

SKYWRITINGS

EAA Chapter 439
Central U.P. of Michigan

December 2016
Home of the Yoopers!



This is what the EAA Ford Trimotor might look like flying over the Upper Peninsula in the Fall. Come help us make it happen!

Up-Coming Events

December 17th - 9am CST Chapter Meeting at Kubick Aviation: time for elections and further discussion on the hangar (see page 4) and FAD.

January 7th - 5pm CST Chapter Christmas Party/Kubick Open House at Kubick Aviation

The Prez Sez!

Tom Sullivan

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As many of you may already know, November 14th was the culmination of 17 years and 9 months of hard work, 7,955 hours (now over 8100 hours) of build time, and more frustrations and setbacks during that process than I care to discuss, but Lancair N994PT completed its first flight. I was fortunate enough, with the help of my type organization LOBO (Lancair Builders and Owners Organization), to be only the second prop-jet to be approved by the Washington GAO to use the second pilot initiative during Phase 1 testing (prop-jets are currently excluded from the initiative passed a couple years ago). That meant I could “legally” participate in the first flight (and subsequent flight tests). I was absolutely astonished at the power on takeoff. It was pretty similar to a commercial jet. I suppose 724 HP on a 2500 pound airplane will do that.

I actually conducted the take-off and all of the flying on the second flight that day. I was really slow adding power (afraid to over speed or over temp the engine) so the roll was pretty long. Once airborne I was rapidly approaching maximum gear retract speed so you will see in the video I had to really yank the nose up to keep us at 120 knots indicated on the climb.

<https://www.youtube.com/watch?v=YehRFTkBfCA> I did much better by the fourth day, getting it airborne in 1,000 feet and climbing out into the most amazing cloud backdrop (we DID stay below the clouds though). https://www.youtube.com/watch?v=wXOudt_HWXQ My Test pilot/Engine builder was very impressed with the plane and said he would have no issue taking it across the country after the first day flying it. Well, that’s mechanical wise anyway. The electronics and avionics glitches took us three more weeks to sort out (and I’m not sure we’re done yet). By the third day we headed to Siren, WI, the farthest west point of my test area, and saw 300 knots TAS at 16,500. This plane really likes 24K to 28K, so it will be interesting to see what it will do up there. Needless to say, I am pretty happy with the outcome.

Will comments on Mark Yankovich, our local DAR, later in this newsletter. I used Mark for my airworthiness inspection after initially planning to use a Lancair “Specialist” from California. I ran into a real problem with several aspects of dealing with the Grand Rapids FSDO, and without Mark, I would have needed to move the plane to Wisconsin or Tennessee for it to be completed and flying before well into 2017. Not only did he expedite (probably with much resistance from GRR) the entire process, his help in ensuring I had a safe airplane to fly was invaluable. If you are building an experimental aircraft, he is a tremendous resource for those of us in the U.P. when you get to the final inspection process. Just make sure you are working with him well in advance.

I would hope our next couple events will interest the membership enough to attend. The next meeting is our annual election meeting, and we are working on the exciting prospect of finally building a chapter hangar next summer. The Christmas Party this year will be a combined event with Kubick Aviation’s annual event, so we should have a great hangar flying party. In addition, Kubick and the Chapter will be providing the food and drinks, so you only need to bring yourself and your partner, no food! This will be an awesome recruiting opportunity as well, since there will be a lot of aviation enthusiasts in attendance that are not currently involved with the chapter.

Hope to see you at one, or both, of the upcoming chapter activities!

Tom

Editor's Notes

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Shake the Stick

In the military we were trained to shake the stick, along with a verbal statement of "I have it" or "I have the aircraft", when assuming control of an aircraft from another person. This worked to coordinate between pilots who was actually flying the aircraft along with responsibility for the flight. It also carried another meaning for large aircraft like bombers - the nonflying pilot was now responsible for managing checklist, radios, nav aids, fuel, visual navigation, etc. and coordinating actions with the bombardier/navigator. Like anything else in the military, this practice probably came as the result of aircraft accidents where the pilots thought the other pilot was flying the aircraft or where both pilots were attempting to fly the aircraft.

Transfer of aircraft control was part of what the Air Force called "crew coordination" which grew into "Crew/Cockpit Resource Management" (CRM). CRM went beyond just coordinating the different areas of responsibility to focusing on interpersonal communication, leadership, and decision making in the cockpit.

CRM has helped to reduce accidents and remove some of "The captain is god" mentality from the cockpit. Sadly though, it did not remove the external influences that project themselves into the cockpit. In the Air Force we had the Command Posts, AWACS, Air Combat Controller or other entities that injected their demands on what or how the crew should fly their aircraft. In a combat (or simulated combat) situation the input from AWACS or the ACC were welcomed because they had a better grasp of what you were heading into and provided valuable information. However, in my humble opinion, some of the other "staff" did not always have your best interest in heart. They represented the people who cared about the data they had to report and how that data would reflect upon them.

Case in point. After aborting a night low level bombing run in a B-52D because of trapped fuel in a 19,000lb external drop tank, which would result in a severe lateral imbalance upon landing, the crew was directed by the 15th Air Force Command Post controller to divert to Minot AFB in North Dakota. This was fine with the crew until they found out the weather at Minot was 200' overcast with 1/2nm visibility because of blowing snow and a 20knot crosswind. The aircraft commander informed the controller they were a Southern California crew and would be going to Grand Forks AFB which was closer and VFR. The controller disregarded the crews comments and ordered them to go to Minot! The aircraft commanders response was "Shake the stick asshole, otherwise we are going to Grand Forks". The aircraft commander was later called to task for his comment, but not his decision.

Now, why would a Command Post controller order a crew not familiar with winter conditions and occupied with an aircraft problem to fly into a base with bad weather when a closer base had good weather? Well, it seems the 15th AF controller's checklist stated he was to divert all 15th AF assets to 15th AF Bases and Grand Forks was a 12th AF base. It didn't say anything about weather or safety or common sense. Makes sense right?

So, why this article? The news about the Brazilian airliner crash with the soccer team on it made me think about what was going through the pilots mind when he was ordered to fly to the edge of his fuel capability which left no margin for error. Maybe he should have told them to "Shake the Stick".

Chapter Officers for 2016

Every month the names of the chapter officers are listed on the last page of the newsletter. However, they are listed below since the election for 2017 officers will be this month. Any new volunteers?

President: Tom Sullivan

Vice President: Mike Youngs

Treasurer: Scott Trask

Secretary: Mike Betti

Who are our Board Members: Current Board members are: all officers (Tom Sullivan, Mike Betti, Scott Trask, Mike Youngs) along with David Pasahow, Jim LeFevre, Bruce St Onge, Bill Landry, Dave Houseman and Will Kroeger.

“The Hangar”

It was decided at the November meeting to get a quote on building materials and prints for a 60' x 70' hangar with a 15' x 70' lean too build on the side of the hangar. Please come to the December meeting if you have any comments, input, advice or concerns.

German Gyro Now FAA Type Certified



U.S. pilots now can buy a factory-built FAA-type-certified autogyro for the first time “probably in at least 60 years,” per Bob Snyder, program manager at AutoGyroUSA. The Calidus autogyro, which has been flying in Europe since 2009, recently was awarded a type certificate in the seldom-used Part 23 primary category by FAA officials. Snyder said U.S. deliveries are set to start on Wednesday. Pilots will need a gyroplane rating to fly the aircraft. “The easiest route, if you’re a private pilot, is to get a sport pilot gyro sign-off,” Snyder said. Active pilots can expect about 10 hours of transition training, he added.

The aircraft will be at all the big U.S. shows this year, including the Sebring LSA Expo, Sun 'n Fun and EAA AirVenture, where curious pilots can get an up-close look. “We also have dealers across the country, where you can get training,” he said. The company in Germany has been producing about 300 aircraft a year, for about 12 years. The gyroplanes sell for about \$100,000.

Autogyros have no direct power to the rotor — they get thrust from a powered prop mounted on the rear of the airplane, and the free-wheeling rotor provides lift. In the event of power loss, the rotor will continue to provide lift as long as the aircraft is moving forward, and landing distance requirements are very short. The Calidus is powered by a Rotax 912ULS, with an optional Rotax 914 turbo available. It burns less than 5 gallons of fuel per hour and can take off in 30 to 300 feet, according to the company website. Cruise speed is 82 to 95 knots, with Vne of 104 knots. It has a fuel capacity of about 20 gallons and an empty weight of 595 pounds. The autogyro’s main mission, according to Snyder, is “just to have a whole lot of fun.” (From 12/6/16 AVweb article by Mary Grady)

EAA Provides Update On New Medical Rules

The FAA is working to comply with new legislation, passed in July, that will make it possible sometime next year for private pilots to fly without a medical — but right now, until new rules are in place, the current rules remain in force, and that has created some confusion. One examiner advised some pilots who had special issuances that they should surrender their medicals, rather than wait for them to lapse, but that’s never a good idea, according to Sean Elliott, EAA’s vice president for advocacy and safety. “An airman should never surrender their certificate,” he told AVweb in an interview this week. In some cases, he added, it might be a good idea to “just let it lapse.”

The misguided advice to surrender the medical was an “isolated incident,” Elliot said, and “just a misunderstanding,” but it could have resulted in a pilot losing their flight privileges. “The decision to surrender should never be made lightly or without consultation with an aviation attorney,” EAA said in a statement. As far as the new rules are concerned, Elliott said, “We are hoping to see something [from FAA] in the early part of 2017.” He advised EAA members to call EAA if they have questions about their medical or the pending new rules. AOPA and other member groups provide similar services to their members. (From 12/2/16 AVwebFlash article by Mary Grady)

AIRCRAFT MAINTENANCE: OIL USE

Aircraft engines are designed to use a certain amount of oil, and determining what is excessive is debatable. Lycoming uses the following formula to determine maximum oil consumption: $(.006 \times \text{BHP} \times 4) / 7.4 = \text{maximum quart/hour consumption}$. This means that, for a typical 180-horsepower engine, using one-half quart per hour is acceptable to the manufacturer. One quart of oil every two hours may be acceptable to Lycoming, but I prefer my aircraft's range limited by fuel burn rather than oil usage, and flying around with two cases of oil in the baggage compartment can limit your useful load.

As with low compressions, it's the source of the problem, in this case oil loss, that's the key. Oil can leave an engine in a variety of ways including the breather tube and crankcase leaks. It's the actual burning of oil that's most important. The best way to determine whether oil is leaking past the rings is to examine the spark plugs. Finding an oily bottom spark plug is not necessarily a problem, but oily top and bottom plugs typically indicate that excessive oil is leaking past the rings. Surprisingly, oil consumption and low compressions do not always go hand in hand. If a cylinder's compression rings are OK, but the oil control ring has failed, you may have excellent compression readings, yet still have oil-soaked spark plugs.

The borescope inspection is useful in evaluating cases of oil usage because you can look for scratching up and down the sides of the cylinder wall indicating a broken ring. If there are no signs of ring damage, the compressions are within spec, and the oil usage is within the manufacturer's spec, I would be hesitant to recommend pulling a cylinder based on oil consumption alone. It's not ideal to have to keep adding oil, but it makes sense to monitor the situation to see if it's progressing before jumping to cylinder replacement. *(Edited from 12/2/16 AOPA ePilot article by Jeff Simon)*

Designated Airworthiness Representative (DAR)

A DAR is an individual appointed in accordance with 14 CFR § 183.33 who may perform examination, inspection, and testing services necessary to the issuance of certificates. There are two types of DARs, manufacturing and maintenance.

Manufacturing DARs must possess aeronautical knowledge, experience, and meet the qualification requirements of Order 8000.95.

Maintenance DARs must hold:

- a mechanic's certificate with an airframe and powerplant rating under 14 CFR part 65, Certification: Airmen Other Than Flight Crewmembers, or
- a repairman certificate and be employed at a repair station certificated under 14 CFR part 145, or an air carrier operating certificate holder with an FAA-approved continuous airworthiness program, and must meet the qualification requirements of Order 8100.8, Chapter 14.

Specialized Experience – Amateur-Built and Light-Sport Aircraft DARs Both Manufacturing DARs and Maintenance DARs may be authorized to perform airworthiness certification of light-sport aircraft. DAR qualification criteria and selection procedures for amateur-built and light-sport aircraft airworthiness functions are provided in Order 8100.8 and Order 8000.95, as appropriate.

So who is our local DAR?

Mark Yankovich of M&M Aviation in Escanaba. He is cleared for Function Code 46, which means he can issue original/recurrent special airworthiness certificates, experimental, for the purpose of operating United States (U.S.)-registered amateur-built aircraft. His Authorization Class is airplane with an Authorized Complexity of: Metal, Tube & Fabric, Wood, and Composite.

You can reach Mark at (906) 360-9797 or email mandmaviation@gmail.com

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Dues are \$15.00 a year (\$25 for mailed newsletter)! From August 1st Please send them to our treasurer!

Website: www.eaa439.org