

13 AEROTAN BIPLANE - Wing Stagger Modification

1 message

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20 November 2022 at 06:03

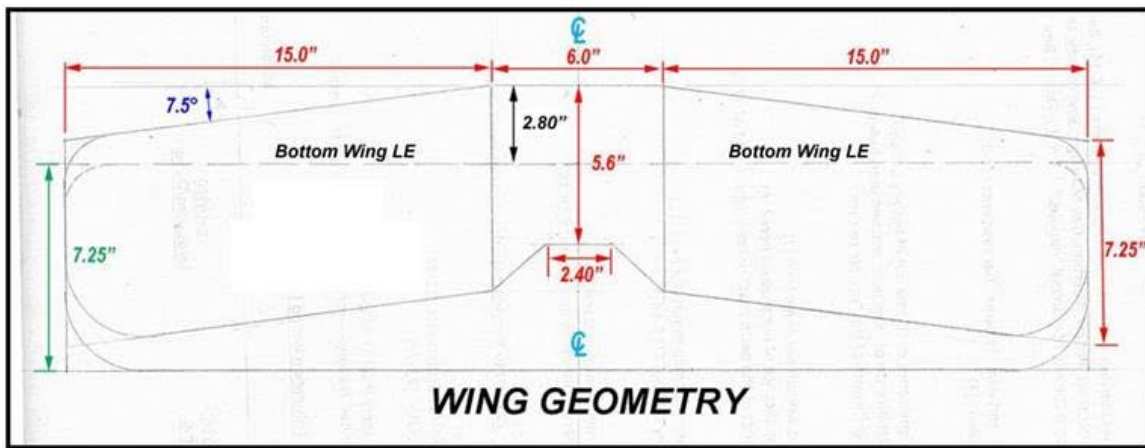
The proper way to design is to work through every component and element the configuration first. However, I tend to kind of design as I go which results in redesign along the way because you cannot anticipate forthcoming problems. Having to modify the wing stagger to eliminate a top wing leading edge interference problem is a case in point.

Report No. 13

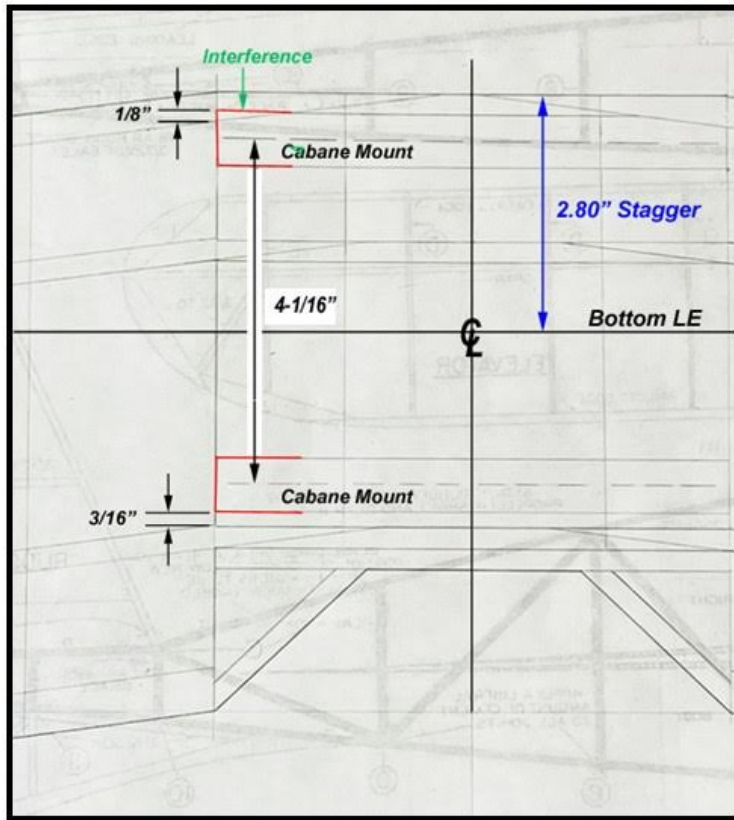
AEROTAN BIPLANE

November 19, 2022

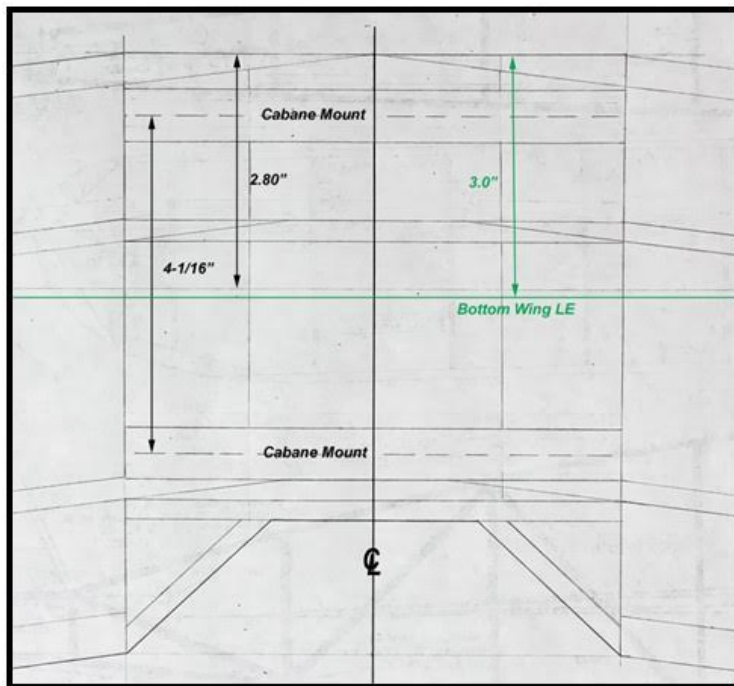
The distance the top wing's LE is from the bottom wing's LE is referred to as "Stagger". The wing's 2.80" stagger was established in Report No. 2. The planform outlines shown below for both the top and bottom wings were presented in Report No. 8



The top wing's structural design was developed in Report No. 12, including the locations of the two cabane mounts. Reviewing the portion of the drawing shown below uncovered an interference problem between leading edge and the forward corner of the front cabane mount as shown in green below. This interference can be eliminated by simply moving the front cabane mount aft an 1/8" as you can see. However, notice that rear face of the rear cabane mount is 3/16" forward of the aft spar forming an open 3/16" gap.



By moving both cabane mounts aft $3/16"$, not only is the front cabane mount's interference eliminated, but the $3/16"$ gap between rear cabane mount and the aft spar is also eliminated as shown below. This slightly increases the stagger to $(2.80" + 3/16") = 2.99" \sim 3.0"$.



Moving both cabane mounts aft effectively moves the top wing forward $3/16"$ as shown below.....Tandy

WING STAGGER ADJUSTMENT

