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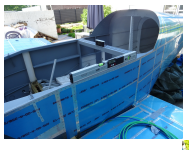
Today, I took some pictures of the measuring process and readings on the wing mating procedures for later reference. I thought it might be usefull to show where I measured.

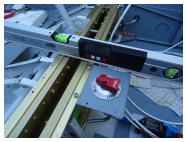
First of all, measurements of the fuselage read level on all horizontal stations. 0.0



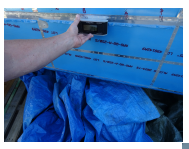


Then measured lateral level along the longerons, on the 704 and on the tail section (along the skin which is level with the longerons below)





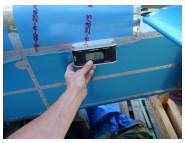
along the tail top fuselage skin and on the aft deck supporting the horizontal stabilizer.




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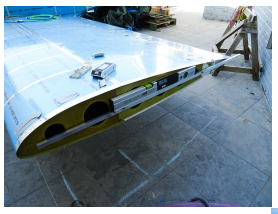
On the next image you see the angular alu strip which I use for aligning the ailerons along the chord of the wing. There are 2 tooling holes in the outer wing rib which are used to define the chord. Match drill two holes through these rib holes and secure the angle with an3 bolts and some washers underneath so that it passes the aileron hinge.



I measured on the chord and get the perfect 1 degree angle of attach. (defined by drilling the aft rear spar attach hole on the inboard).



To cross check, used another digital level. These things have some 0.1 degree inaccuracy so better measure twice and verify with the average of the reading. In this case, both read 1.0 degree.





The way the inboard attach hole was drilled was done by using a digital level and a small tool that you have to construct yourself. The tool rests on the forward spar and has an offset on the rear which rests on the rear spar.

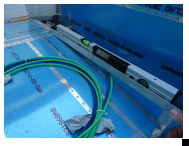
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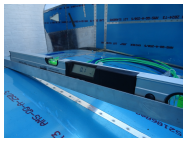
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When setting the angle of attack, your level should read 0. (See some articles before where I explained the drilling of the rear spar attach hole for more details on the process.)

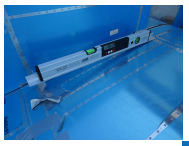
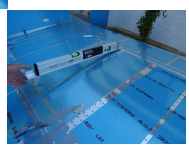
Here are my readings at various stations on the left wing that lead to the 1.0 degree incidence in the previous picture.







Same measurements on the right wing

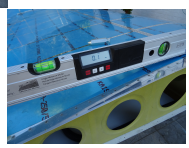





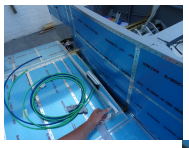
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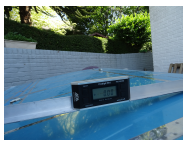
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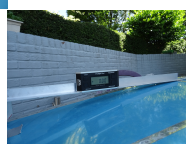
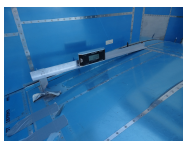
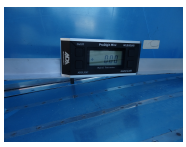
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I double checked here also with the inclinometer and got slightly different readings. This shows how inaccurate these things can be if you're being truly "anal"



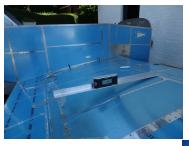
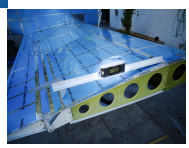


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Measured the other chord angle of attach and reading 1.1 degree.
That's not exactly the same as the other side and was a bit of a surprise for me.
By the time of drilling I didn't think of measuring on the chord using this alignment tool and only based myself on the measurements on the wing above.
So do yourself a favor and measure also along the chord although the instructions don't mention it.
.1 degree is close to nothing so I guess it won't get significant effect from this. Not so long ago, people build airplanes using air bubble levels. Guess that was less accurate then the digital level.




checked alignment on the left aileron using the tool.

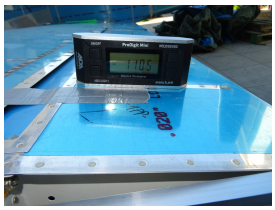


and measured the neutral position angle.

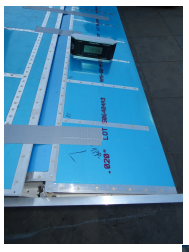
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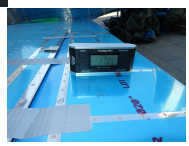
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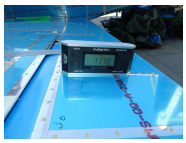
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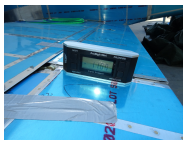


It's difficult to measure this exactly as the aileron will give very slight different readings along different stations on the aileron

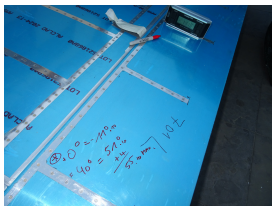




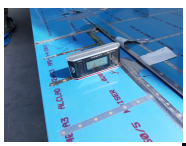


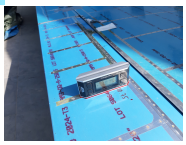


Here is a shot of the measurement I wrote on the flow in 0 degree and full flap extention at 40° flaps.



Measurements on the right wing aileron

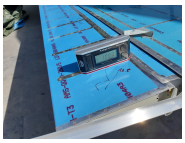




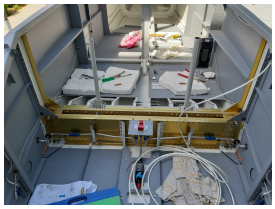
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Sticks neutral 90°





The alignment tool rigged tgo the right wing and checking aileron trailing edge in neutral position.



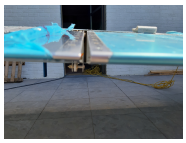
The following pictures show the alignment of the flap and aileron of the left wing on the neutral position



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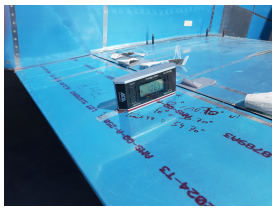
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Same picture on the right wing.



Measuring deflection on the right wing flap. neutral and extreme down position. In the extreme position the flap can go down to 44 degrees.





Here is how that looks on the inside on the flap actuator side. When the flap is at 40, a nice gap remains between the fuselage skin and the actuator so that the actuator doesn't chafe against the skin.

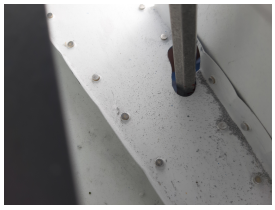


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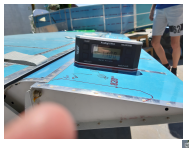
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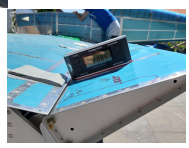
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Deflection measurement on the left wing aileron.







Measuring deflection on the aileron on the right wing.





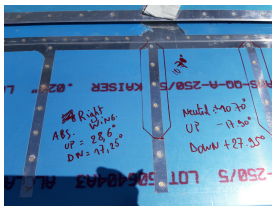


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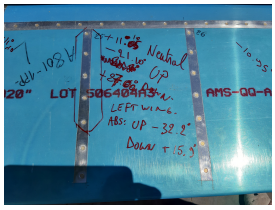
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right wing summarized



left wing summarized



After all that measuring, couldn't resist getting into the plane and taking some shots.





In the following pictures, I took some close up shots of the finished flap actuator holes in the fuselage.
Bottom view

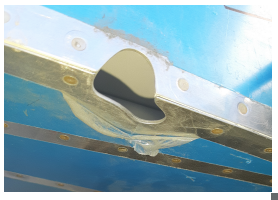


Side view

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Some different angles





View from the inside



Inside view with the actuator installed at full flap up position.

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