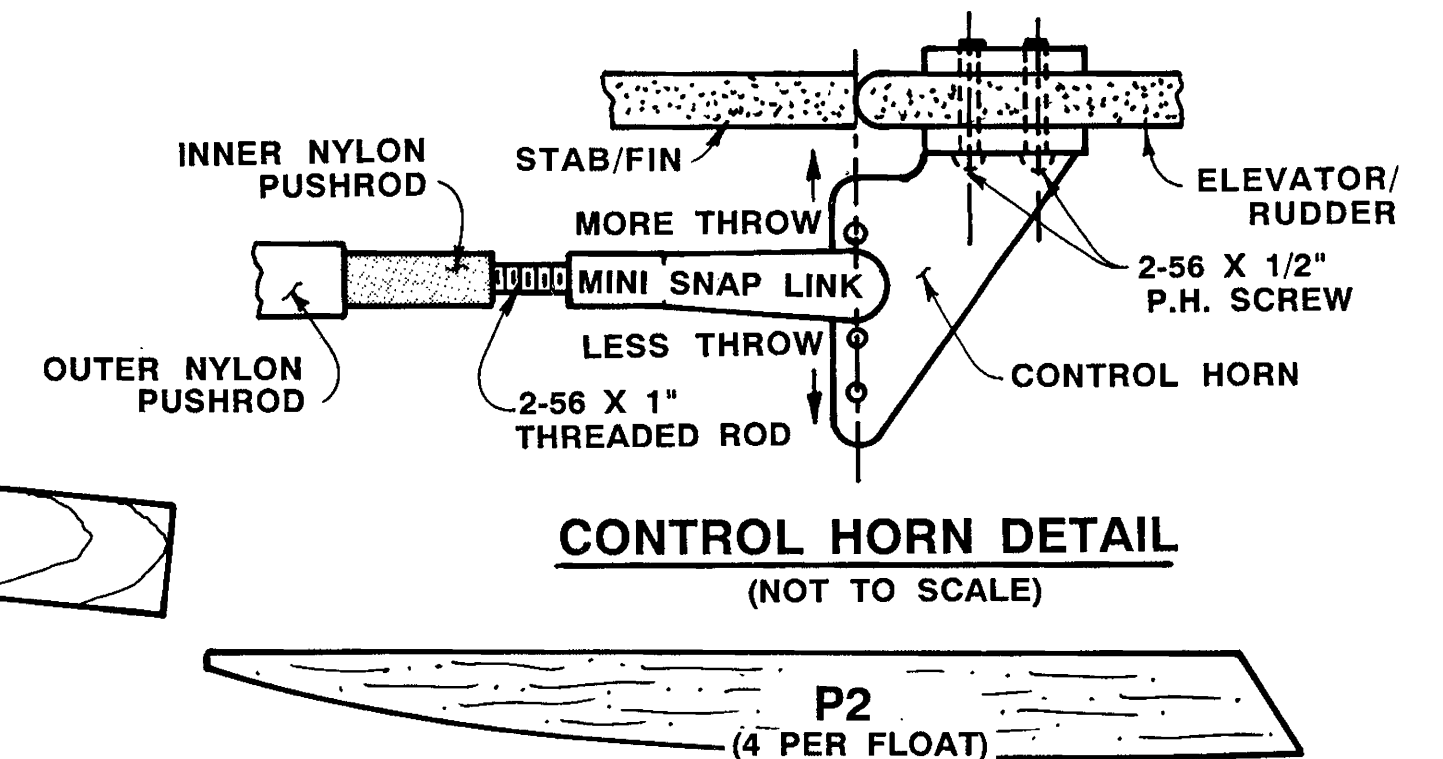
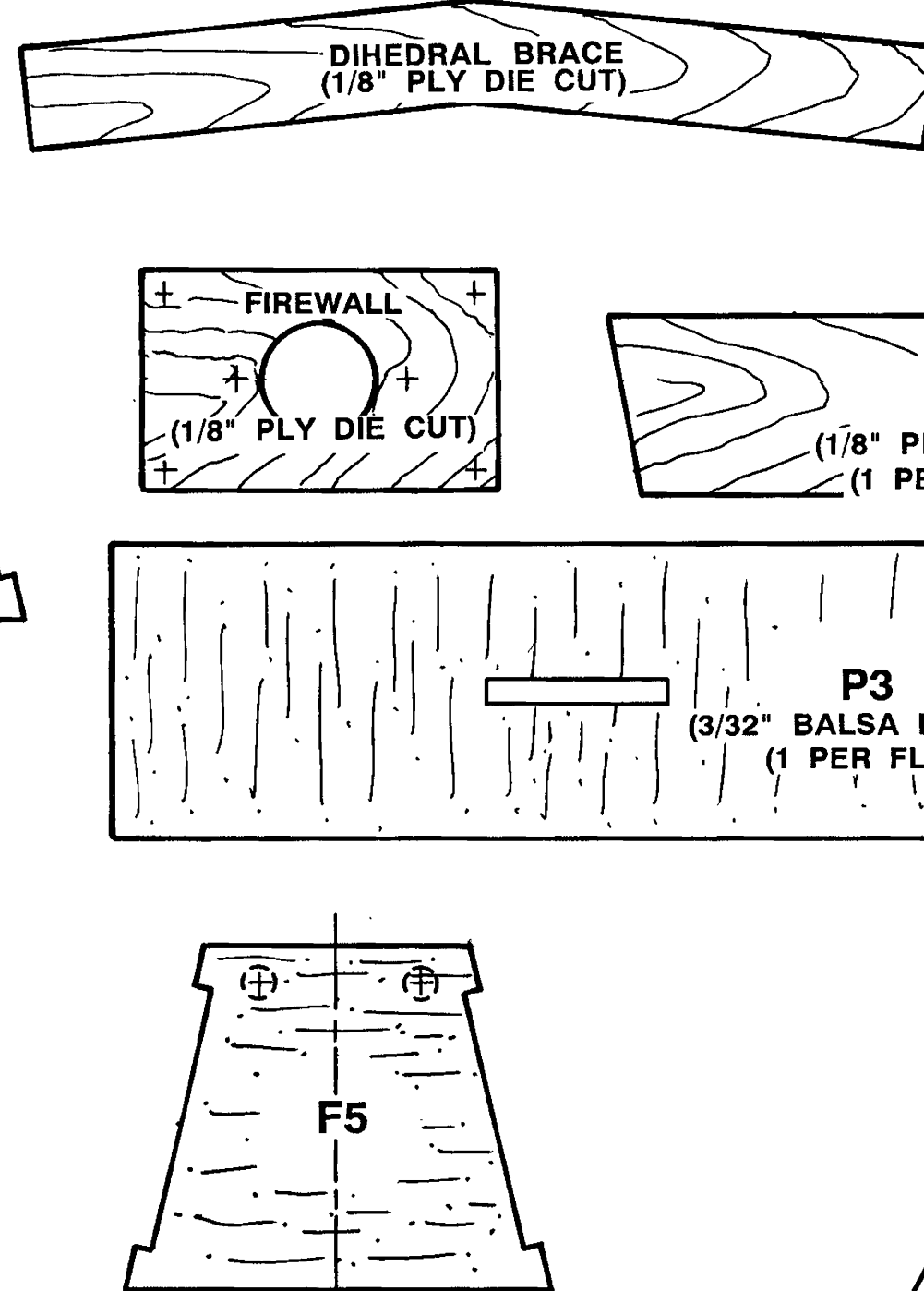
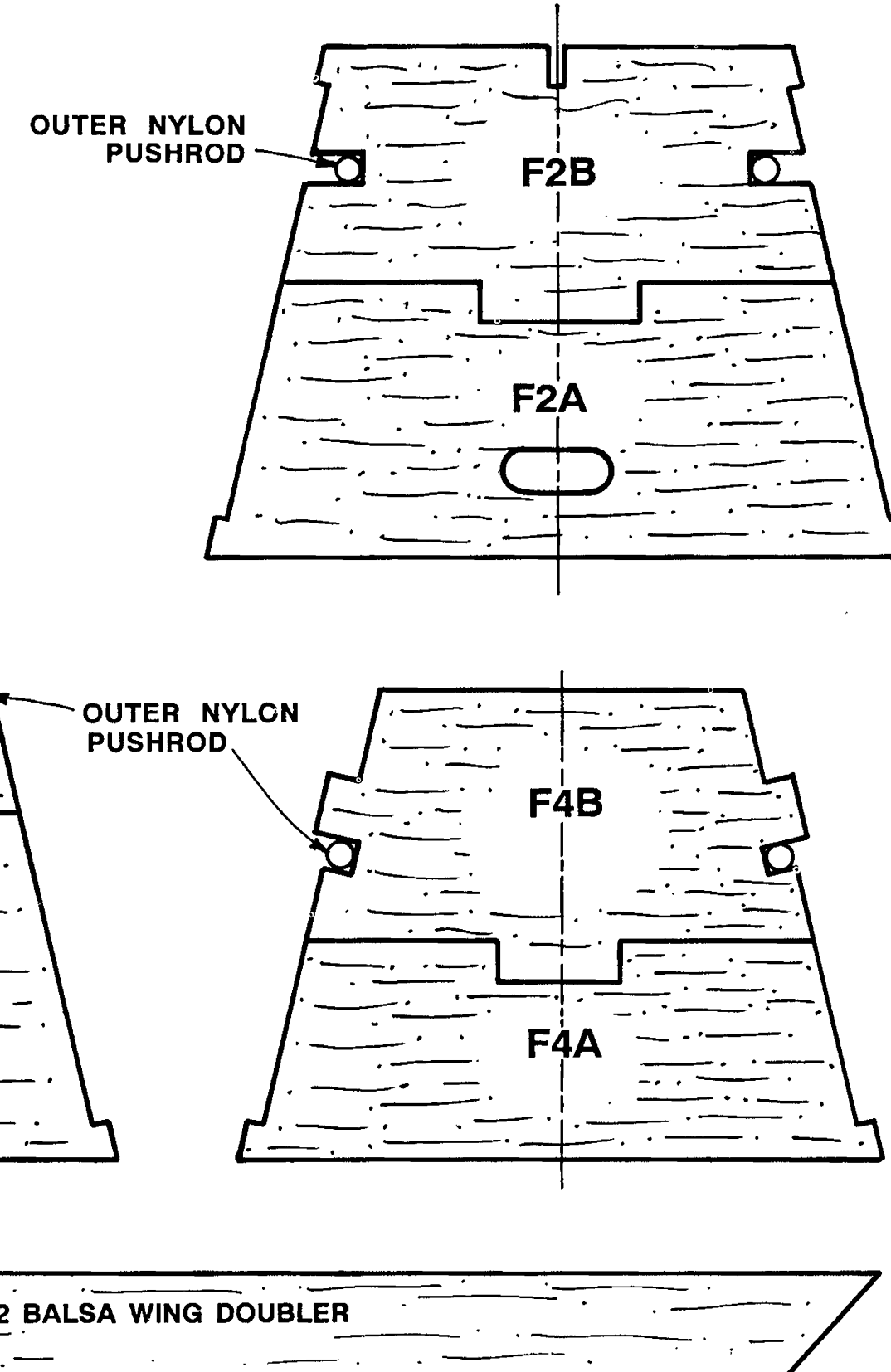
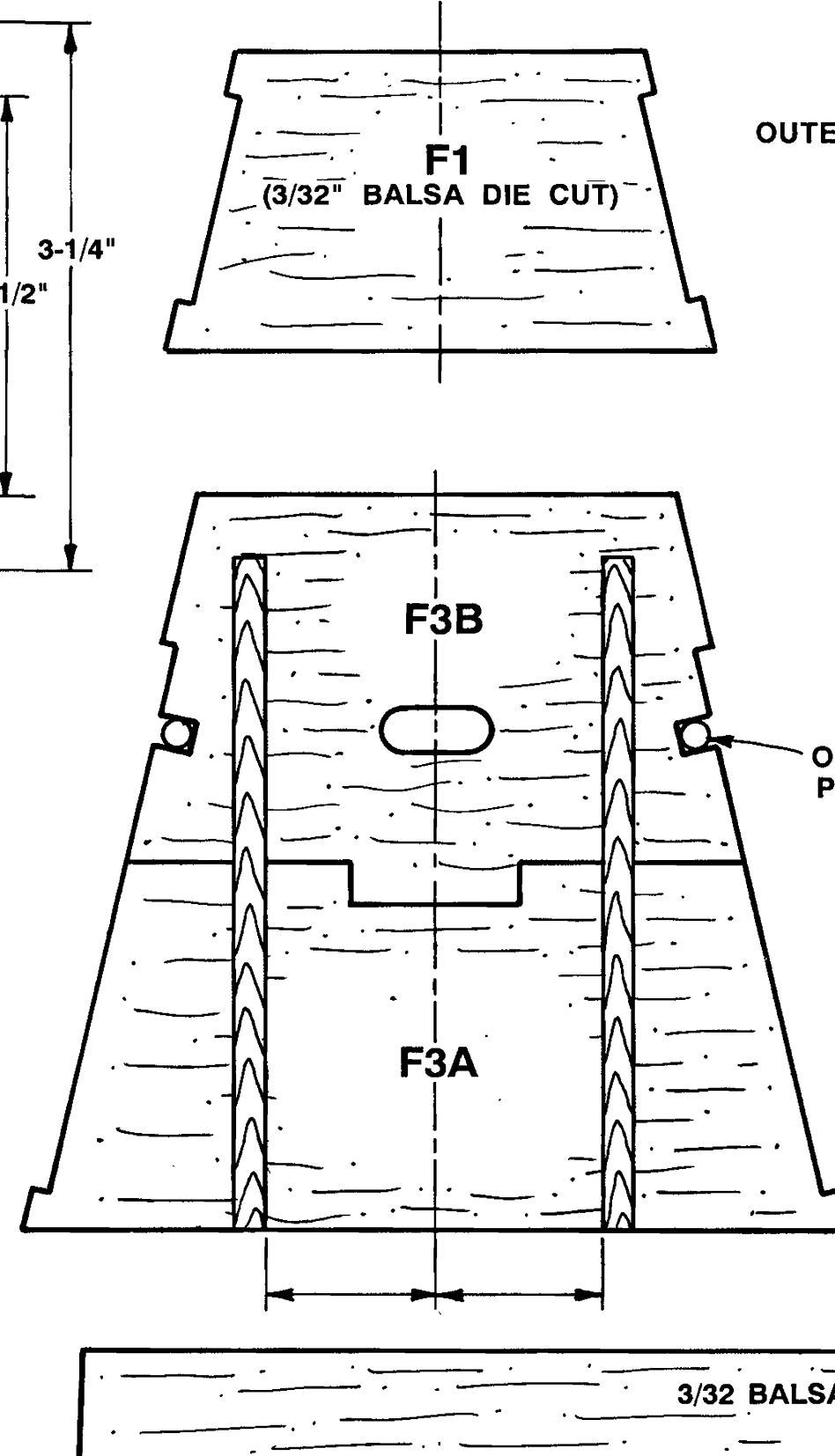
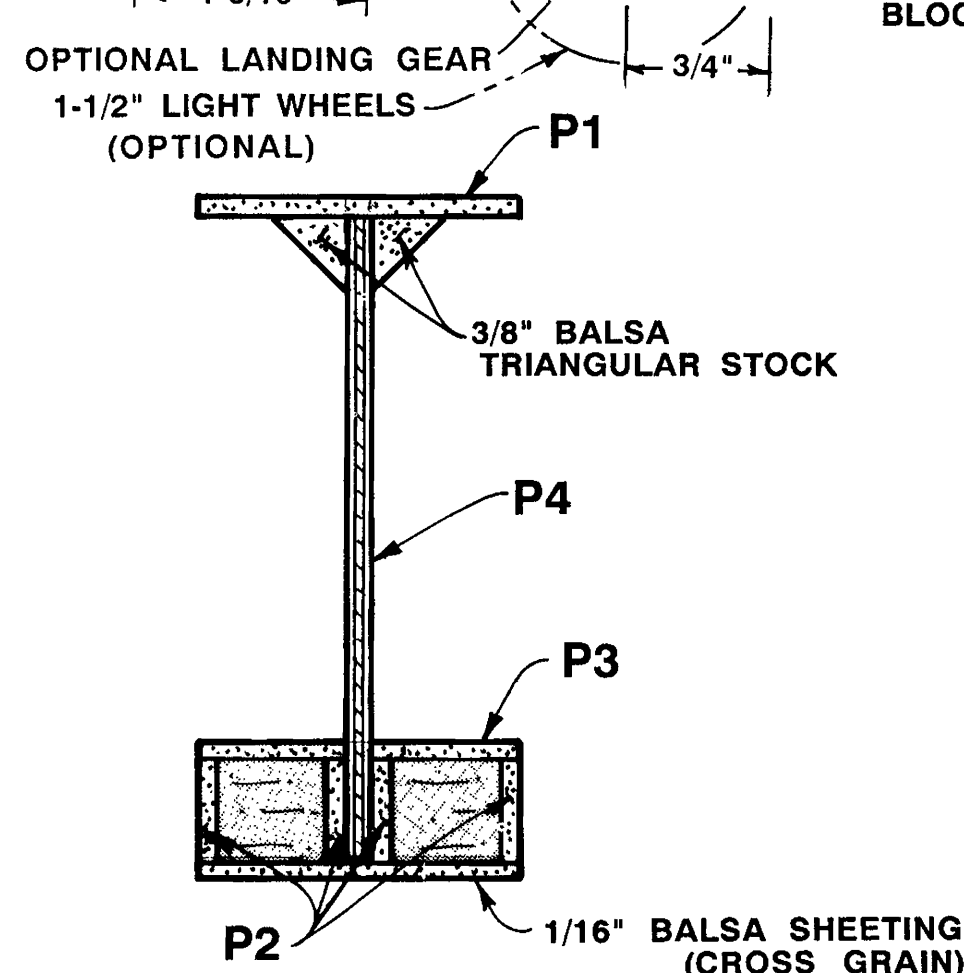
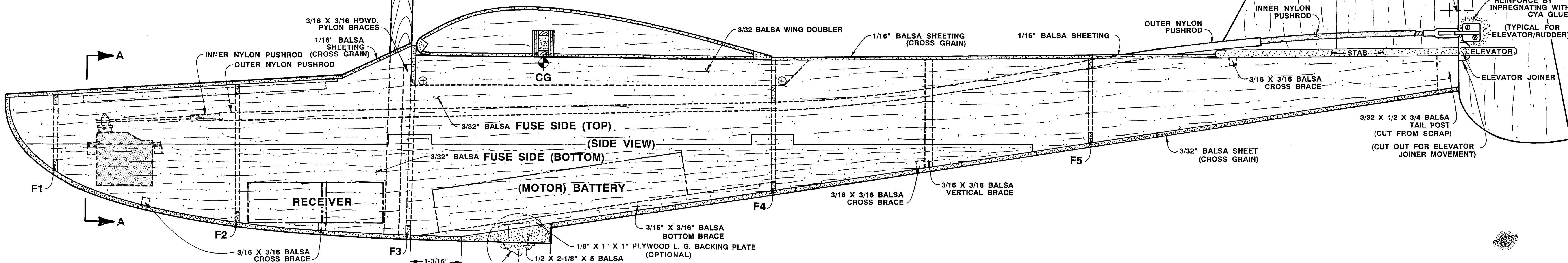


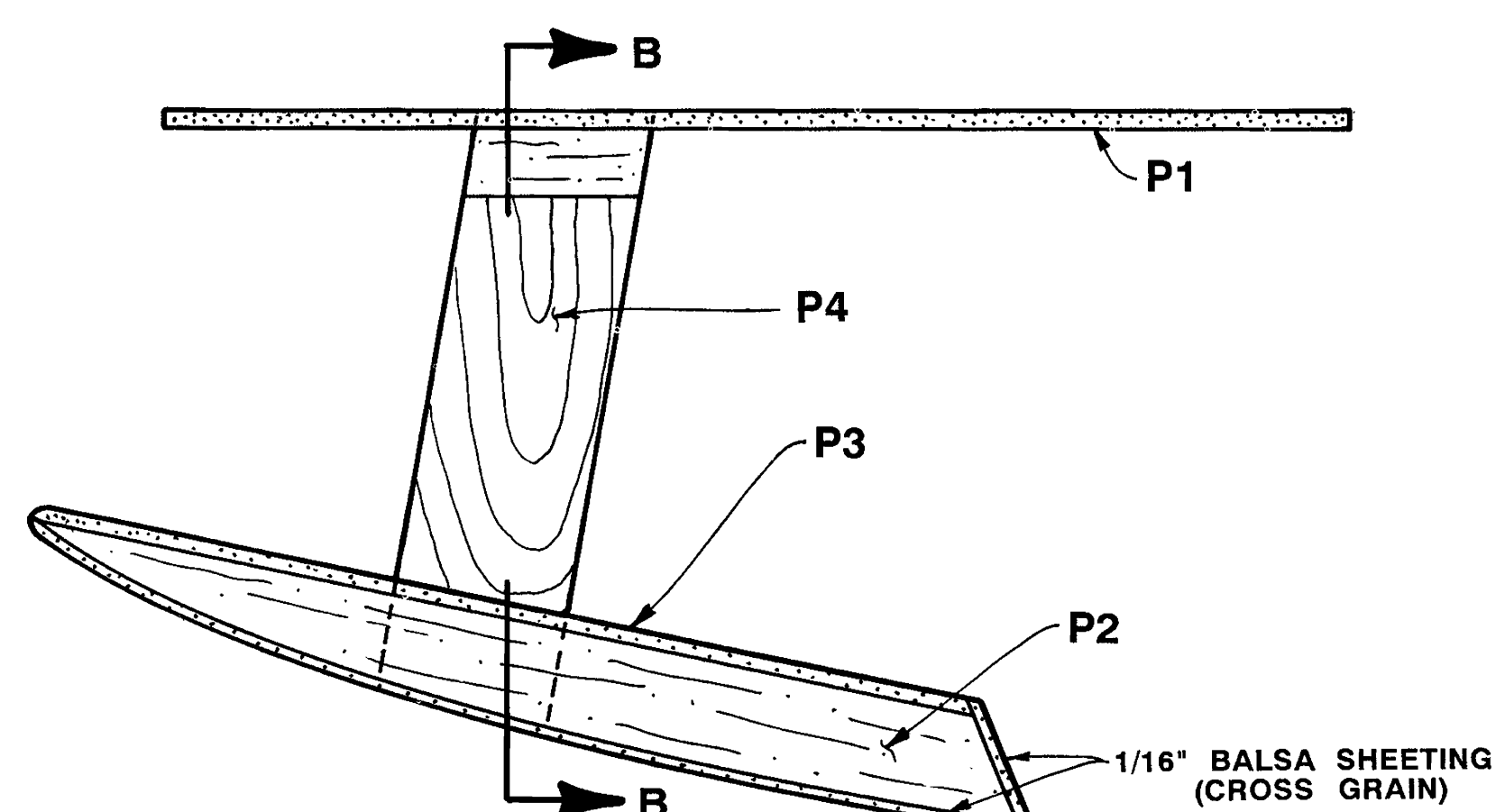
HATCH DETAIL
(NOT TO SCALE)



CONTROL HORN DETAIL
(NOT TO SCALE)



SECTION B - B
(NOT TO SCALE)



WING FLOAT ASSEMBLY DETAIL
(NOT TO SCALE) (SIDE VIEW)

POWER RECOMMENDATIONS

We have successfully used the following power combinations. This by no means indicates that there are no other alternatives. Any quality 05 sized motor for aircraft mated with an efficient prop and good battery pack should be a workable power plant.

Astro Cobalt 05 w/APC 7X5 Prop, 6 or 7 Cells
Great Planes Goldfire w/APC 7X5 Prop, 6 or 7 Cells
Kyosho 360ST w/APC 7X4 Prop, 6 Cells*
*If a proportional speed control is used, 7 Cells will be OK.

Sanyo 800SCR, 1400SCR, or 1700SCR cells recommended; or any of the "SR" packs in this same category are also recommended.

For maximum duration, use 6 cells, for maximum power, use 7 cells.

If a proportional speed control is used, we have successfully used Jomar and Flightec devices. If not used, we recommend a radio commanded on-off switch: either a servo activated micro switch (use at least 5-15 Amp switch) or a commercially available radio activated relay-type switch.

All electronics should be housed in the compartment forward of the wing for waterproofing.

Wire should be at least 16 gauge high flex and length should be kept as short as possible.

An arming switch and fuse is a safety necessity (see wiring schematics).

Either a commercially available "B.E.C." (Battery Eliminator Circuit) should be used for radio power, or a small 150 to 270 mah receiver battery pack. With a seaplane, we prefer a small pack because you still have some taxiing ability, even though the motor batteries are almost discharged.

For connectors, we recommend Sermo. Deans for ease of use, cost, and minimum current loss.

In any event, keep weight at a minimum and electrical efficiency at a maximum.

We have included a schematic drawing of the electrical hookup.

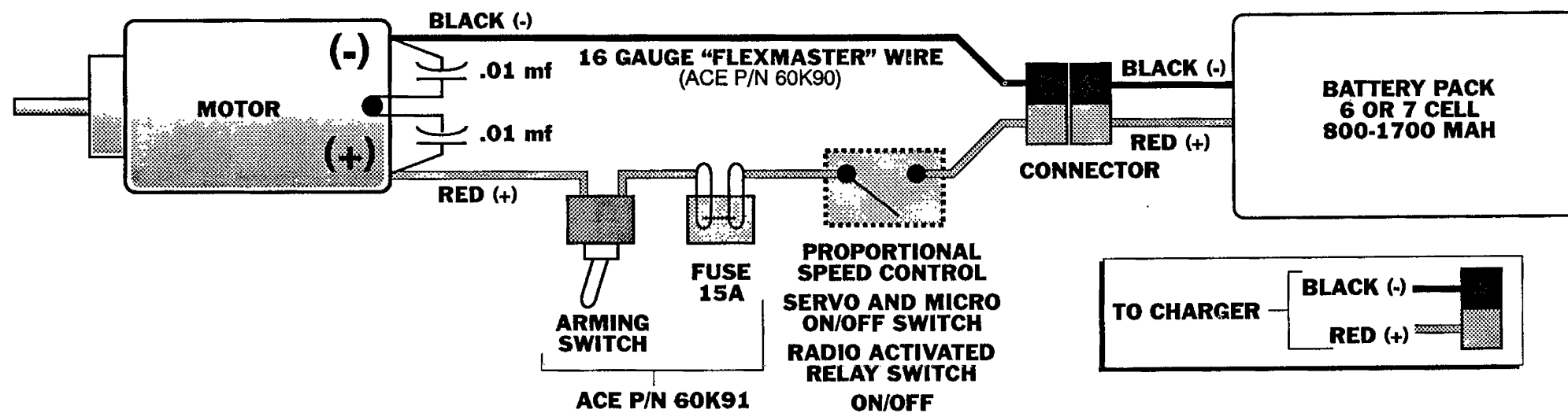


PLATE #1
FULL SCALE

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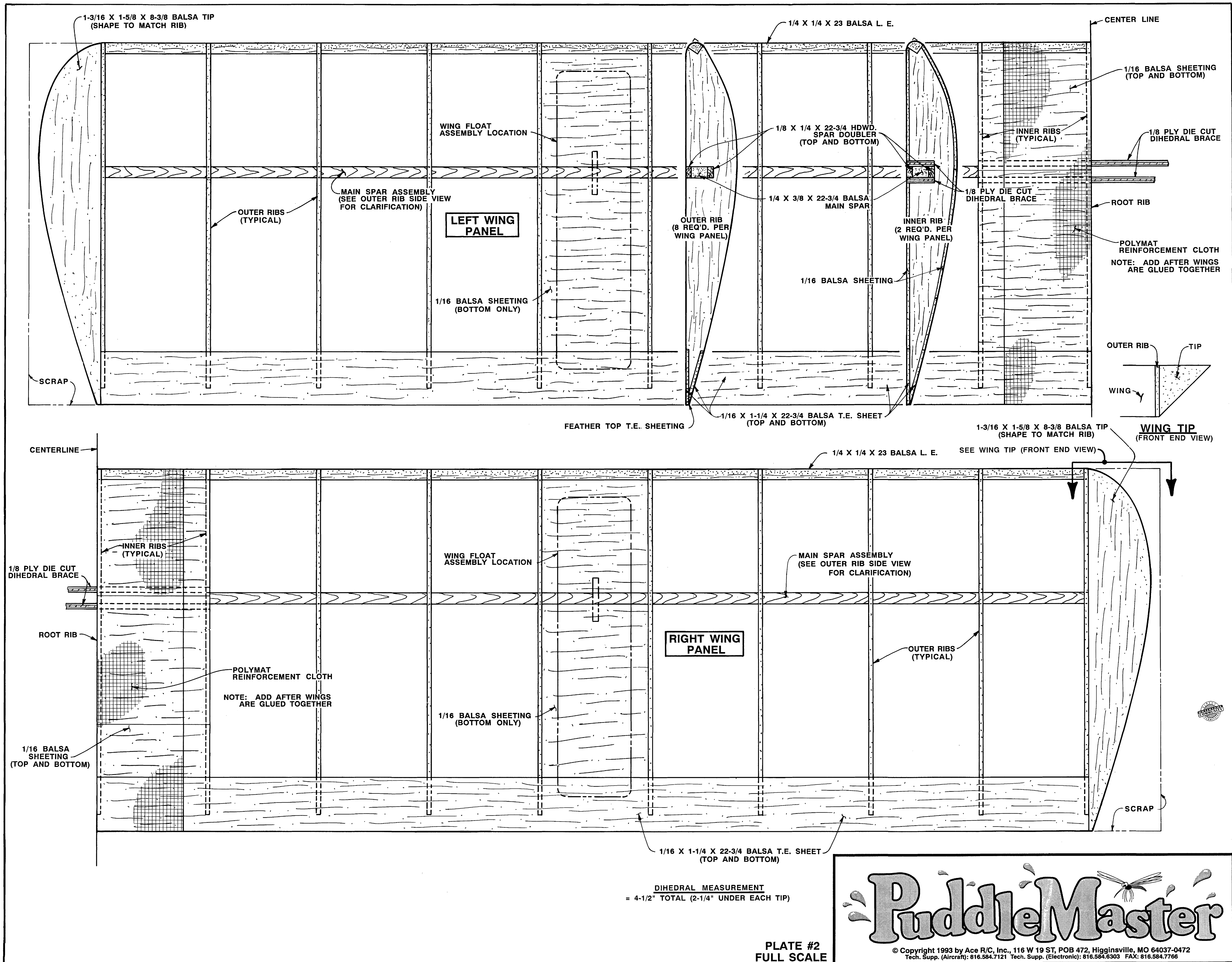


Designed by
Scott Hartman

Span: 48"
Area: 402 sq. in.
Weight: 44 Oz
Motor: Can or Colbalt 05
Electric, 6 or 7 Cells
Radio: 3 Channel



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suggested radio installation as shown on the plans. Install 3/16" sq. hardwood servo rails where desired, making sure proper control linkage alignment is maintained.

I. FUSELAGE CONSTRUCTION

- [] "Dry" assemble the fuselage by installing the formers into their slots in the inside of both fuselage sides, holding things together with masking tape....DO NOT GLUE!
- [] Position the fuselage over the plan's Top View and check that the center lines on the formers are in proper alignment. Adjust and re-tape as needed. When satisfied, glue the formers to the inside of the fuselage sides and join the sides at the tail. Our favorite technique is to run a bead of medium CyA along each joint. Check for proper alignment as the glue sets. When set, remove the tape.
- [] Find the triangular shaped $1/2" \times 2\frac{1}{8}" \times 5\frac{1}{8}"$ balsa Step. Study the Side View to determine how it is positioned on the fuselage. Note that the front edge is $1\text{-}3/16"$ to the rear of F3 and the rear 90° angle is perpendicular to the bottom edge. Glue the Step onto the bottom of the

[] At this point in time, we suggest you install your servos and temporarily install the rudder and elevator linkage. We recommend small, micro or mini sized servos plus either a BEC (Battery Eliminator Circuit) or a small 100 to 270 mah receiver battery pack for optimum performance. Total radio weight shouldn't exceed 6 oz. Hardware is furnished for the

[] Fabrication of the hatch is next. Study the Hatch Detail for clarification and follow this sequence.

[] Cut three pieces of the 1/16" X 2-7/8" sheeting, 3-1/4" long. Glue them together to form a part about 9" X 3-1/4". Trim to 8" X 3-1/4"; we will call this the "front deck". Using a fresh, sharp blade, carefully cut out the hatch according to the dimensions shown on the Hatch Detail and set the hatch aside.

- [] Locate the two 1/4" X 1/2" X 8-3/4" hardwood motor pylon parts. Securely glue them to the front side of F3 and the inside of the 3/16" sq. braces that are installed on F3, flush with the fuselage bottom. Refer to the plans for the proper relationship of the parts. The outer edges of the pylons should be 2" apart.
- [] The 1/8" plywood motor plate can be installed later.
- [] Complete sheeting the windshield area of the fuselage with 1/16" balsa crossgrained. You'll have to cut slots to clear the hardwood pylons.

III. TAIL SECTION ASSEMBLY

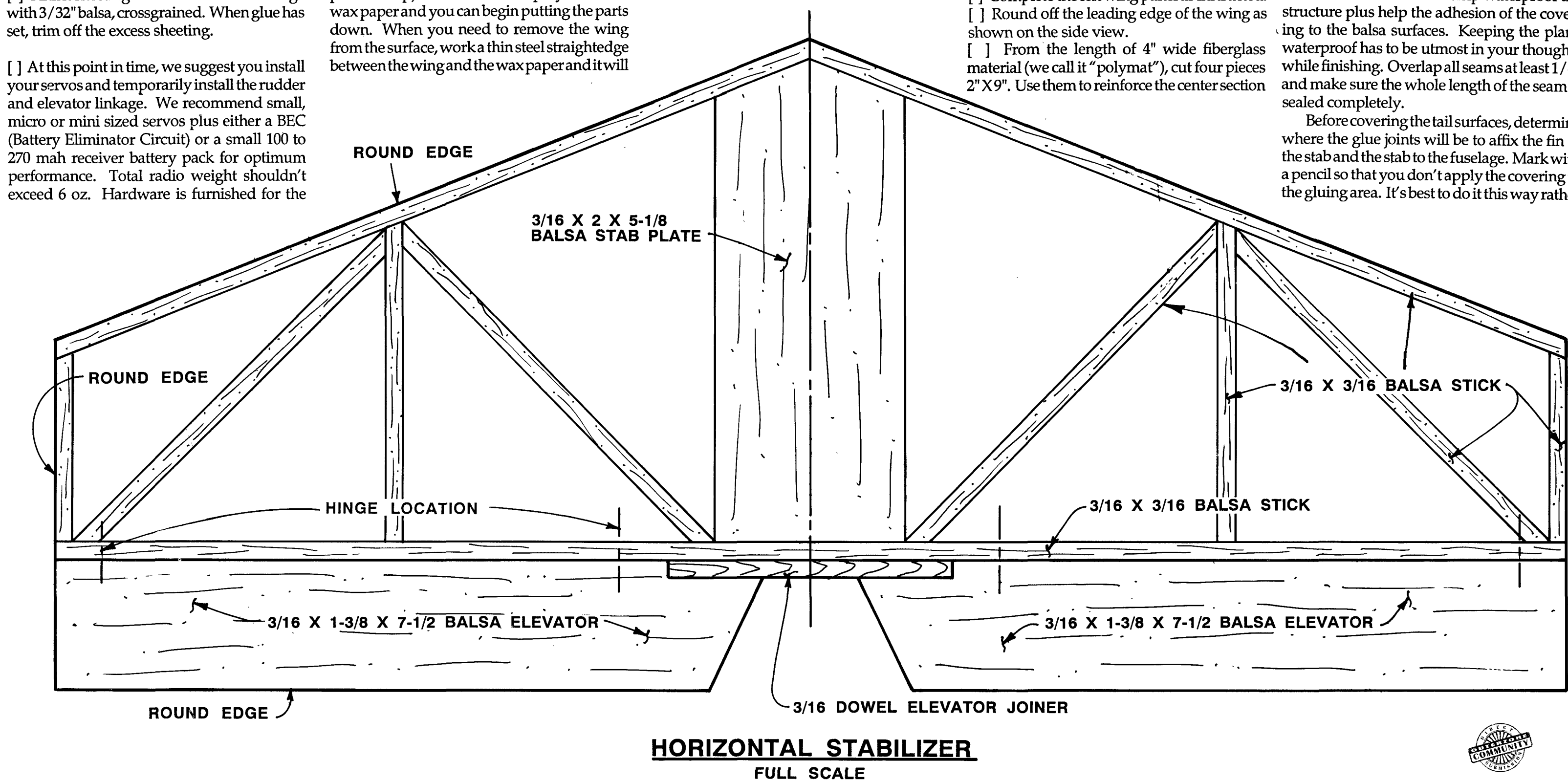
For the horizontal stabilizer and wing construction, we prefer the Hot Stuff / 3M Spray 77 pinless method of construction; that is, use Spray 77, lightly applied, to stick the plans to a flat, smooth work surface. Then spray the plans lightly and cover with waxed paper (not plastic wrap). Now a coat of Spray 77 on the wax paper and you can begin putting the parts down. When you need to remove the wing from the surface, work a thin steel straightedge between the wing and the wax paper and it will

- [] The horizontal stabilizer and elevators will be built over the full-size plans. Put the plans on a flat surface and cover with waxed paper.
- [] Using the 3/16" sq. balsa stick stock and the pre-cut 3/16" balsa Stab Plate furnished, build the horizontal stabilizer (stab) by cutting, fitting, and gluing the parts together. A fresh, sharp razor blade and a sanding block are your most important tools; good, tight joints are the secret to a strong, light stab. Use pins or weights to keep the structure flat.
- [] Using a piece of waxed paper to keep it from sticking to the stab, securely join the elevator halves with the 3/16" dowel joiner. Keep the elevators flat and aligned with the stab as the glue sets.

[] Using this Dihedral Guide, sand the angle into one end of each of the main spars. This end of the spar will go to the center (root) of the wing.

[] Starting with the right wing panel, build the wing panels in the following sequence. Line up all parts on the center line of the wing; let any excess go out the end of the wing. Pin a 1/16" X 1-1/4" X 22-3/4" balsa T.E. sheet on the plans, keeping the edge flush with the wing center line.

[] Using several outer ribs as a guide, pin down the main spar assembly in proper alignment,



[] Trim and block-sand the excess material that extends beyond both the root and the tip ribs.

- [] With the wing on a flat surface, glue the 1-3/16" X 1-5/8" X 8-3/8" triangular shaped balsa tip block to the tip rib. The 1-3/16" surface goes against the rib and the 1-5/8" surface runs horizontal to the top surface of the wing.
- [] Carve and sand the tip block to match the contour of the rib.
- [] Set the right wing panel aside. Build the left wing panel in the same manner, except for one thing.
- [] When it comes time to glue the dihedral braces in place, you will need to move the right wing panel into place and attach it to the left wing panel by securely gluing the dihedral braces (which are affixed to the right wing panel) to either side of the left wing panel's main spar. Block up the bottom edge of right wing panel's tip 4-1/2" to maintain the correct dihedral angle.
- [] Complete the left wing panel as instructed.
- [] Round off the leading edge of the wing as shown on the side view.
- [] From the length of 4" wide fiberglass material (we call it "polymat"), cut four pieces 2" X 9". Use them to reinforce the center section

V. WING FLOATS

- [] Refer to the Wing/Float Assembly Detail and Section B-B for the following steps.
- [] Lay the balsa P3's flat on the building surface; it is a rectangular part with square corners. Note the slot in the middle of these parts and that the slot is closer to one edge than the other; the closer end is the "front". Label it so.
- [] Glue the flat edges of four P2's vertically on each P3. The pointed end of the P2 goes to the front and the rear edge of each P2 should be flush with the rear edge of P3. The middle two P2's need to be spaced 1/8" apart and lined up on the outside edges of the slot; use the 1/8" plywood P4 to get proper spacing.
- [] Using 1/16" balsa crossgrained, sheet the bottom and rear end of both wing floats. You will need to bevel the edges of P3 with a sanding block for proper fit.
- [] Lay each P1 on the building surface. Study the Wing/Float Assembly Detail to determine the proper installation of the plywood P4. Glue each P4 to P1, keeping it perpendicular. Reinforce with two 3/8" triangular X 1" braces cut from the material furnished.
- [] Next glue each P4 into one of the float assemblies, again making sure they are installed properly; P4 should bottom out on the sheeting.
- [] Trim and sand the float assemblies.

VI. COVERING

In any event, we recommend a coat of Coverite Balsarite. It will help waterproof the structure plus help the adhesion of the covering to the balsa surfaces. Keeping the plane waterproof has to be utmost in your thoughts while finishing. Overlap all seams at least 1/4" and make sure the whole length of the seam is sealed completely.

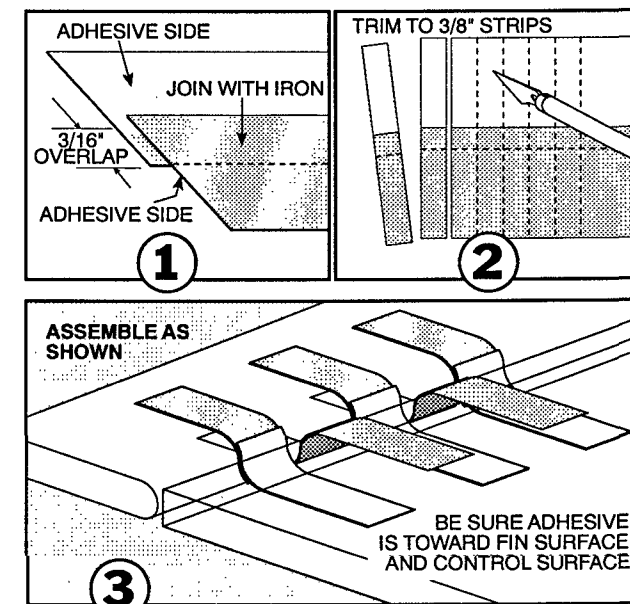
Before covering the tail surfaces, determine where the glue joints will be to affix the fin to the stab and the stab to the fuselage. Mark with a pencil so that you don't apply the covering to the gluing area. It's best to do it this way rather

**"FIGURE 8"
HINGE TECHNIQUE**

Take a 8" length of thread and harden one end for about 1/2" with thin CyA; it will act as a needle. Tie a knot in the other end. "Sew" the

the outer holes then b

the hole opposite the first one. Repeat for all five holes. Snug the thread so the surfaces are tight together and lined up. When satisfied, put a drop of thin CyA on the thread where it exits each hole.



Use them to hinge the surfaces in an "X" fashion. Each hinge location grouping should consist of at least four alternating hinges.

VII. FINAL ASSEMBLY

The wing floats can be installed one of two ways. If you are only going to fly off of water, use silicone sealer to glue them in place. If you want them removeable, use two strips of 1/2" or 3/4" wide self-stick Velcro on either side of P1 along the full length. Of course, the mating Velcro will go on the bottom of the wing.

(While talking about removeable wing floats, the question of non-water flying has

If a "can" motor is used, it is recommended that the motor be "broken-in". Run it for about an hour without a prop using your battery charger as a power source and the current set somewhere between one and two amps. That will help seat the brushes initially. The motor will continue to improve in performance after it has been flown awhile.

VIII. FLYING

Pick a calm day for the test flights. Have the batteries charged. Secure the wing with ten No. 64 rubber bands. Launch the model on the water, apply power, and steer directly into the wind. Adjust the direction so neither wing floats touch and when the plane is up to flying speed, feed in a small amount of up and it should break water. Climb slowly until the model is up to altitude. The PuddleMaster is capable of mild aerobatics; you may have to dive a bit to increase speed. When the motor starts to slow down, turn off the motor and glide back to the water. You will find that the PuddleMaster slows down nicely. Before touching down, apply just enough up elevator to skim across the top of the water. After landing, you should have enough power to taxi back to shore.

A note on motor thrust. If you are experiencing a stalling tendency under power, decrease the amount of motor upthrust by shimmying the top of the firewall with washers. If it tends to dive, do the opposite.

We hope you enjoy your PuddleMaster. If you have any comments, we'd appreciate hearing from you.

