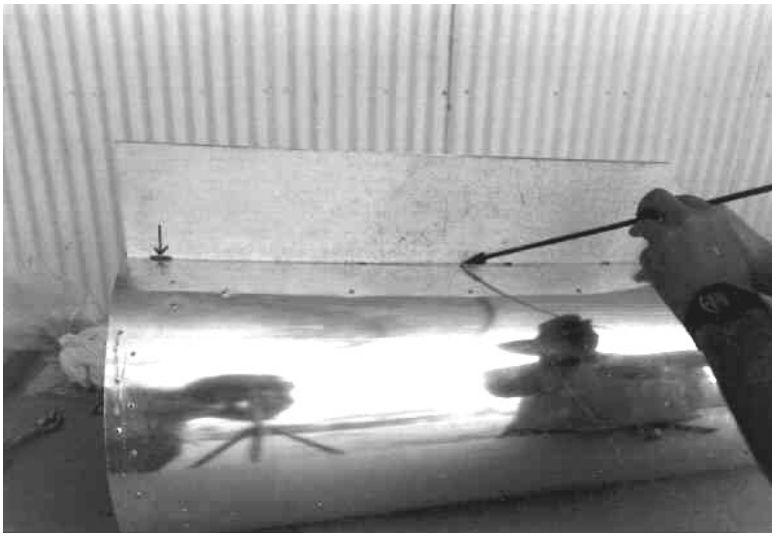


Photo #35

To check straightness of the cone, use a straight edge. Place it as shown in this picture and the next picture.

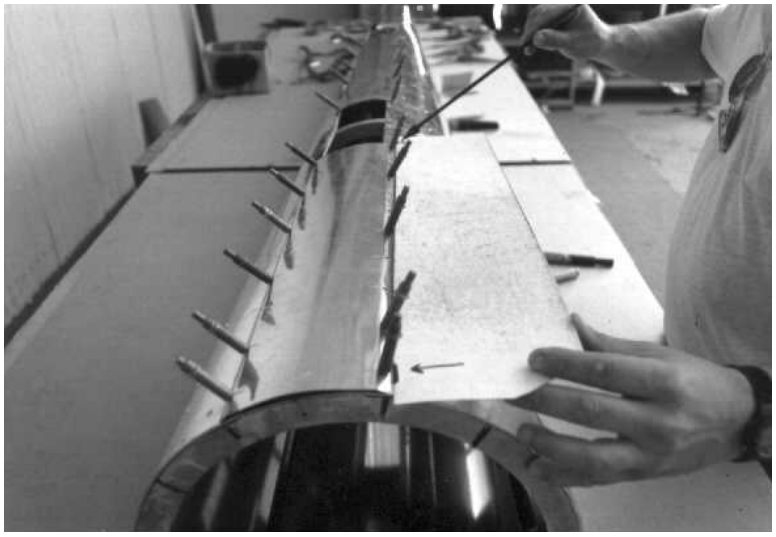


Photo #36

Use the straight edge to check straightness.

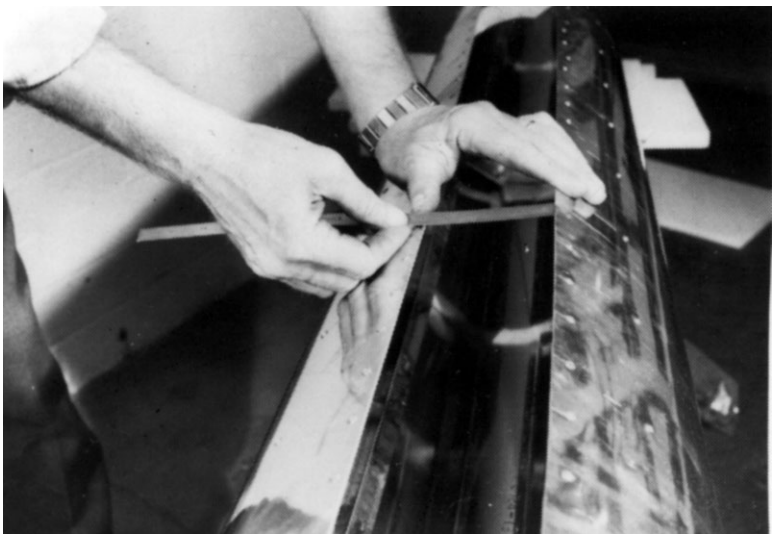


Photo #37

The tunnel opening will measure approximately 3-1/2". However, It is preferable to sight from end to end when squeezing the skin into position, rather than using a dimension alone. This will result in a straighter line. If the tunnel is placed by dimension only, the tail cone may be somewhat pinched between each bulkhead.

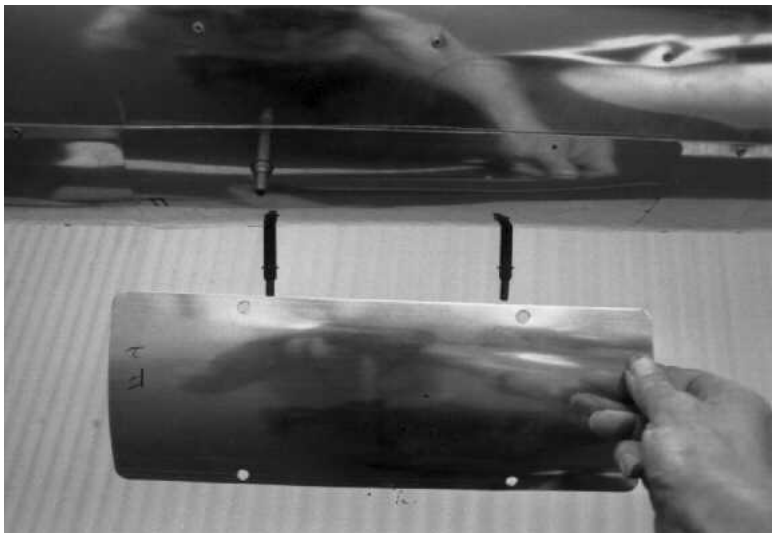


Photo #38

Locate, drill, and install cleco for the inspection covers. Refer to print E09-2000 for hole locations. Install Dzus buttons when satisfied with fit.

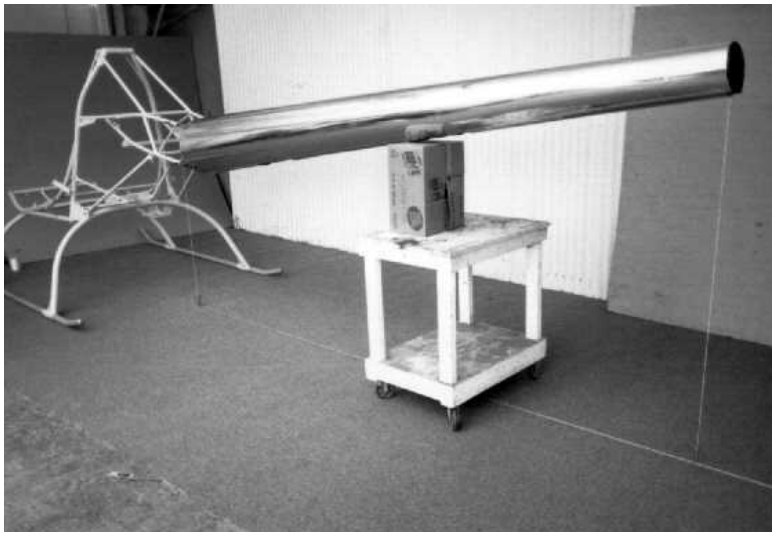


Photo #39

Aircraft centerline can be found by using the forward cross tube and the cross tube at the rear of airframe where the tail boom support tubes are attached.
Pull a string tight just above the floor. Use plumbs to place the aircraft centerline on the string. Insert the tail boom attachment brackets into the airframe (the two with the greater angle are the upper brackets). Install the tail boom to the airframe with the end of the boom centered over the string. Use "C" clamps to hold the boom in place until the desired angle is achieved.
Check vertical alignment by aligning the two small holes drilled in the #1 bulkhead with a straight edge, using a level to confirm it is vertical. Using the same method, check the #4 bulkhead. If #4 is not vertical, rotate the tail boom to achieve vertical alignment. The intent is to have the best vertical positioning of the tail boom brackets over the ears of the #1 bulkhead.

Photo #40

Check the square drive tube to be level laterally, and the angle fore and aft.

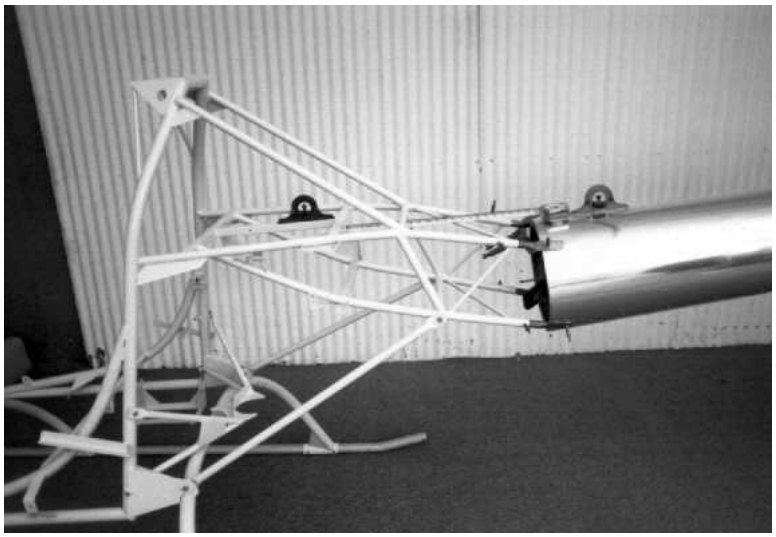


Photo #41

Measure the angle of the square tubes fore and aft and add 2-1/2 degrees. This is the angle that the top of the tail boom should be. The distance from the back of the square drive tube (where the top of the secondary drive mounts) to the front of the #1 bulkhead should be 22-1/2" to 23".

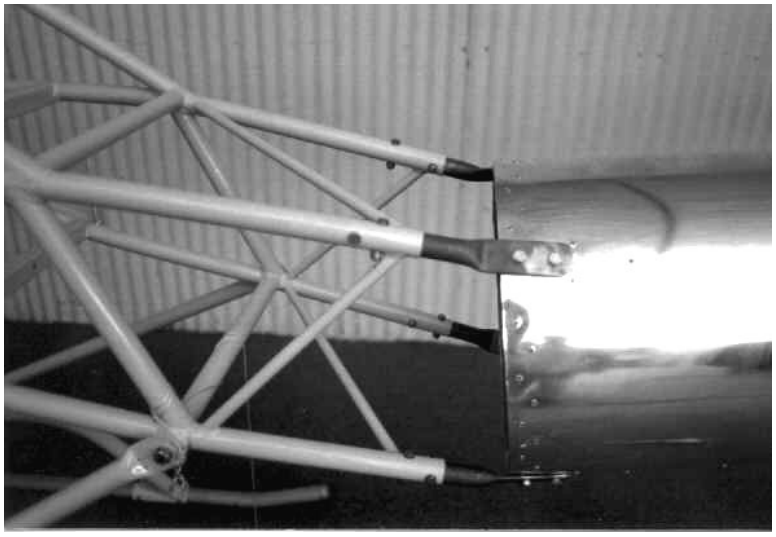


Photo #42

Check to insure that the flat part of the tail boom brackets are over the ears in the #1 bulkhead, and the flat extends beyond the front of the bulkhead. Locate, drill, and install the bolts in the airframe, tail boom brackets, and tail boom. The ends of the tail boom brackets should be radiused slightly before installation.

Photo #43

Locate and mark the position of the horizontal trim fin.

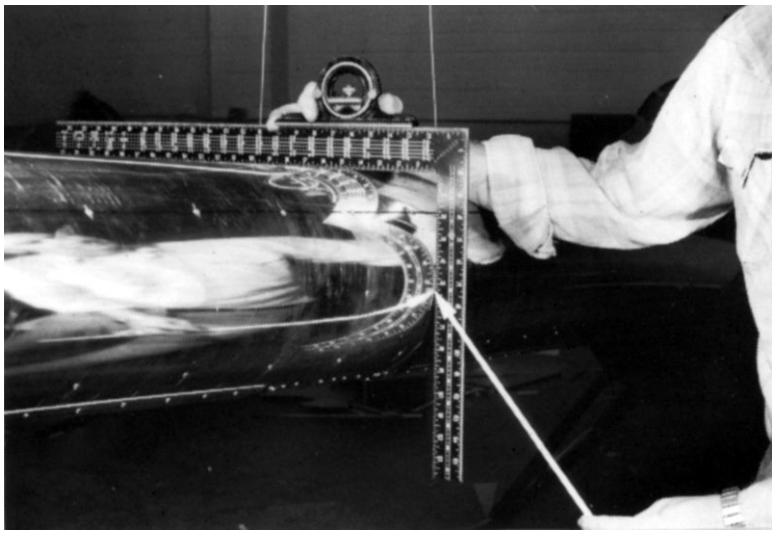


Photo #44

A method to locate the tail boom center line: Place a large square on the top of the tail boom and level the top edge of the square. The point at which the side of the square touches the tail boom is the center of the boom.

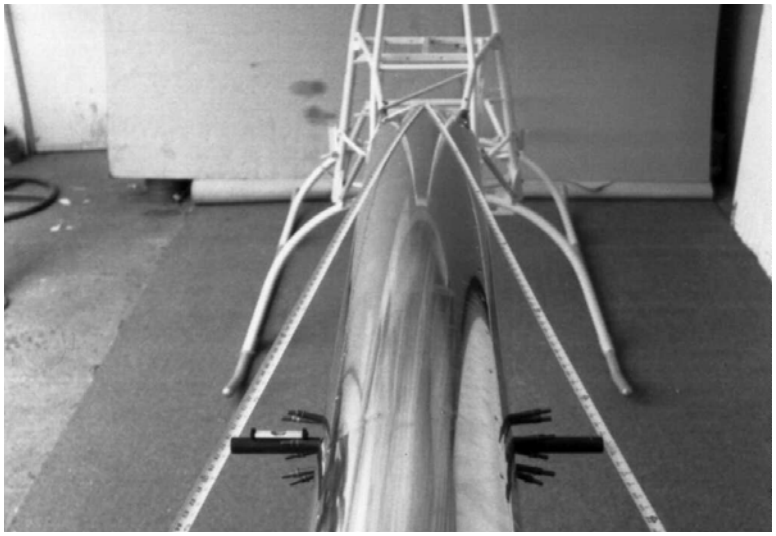


Photo #45

Drill a small hole where the horizontal trim fin mounts (1/4" below tail boom centerline). Install a small straight rod with equal amounts extending from each side of the boom. It must be level. The distance from the top center of the #1 bulkhead to each end of the rod must be equal. Using this method will ensure the Horizontal fin is 90 degrees to aircraft's center line and level.

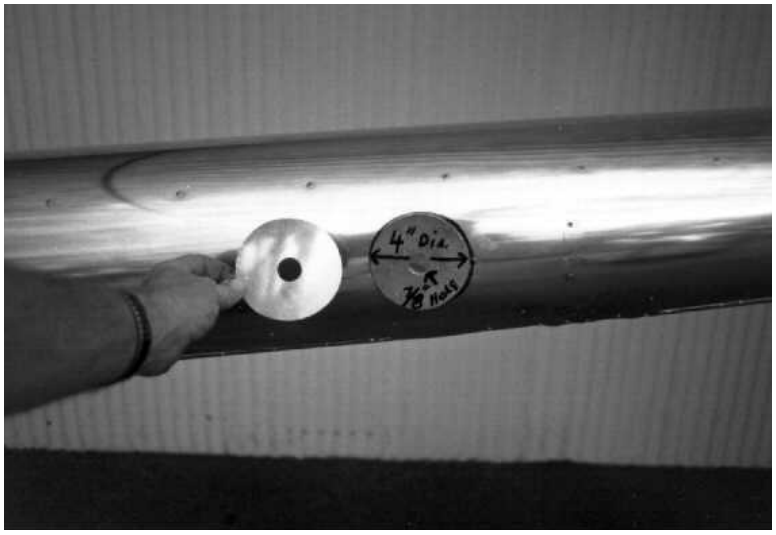


Photo #46

Enlarge the hole to fit the trim fin spar, making sure that the spar will be level when installed. The hole will be slightly larger than 7/8" and not exactly round. Make two 4" diameter doublers from excess tail boom skin material (.025 aluminum), and drill a 7/8 inch diameter hole in the center of each.

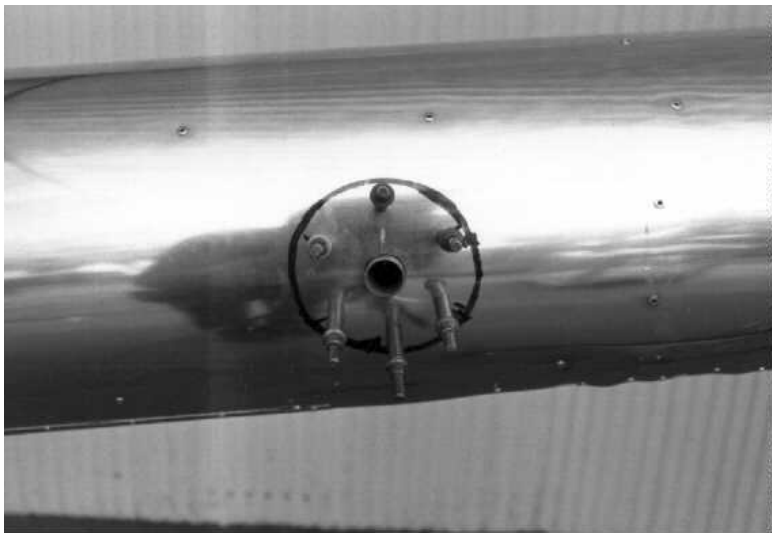


Photo #47

Open the holes in the doublers to match the holes in the tail boom. Install the doublers on the inside of the tail boom skin.

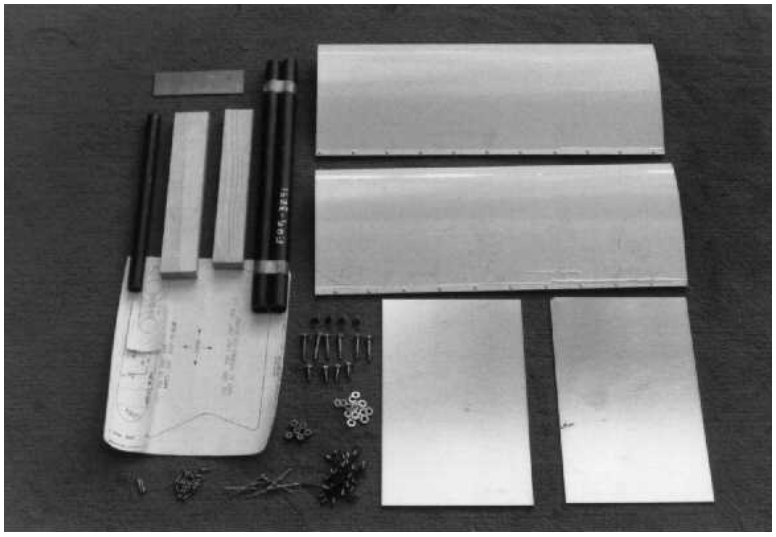


Photo #48

Horizontal trim fin parts as received.

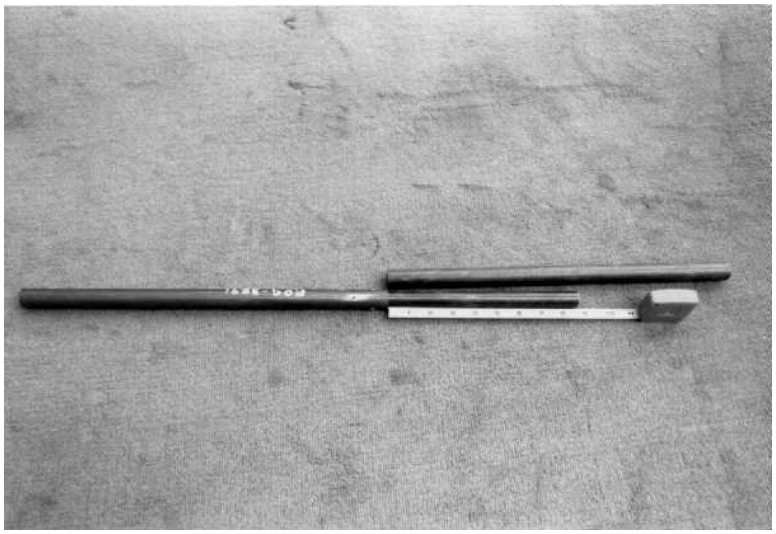


Photo #49

Horizontal spar with splice tube inserted halfway and rivet holes drilled to hold them together.

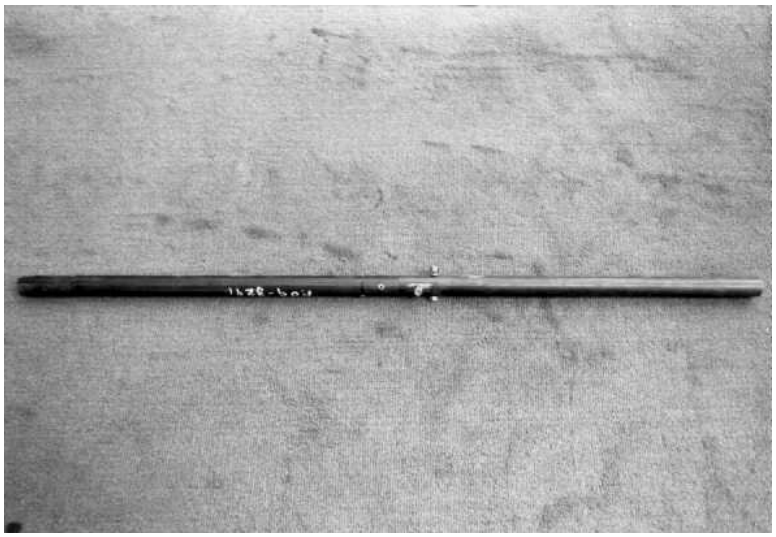


Photo #50

Horizontal spar with splice tube installed.

Photo #51

Cut out and fit the horizontal fin bracket to the spar and tail boom.

Photo #52

Weld the bracket and spar as indicated after fitting it to the tail boom. Cleco to hold alignment.

Photo #53

Install the horizontal trim fin spar in the tail boom and mark the top of the spar. Use a protractor level set at the same angle as the top of the tail boom. Center the bubble and drag it on the spar to get a drill line for the airfoil rivets.

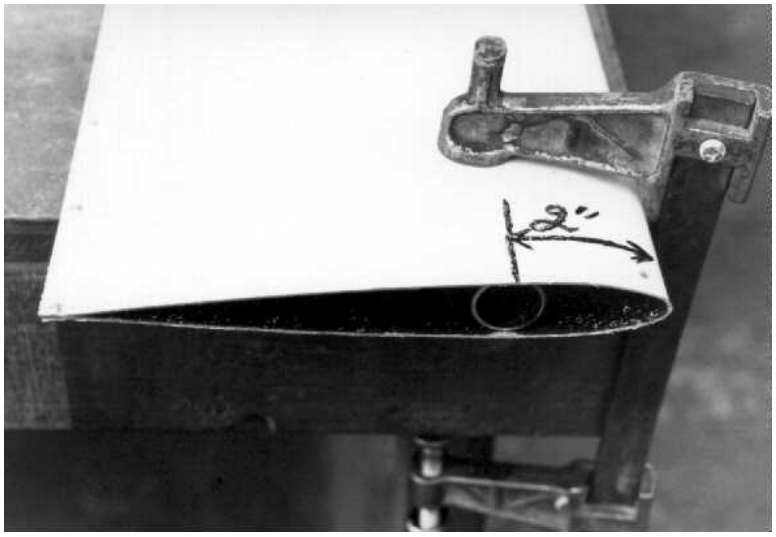


Photo #54

Place a 7/8" tube 2" from the leading edge. Use a C clamp to hold the center of the tube in position; this will achieve the correct airfoil.

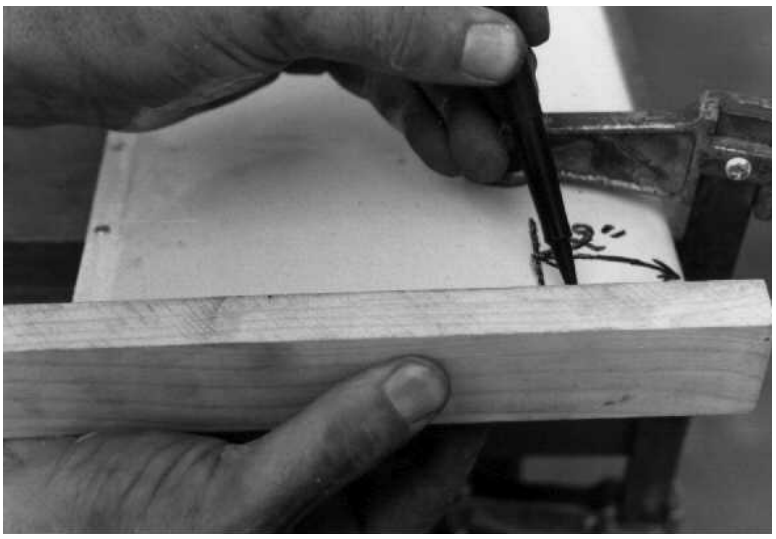


Photo #55

Place the wooden end plug against the end of the airfoil and mark the outline of the airfoil.

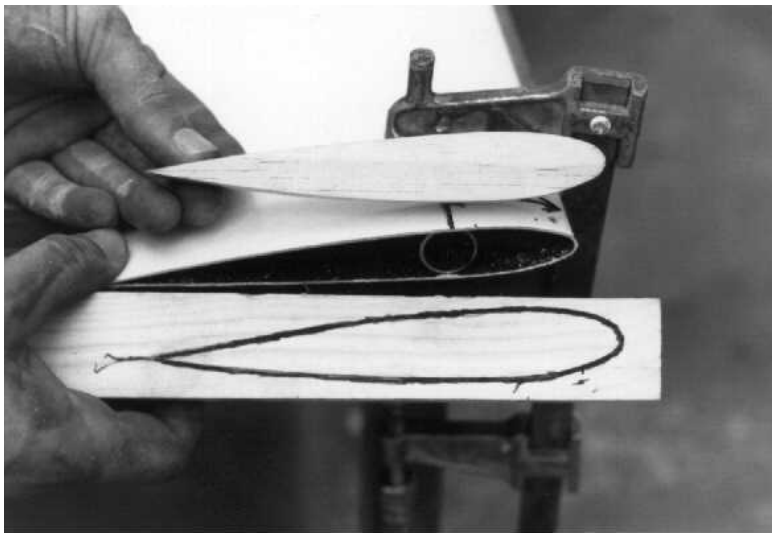


Photo #56

Cut out and fit the end plugs.

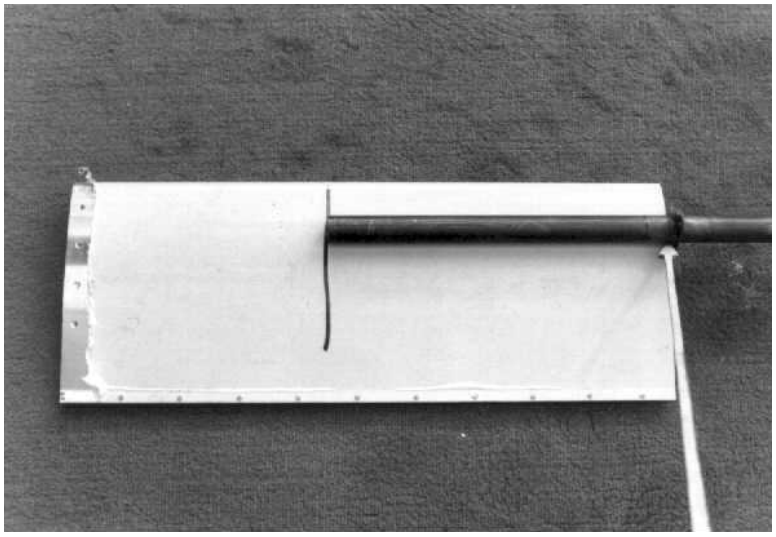


Photo #57

Remove the spar from the tail boom and mark on the airfoil where the end of the spar will be.

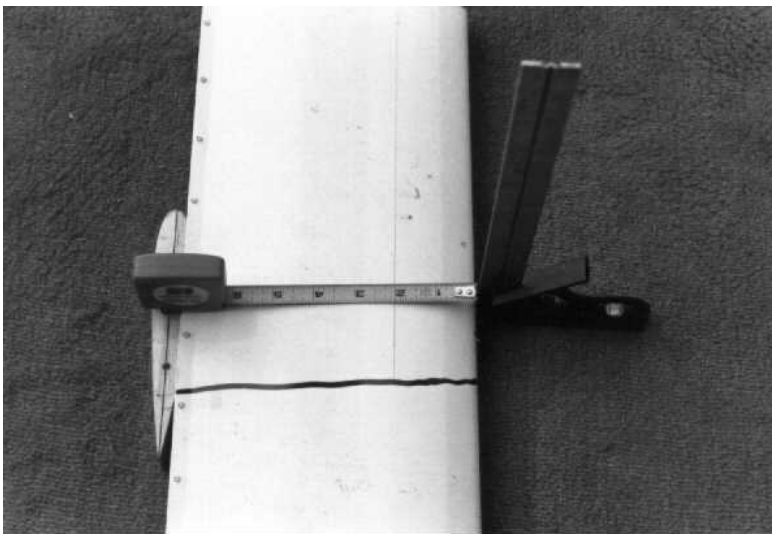


Photo #58

Mark the center of the spar on the airfoil 2" from the leading edge. The chord line of the airfoil must be level when using the square and tape.

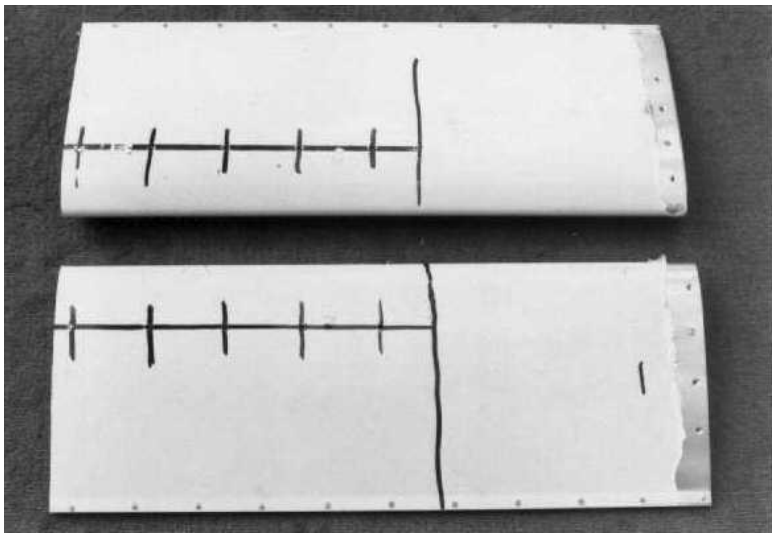


Photo #59

Mark the rivet pattern and drill two holes on the top side only.

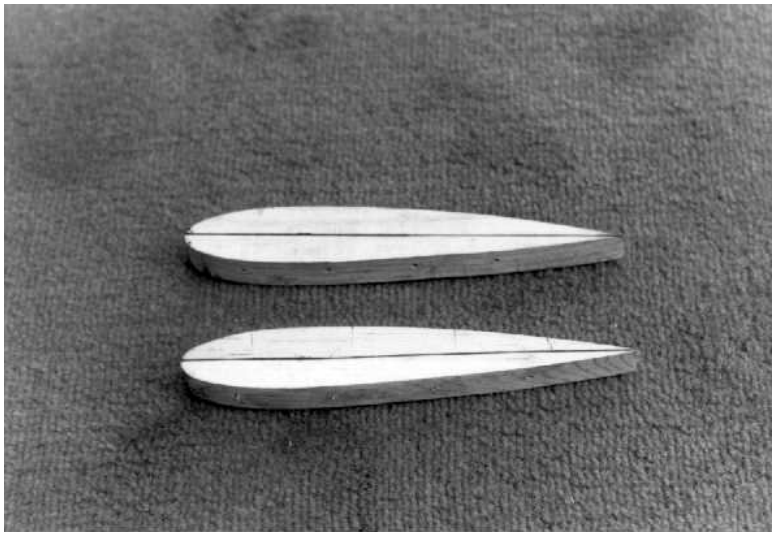


Photo #60

Mark the chord line on the end plugs.

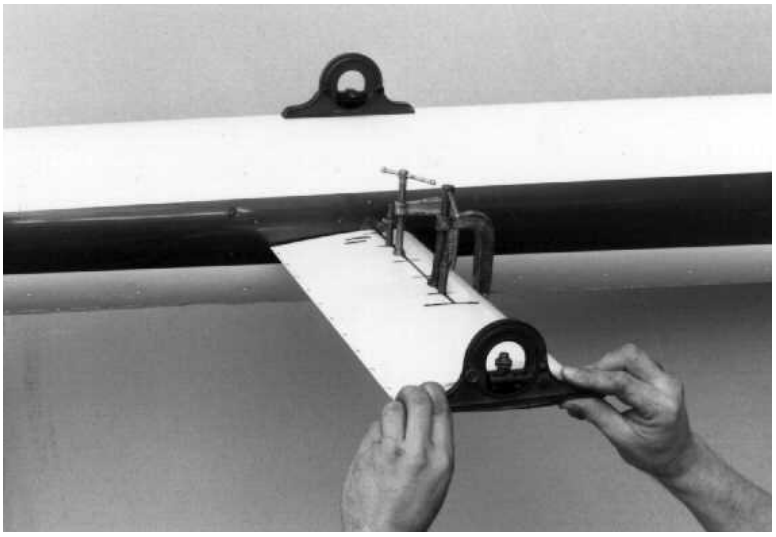


Photo #61

Install the spar in the tail boom and slide the airfoil over the spar. Position the airfoil so that the mark on the spar is under the hole in the airfoil. Center punch and drill the hole in the top of the spar. Align the chord line on the end plugs to be parallel with the top of the tail boom and use "C" clamps to hold this position.

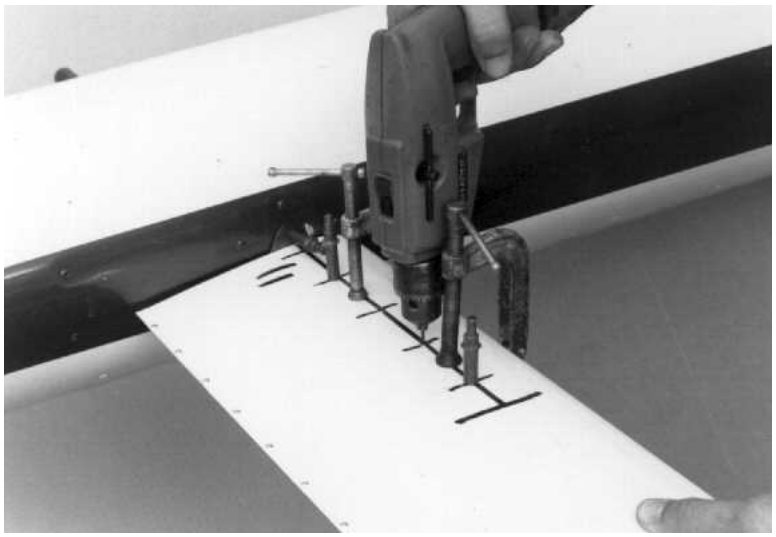


Photo #62

Drill two holes all the way through each fin.
(Note: The dark area along the tail boom in this photo is a painted stripe.)

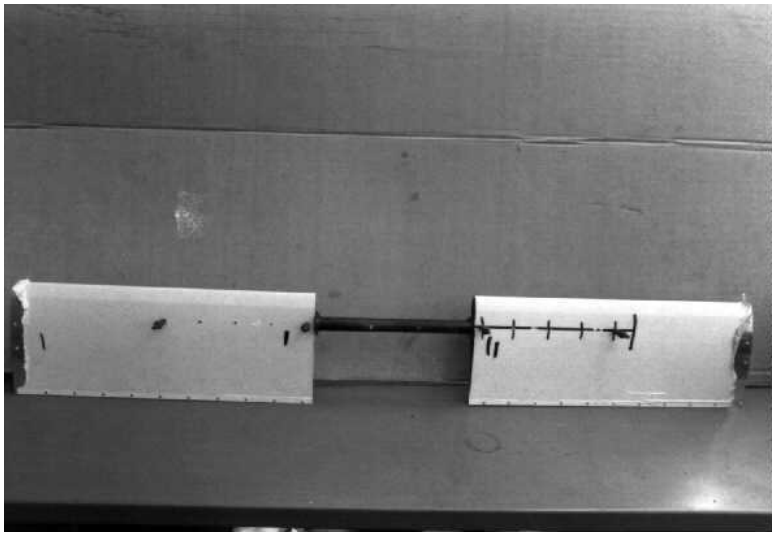


Photo #63

Remove and check airfoils for straightness to each other, then drill remaining holes.

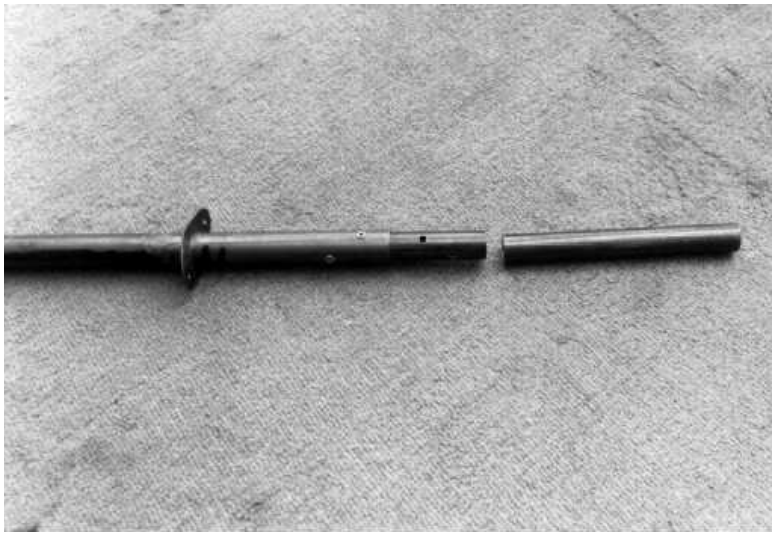


Photo #64

Disassemble airfoils and cut the splice tube per print. Reassemble the splice tube, maintaining the 2-1/4" dimension from the end of the spar, and rivet together. The purpose of the splice tube is so that the unit can be disassembled to change the tail rotor belts and for maintenance.

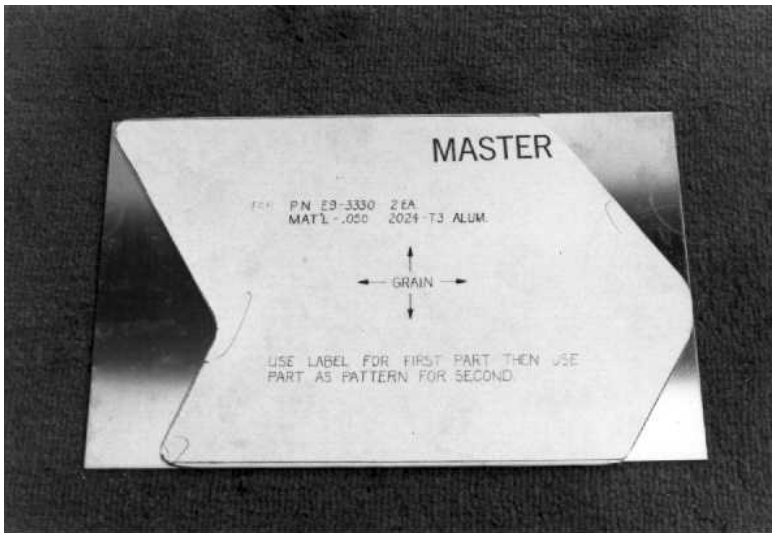


Photo #65

Stick the template for the end plates on the material.

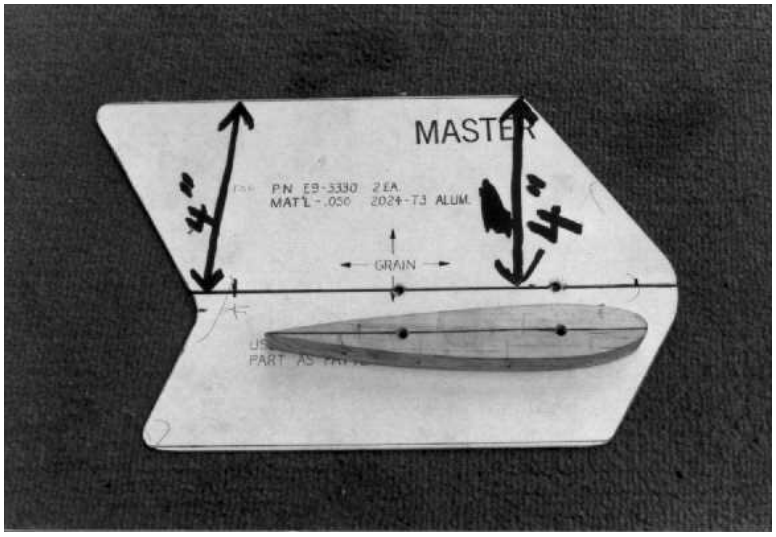


Photo #66

Cut out the end plates.

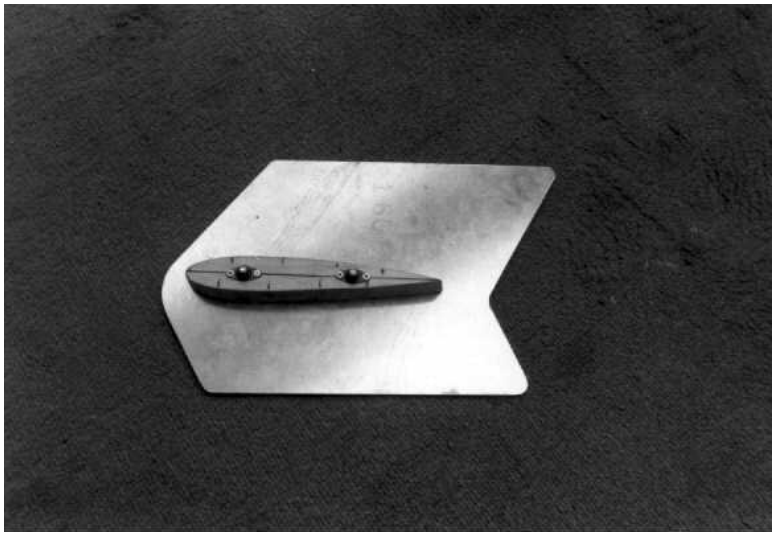


Photo #67

Mount the end plates to the end plugs.

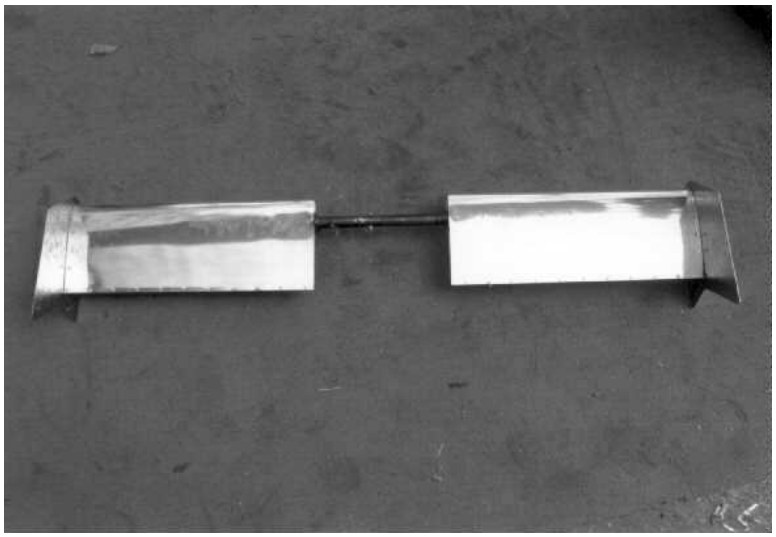


Photo #68

Install the end plugs and end plates to the airfoil.

Photo #69

Install the nut plates (which are to hold the horizontal trim fin), inside the tail boom.
NOTE: The nut plates should be installed on the inside of the tail boom. They are shown on the outside in this photo only to clarify their position.

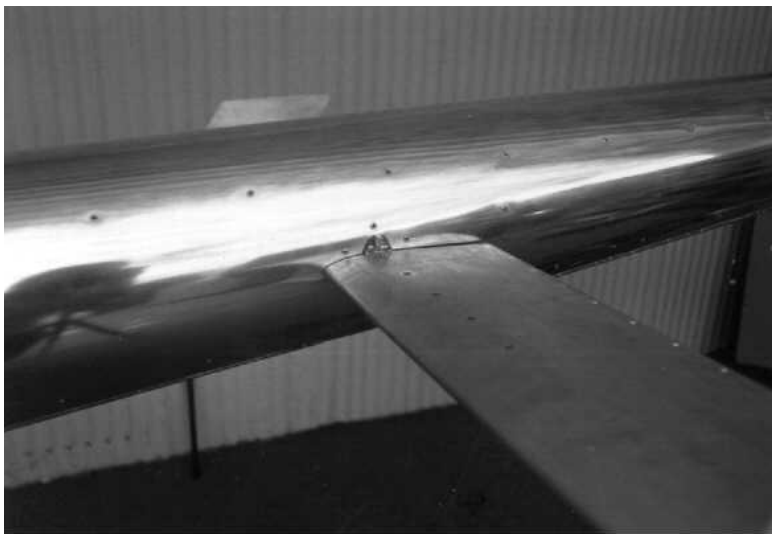


Photo #70

Horizontal trim fin bolted to tail boom.

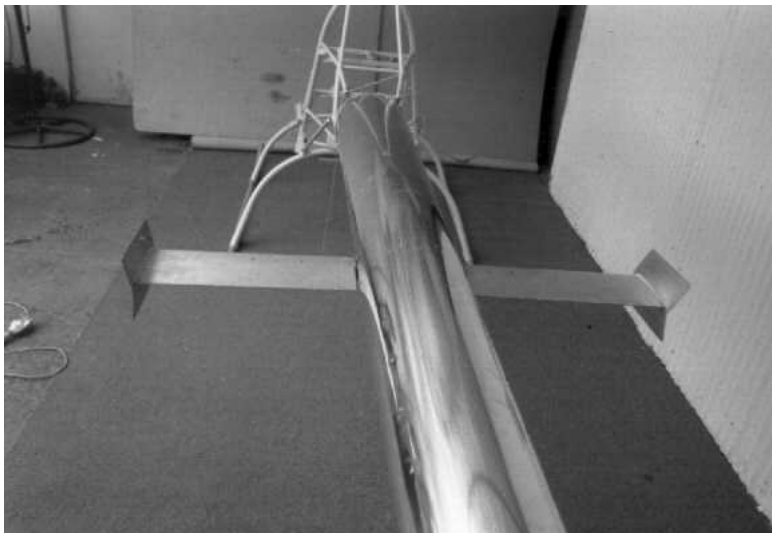


Photo #71

Another view of the horizontal trim fin mounted to the tail boom.

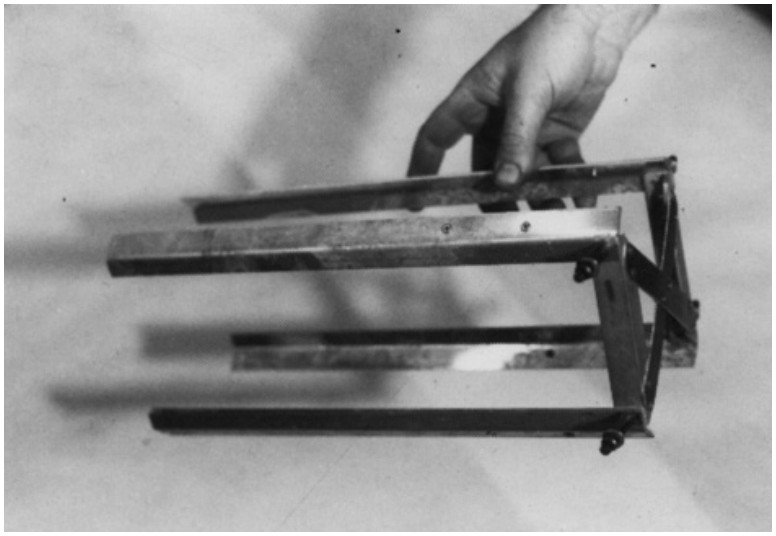


Photo #72

Fabricate the tail rotor slider rails per print. There are two stringers riveted together to form each slider rail.

Photo #73

To help make mounting the slider rails easier, fabricate the bearing plates as shown on page 34 and 35 of this section. Mount them on the rails as far forward as they will go, then install the assembly into the end of the tail boom. The rails must be level across the bottom, and the sides must be level vertically (90 degrees to the ground).

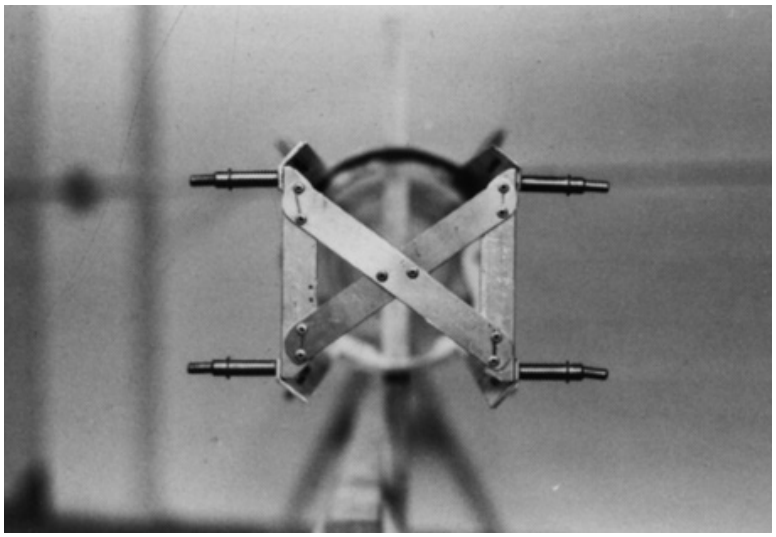
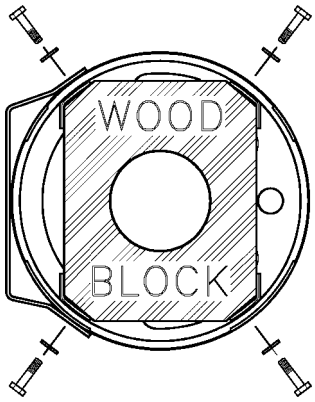


Photo #74

The slider rails must be parallel from end to end, in line with the stringers inside the lip, and tight against the wall of the #4 bulkhead. The vertical centerline of the slider rail assembly must be matched to the vertical centerline of the tail boom, so that the tail rotor assembly, when installed, will slide smoothly during belt tensioning. Measure the inside diameter of the bulkhead and fabricate a fixture from a block of wood to hold the rails in place (as shown in the drawing). Then drill the four holes for the 3/16" bolts that hold the assembly to the tail boom. These bolts will go through the stringers, bulkhead, and skin, plus the vertical trim fin bracket on the pilot's side.



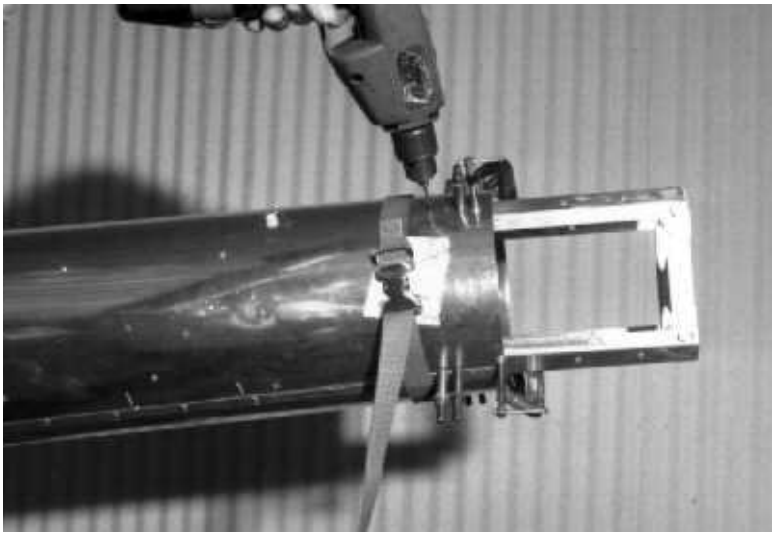


Photo #75

Locate, drill, and install the pop rivets to hold the rear of the slider rails to the tail boom skin.

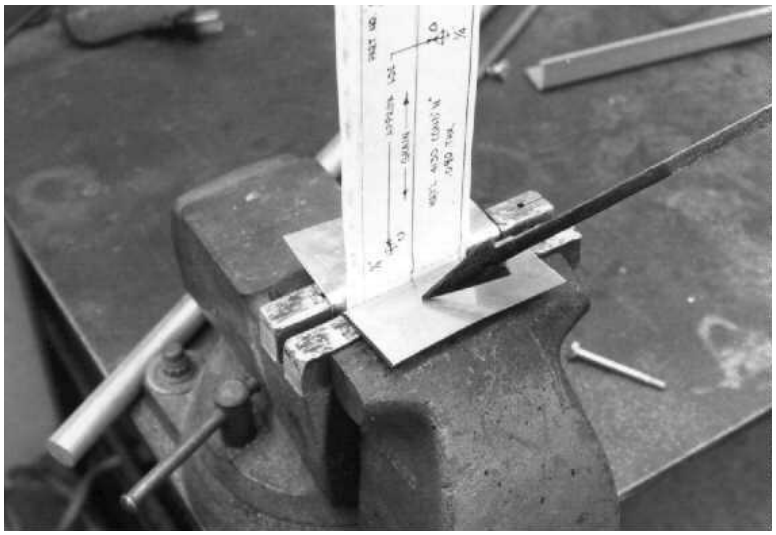


Photo #76

Cut out, bend and fit the vertical trim fin bracket to the tail boom. It must fit to the bolts holding the slider rails and be level vertically (90 degrees to the ground). When bending, be sure to make a radius in the bends. One way to do this is to bend the part over a piece of scrap material.

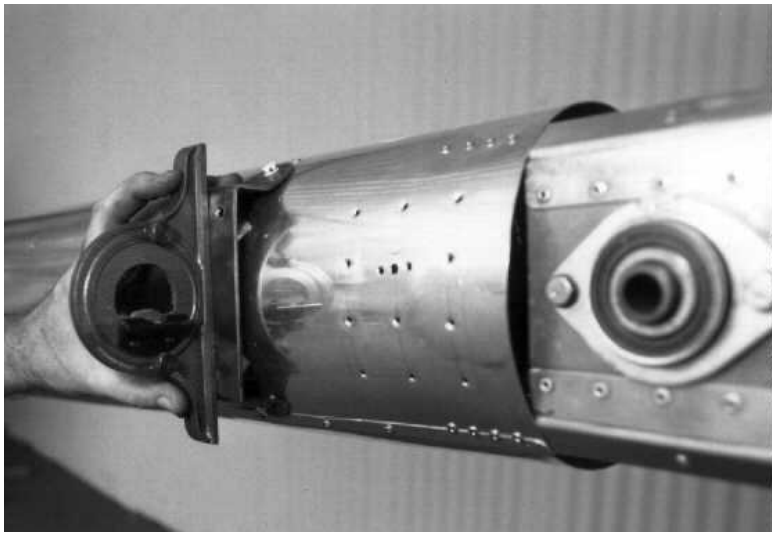


Photo #77

Use a protractor level to verify that the vertical trim fin bracket is vertical before drilling. Attach the bracket to the tail boom at bulkhead #4 with the same bolts that mount the slider rails. (Refer to print E09-2000).

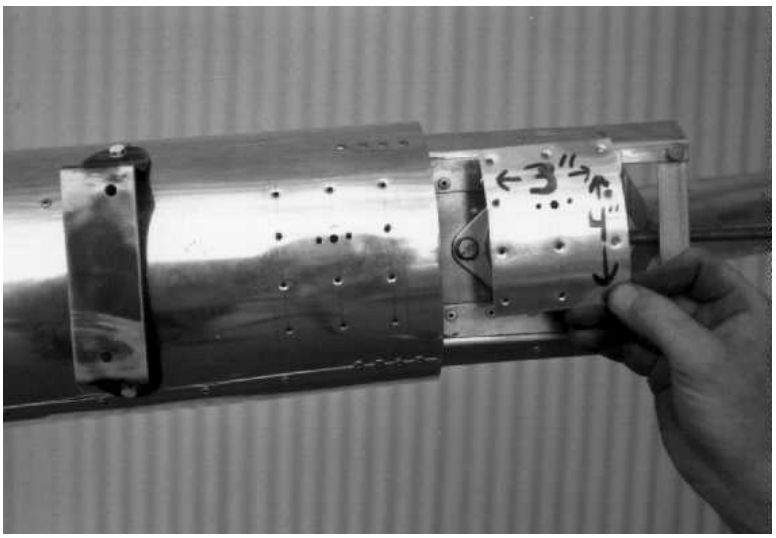


Photo #78

Cut out and install the vertical trim fin angle doubler.