

# BUILDING & FLYING INSTRUCTIONS

The Super Brigadier is simple in structure and anyone who has had some experience building models will have no difficulty in constructing it.

Before beginning the actual work, study the plans to obtain a general idea of the construction. Any difficulties that might appear, clear themselves as work progresses.

Few and simple tools are necessary for building the model. A flat board approximately 3 feet long and 2 inches wide will substitute very nicely for a work bench. The tools you will need are a small coping saw, tack hammer, hand drill, soldering iron, knife, razor blade and sandpaper.

The model is designed for use as either a payload carrying model or as a radio control model. Plans also show engine installation for either spark ignition or glow plug. Ignore those sketches and drawings that do not apply to the type of model you are building.

## FUSELAGE

The fuselage is built of 1/4" square balsa. Build both sides at the same time, one atop the other, to assure their being alike. When the sides have been removed from the plan, glue the ends of the longerons together and install the cross-pieces. Cut the bulkheads from the printed sheets and glue in the proper positions. Attach the side stringers. Add the plywood bulkheads. The basswood motor mounts are inserted in the notches of the plywood bulkhead. The entire structure must be firmly cemented with several coats of cement. Cement firmly in place the pegs for attaching the wing. The formed landing gear is attached to the plywood bulkhead No. 1 by means of three spade bolts before cementing it to the fuselage. Use plywood washers behind firewall if nuts do not pull up tightly. Use several coats of cement when attaching the firewall. The wheels are held in place by soldering washers on the landing gear.

When mounting the motor, drill one hole, put motor in and drill remaining holes seeing that the motor is straight. The nuts may be soldered to a brass plate for ease of installation and removal of the motor. Drill holes in the bulkhead through which the wires must go. The cowl blocks are cemented on, shaped and covered with tissue.

## WING AND TAIL

As the wing and tail are constructed in a similar manner, they are described together. Cement the curved tip sections together and shape to a triangular cross section using a knife and sandpaper. Pin the trailing and leading edges down and put in the ribs. Always carefully check the wing and tail surfaces for warping. By reverse twisting before or while covering, warps can usually be removed. However, once the model is completely covered, this becomes more difficult.

## COVERING

Attach the covering material to the model with a cement. If the cement is too thick because of climatic conditions, thin it out about 1/3 with clear dope. The body should be covered in parts. The side, top halves, and bottom halves are all done separately. The wing is covered from rib to rib working from the center out. The bottom is covered first, the paper being doped to each rib. The top is then covered and the entire wing sprayed with water. Side windows of cabin are outlined with covering material. Give the body, wing and tail several coats of dope to protect it from the exhaust gas and oil. If "hot" or glow plug fuels are used, suitable fuel proofers must be coated around the nose and forward end of the fuselage.

## ADJUSTMENT AND FLYING

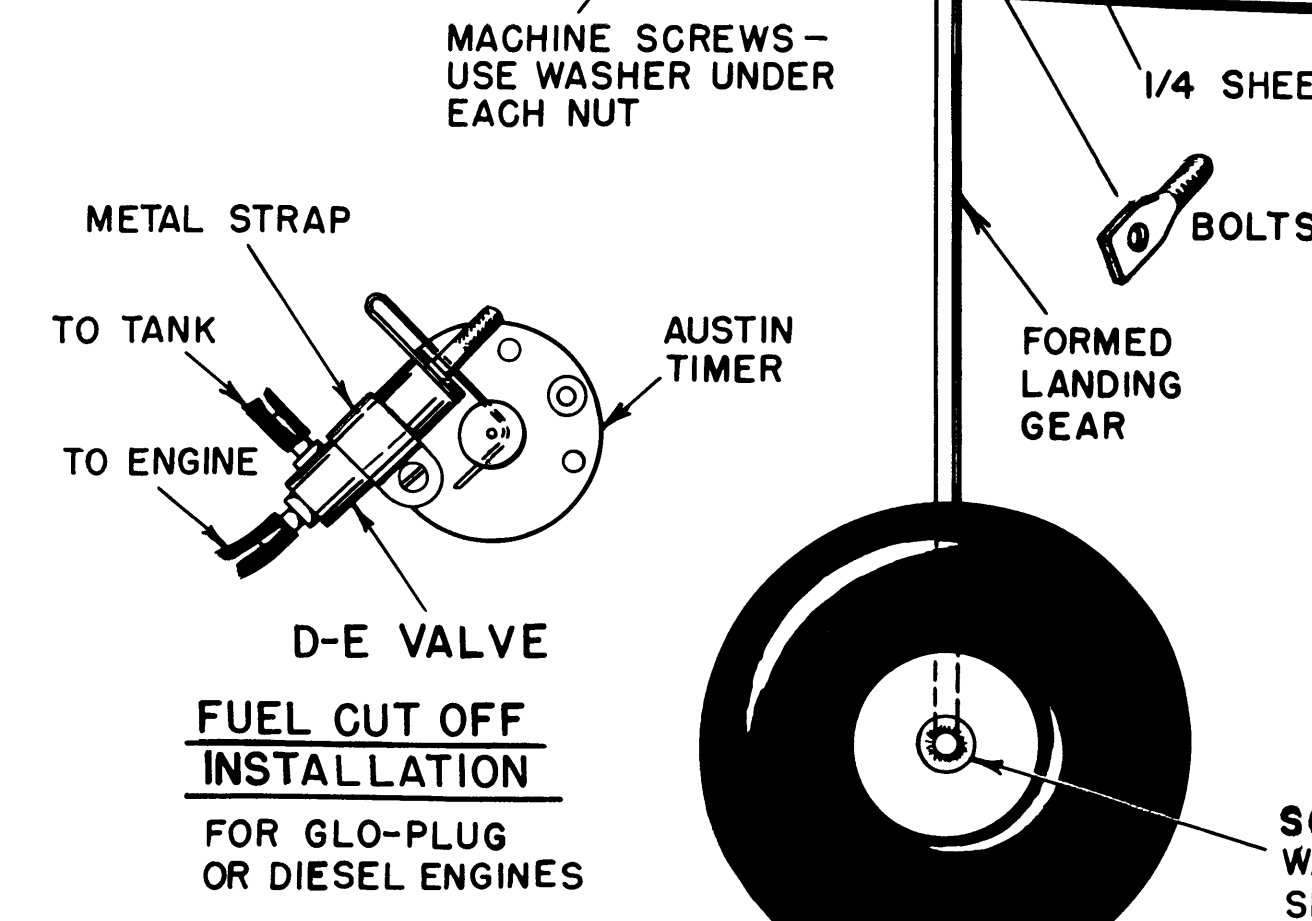
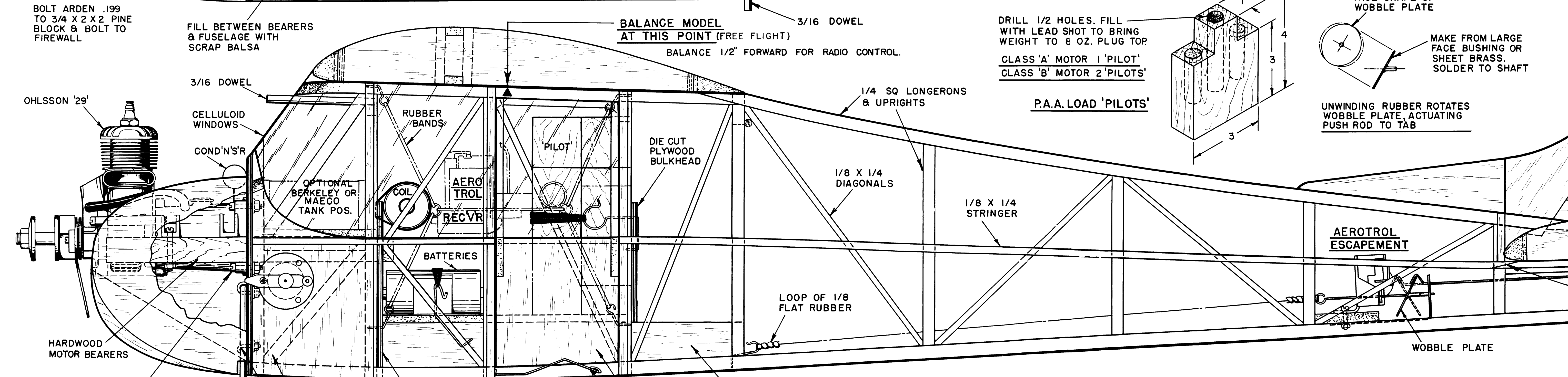
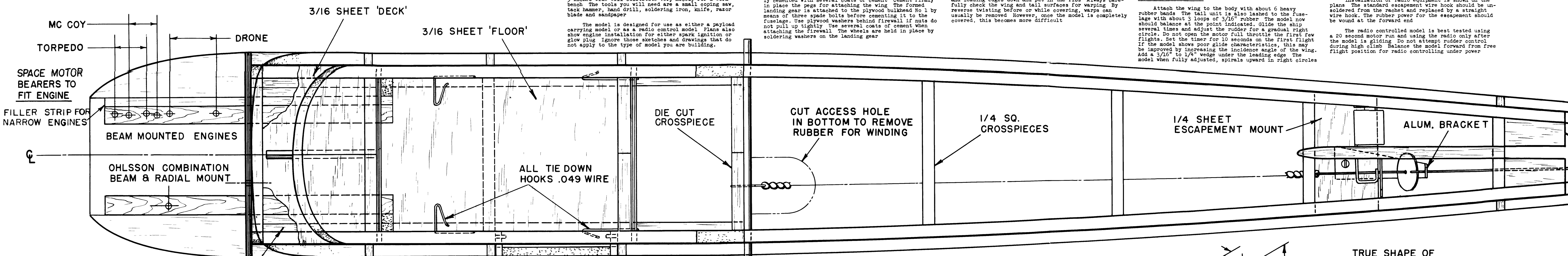
Attach the wing to the body with about 6 heavy rubber bands. The tail unit is also lashed to the fuselage with about 3 loops of 3/16" rubber. The model now should balance at the point indicated. Slide the ship several times and adjust the rudder for a gradual right circle. Do not open the motor full throttle the first few flights. Set the timer for 10 seconds on the first flight. If the model shows poor glide characteristics, this may be improved by increasing the incidence angle of the wing. Add a 3/16" to 1/8" wedge under the leading edge. The model when fully adjusted, spirals upward in right circles.

and when the motor stops, without losing any altitude and continuing to the right, it goes into its slow and extraordinarily flat glide. Selection of propeller will be determined by the amount of payload, the type of flight desired, and the size of the motor used. Use the engine manufacturer's specifications and experiment using up to 2" (plus or minus) variation in pitch and diameter. With a 20 second motor run, you can expect consistent flights of well over two minutes without the help of the thermals, but when there are thermals lurking about and you aren't in the mood to watch your ship fly away - be careful!

## RADIO CONTROL FLYING

Installation of radio equipment is shown on the plans. The standard escapement wire hook should be unsoldered from the ratchet and replaced by a straight wire hook. The rubber power for the escapement should be wound at the forward end.

The radio controlled model is best tested using a 20 second motor run and using the radio only after the model is gliding. Do not attempt rudder control during high climb. Balance the model forward from free flight position for radio controlling under power.



## FLYING PROCEEDURE

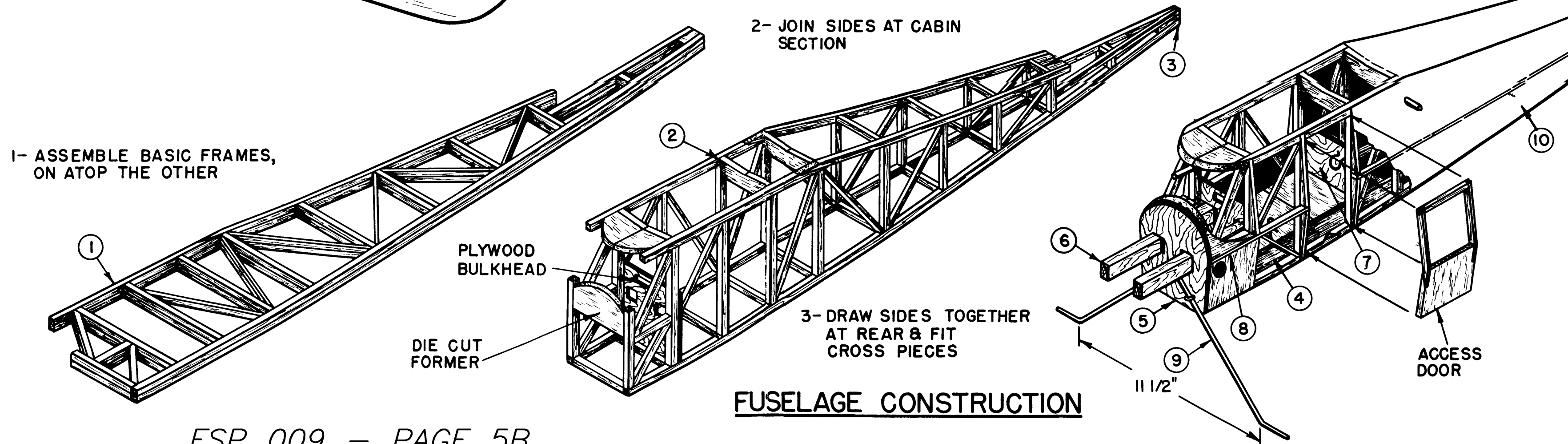
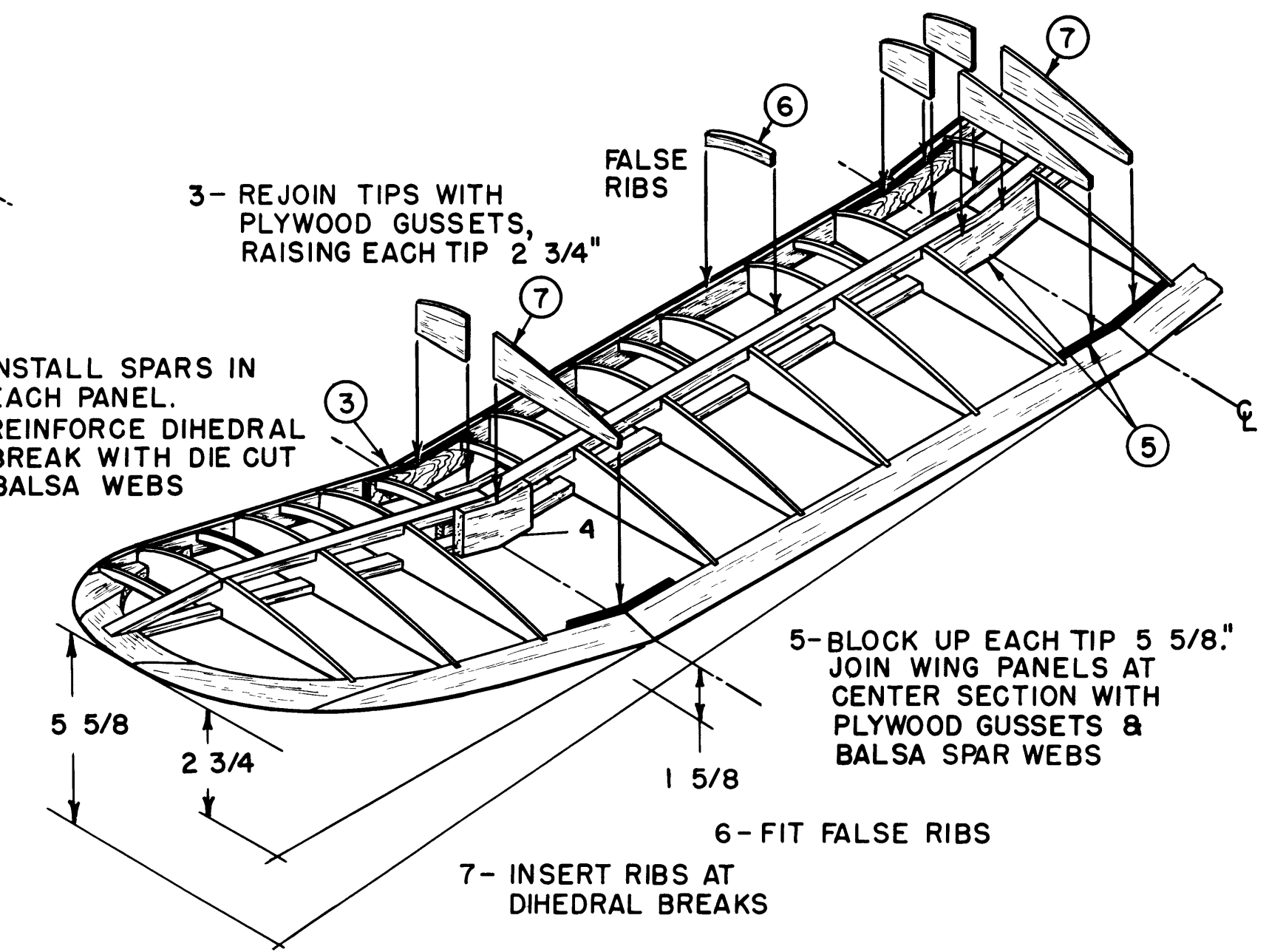
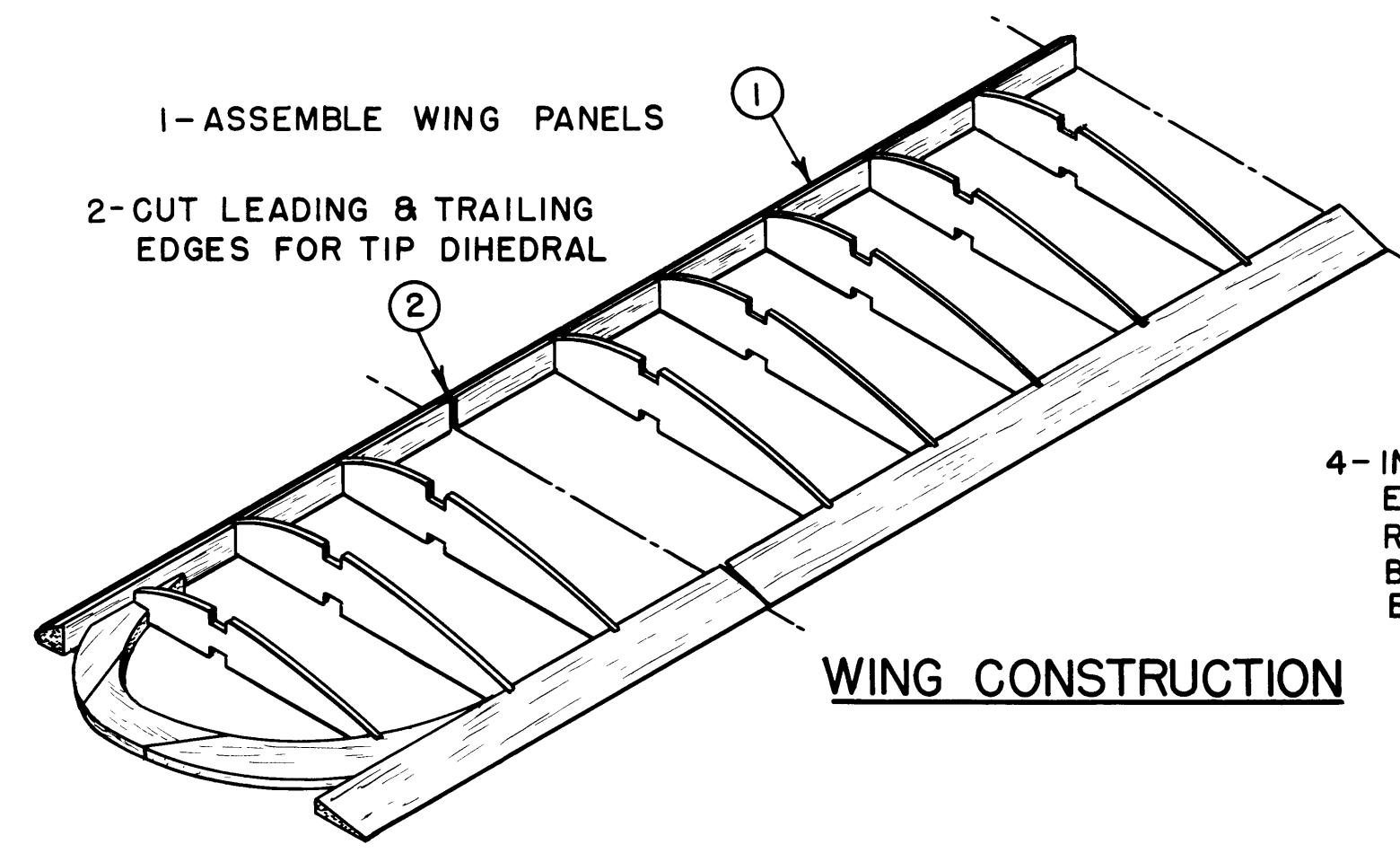
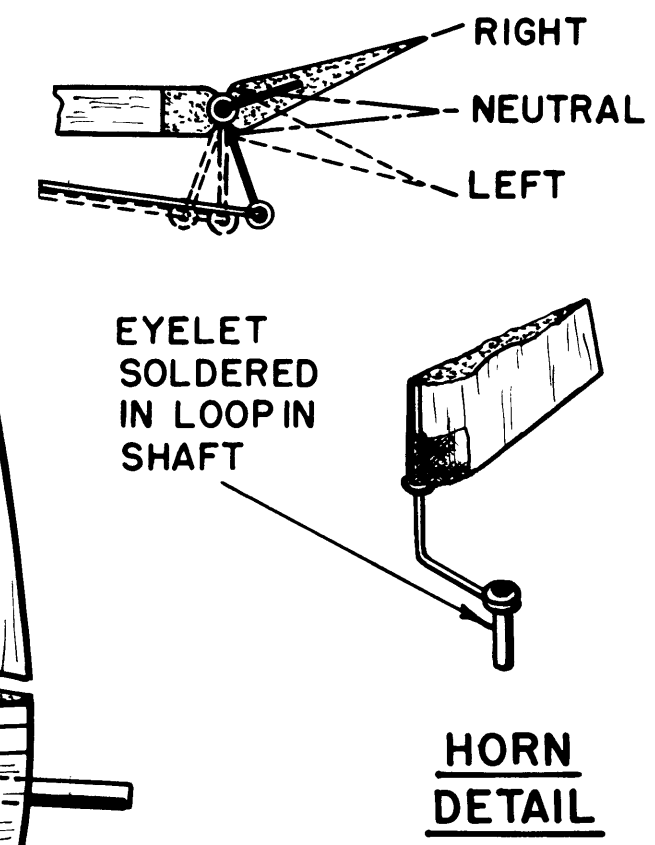
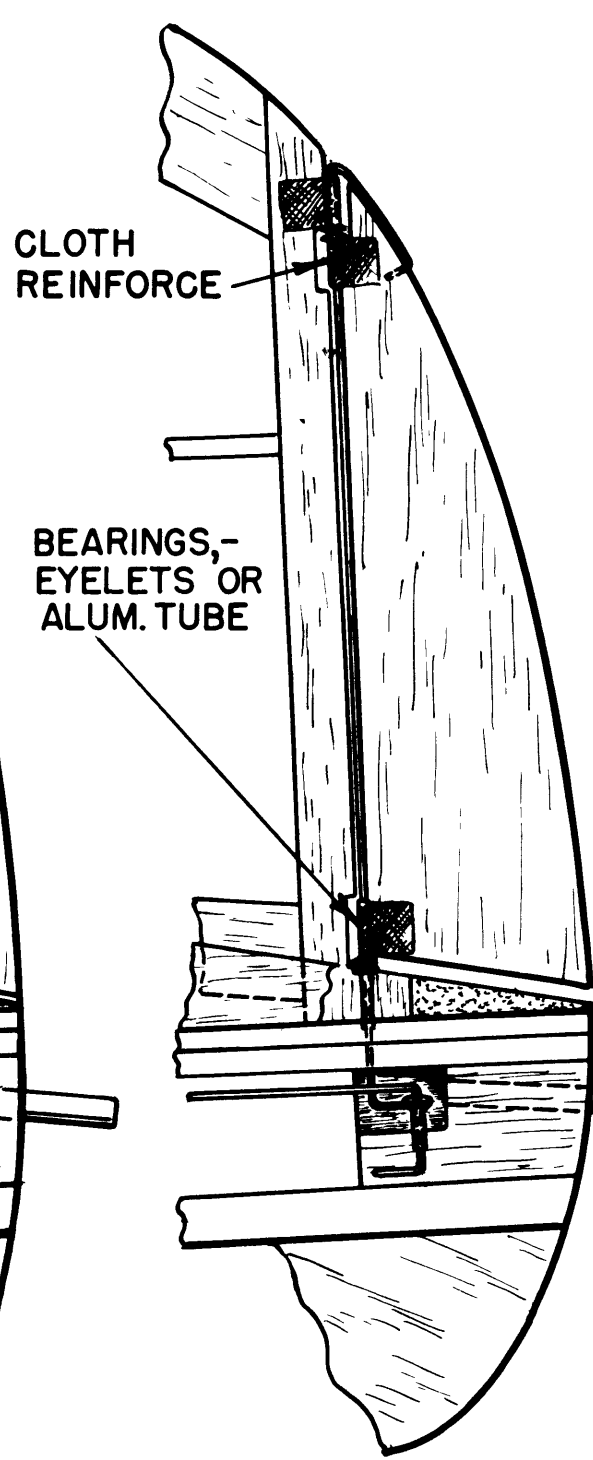
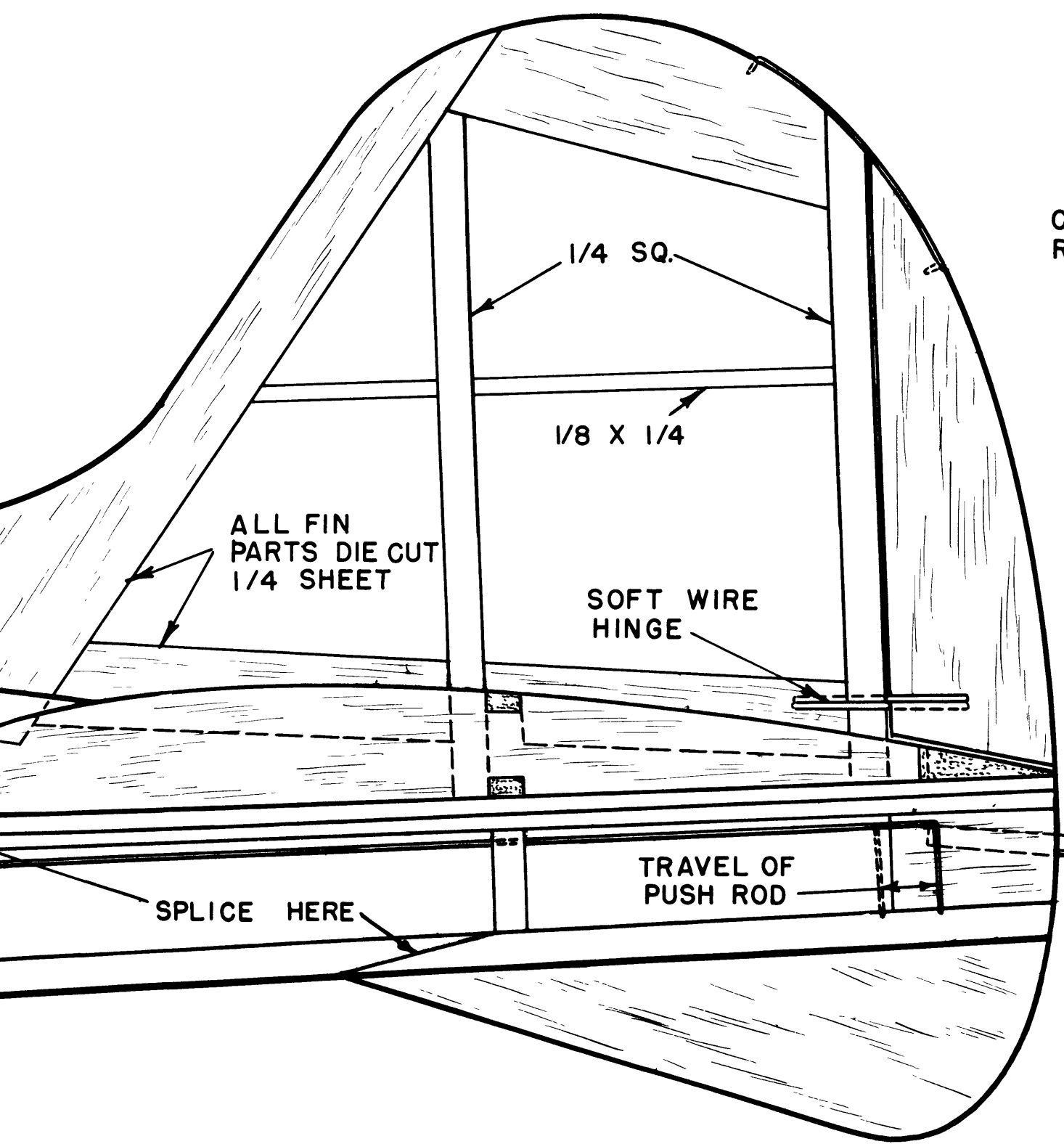
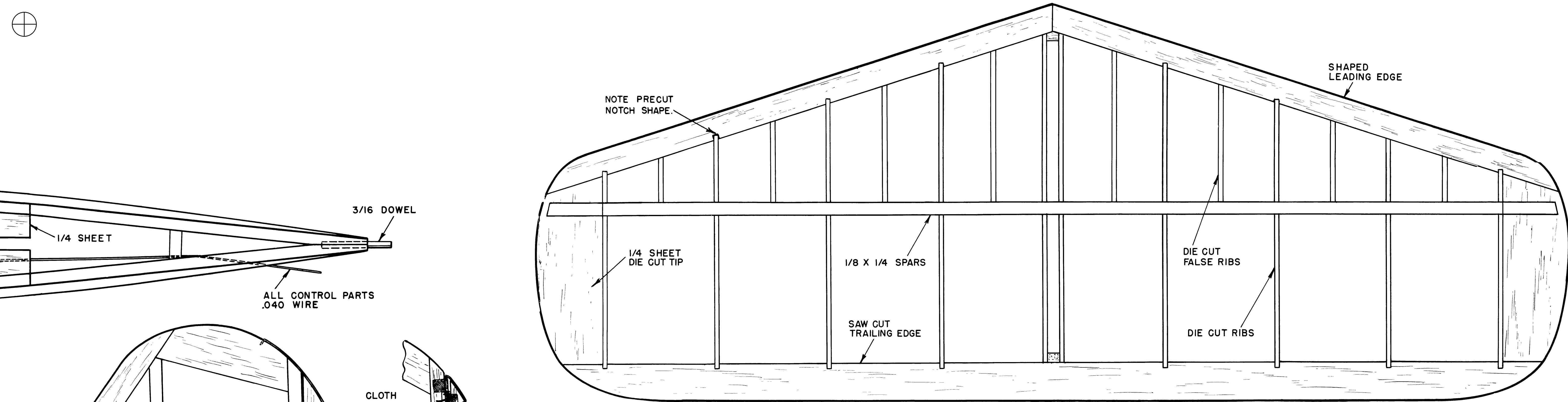
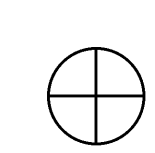
- 1-SHIFT UNITS IN CABIN UNTIL MODEL BALANCES AT POINT INDICATED
- 2-TEST FLY WITHOUT 'PILOTS', THEN LASH IN PLACE & CHECK BALANCE
- 3-WEDGE 'PILOTS' AWAY FROM BULKHEAD WITH Balsa SPACERS IF NECESSARY TO MAINTAIN BALANCE

SPECIFICATIONS	WEIGHTS WITHOUT P.A.A. LOAD
GLO-PLUG	29 OZ.
IGNITION	33 OZ.
RADIO CONTROL	36 OZ.
WING AREA	460 SQ. IN.

THE UNIVERSAL	CLASS A & B MOTORS
<b>SUPER BRIGADIER</b>	
DESIGNED BY BILL EFFINGER & HENRY STRUCK KIT ENGINEERED BY BILL EFFINGER DRAWN BY H. STRUCK COPYRIGHT 1949-REPRODUCTION FOR RESALE FORBID'N	
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