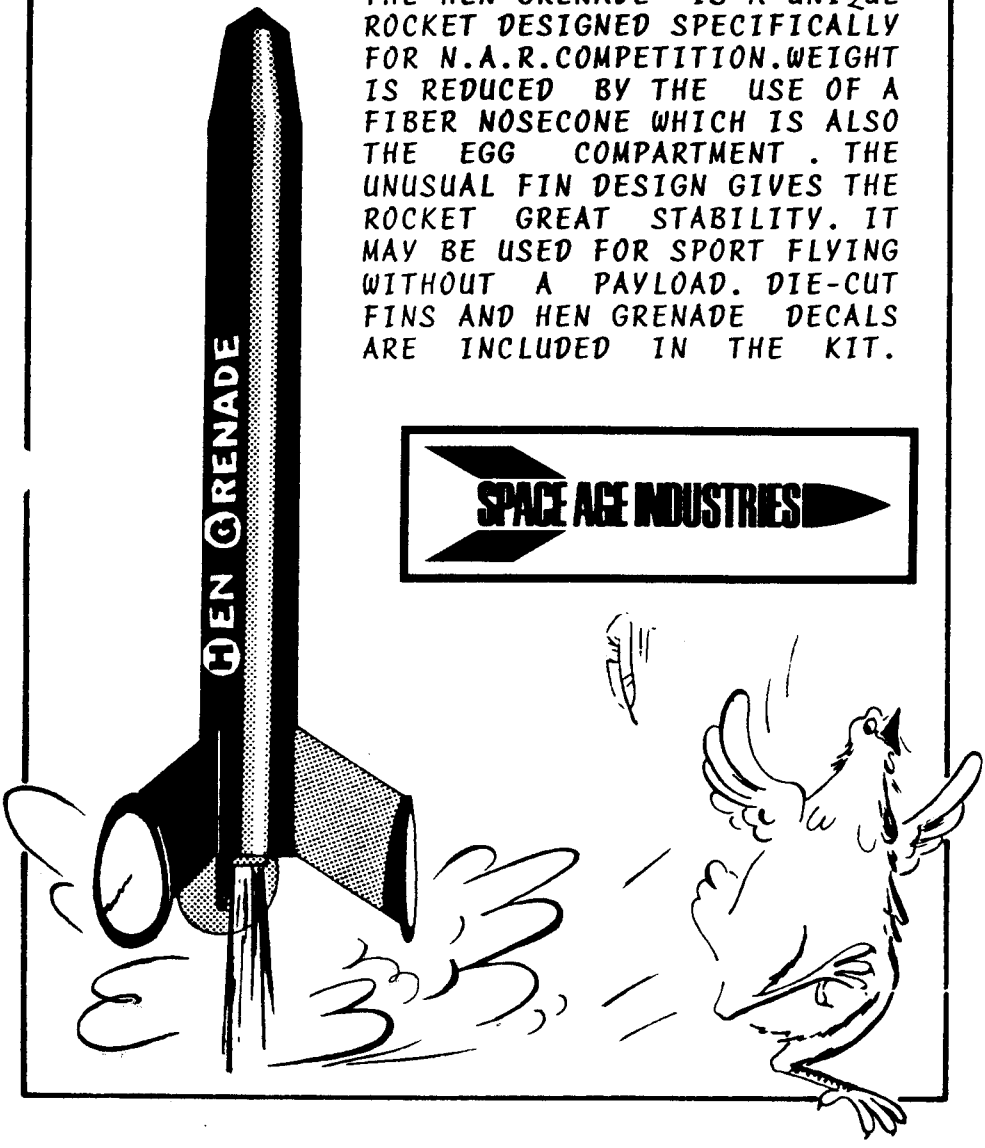
HEN GRENADE

ANOTHER USE-TESTED INSTRUCTION MANUAL

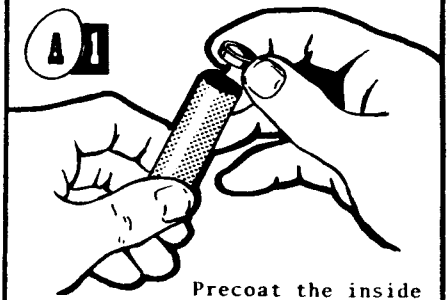
THE HEN GRENADE IS A UNIQUE ROCKET DESIGNED SPECIFICALLY FOR N.A.R.COMPETITION.WEIGHT IS REDUCED BY THE USE OF A FIBER NOSECONE WHICH IS ALSO THE EGG COMPARTMENT . THE UNUSUAL FIN DESIGN GIVES THE ROCKET GREAT STABILITY. IT MAY BE USED FOR SPORT FLYING WITHOUT A PAYLOAD. DIE-CUT FINS AND HEN GRENADE DECALS ARE INCLUDED IN THE KIT.



SPACE AGE INDUSTRIES

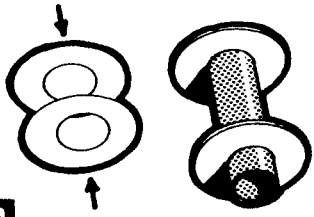
a ENGINE MOUNT

A 1



Precoat the inside edge of the engine tube and the outside edge of the engine block with white glue and place the block into the tube so that the edges are even.

NOTICE: If you plan to build the Hen Grenade with a boat tail, turn to Egg "G", Optional Boat Tail.



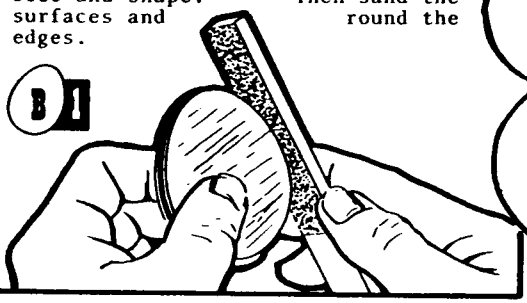
A 2

If four spacers are provided, glue two pairs together with the fiber grain at right angles. Glue the spacers to the engine tube as shown. The lower spacer is 1/2 inch from the edge.

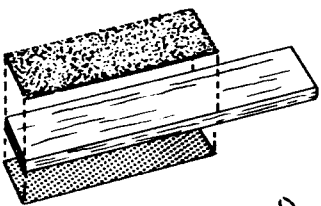
b FIN ASSEMBLY

Carefully separate the die-cut fins from the balsa sheet. Place the three eggs together and sand the edges. Flip one fin and sand a little more. Do this until all of the fins have the same size and shape. Then sand the surfaces and round the edges.

B 1

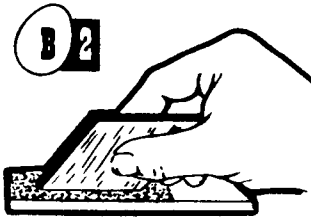


MODELER'S TIP: Make several sanding sticks. Cut 1/4"x1" sticks into short lengths. Glue fine grit sandpaper to one side and coarse grit paper to the other.



Place the three diamond shaped fin pieces together and sand the edges by rubbing them over the sanding stick or against a sheet of sandpaper on a flat surface. Opposite edges must be kept PARALLEL.

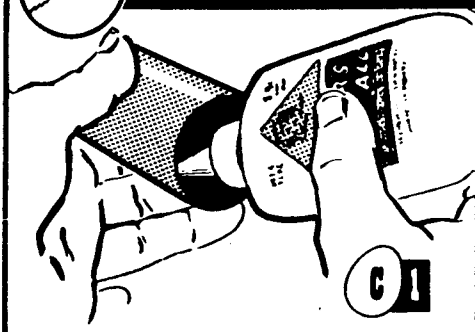
B 2



Place each egg over this pattern and draw a line between the arrows. Assemble the fins as shown, using a square or the edge of this manual to make sure that the angles are perfect.

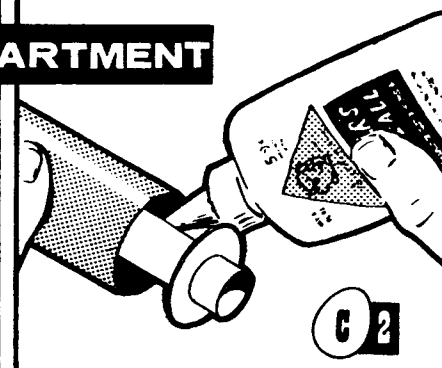
B 3

C ENGINE COMPARTMENT



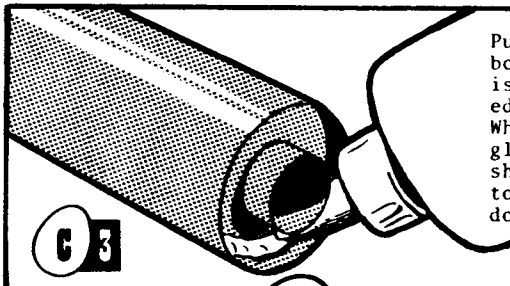
C1

Place a bead of white glue inside the body tube at least 1 1/2 inches from the end of the tube.



C2

Slip the engine mount partly into the body tube and add a second bead of glue about 1/4 inch from the edge of the body tube.

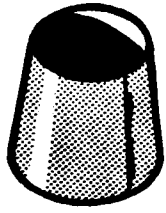


C3

Push the engine mount into the body tube until the lower spacer is recessed 1/4 inch from the edge of the body tube.
When the glue is dry, add fresh glue fillets to the joints as shown. Position the tube upright to keep the wet glue from running down to the lowest point.

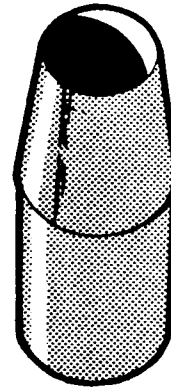
d PAYLOAD COMPARTMENT

Carefully cut the large nosecone former from the fiber sheet. Pull the former over the sharp edge of a table to give it the proper curl. Use white glue to construct as shown.



D1

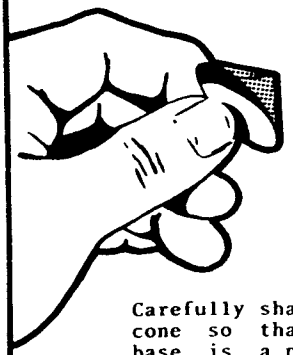
Glue flap on inside



DIRECTIONS CONTINUED ON PAGE 4

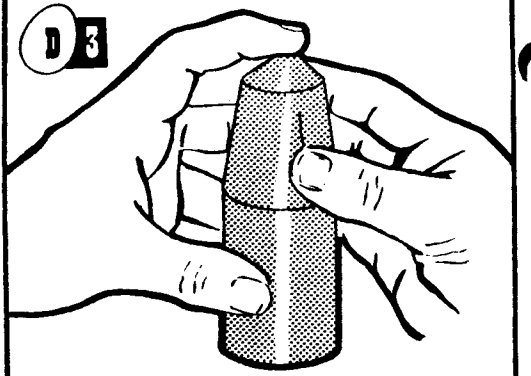
Place a bead of glue along the inside edge of the larger end of the nosecone former and position it over the 2 3/4inch payload tube. It should overlap slightly. This edge will be trimmed and sanded when the nosecone is finished and the glue is dry. The fiber nosecone has several advantages. It is light in weight, easy to assemble and offers maximum payload space. It may be strengthened greatly with little increase in weight by the application of model airplane tissue. Tissue should be applied with clear dope. White glue is not good for this use because it shrinks and may distort the nosecone

Trim the smaller nosecone former and construct as shown.



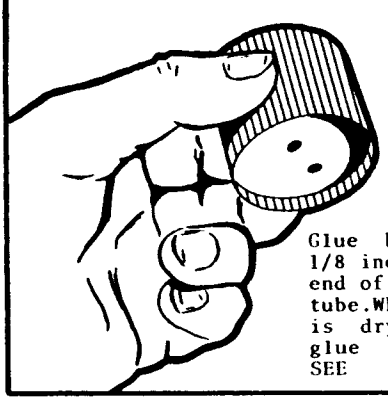
D2

Carefully shape the cone so that its base is a perfect circle.



D3

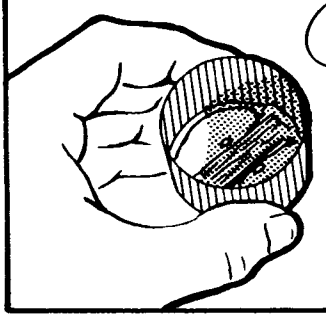
Attach top cone in the same manner that lower section was attached. Use gentle finger pressure to shape nosecone assembly. Do not worry about overhanging edges . They should be sanded when the assembly is dry.



D4

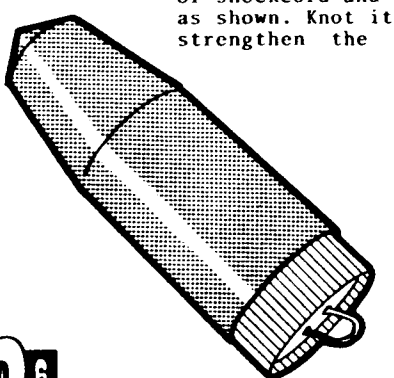
Glue bulkhead 1/8 inch from end of adapter tube.When glue is dry, add a glue fillet .
SEE PAGE 3

Glue 3/8" x 1 1/2"scrap balsa stick on inside of bulkhead.



D5

Fit the bulkhead assembly into the upper payload compartment. Use three straight pins to join the sections.*See pages 4 and* 5.Cut a 3 to 4 inch length of shockcord and pass it through the bulkhead holes as shown. Knot it on the inside of the bulkhead and strengthen the knot with glue.

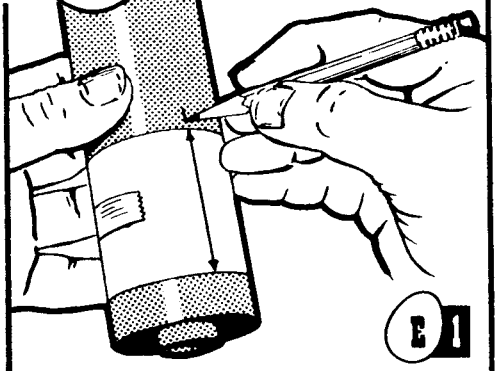


D6

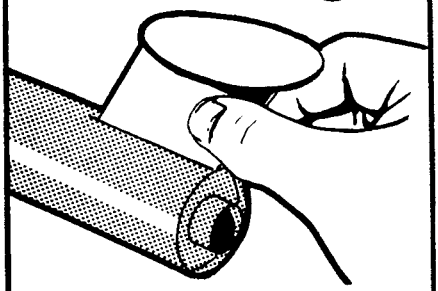
Cut circles from the foam plastic provided in the kit.Trim these to suit the payload.

Upon ejection, the nosecone may snap back and strike the rocket body.For this reason,some builders prefer to rig a chute on the nosecone and a streamer or chute on the rocket body. This scheme is shown on page 7.

e FIN TO ROCKET BODY



Wrap the fin guide around the body tube. Use tape to keep it snug.Make a pencil mark at the tip of each arrow.Rotate the guide to check the accuracy of the marks.

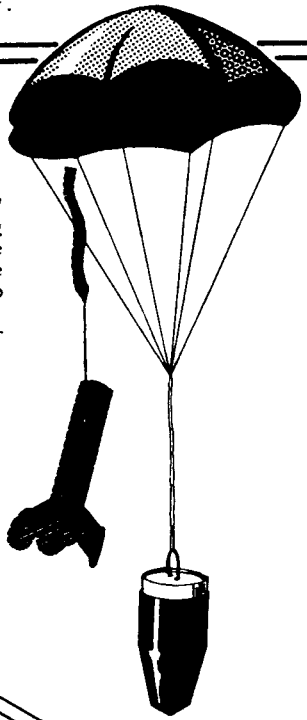


After extending lines through the marks, glue the fins as shown. The Fin Position Guide, below, may be used to verify the angles.Place the tube in a vertical position, fins upward to dry.

f FINAL ASSEMBLY

Glue the shock cord anchor 1 inch from the inside edge of the body tube.
Etch the aluminum launch lug with rough sandpaper and glue it to the body tube.

Use a 1/2"x 2 1/2" strip of masking tape as an engine retainer.Wrap tape around lower lip of engine mount. Change tape for each flight.

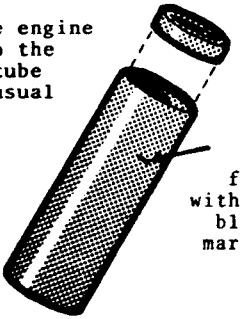


FOR HIGH PERFORMANCE OR CONTEST EGG LAUNCHING EVENTS,"EGG"FINS MAY BE OMITTED.

Sand the rocket with very fine sandpaper such as Flex-I-Grit and add two or three coats of sanding sealer. Paint your favorite color.The original Hen Grenade was painted flat black.Add the offical Hen Grenade decals, rob the nearest hen house,and test fly you

g OPTIONAL BOAT TAIL

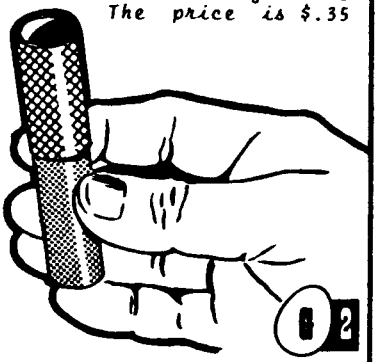
Glue the engine block to the engine tube in the usual manner.



Measure 5/8 inch from end with engine block and mark tube.

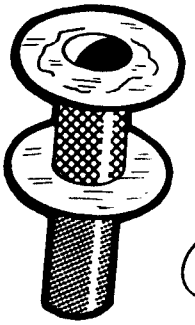
01

Adapter for F.S.I. C,D, and E engines available at your dealer. Ask for EM-2 The price is $.35



02

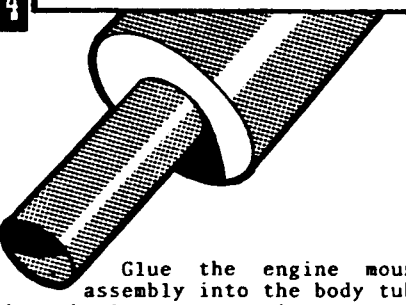
Place a coat of glue on the inside of a 20 millimeter x 1 3/4 inch tube. Slide the engine tube in to the mark.



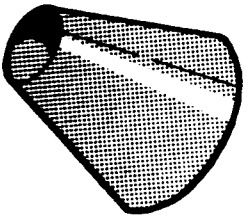
03

Enlarge the hole in the upper spacers. Glue the spacers as shown. Allow the assembly to dry overnight.

04

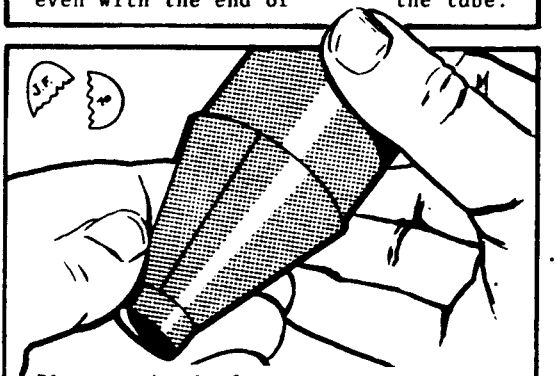


Glue the engine mount assembly into the body tube so that the lower spacer is nearly even with the end of the tube.

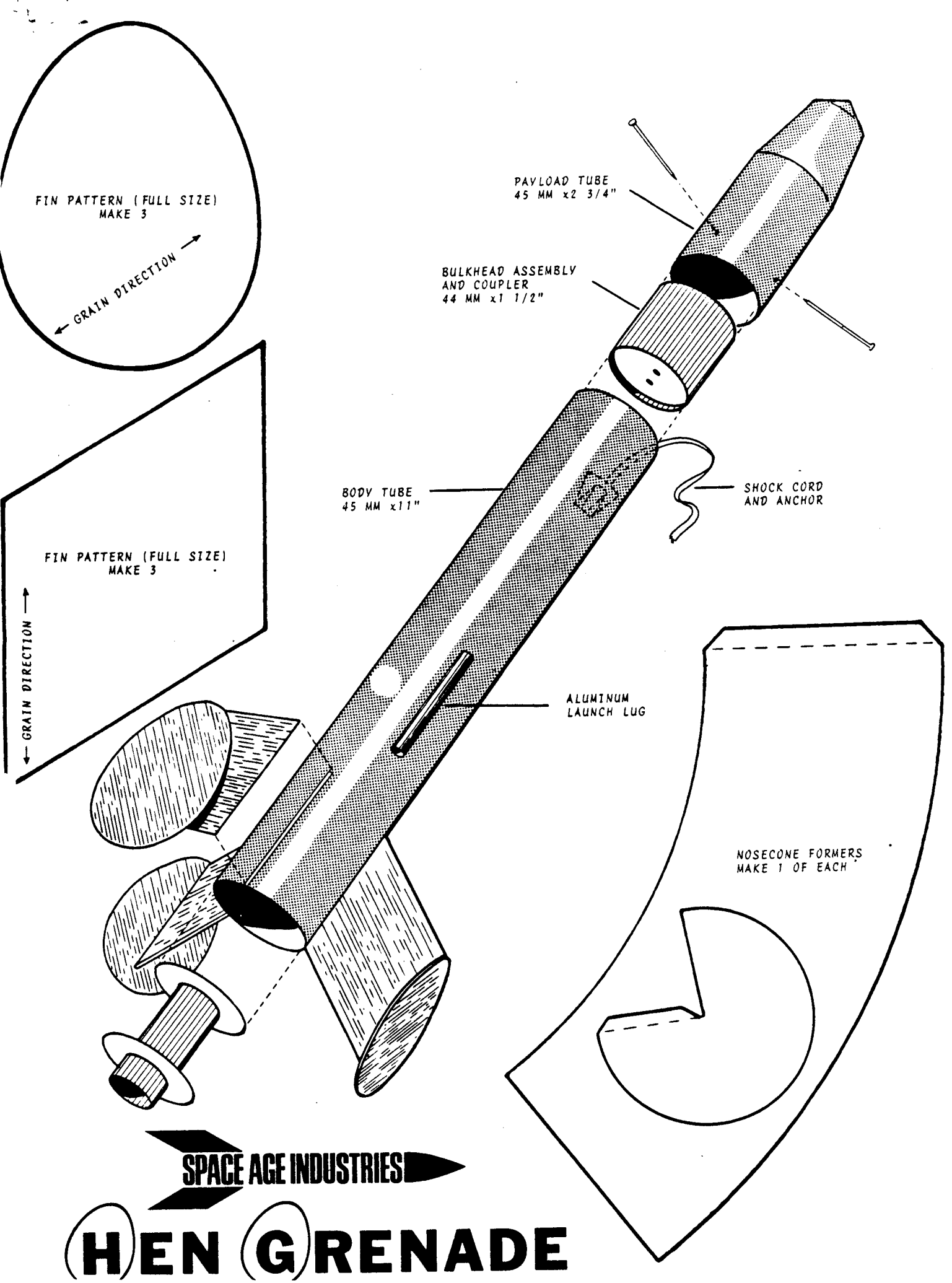


05

Cut out the boat-tail former. Pull it over the sharp edge of a table to give it a curl. Glue it as shown with the flap on the inside.



Place a bead of glue on the inside larger edge of the former and also around the outside of the engine tube about 1/4 inch from the end. Slide the former into position and allow it to dry. You may now return to Part B or modify the fins as suggested in notes in the Final Assembly.



SPACE AGE INDUSTRIES

HEN GRENADE