Chapter 569 NEWSLETTER

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MAY 3, 1994

LOCATION: COBBLER'S INN
Shoemaker's Truck Stop

TIME: 7:30 PM

PROGRAM: **BOB STIVERS**, from the State Patrol will describe the Infrared Camera system. This camera has some interesting charateristics which would help track and find criminals on the run or lost children. Don't miss this meeting!

SHORT TRIPS

* The directories are about ready and should be available at the next meeting.

* If anyone (Jim and Jan?) went to Sun n' Fun maybe they could share a story or two at the meeting for us hard workers who couldn't go.

* Oskosh Convention and Fly-In will start on July 28. The Concorde will be back and will be giving rides! Make your plans now. If you are looking for a ride to Oshkosh, or can give someone a ride, let me know and I'll put it in the newsletter.

* "Old MacDONald had a farm, eei, eei, oh!" Shoemaker has been disking, harrowing, and clearing out brush and trees. Its starting to look like a real airfield. Now, if he would get the tractors out of the hangar and get an airplane!

* Do you know someone who has started a new project, or purchased a new flying machine, or is going on a trip to a fly-in, or has achieved a new rating? Maybe you have done some of these. Please share with the rest of us. Call Roger and put it in the newsletter. A letter or an article would also be nice.

MINUTES OF THE MAY MEETING

Guest Dean Hoy who has been at several meetings before, decided that we are an OK bunch of guys and parted with his twenty dollars for dues.

A brief discussion on the comprehensive county plan concerning the number of airplanes a family can have at a private airfield was presented. The task force is meeting once a week.

Larry Craig from the FAA gave a very informative safety seminar. We saw some great slides and found it very interesting, plus, if anyone is in the FAA's Wings program it counts toward that. The meeting was concluded after the seminar finished.

Mark Lucey
Secretary/Treasurer

NEBRASKA CITY FLY-IN

The first major fly-in of the year will be held in Nebraska City this coming Sunday, the 1st of May. The fly-in is part of the Arbor Day Celebration.

If you fly in, the Nebraska City Jaycees will be giving you a breakfast consisting of Ham, Pancakes, Juice and Coffee. Transportation will be available from the airport to other activities in the city.

Trophy awards will be presented to old pilots, best homebuilt, longest distance traveled, etc., so stick around until 10:30 am for that.

For more information, call Vic Grundman at 873-9943.

FILES & LONG DRILLS

(EAA Technical Counselor News, Winter 1994)
from Bob Nelson, Technical Counselor

*Useful short files can be salvaged from worn out files found in any shop. Both ends are generally useable when the middle is worn out.

Being careful to cool the file often, grind around the file enough to snap it off in a vice. Grind a tong to fit a very large wire nut. Use epoxy putty to secure wire nut to tong.

These short square and half-round files are used to square up rectangular switch holes in tight quarters.

* Using 3/8" flexible drain cleaning wire, used by plumbers, and silver brazing twist drills to the flex wire concentrically, makes a remarkably useful tool. Grind the length of flex wire off to length and square the end to be brazed. The wire can be sterilized by boiling if you desire. Keep the brazing time short. I wrap the bit in a wet rag to protect the temper.

The wire is smooth enough to be guided by bare hands or use leather gloves.

WAHOO AIR RACE

Sunday April 24th, windy, boy was it windy! Even with the wind they had a pretty good turnout of about 15 airplanes. Yours truly and my trusted navigator, Matt Gangler, climbed aboard our unlimited class Piper PA-28-140 and taxied out to runway 20. Holding the brakes and shoving the throttle to the stops, ol' 5FL was ready to race. I released the brakes and we were off.

Our first turn was at Prauge and myself would have turned at the town before Prauge but good ol' Matt kept me honest and I continued on to Prauge. Turning downwind at Prauge our ground speed picked up to about 460 mph or thereabouts, and we were at our next turn of North Bend before we knew it. Turning south at North Bend, I swore I saw Matt deploy the air brakes and spoilers. Our ground speed was about zilch and it was a long trip back to Wahoo. In the pattern getting ready to land we are looking real good for the spot landing and taking the prize home. We need a little extra power here because of the wind. About ten feet off the runway I pull the power back and this time Matt throws out the boat anchor, and that's where we land. We did get the award for the best Harrier landing though.

All in all, we had a lot of fun, ate some chili and enjoyed the company of the other pilots and families. The first place prize was $15.00 and the fellow who won practiced all week in his Cherokee Six, probably burning a hundred bucks in gas. The best time was made in a Piper Aztec but he just couldn't get the thing on the runway. He got the bouncing rubber ball award. Second and third place went to a Bonanza and a Cessna 150.

Mark Lucey

May 5, 1961

Alan Shephard, the first American in space, makes a 15 minute suborbital flight to an altitude of 116 miles in the mercury capsule Freedom 7.

YOUNG EAGLES DAY

The first EAA International Young Eagles Day is Saturday, June 11th. Chapter 569 has decided to make our Young Eagles Day on Sunday the 12th.

The plans at the present time are to assemble at Shoemaker's airport about 2 or 3 pm to begin flying the kids. The club will furnish hamburgers and drink about 5 pm, then more flying. If members bring a covered dish, salad or dessert, we'll have enough for everyone including our guests.

Bring your ideas to the next meeting or call Ken Mueller. We need to decide how we're going to get the young eagles there. I think if we all invite one or two grandkids, neighbor's kids or friend's kids, we should have plenty to keep us busy. Oh.... don't forget to bring your airplane.

HOW TO DRILL A ROUND HOLE

From BD-5 News, Dean Patmore

If you are going to install a 1/4 bolt somewhere, what you should NOT do is to grab the nearest 1/4" drill bit and have at it! There is much more to the process.

The strength and durability of a bolted joint is partially dependent on the closeness of fit between bolt and hole; the closer the match the stronger the joint. A loose joint will allow relative motion (wear and fatigue), will allow moisture (corrosion), will cause hardening of the bearing surface (eventual cracking), will transmit loads unevenly to the material it is supposed to hold (stress cracks), and will allow the bolt to cant sideways in a single shear application (cracking under the head of the bolt or thinning a softer material, weakening it.). How long that new airplane will stay 'new' is somewhat dependent on how good the joints are by which it is held together.

The craftsman has two problems: One is that AN bolts are nominally undersize by about .003"; the other problem is that a drill bit creates a slightly triangular hole. Aspiring builders should check both of these facts out for themselves. Measure a typical AN bolt, and then insert that bolt into a hole drilled into a scrap of sheet aluminum. Careful inspection will show light coming through on three sides around the bolt.

How can this poor fit be avoided, and a stronger joint be created?

Perhaps you should check the different kinds of Drill indexes you can buy. Standard is the fractional set usually from 1/32" to 1/2" in 1/32" increments. That a good idea for bolted joints, however. Lastly there are the lettered sets, from A - Z (.234" - .413"). Lettered bits are .003" undersize relative to their nearest fractional counterparts. Thus a "D" bit is .247", or .003" smaller than this 1/4" (.250") fractional bit. You could not get a true 1/4" diameter bolt into a "D" hole, but an undersize bolt will fit with encouragement.

With this bit (excuse the pun) of background, here are some guidelines to follow:

a. Good sense dictates that the drill should be sharp, in good condition, be held perpendicular to the material, and the work and drill be held as rigidly as the setup will allow.

b. Step Drill. Step drilling is the process whereby you work up to the final size of bit for the hole. For example, if you want a 1/4" hole, drill through with a 3/32" bit, then a 7/32", and finally the 1/4" bit. Better drill indexes have bits in 1/63" increments, but there will be many bits in a 1/2" set that you might never use, so perhaps buy only the bits you need. Anyway, the idea is to come up to the final dimension in small increments, with an end result which will be well worth the extra effort. This is a low cost method of obtaining good round holes.

c. Expansion or Taper Ream. A tapered reamer is used much like a tap, but its gradual taper allows you to open up the hole gradually, adn enough to fit your bolt exactly. For example, a 1/4" taper reamer goies from 7/32" to 1/4" over a length of about 3", giving it a very gradual change in diameter. With a bit of practice you will be able to judge just how far you need to work the reamer into the hole to get a tight fit. Taper reamers can be obtained from tool supply houses. A fancier version of a taper reamer is an expansion reamer. The cutting edges of this tool can be adjusted so that yu can create a clean, parallel faced circular hole to fit a particular bolt exactly. You might use this type of reamer if you rich in time and money, or else need to have an exact hole (not tapered) through some thicker material, such as a wing spar or landing gear leg, where tight fits are mandatory.

d. For a good tight fit of an 'AN' bolt you should step drill, but instead of that final cut using a 1/4' bit, use a letter 'D' bit. It is .003" undersize, so that instead of drilling a .250" hole for that nominal .250" 'AN' (which is actually only about .247'), you will end up creating a .247" hole for a .247" bolt. That is a zero clearance hole, and the bolt will have to be driven in. It is unlikely ever to work its way out. More importantly, however, the bolt will bear evenly against the material it is meant to hold, and therefore create a joint capable of giving the design strength of the joint.

AVIATION ART CONTEST

The Aviation Art Contest Awards will be presented on May 14th at Duncan Aviation's main hangar. The Award Ceremonies will begin at 1:00 pm.

You are encouraged to attend the ceremony. We have donated fifty dollars to become a sponsor of this event so it would be nice to have a good representative group.

May 21, 1927

Charles Lindburgh arrives in Paris after a nonstop solo flight from New York in the Spirit of St. Louis.

April 27, 1920

The first U.S. warrant for "reckless aerial driving" is issued in Los Angeles.

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