

# EAA CHAPTER - 690 gwinnett county, georgia NEWS - COMM

MEETINGS: 2ND FRIDAY EACH MONTH AT STONE MOUNTAIN AIRPORT-8:00 P.M.

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JANUARY 1983

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## JANUARY CHAPTER MEETING

The first meeting for the Chapter for the new year will be presented by Mr. Luke Cousins, Chief of the Bureau of Aeronautics of the Georgia Department of Transportation. Mr. Cousins will give us an insight as to the aviation activities in Georgia and as to future programs for Georgia aviation.

The meeting will be Friday January 14, 1983 at the Stone Mountain Airport starting at 8:00 p.m.. Please bring your own chair for this meeting.

## CALENDAR OF EVENTS

February 11, 1983 - The Hapi engine will be the program for the Chapter meeting.

March 11, 1983 - The Chapter meeting will be at Dennis Balsam's home and the program will be about Dennis's Zenith project.

March 13 -19, 1983 - Lakeland, Fla.  
9th Annual Sun 'N Fun.

July 30 - August 6, 1983 - Oshkosh, Wis.  
31st Annual EAA Convention

## ENCLOSED WITH THE NEWSLETTER

You will find enclosed with the newsletter two documents that need to be completed and returned. The first document is an INVOICE for DUES. Please send this along with your check of \$12.00 to EAA CHAPTER 690, c/o Ed Booth, Treasurer, 1505 Black Spruce Road, Lilburn, GA 30247. Or bring your check to the meeting this month. The second document is an Information Form that we need completed for the new Chapter Directory and for Chapter planning purposes.

## TAIL SPRINGS

*From Ken Osborne, EAA 31931, Technical Officer for EAA Chapter 756*

Many builders make a big problem of making a tail spring for their pride and joy. This shouldn't be as the material is easily available from almost any auto wrecking yard or even an auto springs shop. I would suggest finding some Hillman & Simca auto spring which happen to be 1 1/2 x 3/16 inch . . . an ideal size.

### FORMING:

Here's a jolt. You can bend and form your tail springs cold . . . you do not have to heat them or have them heat treated later. Clamp the spring in a large solidly mounted vise. Use a block of wood between the jaws of the vise and the spring to protect the metal. Clamp a 3 or 4 foot length of 2 x 4 to the free end of the spring and apply pressure. You will find that with the leverage afforded by the length of 2 x 4 that it will be easy to bend the spring to whatever angle of bend needed. The auto-type springs can be drilled and cut with reasonable ease without being annealed. In drilling the holes in spring stock use a good sharp bit and apply enough pressure to keep it cutting. Use a drill press. Here's a generalization to mull over. Longer flexible springs are less apt to break than shorter stiff ones. Remember you can use two or more leafs for bigger loads.

## PIETENPOL GROUND SCHOOL

*From the Utica, New York Chapter 294 Newsletter*

The Pietenpol is the only aircraft that requires ground school to get in and sit down.

Brief summary of the Pietenpol ground school:

Place right foot on the landing gear strut, while holding onto the wing struts with both hands. Move left foot over cockpit side onto left rear corner of the seat. Move head and shoulders over cockpit through brace wires. Place right knee and foot over cockpit side, and sit down. Reverse for getting out. Do not allow feet to become tangled in the fuel supply line or the engine primer line to ensure a good flight.

# LETTERS 'N SHOP TALK

## ULTRALIGHT TIPS

By Jim Jaeger, EAA 105953, as published in the EAA Ultralight Assn. Chapter 1 Newsletter MICROLITE FLYER

Hello fellow wing-nuts. This month's tip on how to get more thrust from your power pack —

Get a tuned exhaust system (expansion chamber) designed for your particular type engine. A Fisher brand would be an example.

Here's an example: With Yamaha 100-S and reduction, prop 54" by 20 pitch, using either straight pipe, or quiet snowmobile muffler thrust was exactly 75 lb.; with the tuned exhaust system thrust shot up to 100 lb. A solid 25% improvement.

Yes, with the tuned exhaust, you will turn the high jet on your carb open more; your engine will be faster, taking in more air, and burning more gas. Consequently it will develop more heat, too.

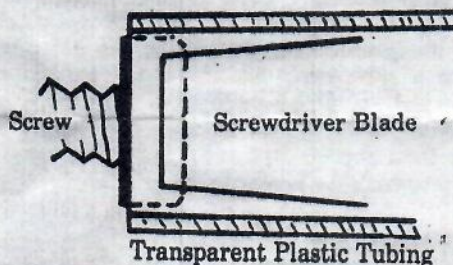
This should be good news for the fan cooled, Chrysler 820 and MAC 101 users. Caution: run the carb mixture as rich as possible (extra fuel has a cooling effect on your engine); too lean and it surely will overheat. Imagine easier lift-offs and half throttle cruise.

## SCREW HOLDER

From Ricardo Chaz Correa, EAA 124246, San Martin 1915, 3400 Corrientes, Argentina

When installing truss head (not Phillips) sheet metal screws I found I scratched the sheet metal of my Teenie Two project when the screwdriver slipped. I solved the problem with the tool-derivation shown. It is inexpensive and functional.

The device is a length of transparent plastic tubing of a slightly smaller I.D. than the width of the screwdriver blade extending from the bottom of the handle to approximately 1/8" below the end of the blade. It firmly holds the screwdriver in the screw slot.



## TACH CHECK

From the Abilene, Texas Chapter 471 Newsletter

The pilot tip of the month goes out to those of you who are concerned about the accuracy of your tachometers. Aircraft tach are noted for their inaccuracies which can cause pilots to operate their crafts at inefficient power settings.

A ramp check can be accomplished that will be no less accurate than the finest tester on the market. The only requirement is that the test be performed at night. Simply position the aircraft in the light of a mercury vapor or fluorescent light and you will immediately be aware of a stroboscopic effect on your propeller blades. This is due to the 60-Hz AC line cycle. The strobe effect (you will be able to see an image of the propeller blades that appear motionless) will be apparent in multiples of 60, i.e., 1200, 1800, 2400, etc. If the test is observed from outside the aircraft, a two-bladed prop will show an "X" pattern at 1800 rpm, and a six-pointed star at 2400.

Dear Chuck,

While at Watsonville Fly-In, I mentioned that I had used a cast cutter to trim plexiglass canopy and it was suggested that I write this suggestion to you. It is the best plexiglass cutter I have found. This was published in Chapter 71's bulletin when I was editor.

The cast cutter is used by your friendly orthopedic physician to remove the plaster cast used for fracture care. The blade oscillates — it does not spin. It will cut curves and do neat trimming with much less danger of cracks developing. You should be able to find a cast cutter in any Family Practice or General practice doctor's office.

Sincerely,  
Tom White, EAA 148271  
P.O. Box 145  
Malibu, CA 90265

## TORQUE LIMITS

By Dewey Ballard, Designee 1064, as printed in TOUCH & GO, Overland Park, Kansas Chapter 200's Newsletter

One of our Chapter members mentioned that he would like to have a convenient chart of torque limits for use with the more common airframe nuts and bolts used in aircraft construction. The values in the chart below are for standard cadmium plated nuts with oil-free threads and used only in metal-to-metal assemblies. In joining wood, unless bushings are used, nuts are torqued up only tight enough to prevent rotation of the bolt and without crushing the wood fibers. In the chart, column A is the torque range for tension type nuts (AN310, AN365), column B is for sheer type nuts (AN320, AN364). The values are in inch-pounds.

Tap Size	A	B
Fine-thread bolts		
8-36	12-15	7-9
10-32	12-15	12-15
1/4-28	50-70	30-40
5/16-24	100-140	60-85
3/8-24	160-190	95-110
7/16-20	450-500	270-300
1/2-20	480-690	290-410
Coarse-thread bolts		
8-32	12-15	7-9
10-24	20-25	12-15
1/4-20	40-50	25-30
5/16-18	80-90	48-55
3/8-16	160-185	95-100
7/16-14	235-255	140-155
1/2-13	400-480	240-290

A bolt of the proper length should have no more than one or two threads showing when tightened with the proper torque. Checking for cotter pin hole alignment after reaching the low end of the torque range allows for a bit more turning to secure alignment without exceeding the torque limit for the bolt and nut. Never back-off a nut to obtain hole and castellation alignment. Self-locking nuts (AN364, AN365) require no specific alignment. They can be used on drilled or undrilled-shank bolts.

When using them on drilled-shank bolts be sure that there are no burrs around the cotter pin hole. A self-locking nut can be used more than once, until it can be turned on or off by finger pressure alone. Just remember, a self-locking nut must not be used on a bolt which is subject to rotation, unless it happens to be one of the super-duper nuts which have a self-locking feature plus castellations for a cotter pin.