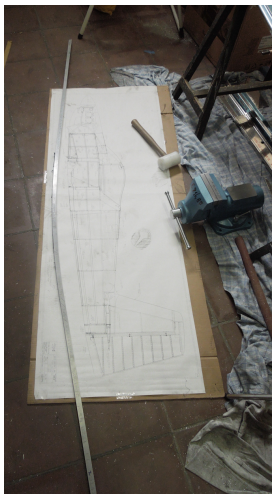
Bending Longerons 3 - 04/04/2013

Category: 3.6. Longerons
Published: Wednesday, 08 May 2013 13:20
Hits: 2061

Continued tuning on the bend of the longerons. Here is a shot of the left longeron after some more tweaking.



I started having the impression my vise was starting to feel a bit loose. Then I noticed this black dust on the ground underneath.

I had been pulling so hard on the handle using an extention bar that I actually killed the threads on the vise.

So lesson learned: a small vise like this one is not suited for this bending job.

Here are some views on the threads from underneath. as you can see, they are almost completely worn out.

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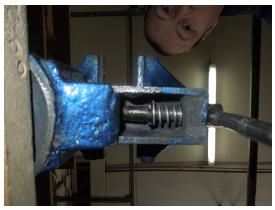

Went to the shop and bought a new vise... well... a VISE this time.
Look at the size and steadiness of this baby. (so was the price)

So continued the bend on the right longeron with the new vise. Wow!
This went much smoother.
I actually overbent without having to put to much pressure on the dies and had to push back the angle.

So what you see in the picture below is actually already too much.

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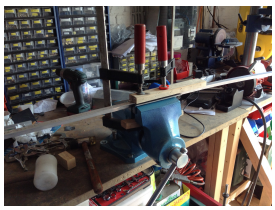
Here is the shot of the final bends on both longerons. I can be happy with the result. I'm within spec and very close to the template.

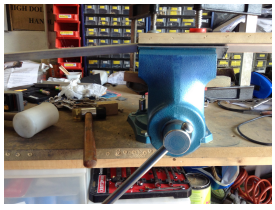
After bending, it is time to do the third manipulation on the longeron.

The forward side in front of 28" 1/4, has to be bend down 5.6 degrees.

There is no real other way than to clamp the angle in the vise with the point of bend next to the jaws (use protection), clamp it from the top with a wood block and then wack it gently with a hammer after preloading the angle (bending the angle down as you slam it)



Here is a shot where I'm real close to the final angle. The angle will want to move in the other horizontal direction as you do this. You can try to adjust this a bit but will never get it close to straight (the excess metal compressed at the vertical part of the angle has to go somewhere right ?)



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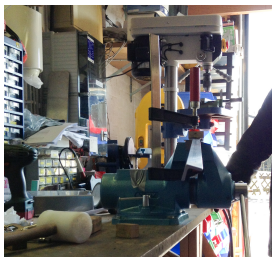
Fred and Hugo came by to check it out.

Fourth manipulation is twisting the part you just bend down (front of 28 1/4") inbound for 17 degrees.
A way to achieve this is by clamping a vise grip on the angle and twisting it around. You'll be suprised how much spring back this thick angle has. You really have to turn a lot and put a lot of pressure to finally get some degrees of profit.

Here is a picture of what 17 degrees twist looks like when you are done.



Well... close... I guess the .7 degrees won't matter. I stopped being anal about this. As you push and manipulate the angle, you'll see you can later easily slip it in the right form as long as you're close to the specifications.

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Second one turned out even closer. Good !

Bending the longerons is done. Few... this was stressy but we managed to get them just right.

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