

SERVICE LETTER #25B

DATE: March 12, 1993 revised September 12, 1994

SUBJECT: 1) Wing dihedral
2) Lift strut adjustments

APPLICABILITY: Subject 1) All non-Series 5 Kitfoxes
Subject 2) All Kitfoxes

COMPLIANCE: As applicable

FROM: SkyStar Aircraft, Engineering Department

Subject 1)

In an effort to help you accurately set your wing dihedral, we offer the following technique: Follow your existing wing directions to the point where you have temporarily positioned the lift strut brackets onto the spars so that the center of the strut bracket bolt holes is 96.75 inches from the root end of the spar for Model IV and XL aircraft. For the Speedster, use an initial starting point of 97.75 inches from the root end of the spar. Temporarily hold the brackets in place with hose clamps. It is important not to drill the spar-to-fuselage attach holes (except for the top rear hole) until after the dihedral has been properly adjusted.

Carefully level the fuselage both laterally and longitudinally. Hold a 4' carpenter's level up to the bottom of the front spar at a mid span location. Because of the dihedral, the bubble will not be centered if the level is held firmly against the spar. Lower the wingtip end of the level until the bubble is centered, and then measure the distance between the spar and the top of the level. Adjust the position of your strut attach brackets until you have obtained the proper measurements. For the Model IV and XL, the measurement should be between 1.1" and 1.4". For the Speedster, the

measurement should be between .31" and .35".

To further increase the accuracy of your dihedral, check the rear spar as well. Take the measurement you obtained from your front spar, and multiply it by 1.137. Adjust the aft strut attach brackets so that your level indicates level when the outboard end is below the aft spar to this value. For example: If you measured 1.1" on the front spar, then $1.1 \times 1.137 = 1.25$ ", so adjust the lift strut attach brackets until the bubble is centered with the outboard end of the level 1.25" below the rear spar.

A special note for Speedster builders: after you have set your dihedral and before you drill all the spar-to-fuselage holes, check that you have clearance for the flaperons when the wings are folded. Carefully fold the wings back by pivoting them on the attach bolt through the upper rear spar hole. When the wing is fully folded, you will need a minimum of 5" clearance between the trailing edge of the wing and the horizontal stabilizer. If you don't have this clearance, increase your dihedral slightly and equally on both sides as required to allow the wings to fold without having an interference problem between the flaperon and the horizontal stabilizer.

Subject 2)

Due to a manufacturing problem called weld warp, occasionally a properly jigged and welded part will fail to fit correctly. This is most obvious on parts with very long members, such as the lift strut. In some cases, after attaching the strut to the fuselage and to the forward strut attach bracket on the spar, the aft strut member hangs below the aft strut attach bracket. A simple technique can be employed to make a warped lift strut fit the airframe.

Clamp the fuselage end of the strut in a padded vise, and place two long boards across the outboard ends of the strut. Apply torque to the strut through the boards in the direction required to make the strut fit; be careful not to apply any torque to the threaded ends of the strut. To allow for the natural springback of the 4130 material, you will need to go slightly farther with your corrective efforts than 'just far enough'. Repeat the process as required until a tension free fit is obtained. Because of the forgiving nature of 4130 steels, the strut is not harmed by this procedure at all.

If you have any questions about the information in this service letter, call our Customer Support Department at 208-466-1711.