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177 Lancer 850 - Bulkhead/Stringer Structure Behind Wing Fairing

1 message

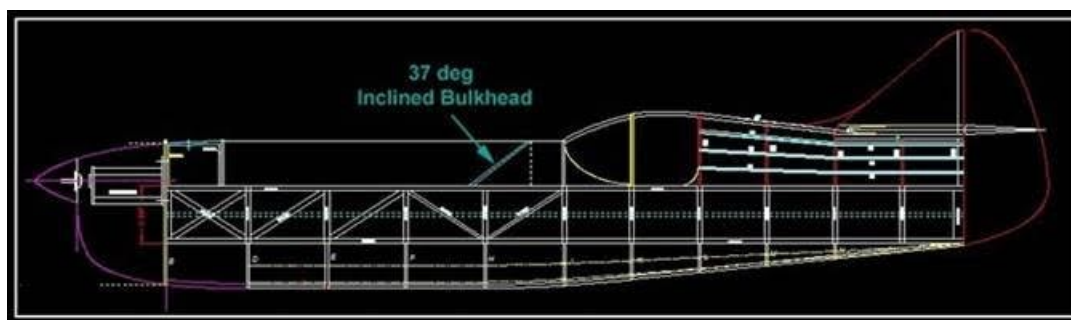
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Tue, Aug 14, 2018 at 5:12 AM

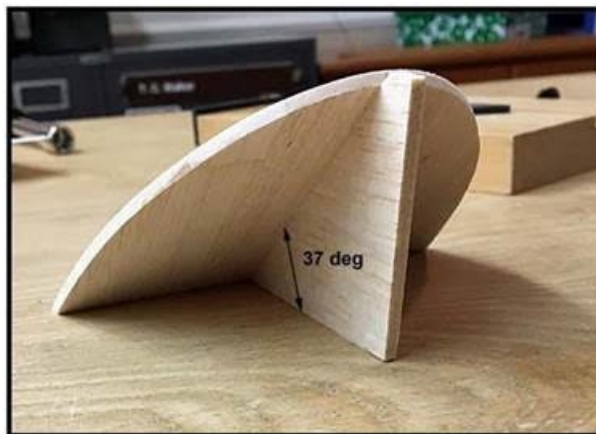
Report No. 177

*New Cyclone Lancer 850**August 13, 2018*

The original plan was to use a bulkhead inclined at 37° behind the wing trailing edge shown below.



Alfredo developed a pattern for the inclined bulkhead on ACAD and one was cut out of 1/8" balsa shown below.



Next the wing was positioned on the fuselage and the trailing edge was located as shown by the red line below. A 1/2" X 3/16" balsa cross member was permanently glued in place which extends 1/8" forward under the trailing edge. This cross member will serve as a base to glue the inclined bulkhead to along the red line.

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After the inclined bulkhead was temporarily spot glued in place, the two wing dowels start sliding into the holes in the forward 1/8" plywood bulkhead as the wing's trailing edge start sliding down the face of the inclined bulkhead at the same time. The two dowels slip completely into the forward 1/8" plywood bulkhead at exactly the same time as the wing's trailing edge came down onto the top longerons as shown below. However, I became increasingly concerned with trying to build a bulkhead/stringer structure behind the wing with this incline bulkhead and get a proper interface with the fairing over the wing. So this approach was abandoned.

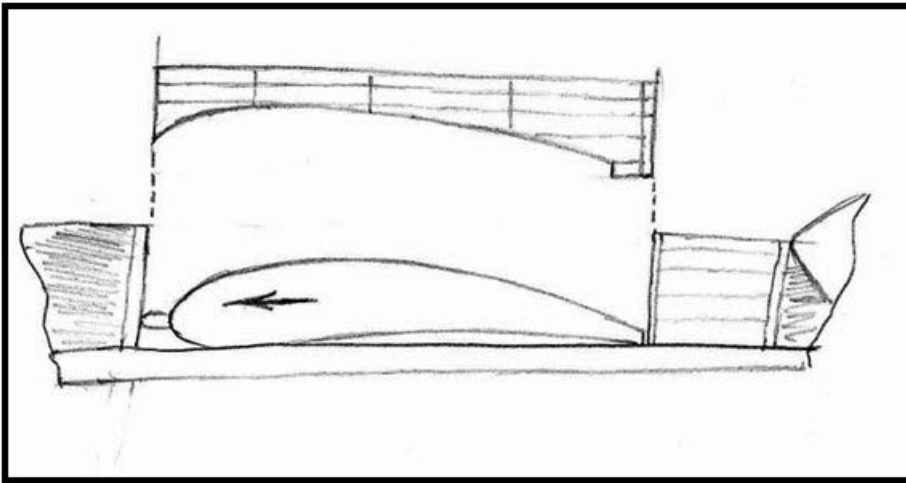


I came up with the idea of making wing opening on top of the fuselage a 1/2" wider at the rear so the wing could be slid forward to engage the two wing dowels as the sketch below shows.

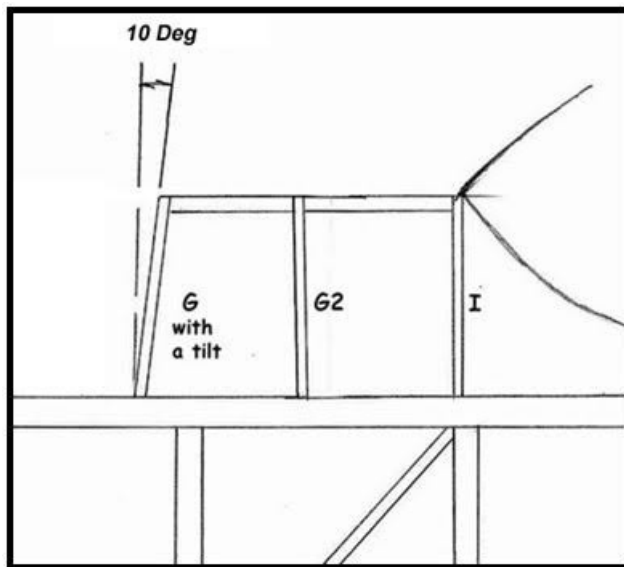
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Alfredo suggested a modest incline on the bulkhead behind the wing trailing edge. I decided on a 10° inclination for the "G" bulkhead and an additional "G2" bulkhead midway between as shown below.

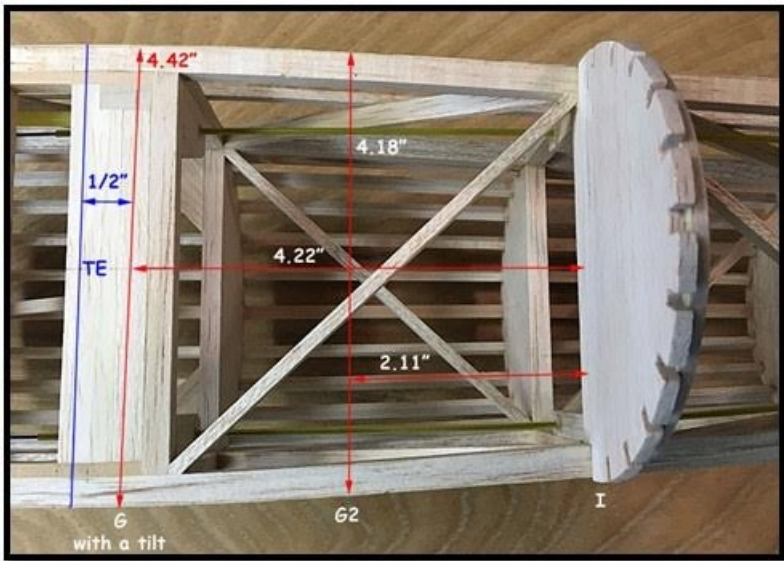


I sent Alfredo the dimensions shown below and asked him to develop patterns for the 10° inclined G bulkhead and the G2 bulkhead on ACAD.

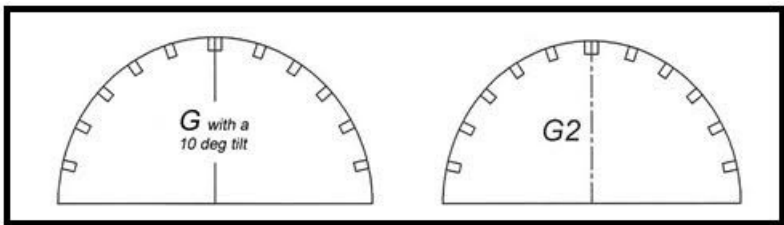
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These are two new bulkhead patterns Alfredo generated for me.

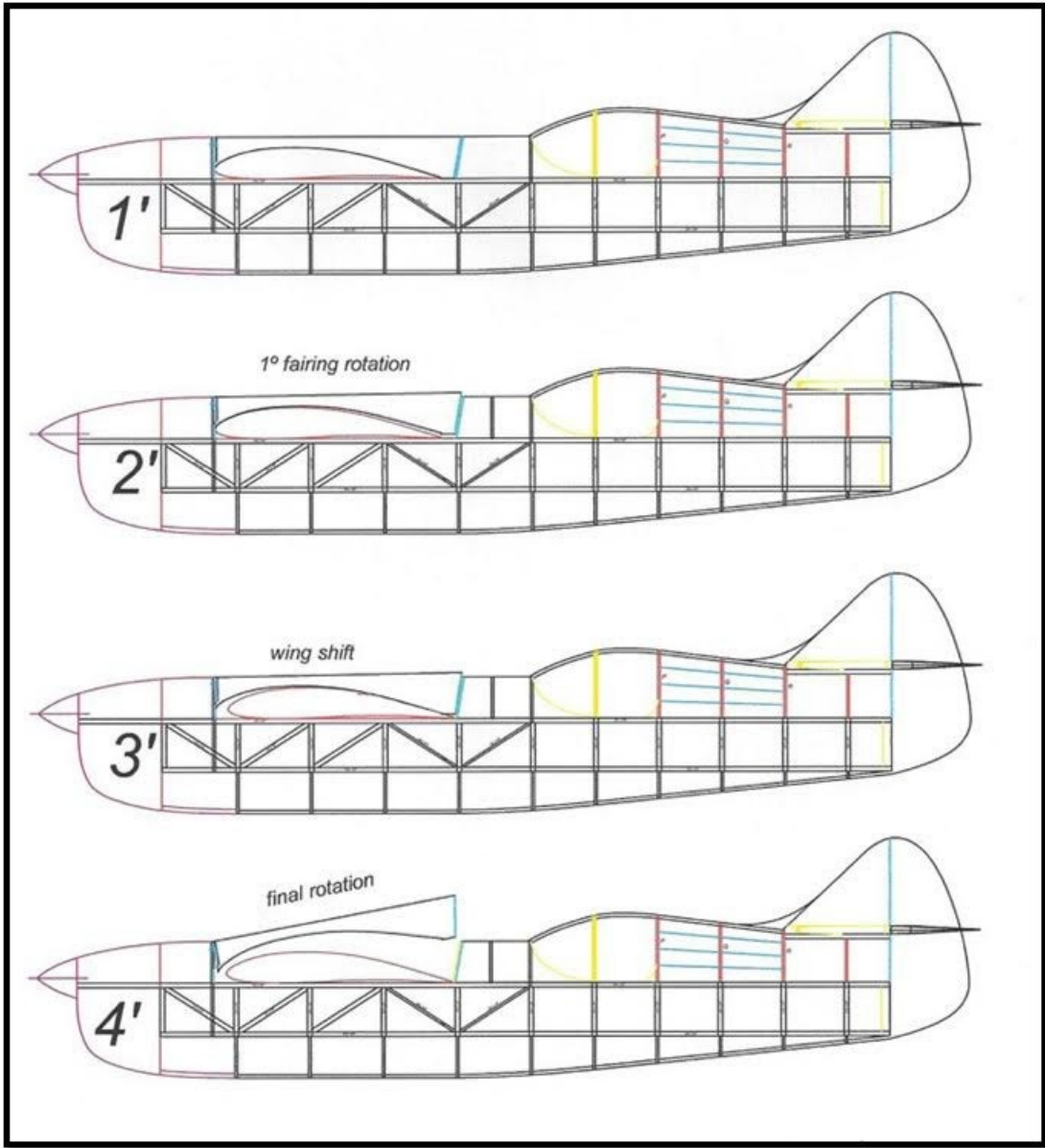


Alfredo also developed this sequential 4-step removal of the wing fairing that incorporated the 10° inclination and the extra 1/2" that allows the wing to slid back to disengage the two front wing dowels. He concluded that this will work "just fine" and should provide just enough clearance in front to rotate the fairing up and aft to clear the fairing's front retention peg.

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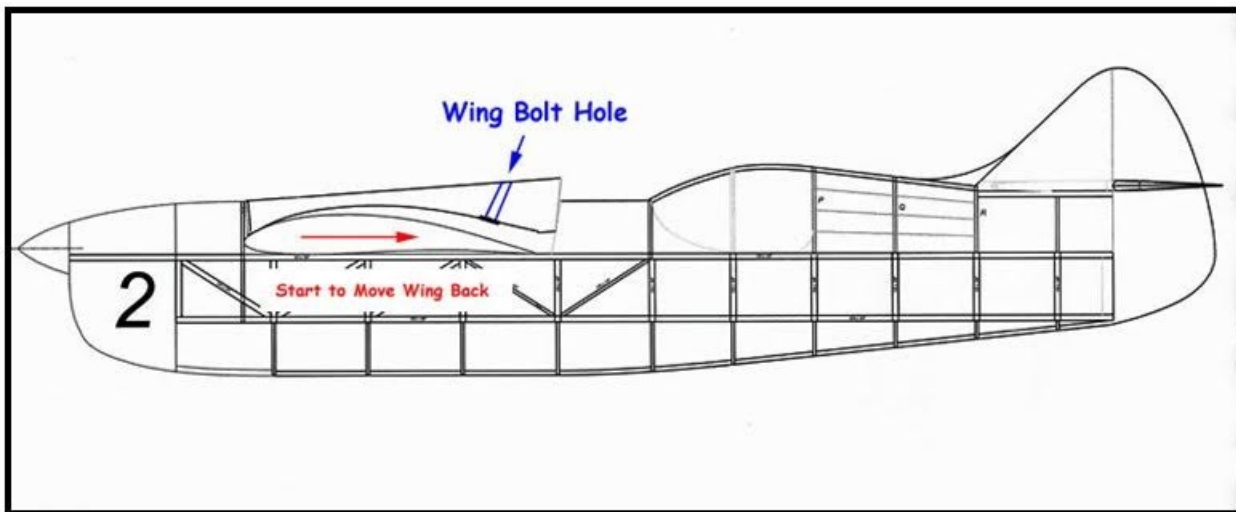


What a great sequential representation of the wing fairing removal. After studying the sequence, it occurred to me that the rear wing nylon bolt would have to be removed through a hole in the fairing and it may mean that the wing's undercamber gap on the top longeron cannot be filled, but that is yet to be determined. In fact, the rear wing bolt can also be used to hold the fairing down in the rear as shown below.....Tandy

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