Chapter 736 Newsletter for May 2015

It's Dues Time Again

This is a friendly reminder that chapter dues of $20.00 are payable this month.
Checks can be made payable to: EAA Chapter 736.

Checks can be mailed to:
Al Yarberry
36 Violette Ave
Waterville, Me. 04901

Or to:
Mike Watson
P.O. Box 6354
China Village, Me. 04926

Or bring it with you to the next meeting on Monday, May 18th.

What Will They Think of Next

GE Builds Tiny 3-D Printed Jet Engine

Engineers at General Electric have created a tiny jet engine using 3-D printing techniques that they say could rewrite the rules for how components inside commercial turbine engines are produced. The mini jet engine project was completed at GE Aviation's Additive Development Center.

Rather than scale down a GE commercial jet engine, designers took plans for an existing R/C model jet engine and customized it for their 3D printer. Because the engine was built layer by layer, it allowed the developers to use different kinds of alloys and totally new geometry.

When they lit off the engine in a test cell recently, it performed flawlessly, spooling up to an incredible 33,000 rpm.

https://www.youtube.com/watch?v=W6A4-AKICQU

EAA Supports Revision of Flight Testing Guidance

The FAA has published revision "B" to Advisory Circular (AC) 90-89, the *Amateur Built Aircraft and Ultralight Flight Testing Handbook*. The AC, first published in 1989 with extensive input from EAA, was last revised in 1995.

EAA fully supported the most recent revision, and supplied the bulk of the changes with the help of volunteer experts on the Homebuilt Aircraft Council and Board of Directors Safety Committee. Changes include new and better detailed guidance on fuel flow testing prior to the first flight, the use of GPS data to confirm the accuracy of pitot-static derived airspeed readings, stall testing, use of angle of attack systems, and more.

The revision also includes guidance recommended by the GA Joint Steering Committee (GA-JSC), a partnership of the GA community, government, and academia focused on improving safety without increasing regulation. The GA-JSC's recommended guidance includes giving closer consideration to lateral center of gravity (such as when flight testing with unbalanced wing-mounted fuel tanks) and flight testing after a major or minor modification.

"This advisory circular is truly a living, community-created document," said Sean Elliott, EAA vice president of advocacy and safety. "We are glad the FAA continues to solicit community input to keep AC 90-89 relevant to today's technology and best practices. We encourage our members to read this document carefully and incorporate any guidance they deem relevant into their flight testing programs."

ADS-B Deadline Extension In Works?

The FAA may be considering some kind of extension on the 2020 deadline for equipage with ADS-B-Out but it's not been confirmed by the FAA whether it's in fact being considered and what form it might take. If some relief is in the works, it will be at the request of the airlines. Aviation Week has published a story quoting various airline officials as telling an April conference that a five-year "grace period" on full compliance with the ADS-B mandate had been proposed by the airlines and was now under active consideration by the FAA. An AOPA spokesperson said the organization is aware of the airline request and prepared a response:

AOPA's statement reads: "The airlines will be required to meet the 2020 mandate for ADS-B Out. That has not changed. Discussion on a "grace period" applies to the position source for early GPS installations on some Part 121 certified aircraft that do not have WAAS receivers. Those early-generation GPS receivers may experience brief outages of the required performance for ADS-B Out. Airplane manufacturers are upgrading GPS receivers across airplane models, but have said the upgraded receivers will not be available until 2018 to 2020. Airlines for America has requested an exemption so airlines that equipped with earlier versions of GPS (without WAAS) can transition to the upgraded equipment over an additional five-year period. The airlines are proposing that the FAA could use backup radar (if available) or an airline could reschedule a flight if GPS outages are too frequent. The FAA is currently reviewing A4A's petition and will consider all public comments before determining whether to grant or deny the petition."

What's ironic about the airline request is that they think it will be impossible to get the 4,000-6,000 non-compliant airliners still expected to be in service in 2020 up to standard in time. There are many times that many GA aircraft facing the same deadline. The issue for the old airliners is that the non-WAAS GPS source components are too old to meet the 2020 requirements and replacements are not expected to be available in time. The airlines are proposing that they install the transponders, hook them up to the old GPSs and promise to have the approved source avionics installed by 2025. The organization did not have an estimate on how many of the non-compliant airliners might still be in the air by 2025. There was another interesting note in the AvWeek story regarding the FAA's enforcement posture on ADS-B compliance. It paraphrased

FAA Avionics Maintenance Branch Manager Tim Shaver as soothing the airline executives by saying the FAA "won't initially enforce the ADS-B Out rule with a 'hammer.'" Whether GA aircraft will get the same consideration was one of the questions we had hoped to have answered by the FAA.

Electric Airplanes Could Revolutionize Work Commutes

A switch to electricity may be the future of aviation.

NASA researchers are working to build the first electronic airplane. And they are doing it in Kern County, California.

On Tuesday, NASA tested phase one of the mobile ground rig, which is just the first stepping stone toward these new electric airplanes.

"It's the sexiest thing I've ever seen," said Joeben Bevirt, founder of Joby Aviation. "It will replace ground transportation and allow us to fly rather than drive."

There has never been a wing designed like this before.

"By distributing these propellers across the leading edge of the wing, we are able to increase the dynamic pressure over the wing and build an aircraft with a smaller more efficient wing," Bevirt said.
The team's main team's focus: general aviation aircraft flying in small communities.

Electric motors give NASA the ability to run the motors at different speeds, reducing noise. They are also energy-efficient, thanks to that smaller wing. By using less energy they can reduce operating costs by 30 percent.

The vision is to create electric aircraft to use for your daily commute.

"By making aircraft that are more efficient and quieter you, those aircraft can land at airports that are much closer to where you live and where you work," Bevirt said.

The first test proves that NASA's tools are working and they can move to the next step. NASA says that if all goes as planned, within 10 years you could be flying to work with this new electronic propulsion design.

Next Meeting

Our next meeting will be held at Curtis Air at the Pittsfield Municipal Airport on Monday, May 18th beginning at 6:00 pm.