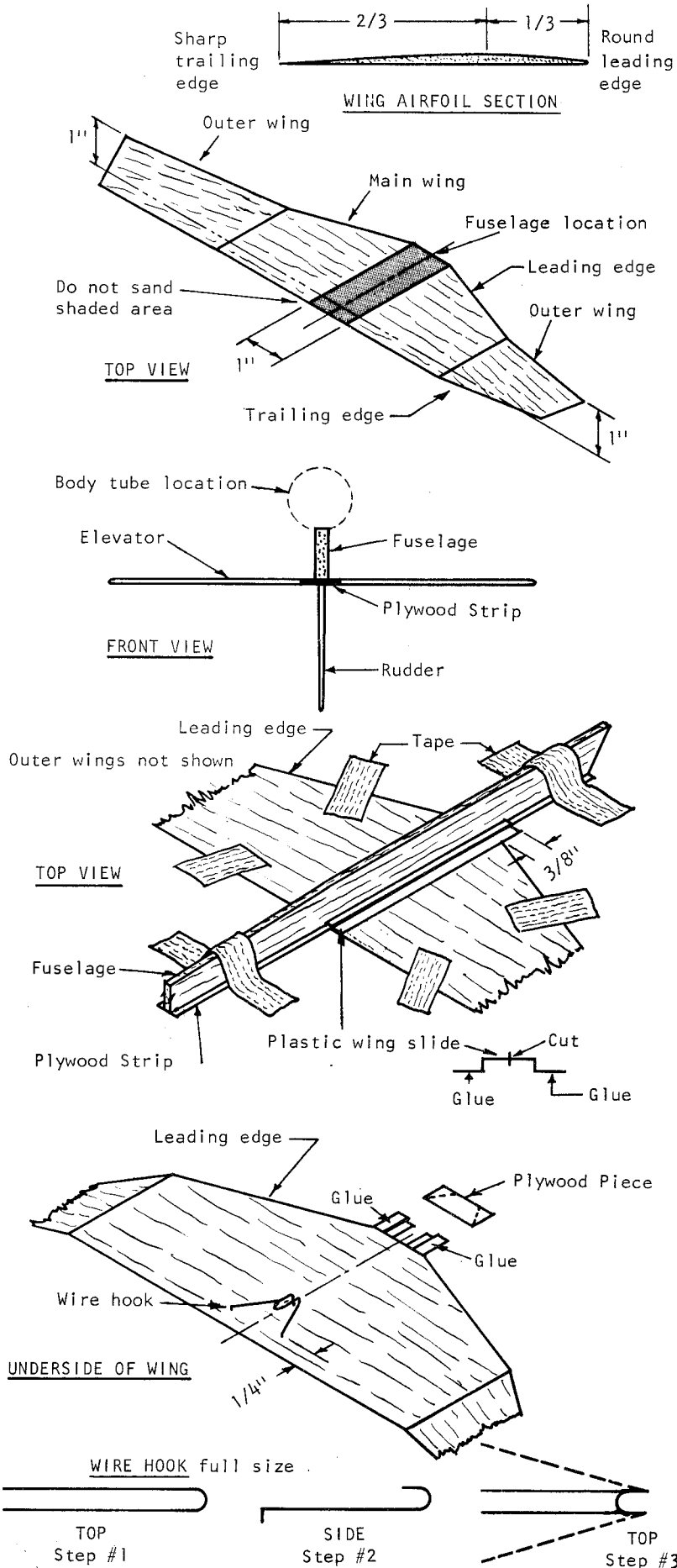


# BUZZARD



Before starting construction, read the complete description of the operating characteristics of this glider on the last page.

## WING AND TAIL ASSEMBLY INSTRUCTIONS:

Epoxy glue is recommended for all construction except those involving plastic parts.

Temporarily assemble main wing to outer wings with masking tape on the underside. Grain of outer wing runs parallel to leading edge. Sand entire wing to an airfoil shape except shaded area where wing slides attach. Be very careful not to sand away too much where the airfoil meets the flat section. Round edges of wing tips. Coat the shaded area with 2 coats of dope sanding between coats.

Disassemble and place main wing on waxpaper as shown and hold in place with pins or weights. Bevel outer wings so they fit the center wing when raised to the 1" dihedral. Prop up the wing tips to 1" and glue in place.

Cut the 1/8" balsa fuselage to shape using full size pattern on last page. Sand front edge and top from back of pod to rear of fuselage round. Coat rounded top with epoxy to prevent burning of balsa during flight. Coat sides of fuselage with 2 coats of sanding sealer sanding between coats. Finish with a coat of clear dope.

Sand rudder and elevator to a symmetrical airfoil shape. Leave center 3/16" of elevator flat on top for gluing to fuselage. Work slowly to avoid notching the elevator root. Glue elevator, with straight part forward, to fuselage in position as marked on full size pattern. Notch rudder to fit over elevator as shown in side view and glue to fuselage flush with rear.

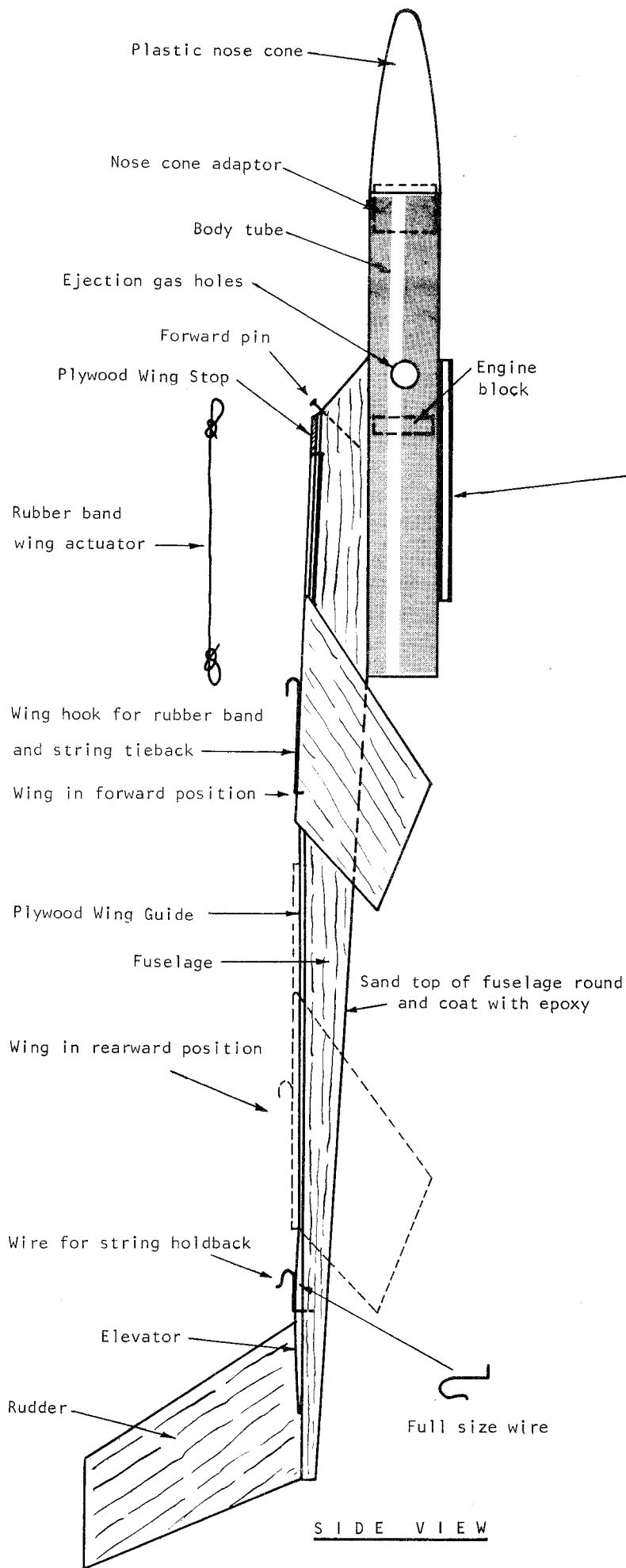
Cut the 1/64" thick 3/8" wide plywood strip to fit from front of elevator to front of fuselage. Glue the plywood strip to the fuselage using epoxy glue. Use enough glue to hold the strip but not enough to ooze out onto the strip. No glue should get on the overhanging edges. This is important since this is where the wing slides.

Tape down wing on a flat surface using masking tape. Lay fuselage with Plywood Strip down along center of wing and tape it in position as shown. Align carefully so that the wing trailing edge is perpendicular to the fuselage.

Cut plastic wing slide in half. Smear styrene epoxy cement where shown and glue to wing on each side of fuselage. The raised portion should fit over the Plywood Strip on fuselage and extend 3/8" beyond front of wing. Be careful not to get glue on sliding portions. Allow to dry.

Slide wing off body and turn the wing over. Using plastic glue carefully glue the small piece of 1/16" Plywood wing stop to the pieces of wing slide extending beyond the front of the wing. Do not get glue inside the wing slides. Allow to dry thoroughly and trim to shape of wing.

Cut a piece of wire to 2 1/2". Bend wire to a hairpin shape as shown in Step 1. Next, bend down the loose ends 1/16", then form a hook in the other end. Finally spread out the ends as shown in Step 3. Epoxy this hook on underside of wing as shown.



POD ASSEMBLY INSTRUCTIONS:

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 adaptor 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.

Coat end of adaptor with epoxy cement to protect it from the ejection charge gasses and at the same time coat the end of the body tube nearest the holes with epoxy cement. Insert the nose cone into the body tube and allow to dry.

Glue the pod to the fuselage so that holes are facing sideways and rear is 2 1/2" from front of fuselage.

Glue launch lug on top of pod parallel to center line with front of launch lug even with front of holes in tube.

Engine block is installed after determining engine position. (See flying instructions.) To install engine block smear white glue around inside of body with a "Q" Tip or brush about 2" from rear. Insert engine block in rear of body tube and push it forward with an engine casing until it reaches the mark previously put on the fuselage. Remove engine casing immediately as soon as engine is positioned.

FINAL ASSEMBLY:

Slip wing on fuselage wing guide with hook to the rear. Make sure it slides freely.

Install pin for rubber band in front of fuselage where shown.

Bend hook for string from a 1" piece of wire in shape shown and epoxy to elevator just in front of rudder.

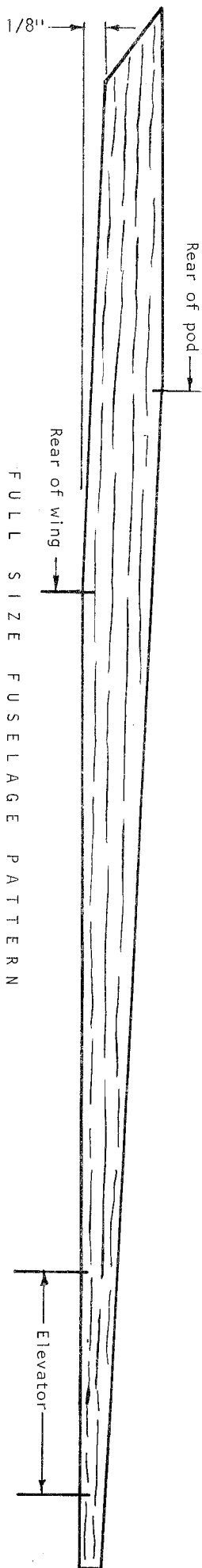
Glue small 1/16" plywood stop with epoxy to front of wing slide to stop wing in forward position. Allow to dry thoroughly.

Tie knots in each end of rubber band to form loops. Cut off one piece of rubber band so that only one strand remains.

Hook rubber band over wing wire and pin in front of fuselage. Check wing operation by sliding wing to rear until it hits elevator. When released the wing should slide forward and come to rest at the Plywood stop. If necessary, lubricate slide with powder or silicone spray to make it slide easier.

All balsa and paper surfaces should be given at least 2 coats of sanding sealer or clear dope, fine sanding between coats. Do not get any dope on plastic parts.

When flying with A3-4m and B3-5m engines the wings should be reinforced by spreading epoxy glue at top and bottom of wing joints and along leading edge of wing. Entire model should be given an additional 2 coats of clear dope over the sanding sealer. A 1/2" wide strip of aluminized Mylar (CMR Cat. AM1) folded over the leading edge of the wing protects the wing and adds additional strength.

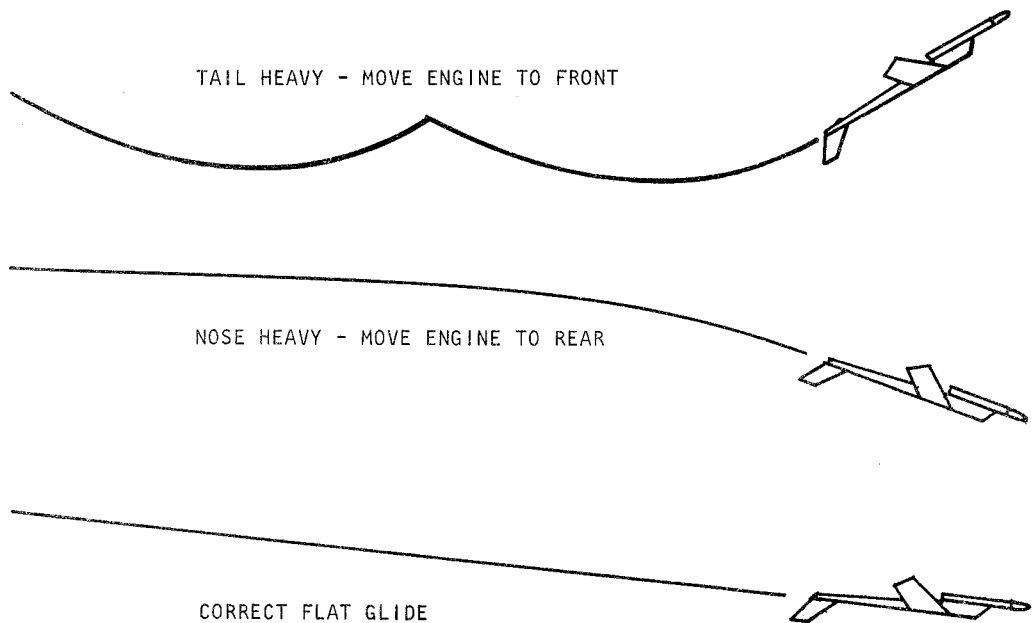


DESCRIPTION:

The Buzzard is specifically designed for the NAR Hornet (1/2A3-3M), Sparrow (A3-4M) and Swift (B3-5M) rocket glider competition events. It can also be flown as a boost glider by ejecting the engine. This glider is a special type that changes its flight characteristics by moving the wing. At take-off the wing is held to the rear by a nylon string. With the wing in the rearward position, the center of gravity is forward of the center of pressure so that the bird performs as a rocket and rises vertically. At apogee, the ejection charge burns through a string, releasing the wing which slides forward. This moves the center of pressure forward and changes the aerodynamic characteristics into a glider, permitting a gliding recovery.

GLIDE TRIM ADJUSTMENTS:

With the wing in its forward position, insert an expended engine into the body tube so that about 3/8" of the engine protrudes. Use tape around the engine so that it will remain in place. Gently launch the glider by hand and adjust the engine until a flat glide is attained. Do not attempt to throw this glider like a hand launched glider. It is not designed as one. When properly adjusted, mark position of rear of engine on fuselage and install engine block. Further adjustment may be necessary after powered flight.



FLYING INSTRUCTIONS:

Unhook the rubber band from the front pin and slide the wing to the rear against elevator. Tie the special nylon thread furnished in the kit (CMR Cat. No. SL-1) into a loop with a slip knot. Slide the loop over the front of the body tube and fuselage so that the string is over the center of both ejection gas holes. Tighten the loop with the string on the bottom. Pull the string along the bottom of the slide and around the hook at the rudder, then tie to the top of the wing hook over the rubber band. Attach rubber band to front pin. (Operation can be checked by cutting the string over the ejection ports.) DO NOT USE ANYTHING BUT NYLON STRING.

With the wing tied in the rearward position, install engine with igniter in the body tube using tape until it is tight. Slide launch lug over launch rod. Put a piece of tape on the rod so that the weight of the bird is resting on the launch lug. Follow safety launching procedures of engine manufacturer and launch the glider. It should rise vertically from the pad and at apogee the ejection charge should burn through the string allowing the wing to move forward permitting a gliding recovery. Trim glide for best performance by using clay weight.

To fly the Buzzard as a boost glider attach a mylar streamer (CMR Cat. No. SM-2) to the engine casing with clear scotch tape. Use just enough streamer so that the engine will fit in the body tube. The bird now must be trimmed to glide without the engine. Either reposition the wing or add clay weight as required. Tie the wing back and fly the same as the rocket glider. At apogee the engine will eject and come down by streamer while the string will burn through moving the wing forward. Adjust trim for best glide.

