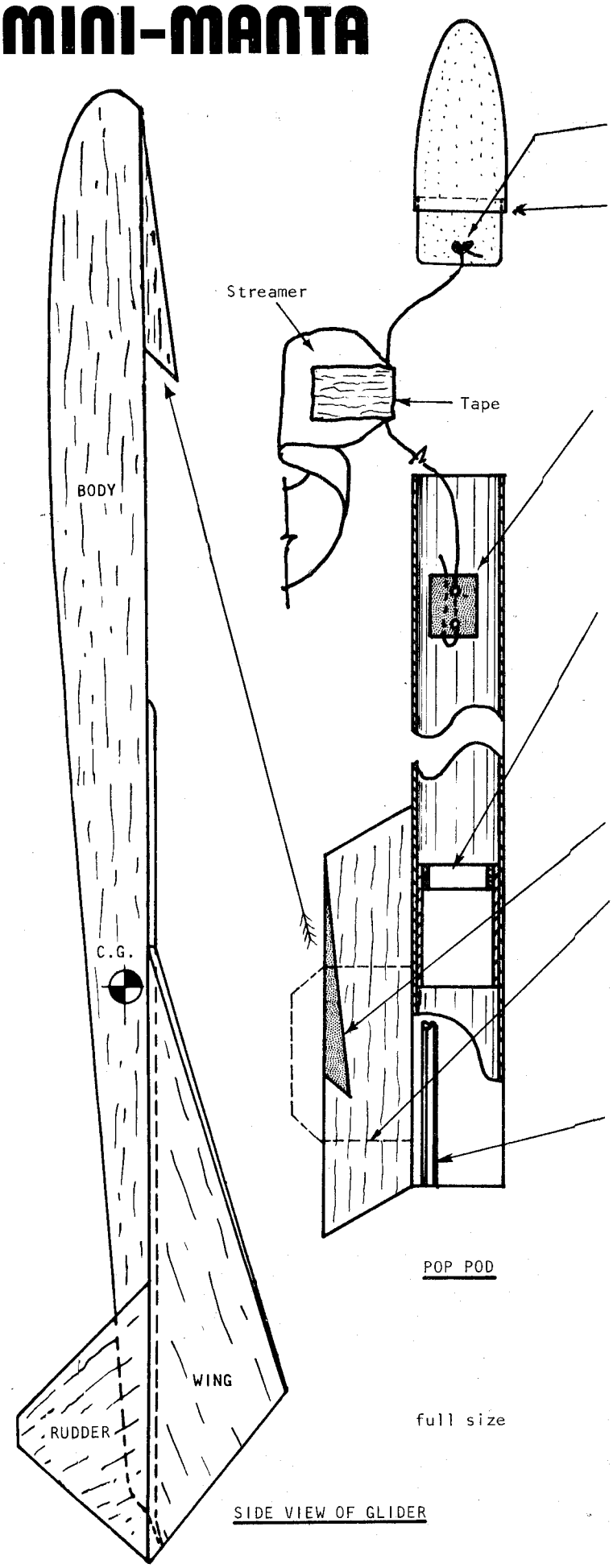
MINI-MANTA



POP POD

full size

SIDE VIEW OF GLIDER

"POP" POD ASSEMBLY INSTRUCTIONS:

Start assembly of nose cone by inserting shock cord through hole in bottom of nose cone adapter. Tie knot large enough to keep cord in place.

Put a thin coat of plastic (styrene) cement around inside of nose cone. Rub cement with the end of your finger to smooth it out and remove excess. Use cement sparingly as it will melt nose cone.

Insert adapter into nose cone then slip nose cone into body tube to insure alignment. With a twisting motion, carefully remove nose cone from body tube and allow to dry.

Punch two holes with a pencil 1/2" apart in the gauze shock cord anchor and thread cord into anchor as shown. Smear glue with a brush or "Q" Tip in body tube about the size of the anchor 3/4" from end. Insert shock cord and anchor into body tube and push into glue with a pencil until securely set in place.

The pod is recovered by streamer which is taped to the center of the shock line with masking tape.

Glue EB50 engine block flush with one end of small piece of RB50. This acts as an engine mount especially designed for piston launching.

Using a "Q" Tip or brush, smear white glue around inside of body 1 1/2" from rear. Insert engine casing in engine mount then into rear of body tube and push it forward until 1/4" of engine casing protrudes. Remove engine casing immediately as soon as engine is positioned.

Cut out shaded portion of balsa pylon as shown on drawing. Glue this piece to front of glider body making sure that it is positioned correctly as shown on side view of glider.

Glue the 1/64" plywood alignment plates on both sides of the notch in the balsa pylon. Make sure that no glue gets in the notch or on the bottom of the pylon. Remove any excess glue from the bottom of the pylon assembly immediately. Any glue remaining will keep the pod from fitting on the body. Allow to dry.

Carve and sand pylon assembly to a symmetrical airfoil shape. Sand top to fit body tube, then glue to rear and parallel to center line of the pod body.

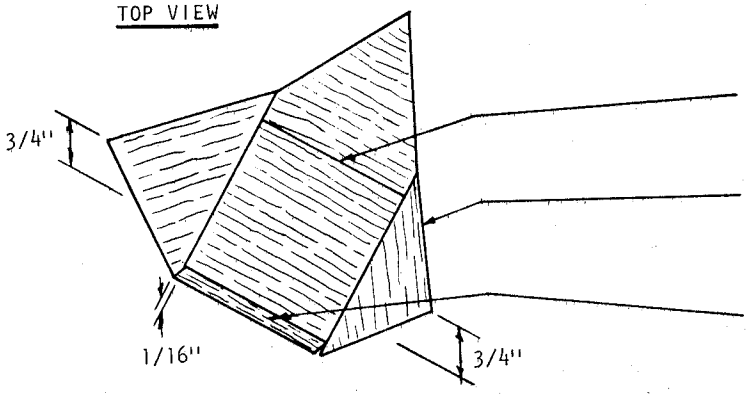
The Mini-Manta is designed for launching from the CMR Piston Launcher, however, if desired it can be flown from a regular launch rod by gluing launch lug along one side if the body tube parallel to the center line. This adds additional drag during boost.

CHECKING:

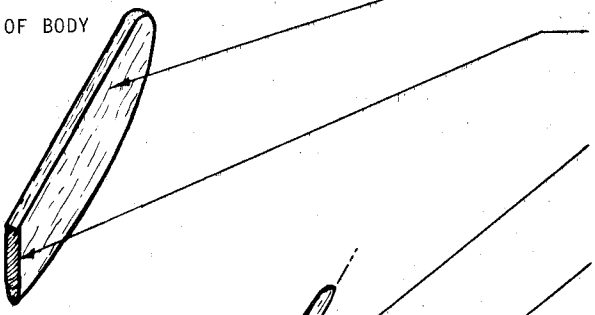
Fit the "pop" pod on the glider body so that the cut-out fits into the space where it was removed from the pylon. By moving the pod forward the "pop" pod and the glider body should interlock. If the pod fits properly on the glider body you should be able to "pop" the pod off the glider by hitting the nose cone lightly with the palm of your hand. If the pod fits too tight, sand the nose of the glider until the pod comes off easily but does not fall off when you hold the glider.

THE BOOST GLIDER DESIGNED FOR PISTON LAUNCHING

TOP VIEW

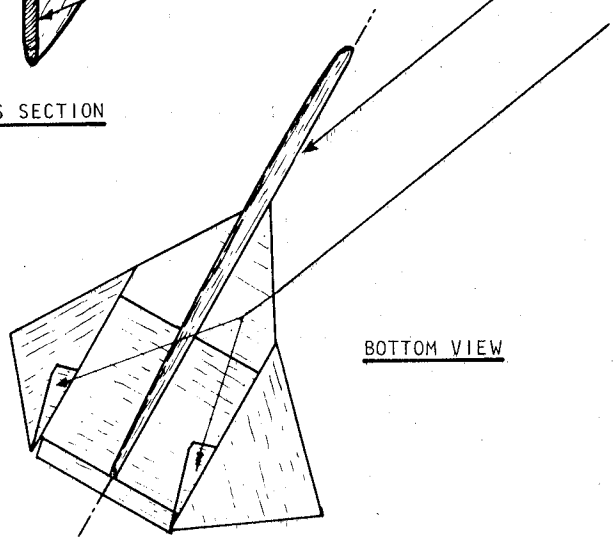


FRONT OF BODY



CROSS SECTION

BOTTOM VIEW



GLIDER ASSEMBLY INSTRUCTIONS:

Place center portions of wing on wax paper with grain running as shown and glue together. Hold in place with pins or weights.

With the grain parallel to the leading edge, bevel the inner edge of the outer wing to fit the center wing when they are raised to the 3/4" dihedral. Prop up the tips to 3/4" and glue in place.

Glue the rear flap in place so that the rear is 1/16" above the bottom of the wing and the front is even with the center wing. Allow to dry.

Cut the 1/8" balsa body to the shape as shown on the full size side view using the actual side view of the glider body as a pattern.

Sand the bottom and front of the body round as shown on the cross section. Do not round the top of the body or it will ruin the fit of the wing and pylon.

Invert wing and prop up the center so that the wing tips are above the table. Mark the center of the wing and glue body on mark.

Sand rudders to a symmetrical airfoil shape then glue flush with the rear and along the joint of main wing and the outer wing.

Check rudders and body to be sure they are vertical and in line with the wing joint.

When dry, sand the wing to an airfoil shape. Resand the body with fine sandpaper, keeping the top flat. Coat all surfaces with one coat of clear dope or sanding sealer and fine sand when dry. For best performance and light weight just fill and sand sufficiently for a smooth surface.

Hand glide and trim the glider as necessary. Generally, exact trim cannot be determined until the bird has been actually flown under power.

Build Pop Pod. (See Pop Pod Assembly Instructions.)

FLYING INSTRUCTIONS:

Although the bird will generally lift off the pad and rise vertically with no adjustment, sometimes a little adjustment is necessary for a perfect vertical flight. For the first flight, load the power pod with a 1/2A3-2T engine, with igniter, wrapped with tape on the front edge only for a tight fit. Place flameproof wadding into front of pod and push until it hits front of engine. Fold and insert streamer then replace nose cone. Nose cone should fit snugly into the body tube to insure proper separation of the "pop" pod. The Mini-Manta is designed to be flown from the CMR Piston Launcher. See instructions with Piston Launcher Kit. If CMR Piston Launcher is not used, a piece of masking tape should be wrapped around the launch rod so that the "pop" pod weight is resting on the tape. This keeps the pod from separating from the glider before ignition. Attach igniter clips and fire. Observe the flight under power. If the bird veers over on its back during the initial flight, shave the nose of the glider to tilt the nose of the pod down. This should be done only a 1/32" at a time until the trim is correct. At the same time the glider should be adjusted for a perfect glide in a large circle using clay as necessary.

The Mini-Manta can be flown with 1/4A3-2T, 1/2A3-2T, A3-2T engines without difficult. When flying with larger engines, the wing tip joints, leading edge and the body wing joints should be reinforced with Japanese tissue and clear dope.