

OCTOBER 1983

EAA CHAPTER-690 NAV-COM

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

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CHAPTER MEETING

The Chapter meeting will be Friday October 14, 1983, at the Stone Mountain Airport. The meeting will begin at 8:00 p.m.. This month's guest speaker will be Bill DuBose. Bill will be speaking about the use of "Adhesives for the Aerospace Industry."

VOTE OCTOBER 14th!

At the Chapter meeting this month we will have elections of Officers for the 1984 and 1985 terms of office for EAA Chapter 690. A slating committee was appointed at the August Chapter meeting and the following members have been nominated by the committee:

For President: Tom Ferraro
For Vice-President: Boyce Miller
For Secretary: Henry Warner
For Treasurer: Dick Strand

At the meeting the floor will be opened for further nominations.

GUEST AT SEPTEMBER MEETING.....

.....was Charles Sego.

SATURDAY DECEMBER 3rd, 1983

That is the date set for this year's annual Chapter Christmas Party. Preparations are underway for the activities and obtaining this year's guest speaker. The Party will again be held at the Perimeter Inn North at I-285 and Buford Highway. Please mark it on your calendars and make arrangements for your babysitters now.

PROJECT OPEN HOUSE

If you are working on an aircraft project, whether it be a new homebuilt or a restoration project of a homebuilt, antique, classic, warbird or you are putting together an ultralight, glider, rotorcraft, or what ever, pick a date and have an "OPEN HOUSE". As a suggested "PROJECT OPEN HOUSE" have it on a Saturday or Sunday afternoon from about 2:00 p.m. til about 5:00 p.m.. This way members can come at different times and see projects of different varieties. If you are interested in having an open house contact your newsletter editor so that the date and time can be scheduled in the newsletter.

1984 SPORT AVIATION CALENDARS ARE IN!

Pick your calendars up at the October meeting.

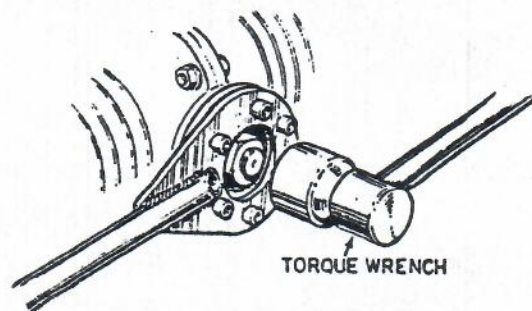
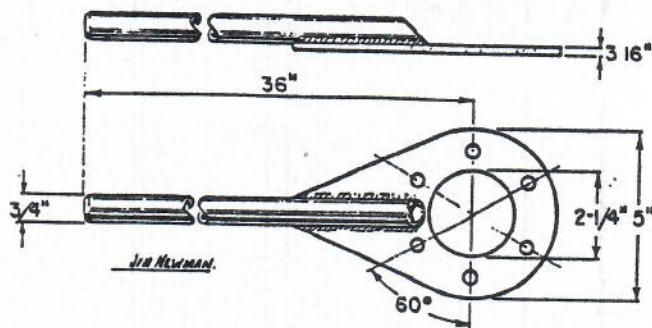
DESIGNEE NEWSLETTER

SHOP TALK

PROPELLER HUB WRENCH

By Jim Newman, EAA 109981, Chapter 104, Northwest Indiana

I found difficulty in tightening the propeller hub nut on our Rectimo VW, the center hole in the propeller being too small to allow the passage of the socket wrench thus precluding the use of the propeller as a means of preventing the crankshaft from rotating. To work around the problem, I designed this simple tool which was beautifully made up by good friend Gene Johnson from materials found around the shop. Although the handle was made from round stock, flat stock would work just as well. The center hole is just large enough to accommodate the socket wrench and the plate was drilled using the propeller hub as the template initially, since the drive bushings in the hub should fit snugly so that the load is not taken by only two or three of them. Before attempting work on the propeller or hub, be sure the magneto "P" lead really grounds out the magneto or, remove the spark plug leads from the plugs.



MEMBER PROFILES

DOUG LAWTON - I co-own and operate Southern Air-Time, Inc., an ultralight aircraft business located at Gwinnett County Airport in Lawrenceville, Georgia. We are the oldest and by far the most experienced dealership in the state of Georgia with a combined total of over 17 years of flying, selling, servicing, and instructing in ultralights and hang gliders. We represent the top five manufacturers of ultralights including Quicksilvers and the C.G.S. Hawk.

My initial addiction to flying came at the ripe old age of 17. As an avid water skier and part time show skier, I came upon a boat towable ski-kite in 1972. Approximately one year later, I was hang gliding off cliffs in Knoxville, Tennessee. In 1975, I acquired my Private Pilots license at the Lawrenceville airport. In 1976, I began competing in national and international hang gliding competitions and have been fortunate enough to win The World Tow Gliding Championships in 1978, was a U.S. team member at the American Cup Championships in England in 1982, as well as having won many regional contests such as The Southeast League at Lookout Mountain in Chattanooga.

Although the business and my main hobby of hang gliding take up all my time, I do sometimes slip away for recreation in the sports of skydiving, snow and water skiing, roller skating, and motor cycling. I especially enjoy aerial photography from both ultralights and hang gliders.

Flying is my life, has always been, will always be, and I truly enjoy the camaraderie of fellow pilots through organizations such as the EAA. As a pilot of both conventional and unconventional (i.e. hang gliders and ultralights), I am convinced that both types of aircraft can operate in harmony through communication and education.

One thing I would like to see the EAA Chapter work towards is opening a seaplane base on Lake Lanier.

GEORGE N. BROOKS - Occupation: Forester with the U.S. Forest Service. Head of F.I.P. (Forest Incentives Program) which provides federal funds and information to state forestry programs and private land owners to develop good forest practices. This program covers the southern thirteen states.

Family: Wife-Carol, Children-Amy (14 and a 9th grader), Kimberly (10 and a 5th grader) and Michael (9 and a 4th grader). We live in Dekalb Co. and attend Stone Mountain High and Rockbridge elementary. We are all actively involved in Stone Mountain First United Methodist Church.

Flying Interests: Private pilot - earned while an undergraduate at the University of Illinois. I have owned 2 Aeronca Chiefs, 150, 140, and a J-3 Cub - plus various and sundry parts of which there are still a few for sale! I rebuilt the 140 Ray Rocque owns and plan to build (in the near future) a "Hatz" biplane. Besides my Chapter membership, I belong to the 120/140 club and EAA.

Outside Interests: I have started my own small business; Brook's Air Photo which takes aerial photos of area residences and commercial property.

I enjoy the companionship and relaxation the sport flying provides. it also offers opportunities to share experiences, knowledge and skills which are necessary to keep the cost of flying reasonable. I hope that recreational flying will never be too regulated that I cannot enjoy barnstorming in my "Hatz".

This is paraphrased by a Saturday widow who supports her husband's flying and has learned a few new skills herself - riveting, shrinking fabric, etc.

Carol Brooks (s)

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W. DANIEL BARKER, III - I work for National Software Enterprises. All technicians with this company work in all three divisions of the company; education, technical support, and products.

Under education, my work is restricted to course design suggestions, and text maintenance as I freeze up in a teaching environment.

Under technical support, my responsibilities include most of what usually is called "system programmer" duties but on a consulting or hourly cost basis.

The products currently being offered were either developed by mr or I had extensive knowledge of them due to association (at another employer site) with their author.

I am recently divorced and have no children. Nuclear family, father, mother, 3 married sisters 3 living grandparents.

I have just over 100 hours in unpowered ultralights, about 30 hours in powered ultralights and one Cessna Discovery Special (about 20 minutes).

I believe I would like to get into aerobatics but so far have not the hardware to do it safely. Although my kite is rated 7.5g's positive, the lack of aerodynamic control surfaces makes radical attitudes less than safe. I always fly with a 'chute and try to keep all axes of the craft within 90 degrees of the horizon.

I hold an AMATEUR EXTRA radio license (Oct. '82). I began operating amateur radio in February '82. I also (very occasionally) like Kayaking some of the milder rivers of Georgia. The only competitive sport I currently am interested in is Table Tennis.

GORDON WASHBURN - While living in Portland, Oregon I received my degree in Aviation Maintenance. I was hired by Eastern Air Lines in 1974 as a Customer Service agent. In 1977, I transferred to Miami, Florida to work full time maintenance. There I worked in Overhaul on DC-9's and 727's. In 1979, I transferred to the Heavy Maintenance Department where I worked on the Lockheed L-1011 Tri-Star. My next move was to Atlanta where I now work at the terminal for line maintenance.

While stationed in Japan with the Air Force in 1970, I finally got my chance to learn to fly. Several years later, back in Oregon, I received my license. I'm a private pilot with a single engine land rating, and also within a checkride of having a sailplane rating. I own an Aeronca 11-AC Chief and am in the process of restoring it. I hope to be finished within a year. Later I would like to build an aircraft, but first the Aeronca!! I also enjoy working on old cars, boating, camping, and travel.

My family consists of Jean, myself, and one overweight cat. Jean is originally from Boston and a former kindergarten teacher in Omaha, Nebraska. She now works for the Marriott Hotels and is just beginning to learn about EAA and aviation.

Since joining the EAA in 1971, I have found time after time how helpful and friendly EAA people are. As a new member in the Chapter, I was pleased with the hospitality extended. We have enjoyed the family outings and look forward to more. The EAA and flying provides me with the opportunity to meet and have fun with the many talented people who share our common interests.

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AURELIO JOSEPH DONATO - I am currently enrolled at Auburn University as a freshman taking electrical engineering. I'm kind of narrow minded but outside of flying I like swimming, hiking, playing and watching baseball, making model aircraft, and just being around airplanes.

I have a private pilot license and flying has captivated me as far back as I can remember, 19 years this December.

My family is currently restoring a De Havilland DHC-1, "Chipmunk". Designed in the late 1940's, it served as a primary trainer for the RAF, RCAF, Portugal, and other countries. It is currently the oldest aircraft with the RAF. It will still be a while before the plane is ready to fly.

With the Chapter and the EAA, I hope to learn things that will benefit the rebuilding of the plane. I also learn of the things that the EAA is doing in the world of aviation to try to improve it.

I would, if possible, like to make a career of flying and maybe join the Air Force.

I am also a member of AOPA and the Georgia Historical Aviation Museum.

I really enjoy going to the meetings where everyone has the same interest as I do - flying!

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SLICK MAGNETO REBUILDS?

There is an advertisement running in some publications for rebuilding 4000 Series Slick Magnetos. Slick indicates these magnetos are not rebuildable in the field as they are a sealed unit. They also indicated they had discontinued production of this series. The "rebuild" reportedly consists of a new oil seal, a pin and some grease which doesn't seem to constitute a "rebuild". The \$80.00 exchange probably indicates the motivation for this offering.

The Slick 4000 Series Magnetos cannot be rebuilt according to the manufacturer.

HANDY-DANDY COMPOSITE BUILDER TIPS

From the Redding, California Chapter 157 Newsletter

Note from a composite builder (who shall remain anonymous): When using 5-minute epoxy, it is best to replace the caps on mixtures A and B correctly; otherwise Cap A may bond itself to Jar B (and vice versa) and become difficult to remove! Hint from another composite builders assistant: the "hot" wire is not misnamed; treat it with respect!

MARCH 11-17, 1984 — LAKE LAND, FLORIDA — Sun 'N Fun '84. Help Sun 'N Fun celebrate its 10th birthday! Contact Billy Henderson 813/665-6374.

TECHNICAL TOPICS

SUSPENDED HOT WIRE "SAW"

Dear Chuck,

We are not sure whether anyone has come up with the following ideas or not, but if they haven't, we may have a solution to a problem that appeared in Bob Walters' article in the February 1982 issue of *SPORT AVIATION*. We think it may be worthy of publication if no one else has already written about it.

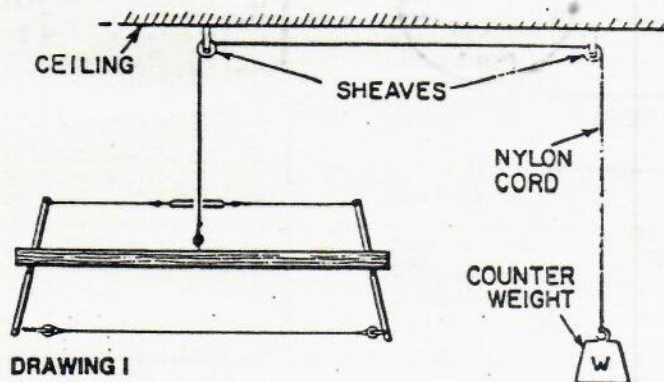
We are part of a group that is building Dragonflies, and since we were cutting a lot of wing cores, canard cores, etc., the problem of the hot wire saw causing arm fatigue and the tendency to "flight" the saw (case of trying to let the right hand know what the left hand is doing) jumped up immediately.

We solved this problem very simply by suspending the hot wire saw from the ceiling by using two small sheaves and a counterweight. The saw is tied to a piece of nylon cord at its balance point and then through a sheave over the work table and through another sheave at the side of the shop. We found that a single firebrick was just about right for the counterweight. (This, of course, will vary according to the weight of the hot wire saw.)

We found the results are amazing compared with trying to hold the saw with one hand and cutting with the other, and we are using a light hot wire saw. The saw is counterweighted so that it takes about the weight of the hand to cause it to drop. We found that it is much easier to "one hand" the saw and control the cut.

We only used single point suspension of the saw, but it's easy to see that a little extra time and money and the saw could be "tracked" (that is, the sheave above the table put on a track that is parallel to the direction of the cut) or a swivel arm could be easily constructed from the side of the shop to the work table.

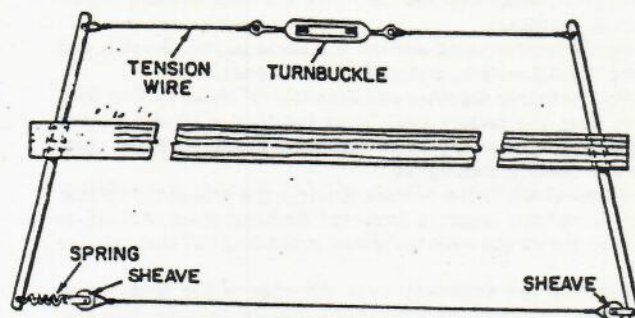
Another alternative is a bridle that is attached to each end of the wooden bar, which would have a tendency to "automatically" balance the saw.



DRAWING I

We also tried a couple of tricks with the hot wire saw which seemed to work and may be worth mentioning.

The first is the use of a lightweight turnbuckle as a tensioner across the top of the saw to tighten the cutting wire and the use of a spring and two heat-proof sheaves to keep the wire in constant safe tension. The rationale here is a couple of bucks spent trying to keep the hot wire from breaking during a cut will save a lot of bucks that would have to be spent buying one or two or three new styrofoam billets. We also used a different approach to heating the wire. Some techniques call for heating the wire red hot and then backing off until the wire is no longer red. We used a modified version of Bob Walters' technique of gradually increasing the heat until the wire cuts properly.



DRAWING II

JIM NEWMAN

The use of the spring and sheave allows the hot wire saw to be kept in constant tension hot or cold. The use of the sheave (heat-proof) is to "ease" the wire and to position it below the arm of the hot wire saw. This "easing" of the wire over a larger radius prevents strains induced by short radius bends and kinks. The spring is attached to one side of the arm of the hot wire saw and is located between the arm and the sheave. The spring should be selected according to the minimum tensile strength of the wire. For example, the minimum tensile of Nichrome V wire is 100,000 P.S.I. We used .036 Nichrome V and by using the old calculator we came up with the fact that the wire should support minimum pull of approximately 102 pounds. Right here you have to make a judgment. We could not easily find springs in different ratings so we purchased a one-inch coil spring that one man could just barely manage to open slightly by pulling on it with pliers. This spring probably has about a 50-75 pound pull. The idea, of course, is to get maximum tension without over-stressing the wire.

NOTE: Don't make a mistake. The hot wire saw wooden cross piece must be made slightly longer than normal to accommodate the spring-sheave arrangement.

NOTE: If sheaves are heat-proof insulators (porcelain, glass bakelite, etc.) you must attach electric wire directly to hot wire. We made ours out of bakelite because we did not know what the heat would do to our coil spring or whether the spring would heat up. It very well might be that the sheaves could be metal and then the electrical supply could be connected to the arms as it is shown in various designs. We did not try this, however.

Operation:

1. Tighten turnbuckle until coils open.
2. Heat up saw gradually until proper "sizzle" sound is heard and "angel hair" appears at end of test cut.
3. Check spring. If coils have closed, tighten turnbuckle until coils open. This should (and it seems to) keep the wire in constant tension at 50-75% of its minimum tensile strength. This should prevent a lot of hot wire breakage.

We all very much enjoy your magazine and have learned so much from it that it is a real pleasure to try to contribute in return.

Respectfully submitted,
Charlie Hayes, EAA 171787
Don Hewes, EAA 32101
Jim Green, EAA 137367

Illustrations by Jim Newman, EAA 109981

STRAP DUPLICATOR

By Schuyler R. Shipley, Secretary EAA Chapter 491, P.O. Box 365, Buellton, CA 93427

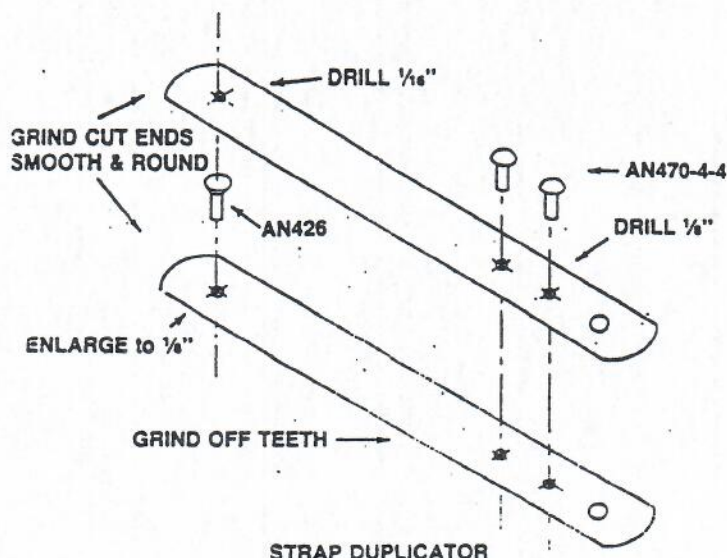
A strap duplicator is a small device used to transfer hole alignment when lap-joining sheet metal. While they are not expensive (\$6-7), here's how you can make one from an old hacksaw blade in ten minutes.

1. Grind the teeth smooth and cut the blade in two. Smooth and round the cut ends to match the factory ends.
2. Clamp the halves together and drill two $\frac{1}{8}$ " holes half an inch apart near the factory end. Rivet together with AN470-4-4 rivets. (Do not use the blade mounting holes, they are over-size and usually misaligned.)
3. Near the cut end drill a $\frac{1}{4}$ " hole. Enlarge the hole in the bottom strap to $\frac{1}{8}$ " and insert a loose $\frac{1}{8}$ " flathead rivet (AN426-4) between the straps with the shank extending out through the hole.

To use, slip the duplicator over the edge of the sheet to be fitted. Insert the extending rivet shank into the existing hole and drill or centerpunch the new sheet through the top strap.

For $\frac{1}{2}$ " holes use an AN426-3 rivet in the duplicator. It will self-center in the $\frac{1}{4}$ " hole.

If a long reach is needed, the tool can be made from two full-length saw blades.



RADIO LICENSE

From the Punta Gorda, Florida, EAA Chapter 565 Newsletter

A new procedure for the temporary licensing of aircraft radio stations has been announced by the Federal Communications Commission.

The action will allow new aircraft operators to use their radios sooner than now possible and also reduce the number of Special Temporary Authority requests required to be processed by the FCC staff.

Effective June 1, applicants will complete only Form 404 and mail it to the FCC. At the same time, they will complete a Form 404-A, which is attached to the Form 404, and post it in their aircraft.

The Form 404-A, which replaces Form 453-B, will serve as a temporary aircraft station license for a 90-day period from the date the Form 404 was mailed to the FCC.

EAA CHAPTER-690 NAV-COM

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