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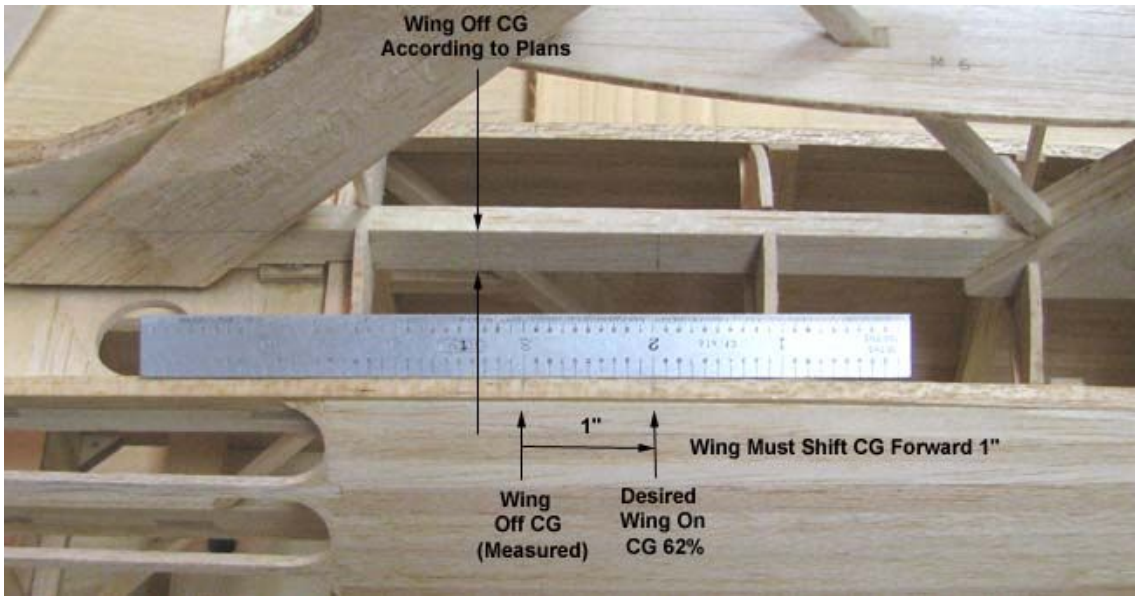
To:	Undisclosed-Recipient:
Date:	4/29/2009 10:55:25 PM
Subject:	88 Sailplane Pylon Concern and Relocation

Comet Sailplane Project

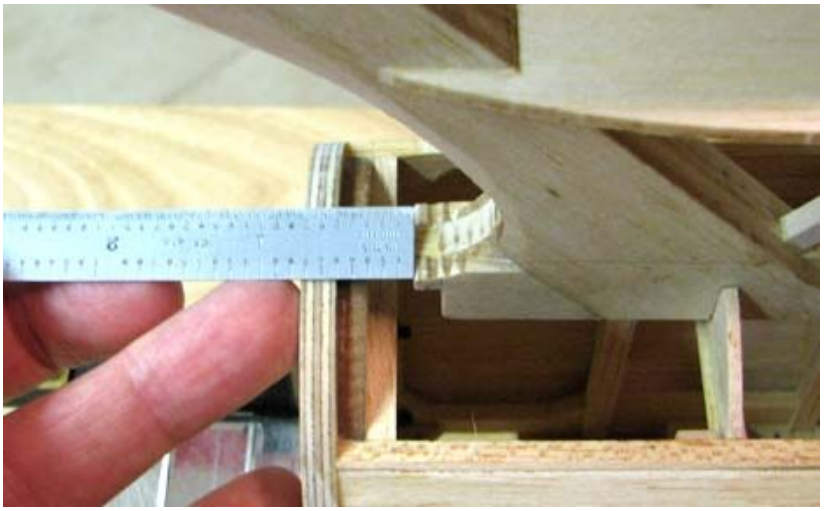
Before I glued the pylon frame to the fuselage structure permanently, I got to thinking about how and where I had placed the pylon on the fuselage. As the picture below shows, I have to count on the weight of the wing to shift the wing off CG forward by one full inch to achieve the desired CG of 62%. This was troublesome because I was not sure the wing will move the CG that far, which would require ballast weight up front to achieve the desired CG.



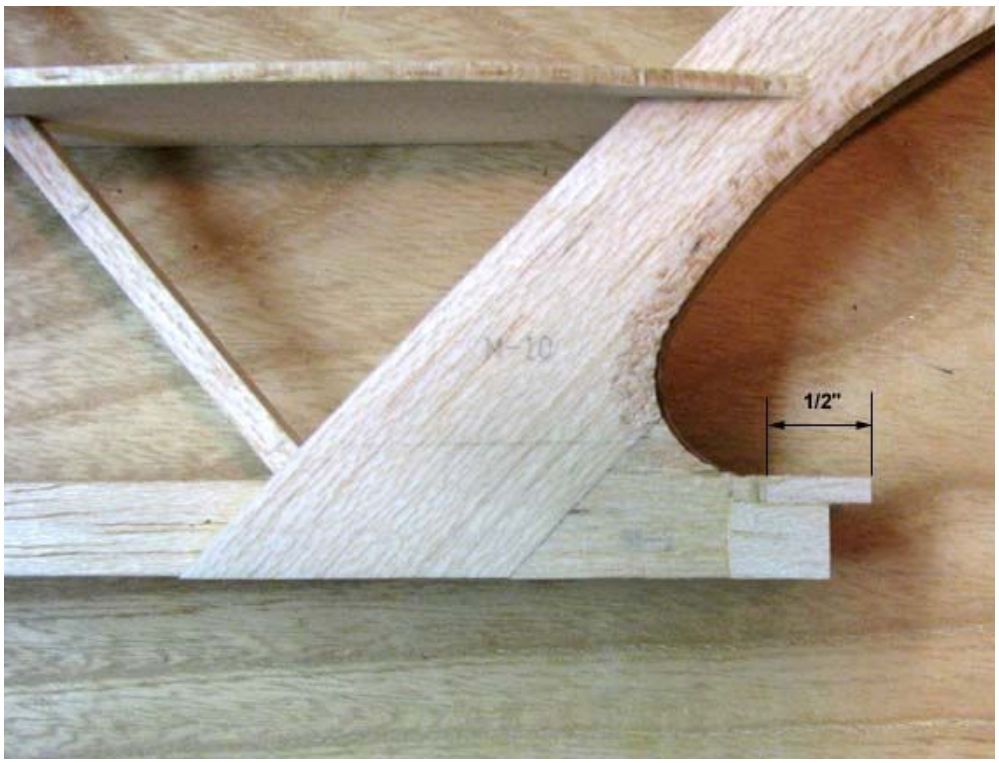
Using some actual Sailplane component weight measurements provided by Steve Rozelle and methodology by Alfredo Herbon, a calculation estimate showed the Sailplane's wing weight would shift the wing off CG forward by only 0.70". An estimate of the Sailplane model's sensitivity to ballast weight in the nose showed a 0.12 inch of forward CG shift per ounce of ballast weight. Based on these estimates, over 2-1/2 ounces of ballast might be required to achieve the desired CG of 62%.

I decided to use the recommendation of Jim O'Reilly to move the pylon frame aft 1/2 inch from its previous location on the fuselage structure. So I cut the tack glued spots on the top bulkheads loose and removed the pylon from the fuselage structure as shown below, which went surprising well.

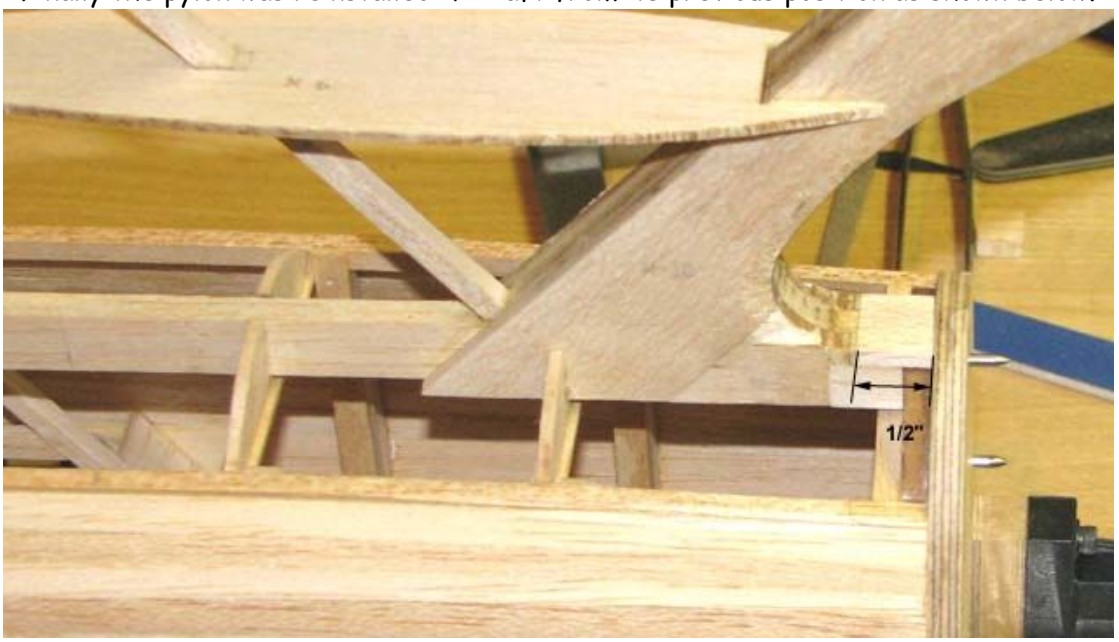
The aft part of the lower member of the pylon frame was cut off 1/2" and the pylon moved back as shown below.



The front of the pylon lower member was extended a 1/2" using two pieces of balsa as shown below.



Finally the pylon was reinstalled 1/2" aft from its previous position as shown below.



If the above calculations are even close, the weight of the wing can easily shift the wing off CG forward by 1/2" and maybe a little more, which is reasonable and certainly more conservative from a balance point of view.....Tandy