the event possible.

The procedures put in place to limit risk to Covid were well received and executed. If a November Young Eagles is held it will do so from the EAA Building with the same procedures in place.



Unshaken — Flying in Turbulent Times

By Robert N. Rossier, EAA 472091

This piece originally ran in Robert's Stick and Rudder column in the September 2020 issue of EAA Sport Aviation magazine.

Over the past months, we've all learned to deal with one form of turbulence or another. If there is one thing that makes flying uncomfortable, it's turbulence. Like driving a car over a bumpy dirt road, it simply jostles the bones and sucks some of the joy out of the experience. Even light to moderate turbulence can easily make passengers nervous or nauseous. Other times, turbulence can be downright dangerous. But just as with other forms of turbulence in life, if we watch for the signs and take the right steps, we can usually avoid the worst of turbulent conditions.

Signs in the Sky

Sometimes we have pretty clear visual signs of turbulence. We all know that clouds with extensive vertical development signify updrafts, which typically signals turbulent conditions, especially as they evolve into thunderstorms. Even a layer of scattered, puffy cumulus clouds tells us that the sky will not likely offer a smooth transit. But there are other signs of turbulent times ahead. Virga signifies rapidly descending columns of air that spell turbulence. Rotor clouds, which form beneath the crests of mountain waves, are definite signs of serious trouble to avoid by a wide margin. When these conditions exist or are forecast, we might consider changing our route, time of flight, or altitude to minimize our exposure to turbulence. One tip for flying in turbulence is to get our feet doing more of the work. Instead of wrestling with the yoke, we can use our feet to lift whichever wing drops.

Imagine a Rocky Streambed

While turbulence in cruise flight can be an issue, what's often more problematic is the mechanical turbulence that occurs when strong winds blow over uneven and obstacle-strewn terrain. Negotiating an approach and landing in such conditions can put us in a high-risk situation. One way we can identify areas of potential turbulence in such situations is to visualize the wind like water flowing over a rocky streambed — rising as it encounters obstacles forming an updraft, tumbling like a breaking wave as it passes over a steep drop, and swirling like a whirlpool as it flows around, and accelerating as it passes between obstacles.

Our best bet is to eyeball the situation carefully, paying attention to windsock indications and the obstacles on the ground that can create mechanical turbulence. Where surface winds encounter rising terrain, we might expect updrafts. Where winds encounter downward sloping terrain, we might expect downdrafts. Either case could result in wind shear. Where wind passes between terrain obstacles, we can expect it to accelerate. Downwind of any obstacles, we might encounter turbulence and wind shear. With this in mind, we might need to alter our approach path and touchdown point to avoid the hazards. Also, consider that gust fronts from nearby thunderstorms and microbursts can spell disaster as gust fronts push madly across the terrain. Even if the terrain is smooth, the low-level wind shear can create a dangerous situation for departing and landing aircraft.

Wingtip Tornadoes

One of the more dangerous forms of turbulence occurs when another (typically larger) aircraft is ahead and above our flight path. The issue, of course, is the furiously spinning wake vortices that become exaggerated when an aircraft is heavy, aerodynamically clean, and slow. Wake vortices roll off the wingtips in a counter-rotating fashion. The energy in those invisible wingtip tornadoes can snap us around in a

heartbeat, leaving us in a precarious juxtaposition with Mother Earth. Encounters, whether on takeoff, landing, or in cruise, can be the last problem we ever face, so it only makes sense to avoid the danger. Remember that helicopters also produce wake vortices that act similarly in flight to those of fixed-wing aircraft.

Time and distance are the keys to avoiding wake turbulence. On takeoff, wait for at least two minutes after a large aircraft departs. Rotate before the aircraft's rotation point and climb above its flight path. On landing, shoot for a two-minute interval before landing after a large aircraft. Use a steeper glide path on the approach and touch down beyond the preceding aircraft's touchdown point. Remember that a light crosswind (1 to 5 knots or so) can cause a wake vortex to drift back over and linger on the runway (or parallel runway), creating catastrophic conditions. In the air, the wake turbulence from a large aircraft typically descends at a few hundred feet per minute and will sink to an altitude 500 to 1,000 feet below the flight path. We should adjust our flight path and altitude to avoid the danger.

A Matter of Speed

Another key to safely negotiating turbulence is knowing and using the right airspeed. Clearly, we don't want to be flying within the yellow airspeed arc when approaching potential turbulence. In fact, any time we suspect turbulence is a good time to reduce our speed to maneuvering speed.

Maneuvering speed (VA) is not shown on the airspeed indicator. However, it is typically placarded somewhere in the cockpit. What we need to understand is that the published maneuvering speed corresponds to the maximum gross weight condition. Unless we're at max gross, we should be using a speed slower than the advertised VA speed. We can calculate that speed in a couple of different ways. One way is to multiply the max gross VA times the square root of the ratio of actual weight over max gross weight. It's easy enough to do unless you're flying in turbulence or can't easily calculate square roots in your head, which could easily include most of us. Another way to estimate changes in VA is by percentages, which might be easier. Figure out the percentage below gross weight, divide by two, and then reduce maneuvering speed by that percentage. For example, if our airplane has a max gross weight of 3,000 pounds and is loaded to 2,400 pounds, it is 20 percent under gross weight. That means our VA will be 10 percent under the VA for max gross weight. Easy, right?

Easier still, and what I like to do, is to calculate maneuvering speed for the airplane for a weight corresponding to nothing but me, my flight bag, and minimum fuel on board. I write that down on a card that also has other important performance data on it that I can keep in my shirt pocket for easy reference. Since I calculate my weight and balance before the flight, I can easily figure out what it will be at the beginning and toward the end of the flight and can interpolate accordingly where VA will be.

Some Reassuring Words

While we might be comfortable flying in turbulent conditions, we should keep in mind that it can be a scary proposition for our passengers. We need to reassure them that our aircraft are designed for such conditions and, although it might be uncomfortable, we are not at risk of breaking apart in flight. And just in case the bumpiness is too much for them to handle, keep those air vents open wide and show them where the airsick bags are stowed.

None of us really like turbulence, but it is often a fact of flight and a fact of life. In both cases, if we read the signs and apply the right strategies, we can avoid the worst of the bumps and remain unshaken.

Robert N. Rossier, EAA 472091, has been flying for more than 30 years and has worked as a flight instructor, commercial pilot, chief pilot, and FAA flight check airman. For more from Robert, look for his Stick and Rudder column each month in EAA Sport Aviation.

November EAA Webinars

11/3/20 7 p.m. CST
Van's RV-14

Van’s Aircraft engineer Rob Heap and community director Greg Hughes will discuss the company’s latest aircraft design, the RV-14. Van's recently released a powerplant upgrade for the RV-14, the Lycoming IO-390-EXP119. Rob and Greg will discuss the process the company and its partners went through in designing and developing the new installation package in order to provide the maximum possible performance out of the new engine option.

11/4/20 7 p.m. CST
Your Engine's Lifeblood

Qualifies for FAA WINGS and AMT credit.
Mike Busch

There's a lot more to piston engine oil than you might think. The lubrication requirements of slow-turning direct-drive Continentals and Lycomings are quite modest, but aircraft engine oil needs to do lots more than lubricate. We also depend on it to clean, cool, seal, and protect against corrosion. It takes a complex package of additives to do all this. In this webinar, Mike Busch offers a guided tour of the complexities of aircraft engine oil, and offers recommendations on selecting the best oil for your engine.

11/10/20 7 p.m. CST The International Aerobatic Club Turns 50 Years Old and It's a Golden Birthday!

Mike Heuer and Lorrie Penner

IAC historian Mike Heuer and IAC magazine editor Lorrie Penner will take you on a ride 50 years in the making. Find out how the IAC got its start, how it has evolved through today, and where they see themselves 50 years from now. Hear stories that you may have heard before and a few you may have never known.

11/11/20 7 p.m. CST True or Magnetic?

Qualifies for FAA WINGS credit
Prof. H. Paul Shuch

Pilots are frequently confused by compass corrections. Is East always Least? Is West really best? Why are runway headings referenced as magnetic, but METAR and TAF winds reported as true? What’s the difference between a course and a heading? When do you use which? Get your bearings with this webinar, which qualifies for FAA WINGS credit.

11/18/20 7 p.m. CST Cockpit Power Management

Phil Lightstone

What’s in your flight bag? The amount of power-hungry portable devices seems to have multiplied like rabbits. An average pilot might have an iPhone, iPad, ADS-B IN receiver, transceiver, personal locating device, backup GPS, tablet cooling fan, flashlights, wearable oximeter, and the list goes on and on. With different USB connectors, how does a pilot keep these power-hungry devices charged during flight, so that they can rely upon them during an emergency, without melting down

the aircraft's electrical system? Aviation journalist Phil Lightstone, will provide the facts about the technologies, cutting through the jargon, and three-letter acronyms to help you make an informed decision. Phil will also discuss the future of aircraft battery tech including Lithium batteries for the aircraft.

October Board Meeting Minutes

October 15, 2020

President Fick declared a quorum present and called the meeting to order at 1708 EDT. The Board meeting was held via Zoom.
Directors in attendance: Dave Fick, Sarah Haskett, John McPeak, Chris Pagano, Sarah Pagano, Tom Ryden, Mike Woodley
Directors unable to attend: Jeff Gallant, John Haag, Pat Howe, Paul Ries, Dick Sipp, John Sorg
Guests: Dot Hornsby, Brandon Marks
Minutes from September 17, 2020, Board meeting were approved as submitted – Sarah Pagano/Ryden
Treasurer's report: Treasurer Haag reported via e-mail that, as of 10/15, all bills are paid and all deposits have been made. The account balances are as follows:
FBH - $14,092.28 Chapter - $17,584.17
Clubhouse - $2,668.95
Membership Committee report: Chair Ryden reported that two new member applications were received - currently 79 paid members for 2020
Hangar Committee report: Hangar 7A2 door still in need of repair, waiting for return of quotes. Committee member Sarah Pagano reported most/all of the hangars are in need of routine and special maintenance. With Chair Bonem no longer residing in the Midland area since early 2020, there is a need for regular on-site inspections and follow-up maintenance. Discussion by Board re: adding Hangar Committee Chair duties to the position of Chapter Facility Manager, perhaps starting in 2021.

President Fick will contact Chair Bonem re: a successor Chair and will initiate a search for a replacement Chair candidate.
Young Eagles report: Chair Gallant reported via e-mail that four pilots flew eight Young Eagles on Saturday, October 10. Registrants were assigned a time slot so that social distancing could be maintained. The new procedure developed in August was used, and everything went well. Next month (November), the EAA building will be used rather than the MCADA area for 10 preregistered YE flights.
Scholarship Committee report: Chair Jim Murphy submitted an e-mail report. The Chapter will probably be eligible to apply for a Ray Scholarship(s) for 2021; the Committee will be notified later in October. The Board will then need to decide whether or not to apply; Murphy will present details at the November Board meeting re: financial considerations and identification of potential candidate(s).

2020 Ray Scholarship recipient Daniel Libbey is expected to schedule his Private Pilot check ride after some more ground refresher training and 2-3 more hours of flight instruction. He has until February to complete a successful check ride.

The Nominating Committee presented the current slate which has a nominee for each of the Director positions except Facility Manager. The membership will receive a notice of the slate; voting will be via online survey in early November.
UNFINISHED BUSINESS:
2021 budget discussions: Fick and Sarah Pagano will present a draft of a 2021 budget at the November Board meeting
Cessna 150A disposition: McPeak reported that attorney Rob Bourne has obtained the signature of one of the co-owners, the other two co-owners will be contacted for their signatures on a Bill of Sale.
RV-12 build project: Sarah Pagano and Fick reported that the Committee plans to utilize the hangar of Joe Maj for the builds of the initial kits, and use the EAA Annex for parallel or subsequent kit builds. The plan is to build all of the kits (total kit cost $26,925) up to the finish kit, then choose one of three options: form a club to own/finish the plane; finish the plane for sale; sell the craft as-is. Money to purchase the kits will come from the Chapter investment account. Start of build is on hold due to restrictions on conditions for indoor gatherings.
Building insurance coverage/waiver of liability: Ryden reported that a review of

hangar assessments/insurance coverage/ premiums indicated that all appear to be in line. Ryden will coordinate with new Facility Manager and Hangar Manager before recommending to the Board any changes, or need for waiver of liability.
Building calendar use instructions: Chris Pagano - tabled
NEW BUSINESS:
EAA Chapter survey results: discussion centered on survey comments/suggestions that indicated that the Chapter is doing many things well; providing interactive opportunities for members and others in the aviation community should be continued and strengthened. Eagle flights could be made a higher priority.
President Fick adjourned the meeting at 1820 EDT.
Respectfully submitted,

John McPeak
Secretary
EAA Chapter 1093