Rigging Tool For Swept Wing Biplane

(Courtesy of Pitts Aviation)

John Livingston devised this tool to make it easier for his friends to rig their swept wing biplanes. Pitts Aviation Enterprises, Inc. worked out the details to make it useable on both the Pitts S-1S and S-2A.

Refer to the upper right hand portion of drawing no. 41574. When block -4 is in the position shown on the rib profile the tools are used to rig the S-2A.

When movable block -4 is turned to the down position so that it contacts the leading edge of the wing the tool is used to rig the S-1S. When properly used on either the S-1S or S-2A the top edge of the tool is parallel to the wing chord line.

To check the rig of the upper wing proceed as follows. (We assume the wing to be level across the fuselage.) This being the case it is not necessary to level the airplane.

1. Place three rigging tools on the upper wing as shown on drawing 41574.

2. Make sure the tool is parallel to the ribs.

3. Make sure the -2 member is parallel to the rear spar and rests on at least two ribs.

4. Make sure the tool is in proper contact with the wing leading edge.

5. Sight spanwise across the top of the three tools with your eye approximately aligned with the center point of the two outboard tools.

6. If the top of all three tools are in spanwise alignment there is no dihedral in the wing.

7. If the top edge of all three tools are parallel there is no twist in the wing. For this check, all three tools top edge must be exactly parallel. Be very accurate with the adjustment of the wing tip wash in or wash out to accomplish this. Here is where accuracy pays off.

To check the rig of the lower wings place two tools on each lower wing as shown. Follow steps one through five and step seven as outlined above.

Dihedral is fixed by the strut length, therefore, if the upper wing has zero dihedral the lower wing dihedral will be correct.

We will not answer individual correspondence on this subject.

