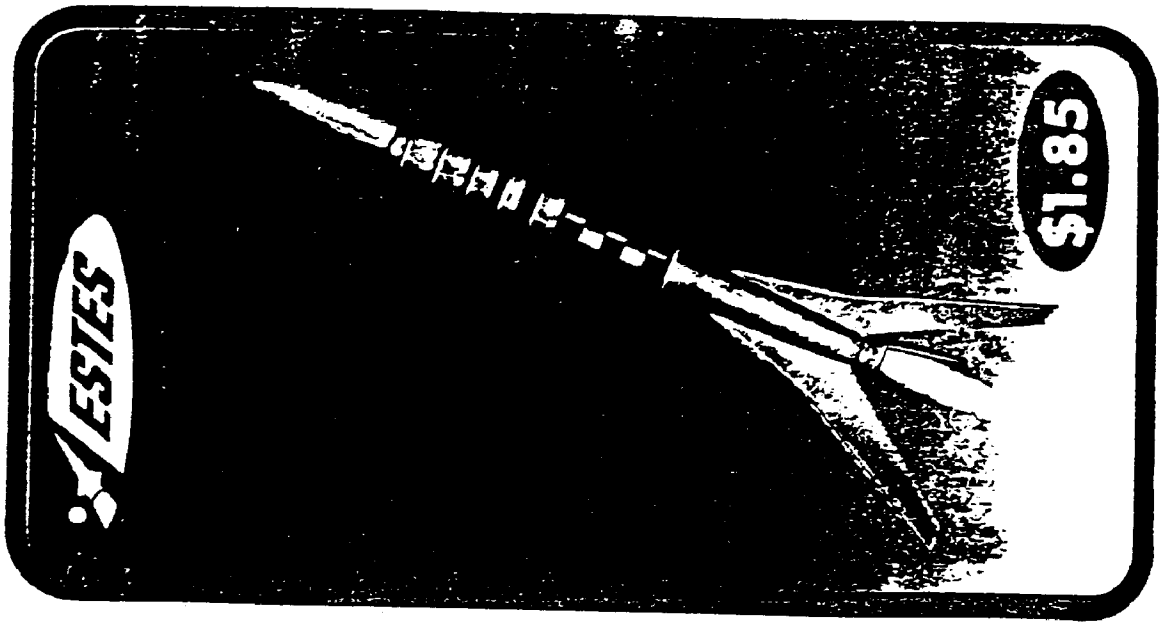
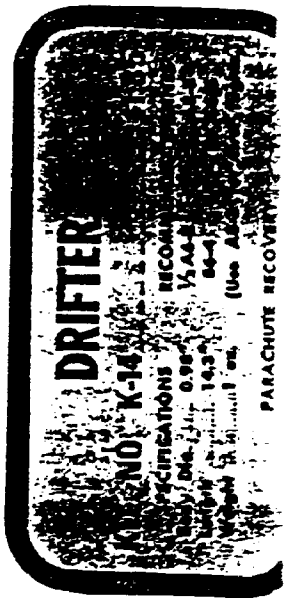




ASTRON DRIFTER

Assembly Proceedure

The Astron Drifter is a high performance parachute recovered rocket designed for both sport and duration competition flying. It combines high altitude capability with a large parachute capacity. If built carefully your Astron Drifter will give you many spectacular flights for your research program, fun or contests.

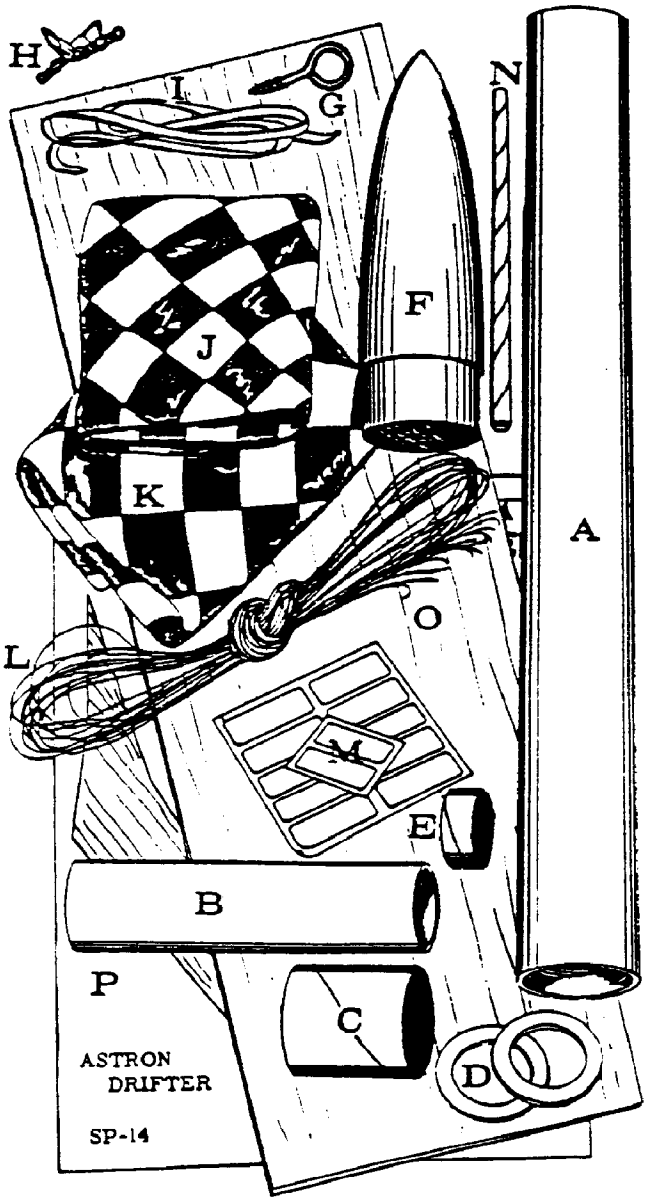
The kit consists of the following parts as illustrated at right:

A) One body tube--Part # BT-50H
B) One engine holder tube--Part #BT-20J
C) One stage coupler--Part #JT-50C
D) Two adapter rings--Part #RA-2050
E) One engine block--Part #EB-20A
F) One balsa nose cone--Part #BNC-50K
G) One screw eye--Part #SE-1
H) Two snap swivels--Part #SV-12
I) One shock cord--Part #SC-1
J) One 12" parachute--Part #PK-12A
K) One 24" parachute--Part # PK-24A
L) 216" of shroud line cord--Part #SLT-16
M) 12 tape strips--Part #TD-2
N) One launching lug--Part #LL-1B
O) One sheet balsa fin stock--Part #BFS-20
P) One pattern and shroud sheet--Part #SP-14

In addition to the materials included with your kit you will need the following tools and supplies:

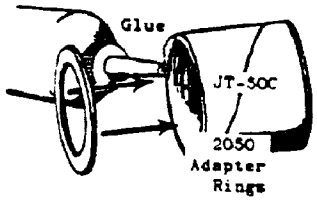
1) Modeling knife or single edge razor blade.
2) Scissors.
3) Extra strong white glue.
4) Ball point pen or pencil.
5) Fine and extra fine grit sandpaper.
6) Paint brushes, snading sealer and paint or dope.

Read the entire assembly instructions carefully before beginning work on your rocket. Then start construction, following each step in order, checking off each step as it is completed.



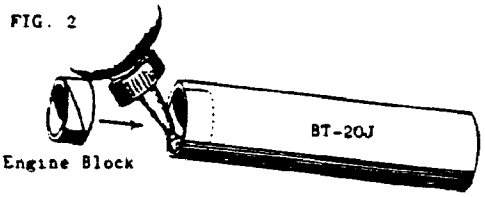
☐ (1) Glue one adapter ring to each end of the stage coupler as shown in fig. 1. The rings should be centered perfectly on the coupler. Apply sufficient glue to insure a permanent, strong joint, but do not leave any excess glue on the outside of the unit. Set the unit aside to dry thoroughly.

FIG. 1



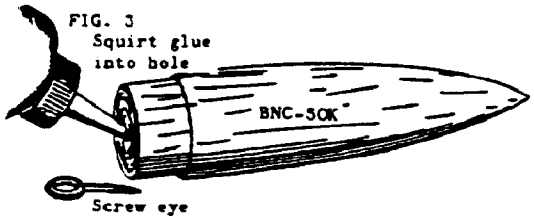
☐ (2) Glue the engine block in one end of the 2-3/4"long engine holder tube. To do this, apply glue to the last 1/4" of the inside of the tube, then slide the engine block into the tube until the end of the block is even with the end of the tube (see fig. 2).

FIG. 2



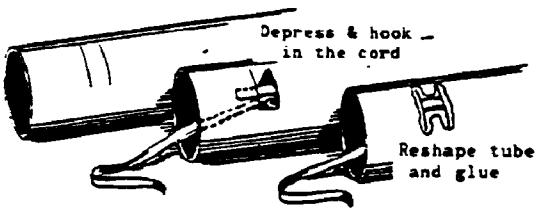
☐ (3) Glue the screw eye into the base of the nose cone. First insert the screw eye into the balsa. Then remove it, squirt glue into the hole and replace the screw eye.

FIG. 3



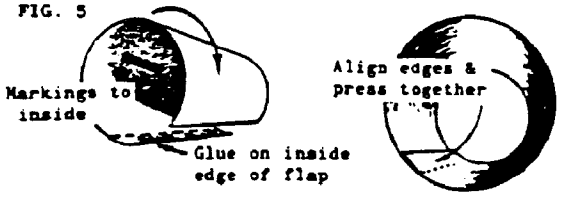
☐ (4) Cut two slits in one end of the body tube, the one directly under the other, 3/4" and 1" from the end of the tube. Cave in the section between the slits and hook the shock cord through the slits as shown. Press the caved-in portion of the tube outward until it is round again and apply glue to the cut edges and to the shock cord to anchor it in place.

FIG. 4



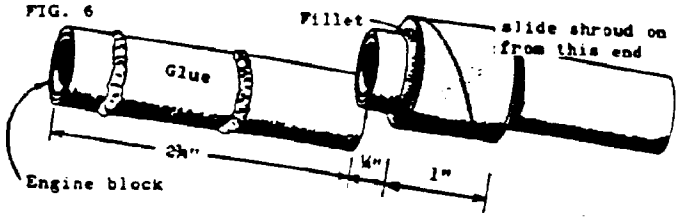
☐ (5) Cut out the shroud along its edge lines. This must be done carefully if it is to fit correctly. Form the shroud into a cone with the markings on the inside. Apply glue to the flap and press it into position. Hold it in place until the glue sets, then set it aside to dry thoroughly.

FIG. 5



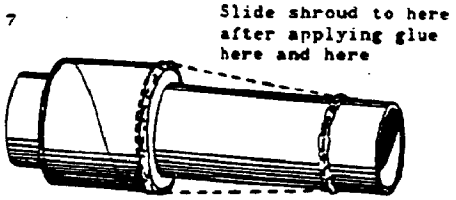
☐ (6) Glue the ring-coupler unit to the engine holder tube 1/4" from the end of the tube which has the engine block. To do this, mark the tube 1/4" from the end, apply glue around the tube at points 1-1/8" and 3/8" from the end and slide the ring-coupler unit into place from the lower end of the engine holder tube. Apply a glue fillet to both ring-tube joints as shown. Let dry.

FIG. 6



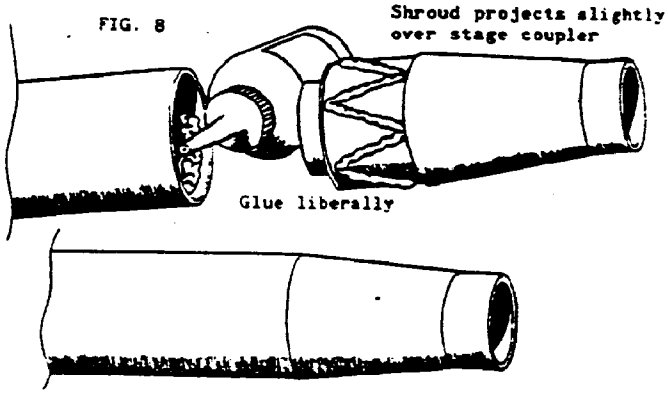
☐ (7) Slide the shroud all the way forward on the engine holder unit and glue in place as shown in fig. 7. Let the glue dry completely.

FIG. 7



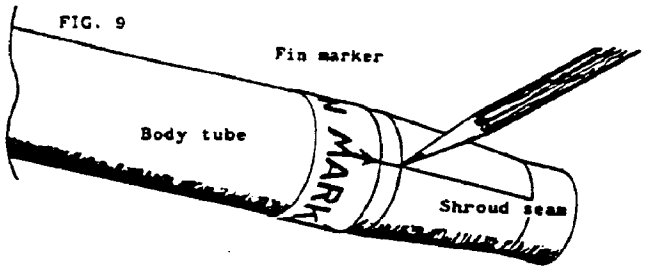
☐ (8) Apply glue all around the outside of the stage coupler and to the inside of the bottom end (end away from the shock cord) of the body tube. Slide the coupler into the body tube so the shroud laps against the body tube. Wipe off any excess glue from the outside of the body and shroud. Let this assembly dry thoroughly, then sand off any rough edges on the outside to obtain a smooth contour.

FIG. 8



☐ (9) Cut out the body tube marking guide. Wrap it around the lower end of the body tube just ahead of the shroud and position it so one of the arrows is directly over the seam in the shroud. Mark the body tube under each arrow.

FIG. 9



☐ (10) Cut out the fin pattern. Lay the pattern on the balsa fin stock with the grain of the wood and the grain shown on the pattern matched perfectly. Trace out three copies of the fin. Cut out the fins carefully. Be especially careful on edges which attach to the body so they will fit exactly. Sand the flat sides of each fin until smooth. Sand all edges of the fins except the edges which attach to the body until smooth and round.

A. BNC-50K Nose cone
B. BT-50H Body tube
C. Engine Mount Assem.
D. Fin BFS-20 stock
E. Shroud from SP-14
F. LL-1B Launching Lug.
G. SP-1 Wadding
H. PK-12A or PK-24A
I. SC-1 Shock cord
J. SE-1 Screw eye
K. SV-12 Snap swivel

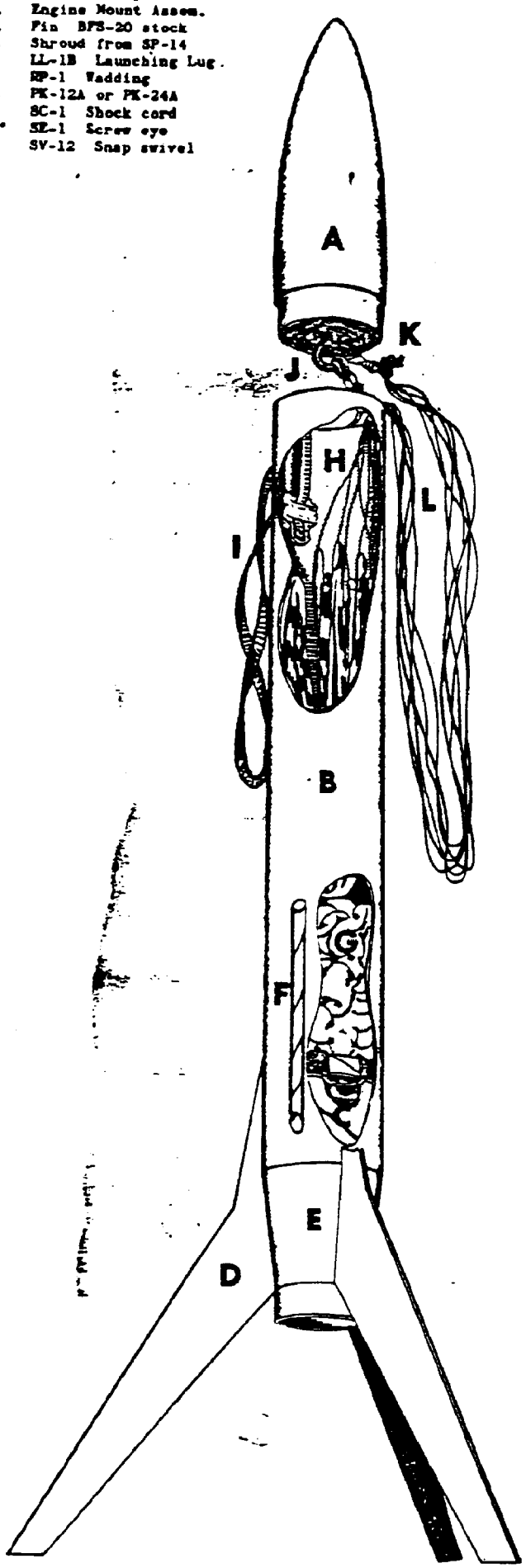
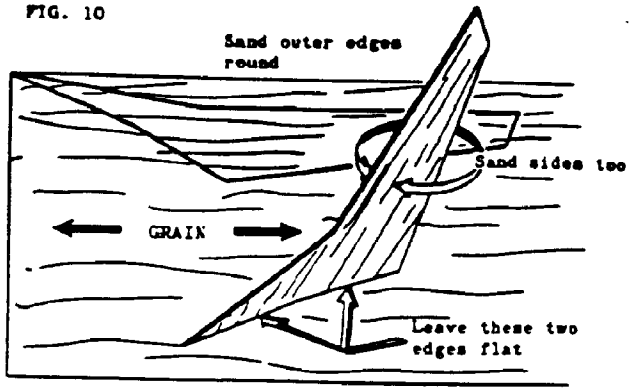
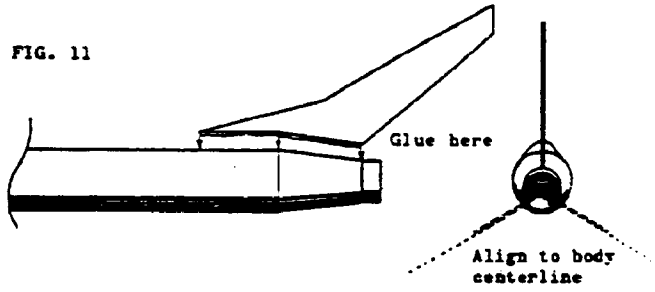


FIG. 10



☐ (11) Apply a line of glue to the inside edges of one of the fins and place it against the body exactly over one of the marks made in step (9). Align the fin by sighting along the body and adjusting it until the fin is parallel to the body and projects straight away from it. The trailing edge of the fin should meet the rear end of the shroud. Repeat this procedure with the other two fins. Do not set the rocket on its fins while the glue is wet.

FIG. 11



☐ (12) Glue the launching lug to the body between two fins in the position shown in fig. 12A. Be sure the lug is aligned to point exactly forward. While the glue is still soft, check again to be sure the fins are aligned properly. Let the glue harden, then apply a glue fillet to each fin-body joint as shown in fig. 12B. Wipe off any excess glue with your finger.

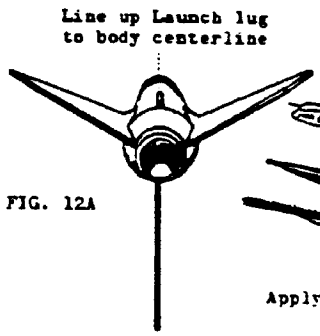
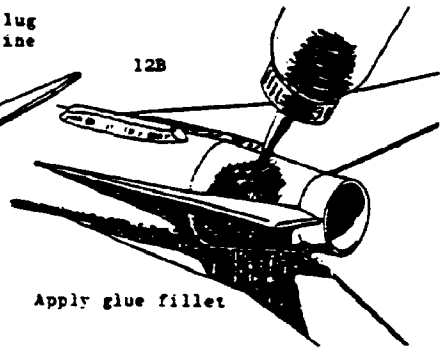


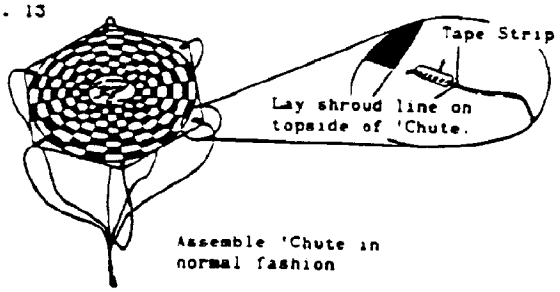
FIG. 12A



Assemble Your Parachutes

☐ (13) Cut each of the six lengths of shroud line cord into one 12" and one 24" piece. Cut out the small parachute on the edge lines. Attach one 12" piece of shroud line to each point marked on the parachute using a tape strip as illustrated. Tie the free ends of the shroud lines securely to the small loop in a snap swivel. Cut out the large parachute and attach the 24" pieces of shroud line cord in the same way that you attached the lines to the other parachute. Tie the free ends of the lines to the remaining snap swivel. Tie the free end of the shock cord to the screw eye in the nose cone.

FIG. 13



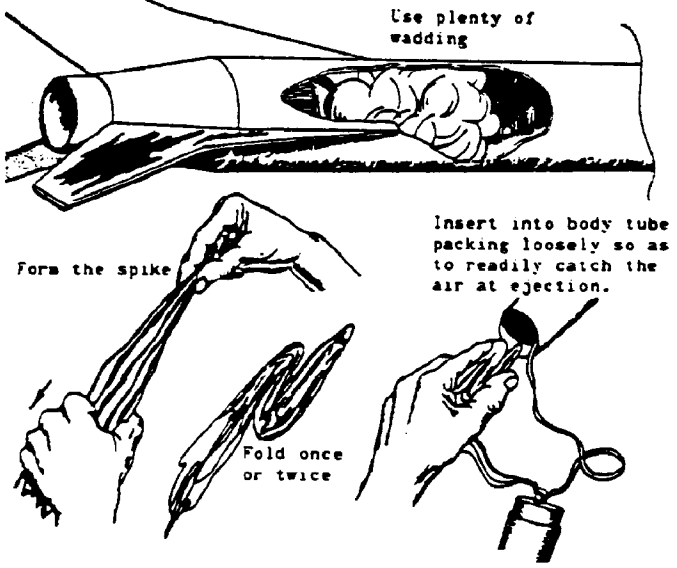
☐ (14) Sand all balsa surfaces with extra fine sandpaper. Apply a coat of sanding sealer to the balsa and sand again. Repeat until all surfaces look smooth and are smooth to the touch. Give the rocket at least one clean base coat of glossy white paint or dope, then give it at least one bright final coat of red, fluorescent orange, cerise, or other high-visibility color to aid tracking.

Preflight Checklist & Countdown

☐ -12- Select a parachute (the 12" parachute is recommended for the first flights). Attach the snap swivel to the screw eye.

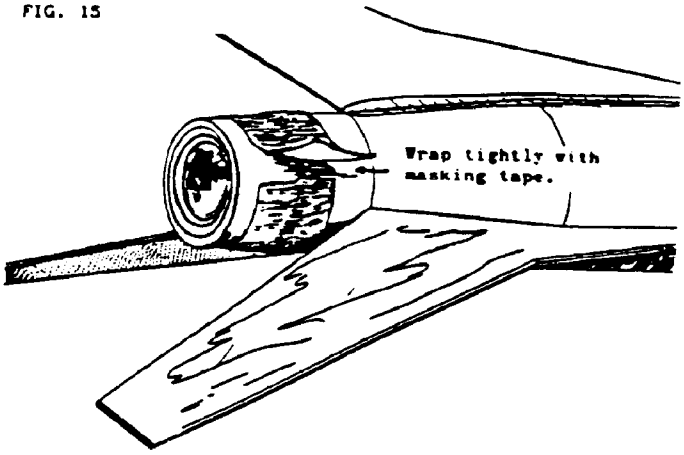
☐ -11- Pack flameproof recovery wadding into the body tube from the top. The wadding should rest against the engine holder, extend forward in the tube for 1-1/2" to 2" and seal tightly against the sides of the tube. Hold the parachute between two fingers at its center and pass the other hand down it to form it into a "spike" shape. Fold this spike in three sections as shown in the illustration. Push the folded parachute down into the tube on top of the wadding and pack the shroud lines and shock cord in on top of the parachute. Slide the nose cone into place.

FIG. 14



☐ -10- Select an engine (1/2A6-2 and A8-3 engines are recommended for first flights). Form an igniter and insert it into the engine as directed in the instructions which came with the engine.

FIG. 15



☐ -9- Place the engine in the engine holder. Secure the engine by wrapping masking tape tightly around the end of the engine and the bottom 1/4" of the engine holder tube as shown.

☐ -8- Place the rocket on the launcher. Clean and attach the micro-clips.

☐ -7- Clear the area, check for low flying aircraft, alert recovery crew, timers and trackers.

☐ -6- Arm the launch panel.

5-

4-

3-

2-

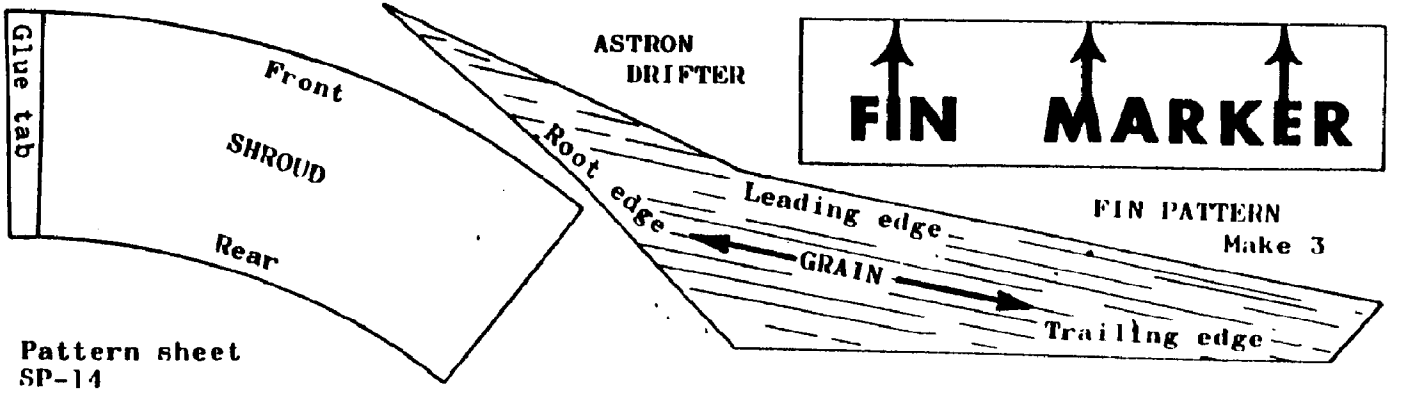
1-

LAUNCH!

PARACHUTE DURATION CONTESTS

Your group or club can hold parachute duration contests with Astron Drifters and similar models. Just time each rocket with a wrist watch (using the sweep second hand) or with a stop watch from the instant the rocket first starts to move until it touches down or goes out of sight.

Possible variations on duration contests include limiting the size of engines or parachutes used or seeing who can come the closest to keeping his rocket up for a preset time (3 minutes, for example). Contests like this do much to help develop skill in parachute recovery.



Pattern sheet
SP-14