

[c-a] Spar

Subject: [c-a] Spar

Date: Sat, 15 Jan 2000 10:53:50 -0500

From: Ken Miller <KenEZMiller@compuserve.com>

To: Canard Aviators <canard-aviators@canard.com>

[The Canard Aviators's Mailing list]

To all,

One final comment about 3/16 discrepancies. I have them all over my airplane. We won the Wright Bros. Award. Don't sweat it and keep building. When you break ground that first time, all those memories get shot down.....

I have always advised builders to recheck positioning after installation, especially the winglets. You can washer your wings, but the winglets are glued on. I described a tool in CSA years ago that I made for winglet positioning device consisting of two lengths hardware store channel, one smaller than the other to allow them to 'nest' together.

I ground a point on each one, then nested the two with the points at each end. I then slid them out to the shortest winglet reference length, then drilled a hole through them both. I then extended them to the next measurement, drilled, and the next. This eliminates the hysteresis or sag as in the tape measure when mounting the winglets.

Here is the important part: After your first winglet is structurally attached with top and bottom structural layups in place, re-measure all three points. If there is a discrepancy, mark your device accordingly and transfer that misalignment to the second winglet. This is a very important step to insure your airplane handles nicely. "If you screw up on one side, screw up equally on the other".....

Fly High, Fast and Often,

Ken Miller

<www.long-ez.com>

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Long-EZ N83LE, multiple trophy winner

Long-EZ/XP N6KD, 1995 Wright Bros. Award

Grand Champion Custom Built, Winchester '99

"Long-EZ construction: Measure with a Micrometer, mark with a Magic Marker, cut with a Chainsaw".

[illegible]

Subject: [c-a] Winglet placement (was spar)

Date: Sun, 16 Jan 2000 11:08:44 -0500

From: ERacerVinn@aol.com

To: canard-aviators@canard.com

[The Canard Aviators's Mailing list]

KenEZMiller@compuserve.com writes:

<< "Long-EZ construction: Measure with a Micrometer, mark with a Magic Marker, cut with a Chainsaw". >>

Ken,
Exactly! <LOL>

That is how I felt about the plans-depicted winglet attachment procedure.

The first problem: Measuring within .05", I did not like the variability of measurement of the winglet itself, i.e., lay-up overlaps on the winglet, hot wire errors, Determining the exact centerline of the airfoil by eyeball, etc.....waaaaaaaaa.

What I did: Instead of measuring with my winglet, I used the winglet base hotwire template to determine the winglet placement exactly and then scribed the winglet shape from the template onto the wing.

The second problem: The plans specify a "razor saw" to cut the wingtip to match the winglet. Maybe I am inept, but I could not get a symmetrical cut on both the lower and upper skins at the same time while operating the saw. (I made some practice cuts in the area to be discarded.)

What I did: First I scribed the winglet shape on the upper AND lower wing skins using the winglet hot wire template. Then I used a rotary cutter on my trusty Dremel tool and cut both scribed marks through the skins. Then I used the saw to cut the foam and shear web.

I repeated the process cutting the wing shape into the winglet using the wingtip hotwire template and when I placed the winglet on the wing, everything matched-up and was aligned. I couldn't believe it! Maybe I just got lucky, but I think this procedure was as idiot resistant as I could make it, (which in my case.....).

Well anyway,
It worked for me.
Bruce Vinnola
ERacer#109

Re: [c-a] Winglet placement (was spar)

Subject: Re: [c-a] Winglet placement (was spar)

Date: Mon, 17 Jan 2000 09:47:34 -0500

From: Vsteve@aol.com

To: ERacerVinn@aol.com

CC: canard-aviators@canard.com

[The Canard Aviators's Mailing list]

Bruce,

Thanks for sharing your thoughts about winglet attachment. I could not agree with you more. I did the same thing with the winglet core template and had good results. I cut the wing/winglet attach "discard" foam prior to skinning the top of the wings and the winglets. That way I could cut the angle from the foam for inside winglet attach layups prior to skinning.

I just cut the triangles of foam out, grey taped the triangles and re inserted the triangles. Really worked well and made it easy to "dig out" the inside layup foam for winglet attach. Ken Miller deserves credit for saving me a bunch of work in the template use in my case. It was his idea and it worked great.

Thanks Ken.

What a great forum.

Steve