

# SERVICE

# MEMO

S. M. No. 5

## RIGGING PROCEDURE

Piper J3 Cub Special & PA-11

**RIGGING PROCEDURE:** Raise the forward part of the airplane so that the wheels are just clear of the ground and support it by props under the front landing gear fittings. Raise the tail to approximate level flight position and support it there.

**LEVELING:** Level the airplane as follows:

Laterally: Using a level 30 inches long, place it across the center of the rear seat with the ends resting on the longerons. Due to the right upper longeron being 1/8 inch lower than the left, a 1/8 inch block is used under the right end of the level. Adjust the blocks under the landing gear fittings to bring the bubble to the center.

Longitudinally: Place the 30 inch level along the upper left longeron in the cockpit. Raise or lower the tail to bring the bubble to the center.

**DIHEDRAL ANGLE:** To check the dihedral angle at the front spar proceed as follows;

Stretch a string along the top of the wings above the front spar, from wing tip to wing tip, and draw it tight.

Check the dimension vertically from the front edge of the center section to the string. For correct dihedral this dimension should be 2-3/8 inches. On earlier models the dihedral dimension should be checked from the fuselage front spar fitting and the correct dimension should be 4-1/4 inches. Obtain this dimension by adjusting the front struts in or out.

To check for equal dihedral in each wing proceed as follows:

Using the 30 inch level (without any spacer blocks) hold it spanwise against the bottom of the wing under the front spar in the space between the jury struts and lift strut attachments. Note the position of the bubble and do the same on the other wing. Readjust the front struts until both wings show the same amount off-level, being careful with each adjustment to set the left strut out the same number of turns as the right one is set in, and vice versa.

WASH OUT: To adjust the wash out in the wings (dihedral of the rear spar) proceed as follows:

Set a 3/8 inch spacer block on top of the 30 inch level at one end. Working on the rib adjacent to the outer end of the aileron, hold the level fore and aft along the bottom of the rib with the spacer block at the rear and the front end of the location of the front spar. The correct wash out will exist when the bubble is centered. Adjust the rear struts in or out to obtain this condition.

TAIL ASSEMBLY: With the airplane in level position the stabilizers should be leveled at their rear spars. The hinge line should be straight from tip to tip.

Plumb the fin at the rudder hinges.