



PROP WASH

Propwash is published for the dissemination of information about and for this chapter and its members. President pro tem, Jon More, Vice President George Myers 721-9286, Secretary Jim Harchanko 881-5077, Treasurer John Vincent 882-6695, Editor Jon Moore 882-6672
<http://www.flv.to/eaal90>



EAA Tennessee Valley Chapter 190

07 March 2003

Meeting Notice

Calendar & Events

The February meeting will be at the **Moontown Pilots Lounge then in Frank, Mark and Jon's Hangar on Tuesday the 16th at 7 PM.**

We have competed all the paperwork for the club this year and are marching toward some interesting meetings and activities. This meeting will be around fire and hot metal. John Vincent, who is completing his team tandem Airbike, will provide a demo/class on welding. Everyone should get a few minutes on the torch after John gives some guidance. John welded the fuselage on his Airbike and has a significant amount of experience with a torch and 4130 thin wall tubing. Come join us. We will probably meet down in our hangar, but check in at the office first in case there is a change.

We have some issues to iron out on the fly-in, so be prepared to give some advice and accept some responsibility. These fly-ins are always a hoot – rain or shine. Remember this is not just EAA-190, but also Moontown, the Huntsville Soaring Club and the North Alabama Ultralight Association. Bet this year it does not rain! Any takers?

Sun and Fun is approaching. If you are going, leave a note in the office, and when you get there, go by the Chapter Office and leave a note where you are bedding down so we can visit.

We had a great breakfast last month. Had a great turnout for the breakfast support team, thanks to Mike Wesley. John Frerichs, is a man of incredible energy – after about 10AM he says. In his own words, he is not a morning person, but gave his all, providing an excellent example of 'how to support your chapter'. Thanks John! In case you don't know it, John is usually the one flying kids from sun up to sun down when we have YE events. This time he offered support of a much different type. Don't think any of us saw a plane, but we met all the pilots and crews and heard all arrivals and departures. We had several others sign up as well and provide help that made the breakfast easy. Your opportunity will be coming up, so don't bail out on your chapter – it's only 2 hours!

Finally, I have some bad news. We lost a good friend last month. Frank Mooney died after a serious illness. For those of you who may not recognize the name, you should know that he was a big hearted, gentle and very energetic supporter of aviation and the chapter. He gave to many through his limitless energy and positive attitude. Frank was always ahead of almost everyone, providing moral and physical support without any consideration for himself. He didn't sweat the small stuff, making sure whatever was essential to success was clearly in his approach. He had a great sense of humor that brightened

1st Saturday:

Lawrenceville, GA. (LZU) Ch 690
Winchester Municipal, TN. (BGF) Ch 699

2nd Saturday:

McMinnville, Tenn. (RNC)
Murfreesboro, TN (MBT) Ch 419
Rome, GA. (RMG) Ch 709

3rd Saturday:

Chattanooga, TN (3M3) Ch 150
Covington, GA (9A1) Ch 1025
Dawson, GA (16J) Ch 354
Moontown Airport (3M5) Ch 190

4th Saturday:

Kennesaw, GA (RYY) Ch 268
Dayton, TN (2AO), CAP
Memphis, TN (M01)
Russellville, AL (M22)
Shelbyville, TN 7-11AM

See others and some detail inside

our lives. We have lost a few folks over the last two years, and Frank's is a great loss to aviation and our young folks, our community of volunteers and community minded people and Moontown in general. I miss him.

Be safe out there,Jon

Minutes of January Meeting

Chapter 190 met at Moontown Airport on February 17, 2004 with 9 members present and one visitor/new member (Bill McBride). Jon Moore was elected president (for a one year term) and Aerovents was approved for maintaining our web site at \$10 per month.

Planning for the Moontown/ EAA190/NAUA annual fly-in on 15-16 May was initiated. Task leader assignments made were: air traffic control---George Myers, aircraft parking; Jon Moore, arrange bi-plane rides---George, banquet: food/tickets; John Vincent, set-up (tables, chairs, decorations, loud speaker)---Mark Bowden, hangar pre-cleanup; George Myers and volunteers, banquet entertainment; George Myers, Young Eagle coordination--David Merchant, vendors; Jim Harchanko, pilot hostess; Lisa Brunegraff, media; Lisa Brunegraff, update advertising flyer---Wayne Hample, van transportation; Doug Wester, contact ROTC Cadets for crowd control; Doug Wester, contact Civil Air Patrol---John Vincent, contact Four Points Hotel for feeding the scouts/cadets; Jim Harchanko, sign update/ placement; Paul Jacobs, emergency services; Gordy Seuell, check radios; Bill McBride, grounds clean-up---NAUA (North Alabama Ultralight Association).

Jim Harchanko

Membership

If you have not joined the chapter this year, you are receiving your last newsletter. You may get a copy from the site if we get them up there. Remember, in order for our insurance to valid, all Chapter members participating in chapter vents must be members of EAA National. You can participate in these events as crew of Moontown, however, as were are co-hosts for the breakfasts and the Annual fly-in.

Coming Up.

I want to ask Don Langford to tell us about his rebuilt engine and walk through an overhaul process with the club at one meeting. You should see his work. We will be having a hands-on class on fiberglass and foam moldless construction, perhaps a class on electrical system design and

construction, and update on flight procedures in and around our area. Got something you want to talk about or try? Let George or me know and we will try to get it arranged. We also have a task at hand. We have worked hard for the funds the club has. We have some ideas for using it, but need to here from each of the members as to what you want to do. As part of this meeting, and a board meeting to follow, we will make some selections to place in front off the members in April. Please provide George or myself with your thoughts.

Tech Points

I will be adding this column as I get information or as issues are presented. Anyone with a aircraft related Technical Point is welcome to submit their issue for inclusion in the newsletter to me at tacco@aol.com. Include EAA 190 in the subject or it may find its way to the SPAM can.

The most often asked question I get is "What do you think the torque on this should be?" Determining the proper torque value required for bolts or devices is an engineering task which is not trivial. We, as aircraft owner/maintainers must understand what the purpose of torque is for any specific application, and determine the correct value when it is not specified. Guessing or relying on rules of thumb are not sound methods. For example, is the torque applied to the spark plug driven by the same fundamentals that determine the torque required for the prop bolts on a wood, fiberglass or metal prop? Obviously the answer is no – but why? The torque for a spark plug that measures a half inch or better, is simply that amount of tensioning required to provide adequate sealing and to ensure that the thermal path is properly developed and maintained throughout the heating and cooling of the cylinder. If you use the general rules for torque based on bolt size, you would destroy the head of your engine by torquing to

115 foot pound or so, that is called out for an SAE bolt of that size. For the wing attach bolts on a Long EZ, the required torque is very small. Why, because the bolt provides its function in shear, rather than tension.

What is happening when one torques a nut or bolt? The primary purpose for bolt torque is to provide the correct pressure on the two mating surfaces that must be held together. That pressure causes the friction between the two mating surfaces to 'bond' the surfaces so that they do not move in shear, or it supplies sufficient tension to keep the two surfaces from pulling apart from each other, as in the case of cylinders and cases. That force is called the pre-load tension. For metal surfaces this preload tension is usually set, and it can be achieved by torquing the bolt to a specific torque above the running torque (that torque that the nut exhibits on the threads before it contacts the face of the washer or metal face). This is the torque value called out in the maintenance or service manuals. The factors that go into determining this value is a complex formulation, but the result of the formula is usually provided to the mechanic as a single value with conditions. It may be expressed in inch pounds or Newton meters or foot pounds and so forth. There may be conditions; the threads must be clean and lubricant free, or a specific lubricant must be used, or the temperature must be within certain bounds. On thermally varying surfaces, like engines, you may have to apply the torque, run the engine and reapply the torque. Torque values can be expressed in some cases as the number of turns or faces or degrees of the bolt or nut must turn after it is 'snug'.

The basis for torque applied to the wooden propeller is a very complex, in that the conditions for the proper torque are determined based on the type of wood, the moisture content in the wood, the size and type of the flange, and the torque applied to the mating surface of the propeller and flange with each power stroke. You and I need to ensure the proper pre-tensioning is maintained between the prop and the flange by torquing the prop at each annual or with the change of season.

Torque applied to a fiberglass propeller requires many of the same considerations, but the primary driver for maintaining the torque on the prop is due to the flow of the composite matrix and therefore the reduction in applied tension with time.

For metal props, checking the torque is required because the

bolts stretch and the aluminum prop on a steel flange causes galvanic action or very slight corrosion which changes the pre-tension.

So the next time you guess at what the proper torque is for a particular application – don't. Get the manual out, and perform the torque operations per the specified values. In cases where that value is not

provided, contact the manufacturer. There are torque tables for your use when all else fails and they are available on-line by using any search engine to find 'bolt torque'. Beware though – particularly for aircraft application. I have not found an on-line reference for torque values for AN bolts. Maybe you can.

More Events – Courtesy of Southern Aviator, and EAA

4/13 - 4/19/2004 Lakeland, FL

Sun 'n Fun EAA Fly-In, Lakeland Linder Reg. Airport LAL

Contact Information: 863-644-2431 <http://www.sun-n-fun.org>

4/24/2004 Mobile, Alabama --

7th annual Spring Fly-in, EAA Chapter 1209. Saint Elmo Airport (2R5)

Email: EAA1209@aol.com

4/30/2004 - 5/2/2004 Lawrenceville, Georgia --

EAA 690 5th Annual Wings Weekend. Email: jlevine@akorn.net Web: www.eaa690.org

5/1/2004 Meridian, Mississippi --

Fly-In at Topton Air Estate

5/8/2004 Prattville, Alabama --

Prattville Airport Fly-in, Autauga County 1A9 Contact Information: Stephen Conyers 334 3653508 Email Address: sdconyers@hotmail.com

5/15/2004 - 5/16/2004 Huntsville, Alabama --

Annual Old Time Grass Field Fly-In. Camping, Young Eagles, Aircraft Judging. Moontown Airport (3M5) Contact 256-852-9781

Email: tacco@aol.com

Web: <http://www.fly.to/eaal90>

5/22/2004 Guntersville, Alabama --

Lake Guntersville Splash-In at Wally Kirkpatrick's seaplane base on Lake Guntersville (N34-19 W086-23, or 220° radial 7.2 nm from Guntersville Airport),

Email: wshaver@aol.com

It's the EAA 190 Breakfast. **20 March 2004** at Moontown International (3M5).

Please join us and if you are a member please spend an hour and help!

Had some space left over so I thought I'd show that my Long EZ RG is coming along. On its gear for the first time this week. Stance is wide and strong. Gear is electro hydraulic pack actuated. Nose gear is electric. Mark Pickens second RV is next to the EZ. It will be flying within a few months. ed.



NOTE:

Chapters in receipt of this newsletter, please advise me by e-mail (tacco@aol.com), phone or post, that you desire to continue to receive this Newsletter. If you have a chapter e-mail address, let us know and we will provide the newsletter to you via e-mail –in color.

Members: Due the cost of mail, and the limited publishing ability we have (B&W vs. color), we are trying to have everyone receive their newsletter by e-mail. We realize that some folks don't have e-mail and we do not intend to stop the post version, but we would like to reduce the printing and mail costs. If you do not renew, the mail will stop. If you send us an e-mail with your correct e-mail address, you will receive the newsletter by e-mail – in full color.

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