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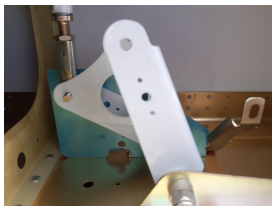
Now that the flaps are moving freely next to the fuselage side skin, it's time to start thinking about the flap pushrod hole in the fuselage belly.

In order to find the neutral point of the flaps (flaps up position), you need to ensure that the ailerons are fixed in the neutral position and then align the flap with the aileron.

So the project of today is setting the aileron 0° neutral position on both wings.
To do this you need to adjust the pushrods that go from the aileron bellcrank to the aileron hinge itself.
Vans supplies a little jig cutout from aluminum to fixate the aileron bellcrank in it's neutral position.
This jig is inserted between the bellcrank and the pushrod and secured by an AN3 bolt.

Adjusting the length of the pushrods will move the aileron up or lower depending on the direction you turn the rod end bearings.



On the end rib, you have to attach a piece of straight edge or aluminum angle where you have match drilled two holes with the predrilled tool/align holes of the outer rib.
Extend the outer edges of the holes with a sharpie pen to extend the parallel lines. Then bolt the angle to the rib to secure it in place with some AN3 bolts.
These two holes in the rib define the chord of the wing (in other words the zero degree angle reference).

The whole point of rigging the ailerons is making sure the aileron is following the chord line of the wing.
In the image below, you can see the result you are trying to achieve.

The trailing edge of the aileron should be perfectly between the two lines defined by the chord of the wing.
This gives you the neutral position of the aileron.

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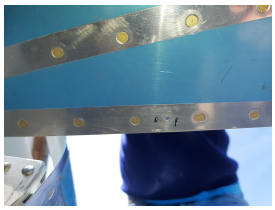
With this position defined, you can now align the trailing edge of the flap with the trailing edge of the aileron and all will be in it's neutral flaps up/aileron neutral position.
I clamped flap and aileron togehter with some vise clamps.

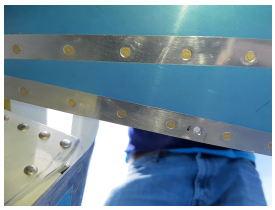
Next step is making the passthrough hole for the flap actuator through the fuselage bottom skin.
There is a pilot hole drilled by Vans but I wouldn't trust on this.
Make your own estimation on where it should be.
There is little documentation on doing this so I'll describe how I did it.

I attached the rod end on the flap actuator and attached it to the flap. Then move the flap up and hold the rod end against the bottom skin to have an idea where it will pass through.
You want to make an initial whole to have the actuator pass through and then fine tune it from there as the flap moves up and down.

In the end you will get a peanut shape through the bottom skin of the fuselage.
There will also be material cut out of the side skin of the fuselage which looks more like an arc.

In the image below, you see my initial markings on the bottom skin where the rod end touches.
You will cut out one of the bottom rivets as well. I was puzzled about that initially but it's normal to have remove one of the rivets.





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I leave it here for today and will make the cut in the next session.
to be continued.

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