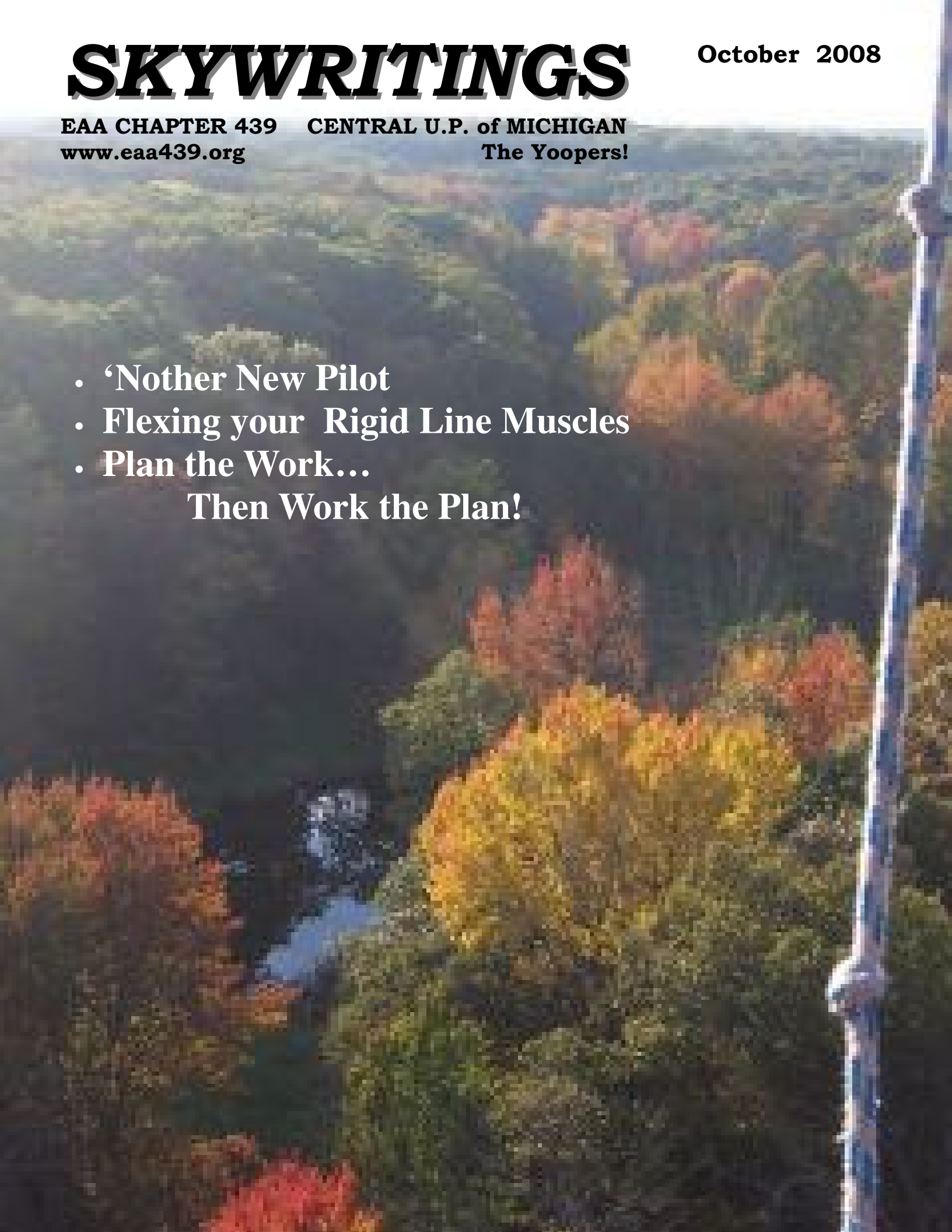


SKYWRITINGS

October 2008

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

- 'Nother New Pilot
- Flexing your Rigid Line Muscles
- Plan the Work...
 Then Work the Plan!



The President Speaks!

Tom Sullivan toms1@chartermi.net

Our September meeting at Kubick's was well attended. The Ford Airport Day changes brought quite a few members out to get an update and reaffirm their commitment for our future event. A committee was formed with 4-5 members to start the organization of next year's July event. Dave Vandenburg has offered to chair the committee and we are already working on some aspects of next year's event.

This year we have election of officers (happens every other year). Nominations are need to be completed at our November meeting. Anyone interested in serving, as an officer, should contact Bruce StOnge about his or her interest. The chapter is ready for some new "fresh" leadership. Please step forward if you are interested!!

Steve Zurcher, a new chapter member, has just completed his private pilot check ride and is the newest local pilot. Good job Steve. Bruce Rutter is close to his challenge of the CFI Certificate. We are all looking forward to another CFI in the area that's available on a regular basis.

The meeting this Saturday, October 4th is at Terry Glimn's hangar. Let's make it another good turnout. Unfortunately for me, my kids have a soccer tournament in Eagle River that day, so I won't be able to attend.

It's election year:
Officers anyone?

Regards, Tom Sullivan



Yes! we do have a Chapter 439 library of aviation related items.

And now Dave Pasahow is offering a set of Sporty's IFR training tapes to the Chapter.

Thank you Dave

Bruce Flannery is our chapter librarian. If you are interested in checking things out, bflannery@chartermi.net is the place to go.

Steven Zurcher, new member of Chapter 439 received his private pilot certificate on September 23rd. 2008.

Steve's current goal is to get a four place plane available to rent locally. If anyone has any suggestions on how to help achieve this goal, Steve can be reached via email at spzurcher@stgeorgeglass.com or by phone at 906-774-4969.

The Next Meeting

Is at Terry Glimn's Hanger in Escanaba.

For info contact Terry at Ph 906.466.5325

Saturday October 4th 9 CST / 10 EST

September 6th, 2008 Meeting Notes Kubick Aviation

Members present:

Mike Betti	Lloyd Cudnohufsky	Aaron Gustafson	Scott Trask
Dave Vandenberg	Jim Riverside	Bill Landry	Jim Richard
Lloyd Cudnohufsky Jr.	Tom Sullivan	Bruce St. Onge	Lynn Sykes
Dean Hensel	James Hensel	Walter Jensen	Bob Smith
Bob Hill	Chad Kubick		

Grant and Barb Cook of Chapter 113 were in the area and attended the meeting also. Introductions were made by all with some background, several new people were in attendance.

Ford Airport Day:

Ford Airport Day was discussed and why it was canceled this year.

Tom Sullivan asked if there were any concerns, none were made by members.

Tom Sullivan is making application for the B17 for next year's show, dates still unknown.

Dave Vandenburg talked about how we need to focus on family oriented activities for our show.

The group was asked for ideas.

Tom Sullivan asked for volunteers to form an executive committee for next year's show.

Lloyd Cudnohufsky, Jim Richard, Mike Betti, Jim Riverside, Dave Vandenburg joined.

Dave Vandenburg is chairing.

A short meeting was held after Chapter business to address the new committee needs.

Bi-Annual Elections:

Tom Sullivan talked about upcoming bi-annual elections.

Bruce St. Onge accepted to chair the election committee.

Members are asked to let Bruce know if interested in any officer positions.

Tom Sullivan expressed that he has no problem stepping down as president if someone is interested.

Aaron Gustafson asked for someone to take the membership committee position which has been vacant.

Someone will be named during elections.

Nominations are at the next Chapter meeting in Escanaba.

Hanger Flying:

Scott Trask talked about the recent fly in at Sidnaw last week, he flew several YE.

Tom Sullivan talked about how important IFR training is even if remaining a VFR pilot.

He told several stories on how it could save a pilots life as it has others.

The group gave project updates.

Tom Sullivan asked our newsletter editor Aaron Gustafson if any help or compensation was needed.

Aaron had no issues and did not want anything for the work being done.

Thanks to Chad Kubick of Kubick Aviation for coffee and donuts.

Ford Airport Day 2009

Plan the work...Then work the plan!

This month I thought a few words about the planning for our upcoming Ford Airport Day 2009 event might be in order. As you are aware, we were overcome by events this year, and decided to drop back 10 yards and punt. To avoid having the same problem next year, we decided to begin the planning a little earlier and to diversify. Our goal for 2009 is to have a family orientated aviation event, with lots of airplane stuff, but also lots of things for kids and spouses to do as well. We want the whole town to attend! Here are some of the things we are considering.

One of our main attractions will be the EAAs B-17. We are waiting for info from Headquarters and will plan our weekend around this date, but we anticipate sometime in early July. The airplane will be available for ground display as well as rides for those who want to fly on a piece of history. We are also hoping to have some warbirds and current Military aircraft on display, as well as local unique aircraft such as Jim Richard's restoration of the Heiserman aircraft. It would also be nice to have a partially completed amateur built aircraft on display, to demonstrate construction techniques, as well as lots of completed amateur built aircraft.



Fly the Fortress!

Since we want to promote aviation, we are planning several "information" type booths. For example, we want to have a "Learn to Fly Here" booth manned by someone who can talk to people about becoming a pilot, including the latest on the Sport Pilot initiatives. The Northwoods Chapter of the 99s has expressed an interest in a booth, as has the NMU Aviation department. Of course we (Chapter 439) should have a booth to educate the public about the EAA, and maybe pick up a few new members.



Ground School ?

Since I want this to be a family affair, we want lots of activities for spouses and kids, and this is where we need lots of ideas. I have several things planned such as a couple flight simulators for the teens and preteens and pedal planes for the younger visitors, but imagination is the order of the day. I would like for us to come up with some aviation related craft activities or games as well. I am getting some good suggestions but need more.

Young Eagles will also be a large part of the event, and I would like to find a way to make airplane rides available to all those who want to fly. We need to explore options here, but I think it is "doable".

I am also looking at flying type activities for local pilots, such as flour bombing and a spot landing contest. These are fun for the pilots as well as the spectators.

I would also like to invite one of the local RC model airplane clubs to exhibit and fly their airplanes sometime during the day. This will take some coordination but again should be doable. I attended a local RC meet last weekend and was really impressed with the things these airplanes and pilots can do. Although not an aviation event, we could also invite a local Antique car club to exhibit their cars. This has always been popular in the past, and adds diversity to the day.



And away we go

If we are going to invite all these people to our house, we really should have something for them to eat. We can probably handle the food service “in house” as we have in the past, or, as Terry suggested, contract with someone to do a pig roast. We will be discussing the pros and cons and our options at a later date.

These are just some of the random thoughts circulating through my skull at the present time. Some may prove to be too large to handle, and I am sure many more ideas will surface in the near future. Right now, we need your ideas, **even the wild and expensive ones**. The committee will meet in the near future and introduce reality as necessary. We will also need everyone’s efforts. This is a big elephant, but we can move it if we all grab a hold and push, so be sure to attend the next Chapter meeting at Terry’s in Escanaba and contribute your ideas. If we all do a little, we can make this a super event.

In the Editors Words - Aaron Gustafson agustafson@chartermi.net

We’re looking for another 439 member to tell HIS STORY in the ‘Spirit of 439’ column . If you would like to have your story in an upcoming newsletter, please contact me or just sit down and start writing. You’ve enjoyed reading about others experiences so now how about telling us about yours.

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

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 1)

The other day I realized that one area of construction we have not explored is the use of rigid fluid lines. These lines are often used to carry fuel, oil, or air, and are generally used where long, stright runs are possible. The lines are relatively easy to fabricate and run, but like most things mechanical, work best when a few simple practices are followed. Let's take a look at some of these practices.

To begin, rigid lines can be made from copper, aluminum (and aluminum alloys), or various grades of corrosion resistant steel alloys. I would point out however, due to the work hardening and cracking of copper lines (and the requirement to anneal them from time to time) and the difficult of fabricating steel lines, most homebuilders chose to utilize aluminum lines. However, aluminum lines can be fabricated from several different alloys, so which alloy should we chose?

For most low pressure (below 1000 psi) applications, such as instrument air, the very soft commercially pure (1100) or manganese alloy (3003) are just fine. They are plenty strong and a dream to work with. If we are working with medium pressure (1000 to 1500 psi) however, we might want to choose a stronger alloy such as magnesium alloy (5052) which is almost twice as strong as 1100. If even greater strength is required we could use the copper based 2024 aluminum alloy. This alloy however is not as flexible and therefore much harder to bend or flare without cracking. You will probably have to anneal the ends if you wish to use a flared fitting. I recommend you use this alloy only when the extra strength is required as it is a real pain to work. For truly high pressure applications or for use in a harsh environment area (wheel wells, etc.) a flex line or one of the corrosion resistant steel lines should be selected. After we decide the material to use, we need to determine the size of the line.

To begin, rigid line is designated by its outside diameter in 1/16 inch increments, and the wall thickness. This information is usually printed on the line and can be used to determine the inside dimension. For example, a line designated as a -8 with a wall thickness of 0.072 inches would be 8/16 or 1/2 inch outside diameter with an inside diameter of 0.500 minus 0.144 or 0.356 inches. We need to size our lines to insure the flow rate is adequate and wall thickness is sufficient to withstand the expected maximum pressure. Strength tables for different size and material lines can be found in most product catalogs or from the tubing manufacturers. Note, I said the listed size of rigid line is the outside diameter. This is different than most flex line which is sized by its inside diameter. This is great, as it allows a -4 rigid line to slide into a -4 flex line. We will look at this option for joining tubing later. Now that we have selected our material and size, we need to discuss fabricating the line.

To be useful, we will need to cut, bend, and find a method of terminating (joining) our lines. I recommend you cut your line about 10% longer than you think you need to account for bends and flares. After all, a line can be shortened later, but is a real pain to stretch. Aluminum can be cut with a fine blade hacksaw or a tubing cutter (shown in Figure 1). The tubing cutter will give a smooth, clean, and



Figure 1

Continued on page 7

straight cut, but a hacksaw will do fine if you are careful. A tubing cutter should not be used with steel however, as it will work harden the material.

Once the tubing is cut to length, be sure to clean up the cut edges with a fine cut file or sandpaper. All nicks and burrs must be removed, and do not forget to blow the chips out of the line with compressed air. Once we have our tube cut to length, we usually need to add a few bends. In fact, all rigid lines should have at least one bend to allow for ease of installation and dimension changes while in use.

When bending a rigid line it is important that we not flatten or distort the tube in the bend area. Such distortion will reduce the inside area of the line and restrict the fluid flow. Generally we want to retain at least 75% of the original internal area. We want to watch for flattened, wrinkled or kinked bends, as all are cause for rejection. Figure 2 shows a good bend and what these defects look like.

Usually soft, small diameter (1/4 inch) tubing can be bent by hand successfully. A good technique is to put the tubing inside a coil spring and carefully bend the tubing around a smooth object. All tubing will have a minimum recommended bend radius (found in AC 43.13-1B page 9-19, available at www.faa.gov) so be sure you do not bend it too sharply. Another technique that works well is to fill the line with fine, dry sand and plug both ends before bending. If you do this, be very sure you remove all the sand after you complete the bend and before you use the line. A couple grains of sand can do extensive damage in the wrong place. Larger or stronger tubing will usually require some form of bending tool.

A typical bending tool is shown in use in Figure 3. This tool is easy to use and will give us a precise angle of bend. The tool may be designed for a single size line, or it may be capable of bending several sizes of lines. Whichever style you have, the tool is designed to ensure we meet the minimum bend radius and should not flatten the line. To use the tool, we simply insert and clamp the tubing in the bender and move the handle until the index mark matches the degree of bend desired. Simple, eh?

Well, that should be enough for now. Next month we will discuss terminating, routing, clamping and protecting our lines. 'Til then, fly safe and keep the workshop warm and humming. And, most important, do not hesitate to call if you have any questions.

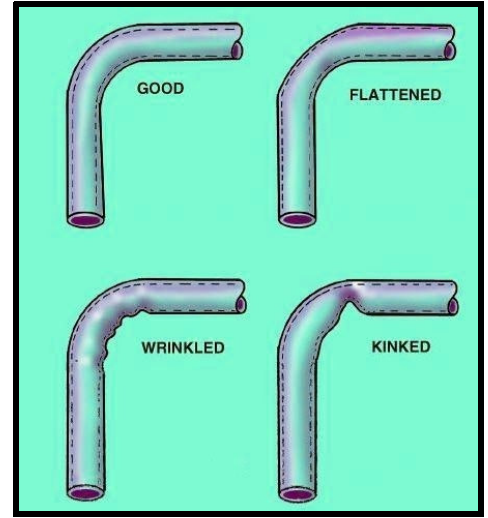


Figure 2

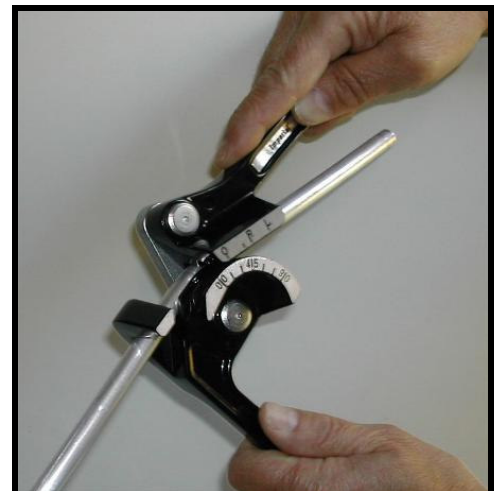


Figure 3

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Dues are \$15.00 a year! From August 1st Please send them to our treasurer!

Website: www.eaa439.org