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Message From Headquarters

Joe Norris, EAA Homebuilders Community Manager

As you read this we are getting very close to the start of the EAA convention in Oshkosh. We're expecting another banner year for homebuilt aircraft this year. We might even top 1000 aircraft! (We came very close last year.) Of course we'll have all the usual activities for your enjoyment and education, including forums and workshops all week long. I look forward to seeing all of you at the Builders Education Center or at Homebuilders Headquarters.

You all have no doubt received an invitation to volunteer at this year's convention, as well as to attend the Flight Advisor/Technical Counselor breakfast. The breakfast will be held at the Nature Center on Thursday, July 30th at 7:00 AM. The Homebuilders Dinner will also be on Thursday the 30th, and will also be at the Nature Center. If you haven't sent in a reply to your volunteer letter don't despair! We'll still be happy to have you join us, and we won't turn anyone away. Just check in at the Builders Education Center and let us know when you would like to help out, and also whether or not you can attend the Technical Counselor/Flight Advisor

Breakfast. You can purchase your tickets to the Homebuilders Dinner at Homebuilders Headquarters. Thanks to all of those who have volunteered in the past. We look forward to having you join us again this year, and we hope you'll encourage your fellow EAA members to volunteer as well.

We occasionally get questions regarding the online availability of Safety Wire. Yes, all the issues of Safety Wire are available via the web. Just log onto the members only section of www.eaa.org, then click on "Technical Counselors" or "Flight Advisors" at the very top of the page (just to the right of the EAA logo). Scroll down the resulting page and you'll see the Safety Wire banner. Just click in the link to the issue you want to view.

Take note of the article in this issue regarding oil starvation in a Rotax 582 engine. This is good information to pass along to builders in your area who may be using this engine in their aircraft. The folks at NTSB were kind enough to pass this along so that we can get the word out.

See you at Oshkosh!



Getting the Beginner Started

**Ron Wagner, Manager, EAA Field Relations
Technical Counselor #4412**

Most of us who are EAA Technical Counselors have been involved in aviation so long that it's hard to remember when we just thought building a plane sounded interesting and exciting, and we weren't at all sure that we were up to the task. To the person just getting involved, building or restoring an aircraft is a daunting task, even if starting with one of today's quick-build kits. The terminology that we use is likely somewhat different than much of what they have been exposed to. Many have virtually no idea what DARs or FAA inspectors will be looking for. They really don't know where to begin. EAA, its publications, Chapters, SportAir Workshops, and you, the volunteers for EAA Safety Programs are all extremely valuable assets. It is important that we all make sure that newcomers are aware of all that EAA has to offer.

It is a great idea if the person who is considering building an airplane discusses it with the Technical Counselor before either ordering the plans or kit. All too often the beginner isn't realistically able to match his skill level for either building or flying to a particular design. It's a tough challenge sometimes when someone has a beginner's skill level but wants a complex or high performance aircraft. It's not impossible that he will succeed, but it's likely it will be a difficult challenge, and then he has to make sure his skill level is up to the aircraft. Many don't take into account the compatibility of the dream project with family and other environmental situations. For example, if the builder has a workshop in the basement or house, and has small children a project requiring bucked rivets may not be a great idea if the only time he has to work is after the kids are in bed. Similarly, if he lives here in Wisconsin and has to work in an unheated or poorly heated garage or shed, a fiberglass airplane may take many years to complete.

Insurability is yet another consideration. Frequently a beginner finds himself with an aircraft that can't be affordably insured at his experience level. If you have any concerns about whether the person is really experienced enough to fly the aircraft refer him to the EAA Insurance Plan. Frequently the insurance company will point out that the airplane is beyond his current flight experience level and save you from the uncomfortable

task of discouraging him, when after all you are trying to build his confidence and trust.

All too often, those of us in Aviation forget to go back to the basics when dealing with newcomers. Remember that they really have a whole new language to learn. This has been rather dramatically driven home to me over the past six months or so. Although I bought my first aircraft, a 1940 Taylorcraft in 1968, and ordered my first set of plans shortly thereafter, I have always staunchly avoided working on any of my own cars. About six months ago I bought a 1975 MGB, which needs a lot of work. This caused me to suddenly have to learn all I can about maintaining and restoring this car. Fortunately there is a great British car club in Oshkosh, and some of the members have taken me under their wing. Still, they will be talking about various parts, adjustments and even tools and I find myself sometimes reluctant to ask what might be perceived as being a really stupid question. This caused me to think about how important it is for those of who represent EAA to make sure that we go back to the basics when talking to people who want to get involved.

When reviewing the pamphlets, EAA's Homebuilt Aircraft Buyer's Checklist and EAA's Homebuilder's Information Kit it is important to take the time to explain the difference between an FAR, an FAA Advisory Circular, and an FAA Order. Similarly it is important to explain what a DAR is. Don't forget that until now the potential builder probably thinks that DAR means Daughters of the American Revolution. All too often we simply rattle off "Make sure you read AC 20-27 and AC 20-139." Did you remember to either bring a copy with you or at least tell the newcomer how to get a copy? Remember, simple steps can seem like major barriers to the novice. I remember a simple flattening of a piece of streamlined tubing, which today I wouldn't even think about held up an early project of mine for several months. We need to do everything we can to break down the barriers.

It's also important to explain enough about the 51% Rule so that the new builder understands the intent of the Rule, the current interpretation of the Rule, and how the Rule represents a privilege that we in the United States enjoy and that people in other parts of the World can only dream of.

ROTAX Installation Issue

Corky Smith, NTSB

An experimental amateur-built Zealot powered glider sustained substantial damage during an off-airport landing following an engine failure. Post-accident disassembly and inspection of the Rotax 582 engine revealed destruction of the rotary valve disc drive gear due to insufficient lubrication. This failure caused the rotary valve shaft and attached rotary valve disc to cease rotation, resulting in engine stoppage due to the inability of the rotary valve disc to introduce the air/fuel mixture from the carburetors into the intake portion of the engine's cylinders.

During the engine disassembly inspectors observed approximately 2 fluid ounces of oil drain from the rotary valve shaft "oil bath" chamber when the shaft assembly was removed from the engine case. According to the Rotax installation manual, approximately 310cc (10.5 fluid ounces) of oil is required to fill the rotary valve shaft lubrication system. With only 2 fluid ounces of oil in the rotary valve shaft "oil bath" chamber during engine operation, the rotary valve disc drive gear was subjected to significant heat, causing catastrophic failure of the brass drive gear due to insufficient lubrication. It is important to note that inspection of the engine components prior to removal and disassembly of the engine revealed that the externally mounted oil tank for the rotary valve shaft lubrication sys-

tem was filled to the proper level.

Rotax service center technicians confirm that it is possible for the rotary valve shaft lubrication system externally mounted oil tank to contain a full quantity of oil without the rotary valve shaft "oil bath" chamber within the engine case actually being full of oil. This phenomenon can occur in Rotax 582 engines mounted on an airframe in the inverted position (spark plugs down) if rotary valve shaft oil is installed without removing a vent plug in the engine case to vent the system during oil installation. Failure to remove the vent plug will cause an "air bubble" to form in the rotary valve shaft "oil bath" chamber, thus preventing oil from filling the chamber. If this occurs, the oil tank will indicate full, but insufficient oil will have been introduced into the rotary valve shaft "oil bath" chamber, causing failure of the rotary valve shaft brass drive gear during engine operation.

Builders who are installing the Rotax 582 in the inverted (spark plugs down) position should be aware that they need to remove the vent plug when filling the oil tank for the rotary valve shaft lubrication system so as to avoid engine failure due to insufficient lubrication. Refer to the Rotax installation manual or talk to Rotax service center technicians for guidance on this issue.

Luce to Receive 2009 Tony Bingelis Award

Earl Luce, of Brockport, NY has been selected as the 2009 recipient of the Experimental Aircraft Association's Tony Bingelis Award, recognizing his involvement as an active volunteer Technical Counselor and aircraft builder.

Luce has been an EAA Chapter 44 member for more than 30 years, helping his fellow members with aviation projects and technical help. He used his appliance and electronic business building to establish the Luce Aeroplane workspace for individuals to come for advice and help on over 30 projects. Besides being an EAA Technical Counselor for 20 years, Luce has provided countless teaching sessions and has been a gas welding instructor for EAA's SportAir Workshops.

Along with his chapter work, Luce is an active Young Eagle pilot, made presentations at other EAA chapters, and has written for EAA's *Sport Aviation* and *Ex-*

perimenter magazines. Luce is also a presenter in EAA's Hints for Homebuilders video series, providing tips ranging from motor mounting to proper tubing cuts.



Luce's personal homebuilt project list is extensive including a Sorrell Guppy, Skycycle ultralight, W-10 Tailwind, all of which were built from plans, and a rebuilt J-2 Cub. One of the more impressive homebuilt projects Luce completed was the replica of Steve Wittman's Buttercup. After receiving Wittman's blessing in 1993, Luce performed reversed engineering to complete the LuceAir Replica Wittman Buttercup.

The Tony Bingelis Award was created in 2002 to recognize a member from the aviation community who has contributed to homebuilt projects and safety promotion while maintaining EAA values. The award honors the late Tony Bingelis who was noted as a homebuilding authority and EAA *Sport Aviation* columnist.



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*Join us for the World's
 Greatest Aviation Celebration!
 AirVenture 2009
 July 27-August 2*

Join us for Breakfast at AirVenture!

Please join us in honoring the Technical Counselors and Flight Advisors at EAA's annual TC/FA breakfast during AirVenture. The breakfast will be held on Thursday, July 30th at 7:00 a.m in the Nature Center.

Gregory Lewis will be our guest speaker this year. He is President of The Society of Experimental Test Pilots and Deputy Director and Test Pilot Instructor for the National Test Pilot School.

Lewis will be speaking on internet resources for flight test safety planning. He has helped NASA and the FAA to populate a database with mitigating procedures for



hazards related to flight testing. The database is open to the public and might be useful to EAA members doing flight tests on their aircraft.

Please let us know if you'll be able to join us on Thursday morning. If you have not sent back the response form that was mailed to you in June, don't worry, you may still sign up in the Builder's Education Center during the first part of AirVenture. There will be a sign up sheet posted on the door in the BEC. You are welcome to bring

one guest to dine with you. We look forward to having the opportunity to thank you for all your hard work throughout the year.