

SKYWRITINGS

November 2008

EAA CHAPTER 439 CENTRAL U.P. of MICHIGAN
www.eaa439.org The Yoopers!



- Please Do Not Yell At The Guests
- Flaring your Rigid Line Muscles

The President Speaks!

Tom Sullivan

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I missed the October meeting due to family commitments. We had an offer from Bruce Varda, from Superior Aviation, to host an upcoming meeting at the old ISD hangar. I think he had a program planned involving the Sport Airplane aspect of aviation, and how Superior Aviation is involved with it. I attempted to arrange this for our November meeting, but he will not be in town until after the meeting. His staff said there really wasn't anyone to arrange this in his absence. With option explored, the November meeting will be this Saturday, November 1st, at Kubick Aviation.

This is the year we have election of officers, so nominations will need to be made at this meeting. Bruce StOnge has not received any interest from the membership to serve the chapter in officer roles. As noted before, I will continue if we have no interested members, but new blood could give the chapter a real boost right now.

I've been stumbling over my Lancair quite a bit lately, while working on other projects in my shop. I always look forward to the winter. It's a great time for working on our home built aircraft. That's providing you have a heated work area though. My particular project has taken way longer than it should. I have the usual excuse list; too busy, kids commitments, will only work on it in the winter, and already have a fairly fast airplane. But then some of the reasons are poor. Many other projects have trumped it as well; about 1,000 man hours building a full regulation soccer field at home, 250 man-hours donated for a new community soccer field complex, wind and solar energy projects. I guess in true reflection, a priority needs to be made to finishing it AND not putting any more projects in front of it. Admittedly, having no kids at home would make it much easier, but then many builders produce airplanes with the same hurdles in place.

Someone
help
me...

I truly hope I can get through the first few weeks of recommitment to the project soon. It seems like the gag factor is always present when trying to get back on a dormant project. The satisfaction/rewards of progress really helps keep the motivation and commitment at a high level, but is seldom realized right away when getting back on it after a hiatus. I have always noticed if I can get past the first couple weeks back on it, I really do well until spring. (Hint, someone help me with a kick in the butt for a bit).

See you on Saturday,

Tom Sullivan

The Next Meeting

is at Chad Kubick's Pilot Lounge
in Iron Mountain.

For info contact Chad at Ph 906.779.0656

Saturday November 1st 9 CST / 10 EST

October 3rd, 2008 Meeting Notes Terry Glimn's Hanger

Members present:

Mike Betti

Terry Glimn

Dave Vandenburg

Aaron Gustafson

Molly Waidner

Harold Berg

Scott Trask

Ford Airport Day:

All donated monies have been returned due to canceled air show.

We are still waiting on a B-17 date for next year, and also what our risk will be.

The Ford Airport Day committee was short on members this month so the meeting group discussed some of the activities we could have. Dave handed out a list for the members to look at and make comments on.

Future Events?

Terry Glimn talked about the pig roast activity and how it could work out as a Chapter event.

The group talked about surveying the local membership to what direction we want to continue on with events. Molly is going to work on a form to send out in the near future.

For Sale: Suburban

There was discussion about the Suburban we are selling. Should we continue to sell it or see if it could be used as a loaner car at an airport. It was decided to continue selling it possibly at a different location and donate it for an airport car as a last resort.

Officer Elections:

Aaron Gustafson heard from Bruce St. Onge that no other members have come forward for leadership positions in the Chapter.

Terry fed the group hot dogs and beans.

In the Editors Words -

Aaron Gustafson

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Christmas Party at Tom Sullivan's Saturday January 10th, 2009

As always, I need your input on any and all subjects. This is your newsletter. Thanks to all who have written.

PLEASE DO NOT YELL AT THE GUESTS

By Bill Landry

Yeah right. Anyway , when you go to tram driver orientation, that is the first thing you are told, it is the “Prime Directive”.

But, I am getting ahead of myself. For the past two Airventures at Oshkosh, while the rest of the chapter was feeding the wild “water buffalo herd”, and doing other chores, I took a different tack. I tried a different type of volunteering activity as a tram operator / conductor.

I had heard it is a challenging job, not much in the way of physical activity, and you get to interact with the “guests”. Share stories and provide a service by transporting people to different destinations. Once again... yeah right.

You start out with an orientation about two weeks prior to the convention, where you meet Jim and Bill who run the operation. After introductions and a few jokes, you are briefed on your job. If you are new to the operation, you become a conductor , paired to an driver who has been doing it for a while. A hand out is passed around which has at the bottom amongst other statements... PLEASE DO NOT YELL AT THE GUESTS. Now, you start wondering, isn't this supposed to be one happy family at the Mecca of aviation ? What does it mean? Then you start to hear a few tales, and think to yourself NAH, can't be true. After this, you are loaded onto a tram and driven around the grounds to see the routes and stops.

Arriving there on a Thursday before the convention starts, I set up camp. As I have to work for a living, and probably will never retire, I can't arrive any earlier, so my sight is usually a good ½ to ¾ of a mile away. Checking in with the tram office on Friday morning, I get my assignment and after everyone is assembled, we are taken to the central staging area and paired up. As a driver, you don't get to see too much of what is happening in the back, 'cept when the conductor tells you to stop or go. That diesel engine is loud and you usually wind up with ear plugs in. You do get a long lasting farmers tan though as you are not shaded to well. Being a driver also has its moments, so I will start with the guy in back.



Trying to obey the ‘Prime Directive’

Now, the conductor or tail gunner job is another story. As the tram starts to move, you make your speech ...with embellishments after a while, about sitting down, open beverages may cause you to meet the person sitting next to you, no jumping on or off the tram while in motion, and what the various stops are. This is where the “prime directive” comes into play. It is sort of like the flight attendant on an airliner giving the

safety briefing, and I know that we all listen to that speech. While moving along at the fast speed of 7 miles per hour, something will happen overhead, and a person will decide to stand up and take a picture. So, you “firmly suggest” that they must remain seated. You are answered with a one-fingered salute. Once again in motion, a bunch of kids decide to jump on and stand, as there are not enough seats, you kindly request that they depart. After calling you a few names and saying things that would make George Carlin blush, they jump off and you get saluted again. After a couple hours of this, you get relieved, where you recount the events of your first ride over an endless supply of “mystery meat” sandwiches and all the watered down Gatorade, water or cold coffee you can drink. As this goes on for a six hour shift, at the end of the day, you are now an old hat in the transportation game and maybe the next day you will get to drive and not have to put up with the amount of “love” that is flowing in the trams. Being a tail gunner is not all bad. I have met some very interesting people, shared stories of my flying career (“what, you flew a Cessna 172 from Guam to Saipan over 120 miles of Pacific Ocean? You must be crazy”), and helped a lot of handicapped people to better enjoy the convention.



A few days later, I was promoted to a driver. WOW, now I can relax.... Yeah, right. Besides working on your tan, you get to interact with the many suicide drivers in all sorts of vehicles while pulling two heavily loaded cars of “visitors”. While driving a loud hot noisy beast at the breakneck speed of between 5 and 7 MPH, you encounter many other critters who have no idea what they are doing while driving in a traffic pattern that each one creates for themselves. You have the “Prime Directive” in your head, so you can’t run them over, so you learn about infinite patience and when “saluted for your efforts, you communicate your thanks with various hand signals, you have learned over the course of your day, with a smile. After all, you can’t hear what they are saying, so you learn sign language.

I could go on with this story forever, as I have two years of tales to tell. I was honored to be involved with the “Make A Wish “ Foundation this year, escorting the kids and their families on a special tram to various events. I was touched with their stories as I talked to their families. I also got to drive for various VIP events after hours.

Sooooooooo, that is what I did on my summer vacation for the past two years. If anyone wants to try it, I will be happy to let you know the ins and outs of the job, after all, I am an old hand at it now.

FOR SALE WANTED
AIRCRAFT PARTS AIRCRAFT ULTRALIGHTS PROPS ENGINES

EAA 439 members place your ad here by sending it to agustafson@chartermi.net
Please include price and contact information in your ad

FOR SALE 1946 Luscombe 8A. 65 HP. Chromed C65. All metal. Hand held + Gel Cel Battery. Old GPS. Light Sport eligible Asking \$20,000.
Contact Don Brackenbury Ph 906.786.3882 or d.brack@att.net

FOR SALE TRADE or PART OUT:

BD-4 four place high wing Project. Val Bernhardt's 464VB is a complete aircraft less engine and avionics. Includes extra parts, extra rear stabilator, full set of extra fiberglass wing tubs, new set of fiberglass wing tips. Some restoration done. \$4500 OBO
Contact Lloyd Ph 906 774 7379

FOR SALE Weedhopper 40, Rotax 447, 7 hrs. TT, like new, electric start, full panel, w/ trailer. **REDUCED \$5000 OBO.**
Ph 906 346 3237 (reason for sale, Need hanger space)

Working with Rigid Fluid Lines, (part 2)

Last month we began a discussion of aluminum and steel rigid fluid lines. This month I would like to continue the discussion of those lines by describing termination (and joining) methods, installing, routing, and securing lines.

To begin, aircraft tubing may be connected to components using a flared connection, a flare less connection, or by forming a bead and clamping the tube inside a rubber hose. Let's take a closer look at some of these methods.

Most of the rigid tubing we will use in our aircraft will be connected to components by flaring the ends and using flare type fittings. To make this type of connection we use a sleeve and a B-nut (Figure 1 shows the components as well as a typical flaring tool). The sleeve reduces the damage to the flare caused by the wiping action as the nut is tightened, and also reinforces the line so vibration is not concentrated at the joint. The nut fits over the sleeve and when tightened, draws the flare tightly against a male fitting to form the seal. Please note; aircraft fittings use a flare angle of 37 degrees and are not interchangeable with automotive fittings which use a 45 degree flare. Mixing the two types is a sure recipe for disaster (or at least a few leaks!). Aircraft plumbing systems actually uses two different types of flares; the single flare and the double flare.



Figure 1

The single flare is probably the most common and is formed by the use of an impact or roller type flaring tool. Figure 2 shows a roller type tool in use. To form a flare using this tool, the B-nut and sleeve are slipped onto the tubing, the tool is set for the correct size line, and the end of the line is inserted and clamped into the dies. The amount of tubing extending through the die is very important, as it establishes the size of the flare. Too small a flare will result in a weak (and leaky) joint, while too large a flare will not enter the B-nut properly. Many flaring tools have a built in "stop" to properly set the amount of tubing that protrudes from the die. If yours does not, allow about 1/16 of an inch and you will be fine. At any rate, once the tube is clamped in the die, you can form the flare.

To form the flare, put a couple of drops of oil or hydraulic fluid on the cone and rotate the handle. This will expand the tubing and form and burnish the flare. Once the flare is formed, the handle is turned in the opposite direction to withdraw the cone, the dies are separated, and the tube is released. This type of flare can be formed on tubing from 1/8 inch to 3/4 inch in diameter. Small (up to 3/8 inch diameter) soft tubing can be double flared if desired.

A double flare is smoother and more concentric than a single flare and thus produces a better seal. It is also more resistant to the shearing effect of torque and is thus more durable. The double flare however requires a special tool and is a little more difficult to form.



Figure 2

Continued on page 7

Heavy wall tubing (and some alloys) are difficult to flare and will require the use of a “flare less” type fitting. This system uses a ferrule and nut to provide a strong, leak proof seal, but must be “preset”. To do this, the nut and ferrule are placed on the tubing, and the tube and ferrule are inserted fully into a presetting tool. The nut is then tightened against the presetting tool. Final tightening is then accomplished to cause the ferrule to cut into the outside of the line slightly. This amount of “over tightening” will vary from one to one and one half turns, depending on the size of the line and whether it is aluminum or steel. Figure 3 shows the presetting operation.

Tubes carrying low pressure fluids such as engine return oil are often joined by a piece of rubber hose that is simply slipped over the tube and clamped. To make a good seal however, the tube must be *beaded*. “Beading” is a simple process which uses a beading tool with two sets of rollers to form a ridge near the end of the tube. Figure 4 shows a beading tool in use. The tool is used somewhat like a tubing cutter in that the tool is rotated around the line while increasing the tension on the rollers. Eventually we get a raised “bead” which will help seal the joint. To make the connection, slide the hose over the tube (remember tubes and hoses are sized to make this possible) and clamp behind the bead with a worm type hose clamp. Finger tight plus a turn or two with a wrench or screwdriver is plenty. Any more force and you risk permanent deformation of the hose known as “cold flow”. Now let’s discuss installation and routing of our lines.

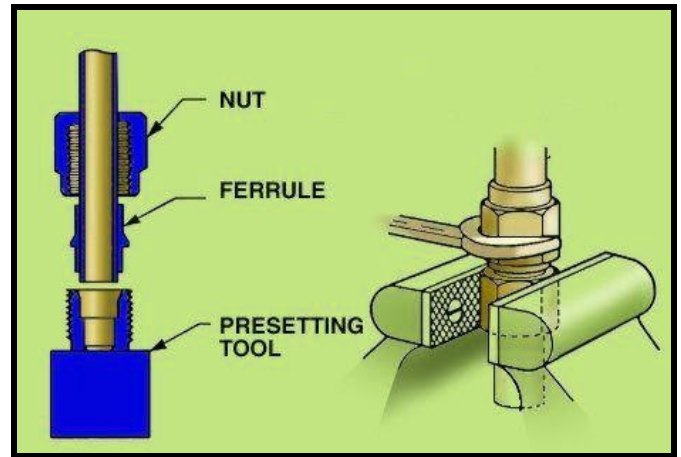


Figure 3

Installing a rigid line is not difficult as long as a few simple rules are followed. To begin, always inspect your lines and flares carefully prior to installation. Any cracks, splits, or imperfections in the line or flare area will weaken the joint and may leak. Also, never use anti-seize or sealing compound on the joint. The flare is designed to be a metal to metal contact so all foreign matter must be removed.

Never pull a tube into alignment by tightening the nut, as this may put the line under tension and promote failure from stress and vibration. For the same reason, always have at least one bend in every line. This will allow for some expansion due to pressure variations as well as ease installation. While I am on the subject, never over tighten a joint to try to stop a leak. If a joint is leaking insure it is torque properly. If it is, and still leaking, remove the line and examine the flare and male fitting for defects. Then install and properly torque. And never (and I really mean never) over torque a fitting. It is very easy to do as most of our lines and fittings are aluminum, so go easy with that wrench. The proper torque values for the different sized lines and fittings can be found in A.C. 43.13-1B, available free at www.FAA.gov.

To present a neat appearance, lines are normally routed along the aircraft structure. This also makes it easy to clamp the lines securely to the structure and away from electrical wires. Lines should be clamped at approximately 12 inch intervals and protected from damage. If the line is subject to vibration, use a cushioned clamp (has a rubber insert) and if it is carrying a flammable fluid you may want to use a “bonded” clamp. This type of clamp has an electrical “pig tail” which can be grounded to the fuselage to dissipate static electricity. Also, do not install a line in such a position as to be a convenient “hand hold”. If you do, someone is sure to use it as such.



Figure 4

Well, that’s enough for this month. As always, I will be glad to try to answer any questions, so Email or give me a call. Fly safe and I will see you at the next Chapter meeting.

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