

RANS

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Page 1 of 1

Airworthiness Directive: 125

Date: October 18, 2001

Subject: S-7 Static Balance

Compliance: Mandatory

Models Effected: S-7 Courier 2000 Style Kit.

Cost: None

Please replace your current pages with the pages enclosed. The date at the bottom determines which page is the newest page. You can obtain lead weight through McMaster Carr. Their phone number is 630-833-0300.

Thank you for your attention to this matter. Hopefully we have not inconvenienced you to any great degree. Fly safe!

STATIC BALANCE OF THE S-7

IMPORTANT!

It is very important that the control surface being balanced is ready for flight and not lacking in completeness. Be certain that the control surface is complete, all bolts, fittings, fairings, hardware, push rods, and hinges are installed.

In balancing a control surface a minor change in weight can have grave results. If the control surface is ever damaged and repaired or re-painted, it must be balanced again. Failure to do so may excite flutter and the destruction of the aircraft.

DANGER

Wear rubber gloves and a particle mask when working with lead. Lead is a heavy metal and can poison you blood stream through the skin and lungs if breathed in. Take care when working with the lead to clean up all shavings and to store lead products out of the reach of children.

STATIC BALANCING OF THE AILERONS

1. Drill #11 holes into the spade as per **FIGURE 11A-01**. If not supplied with the kit, obtain 1/4" lead plate and cut into two weights as shown in **FIGURE 11A-01A**. Attach the weight to the spades using 3/16" aircraft bolts and large washers.

FIGURE 11A-01

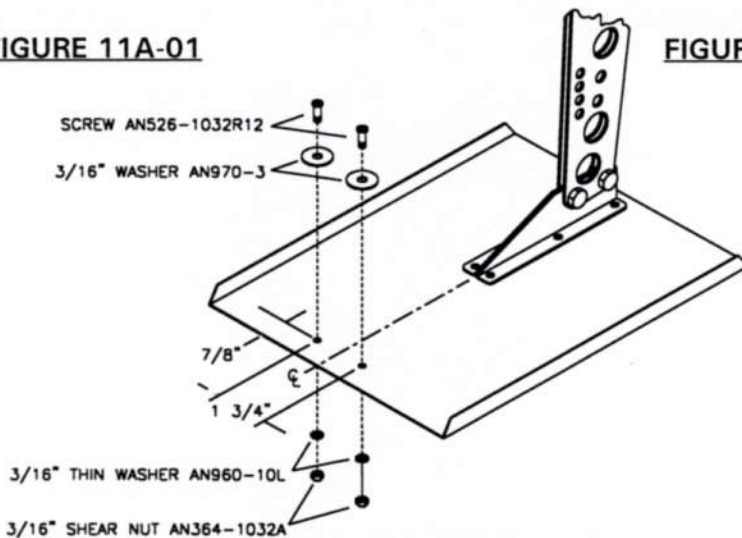
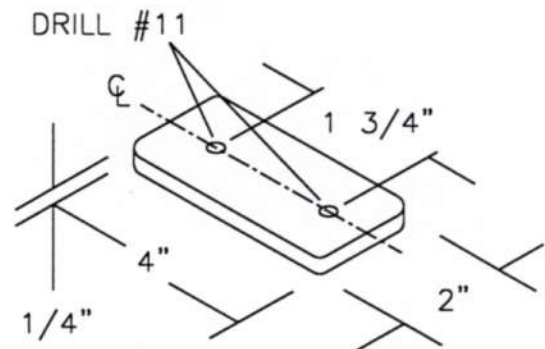


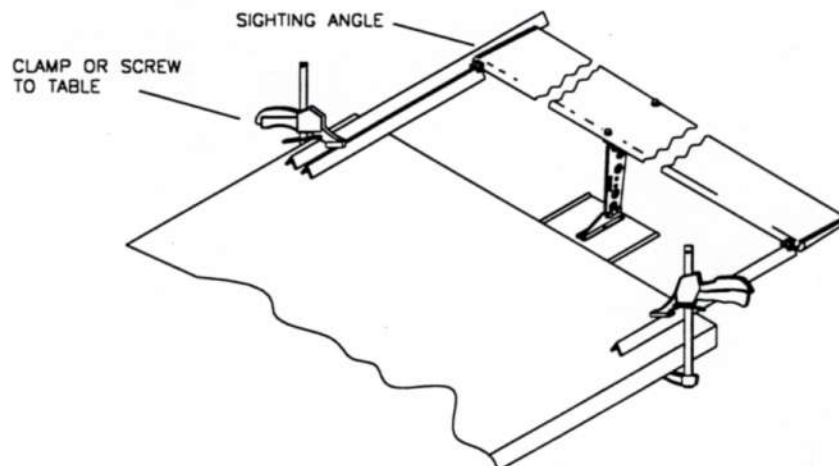
FIGURE 11A-01A



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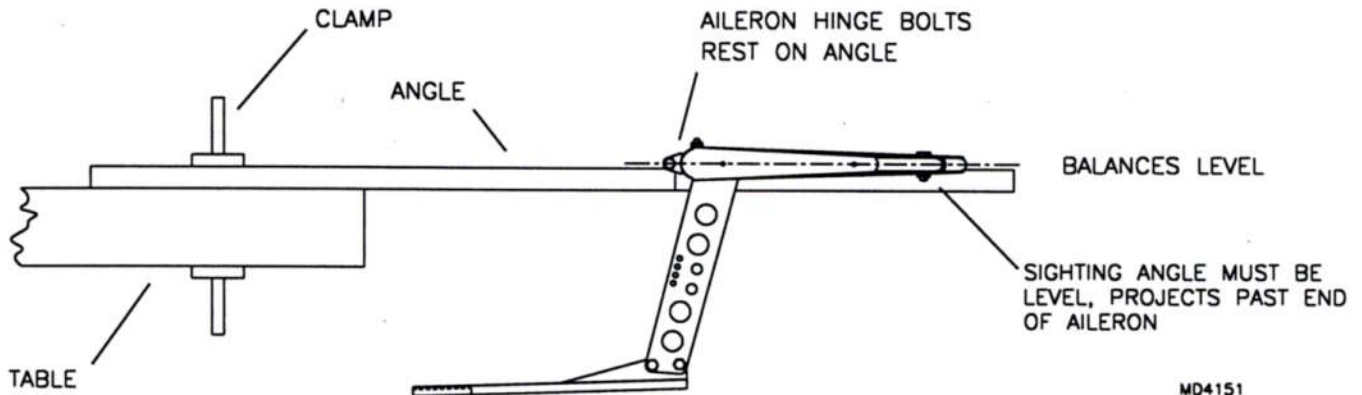
2. The aileron must be fully assembled. If installed on the aircraft, remove the aileron and place it on a fixture as shown in **FIGURE 11A-02**. Use the edge of a flat and level table, and clamp or weight down the angles to support the weight of the aileron.

FIGURE 11A-02



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3. Set the aileron on the angles, balancing them on the hinge bolts. **Important:** The aileron must pivot freely on the bolts, position angles to effect this.
4. The aileron is properly balanced when level through the center of the leading and trailing edge tubes. Use a level sight gauge as shown in **FIGURE 11A-04**. Adjust by adding or removing weight as required.

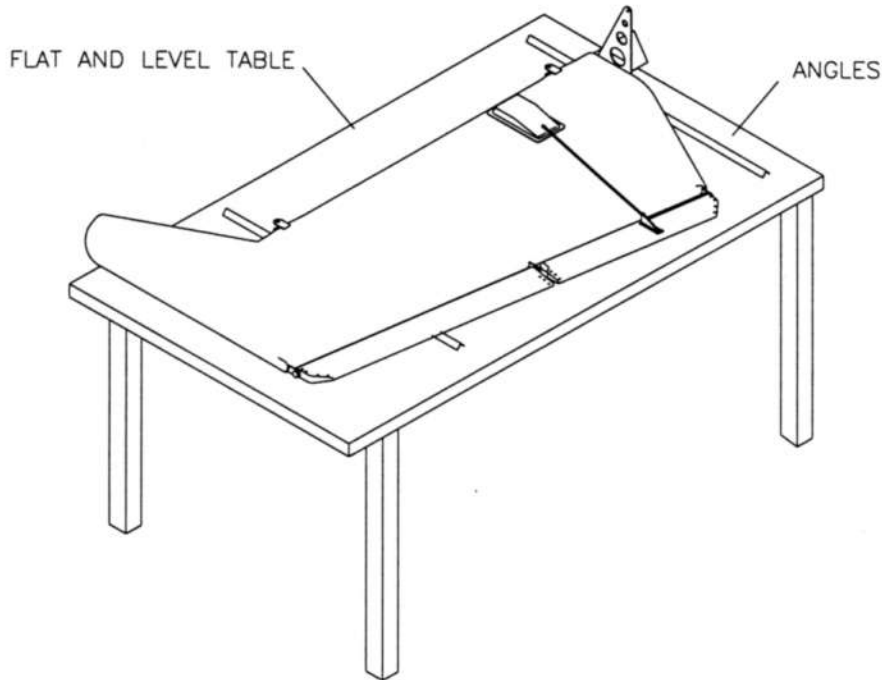
FIGURE 11A-04

5. After ailerons are balanced attach them to the wing, being sure not to over-tighten the hinge bolts and to install the cotter pins. Refer to rigging section as to how to set the spades to the correct angle.

BALANCING THE ELEVATORS

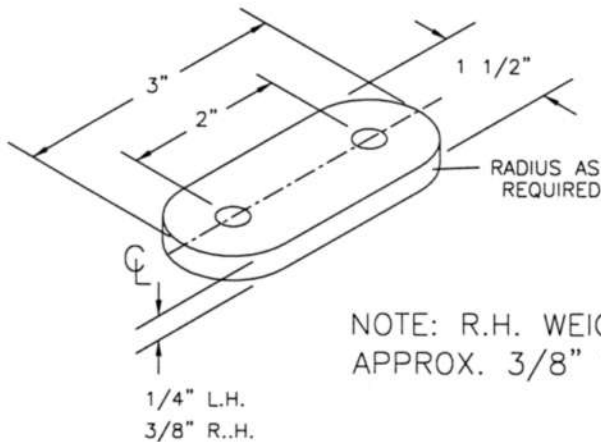
1. The elevators must be removed from the plane and completely assembled and painted, ready to fly. See important note at the beginning of this section. Specifically the elevator horn, trim tab, servo-including push rod, wires and protective cover with screws must be installed.
2. Using a flat and level table and two angles, lay the elevator on the table as shown in **FIGURE 11A-02**. With only the weights in the nose of the overhangs the elevator most likely will not balance. Fabricate a lead weight as per **FIGURE 11A-02A**. Drill and tap holes into the nose weight as per **FIGURE 11A-02B**; if this step was not already preformed prior to covering. Bolt the weight in place and check the balance. The elevator is balanced when the trailing edge is no longer touching the angle with at least a 1/16" to 1/8" gap, see **FIGURE 11A-02C**. Repeat for the other elevator. The trim tab equipped elevator will take almost twice as much additional lead weight to balance.

FIGURE 11A-02



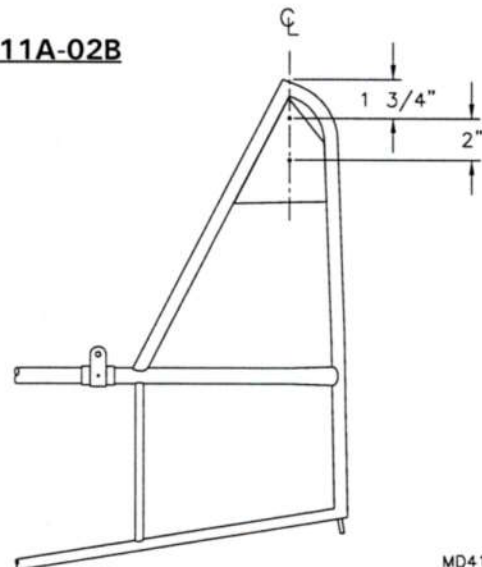
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FIGURE 11A-02A



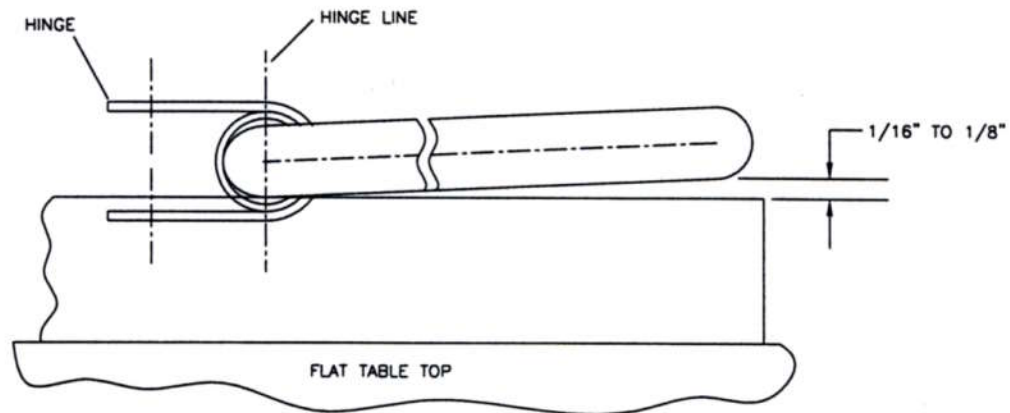
NOTE: R.H. WEIGHT IS APPROX. 3/8" THICK

FIGURE 11A-02B



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FIGURE 11A-02C



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3. Install the elevators. Check the hinges for freedom of movement and security of all attach bolts. Oil with a heavy machine oil and work surface to allow oil to flow through hinges. Check hinges on pre-flight for need of oil, wear and bolt security.