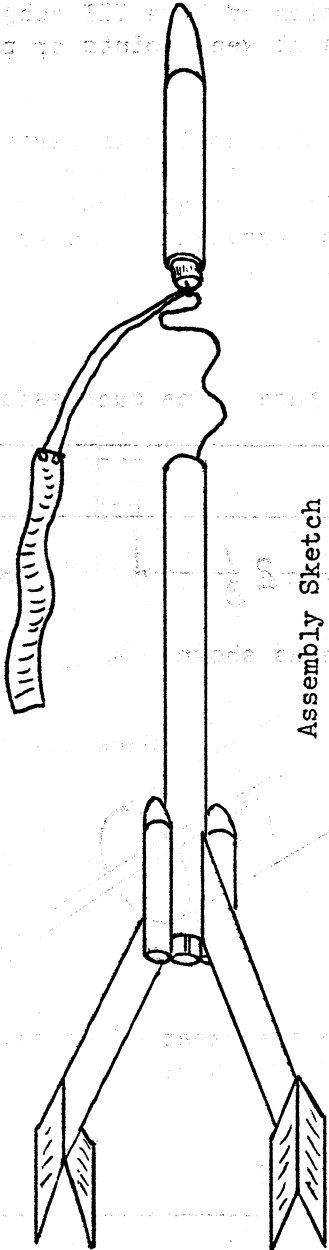
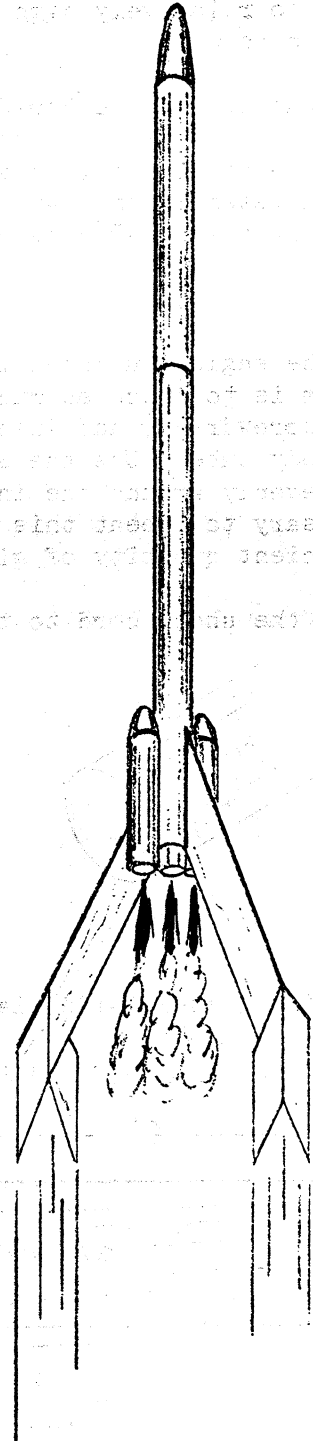


NOVA III



Assembly Sketch



N O V A III

The Nova III is a high velocity model rocket of exceptional performance. A tremendous acceleration can be achieved with certain engine combinations. With two B 3-0 booster engines in the pods and a B.8-6 engine in the main body, a peak thrust to weight ratio of 87 to 1 is obtained.

Do not rush the construction of Nova III. Each part must be accurately cut and all glued joints must be extremely strong. The high acceleration of Nova III subjects the rocket to relatively high stresses which will cause breaks at weak joints or poor construction points.

Construction of the Pop-Pod assembly in general, and the slip collar in particular, deserves your greatest attention. The slip collar must slide freely over the main rocket engine. In flight, thrust of the rocket engines is all that should keep the Pop-Pod assembly on. As the thrust of the Pop-Pod engines stops, drag and gravity should permit the Pop-Pod assembly to fall free of the rocket.

Assembly Instructions

1. Glue the engine bulkhead into one end of the 10-inch body tube. One successful system is to place as much glue as possible on the tip of a screwdriver and insert about two inches deep into the body tube. Use the screw driver tip to spread the glue evenly around the inside of the tube. It may be necessary to repeat this step several times to get a sufficient quantity of glue in the tube.

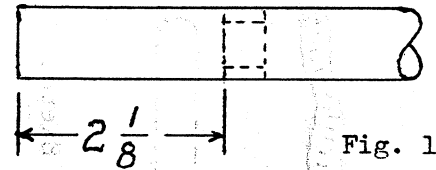
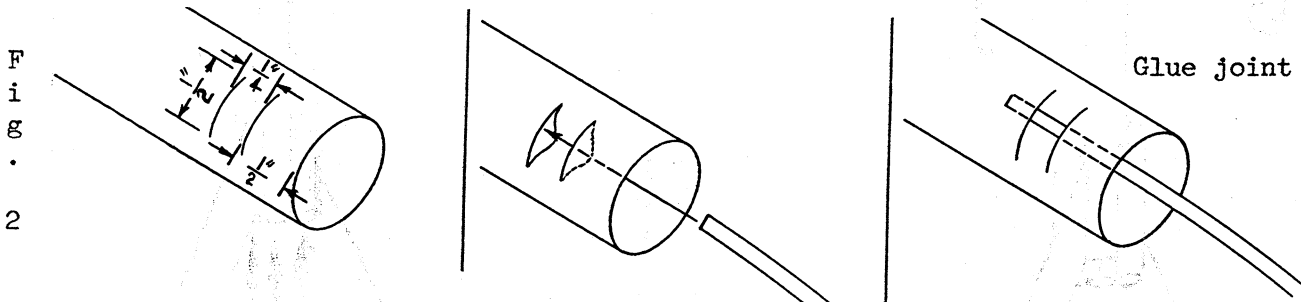
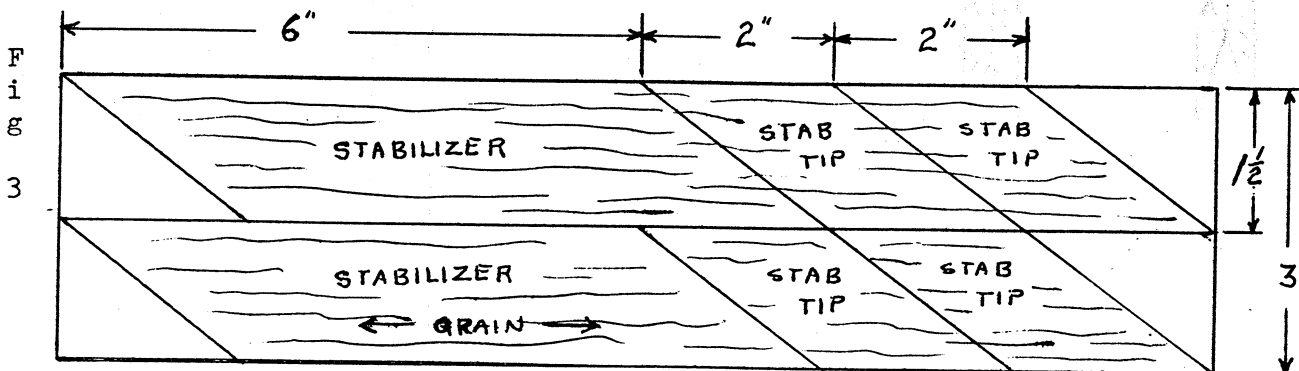


Fig. 1

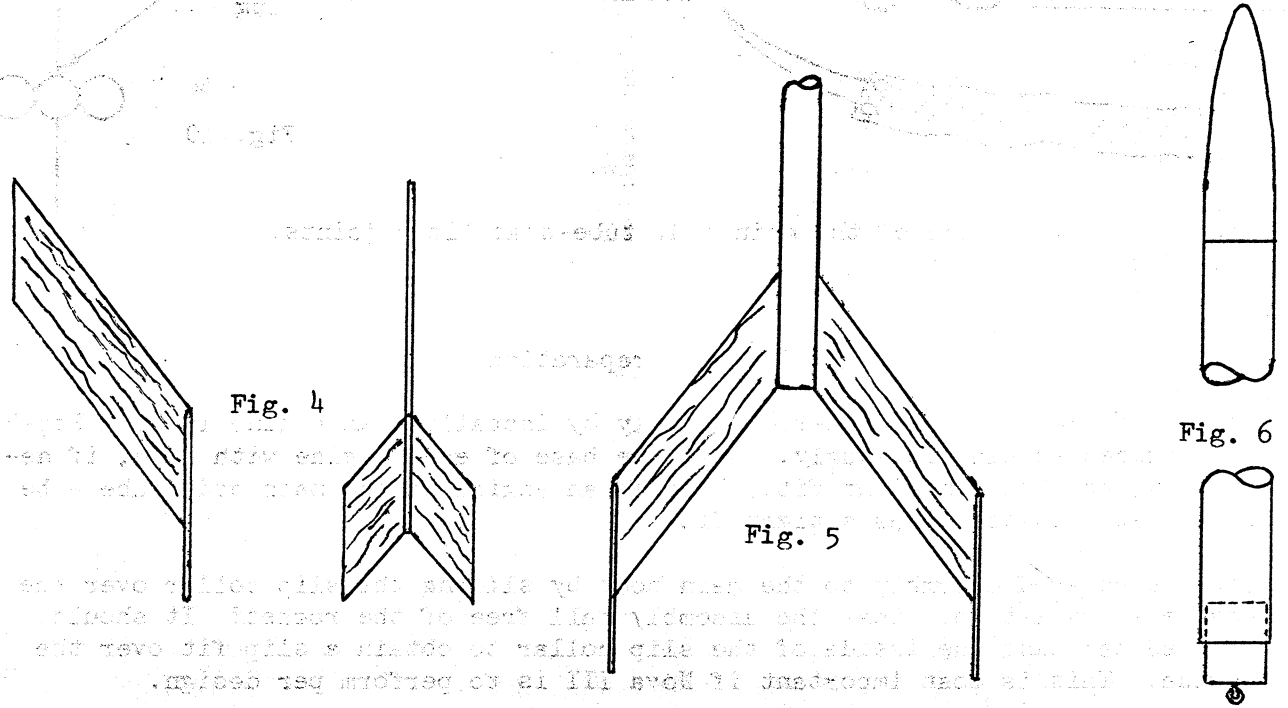
2. Attach the shock cord to the opposite end of the body tube as shown.



3. With Fig. 3 as a guide, lay out the stabilizer patterns on the sheet of balsa. Cut out stabilizer parts. Round off the leading edges of the stabilizers with sandpaper and taper the trailing edges.



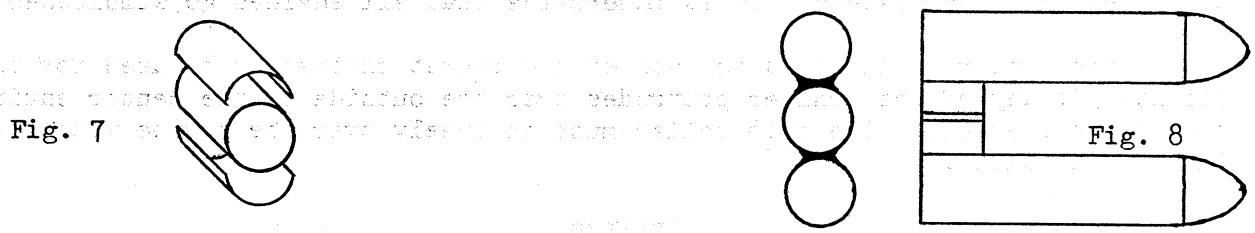
4. Glue the stabilizer tips to the main stabilizers. After the glue dries, use another coat of glue on the inside joints to obtain a stronger union. See Fig. 4.
5. Glue the stabilizer assemblies to the 10-inch body tube as in Fig. 5. Once again after the glue dries, apply one or two additional coats of glue at the joints of the stabilizers and body tube.



6. Glue the nose cone to one end of the 6-inch body tube, the solid wood plug to the opposite end. Attach the screw eye to the center of the solid wood plug as per Fig. 6.

Pop-Pod Assembly

7. Cut two pieces of tube, 5/8 inch long each, from one of the 2-3/4 inch long body tubes. Cut one of the short pieces in half lengthwise. See Fig. 7. Glue these halves to the other short piece of body tube. This short reinforced tube section is the slip collar of the Pop-Pod assembly. Using fine sandpaper, sand the inside of the slip collar (1) to make it smooth and (2) to increase the inside diameter slightly so that it slides freely over the engines.



8. Glue the small balsa nose cones to the two 2-3/4 inch body tubes. Glue the two body tubes to the slip collar, as per Fig. 8. Apply three or four coats of glue at the tube joints, allowing glue to dry between each coat. This must be a very strong joint.

- Attach the loose end of the shock cord to the screw eye. Fig. 9. For recovery device, attach swivel hook to center of nylon line with a knot. Attach two ends of line to streamer with tape discs provided.

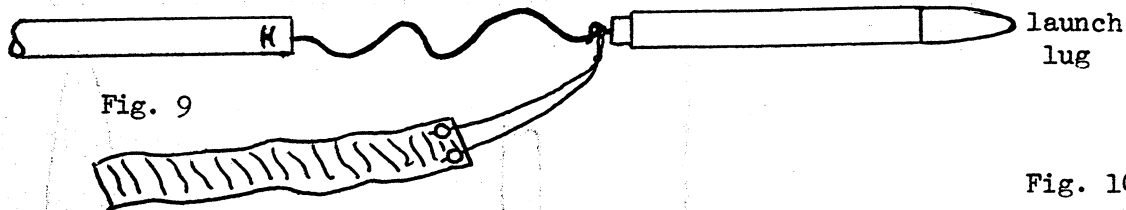


Fig. 9

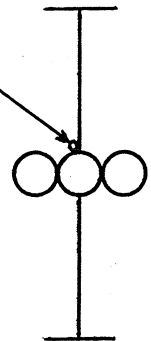


Fig. 10

- Glue launch lug at one of the main body tube-stabilizer joints. See. Fig. 10.

Flight Preparation

- Check performance of the Pop-Pod assembly by installing an engine in each Pop-Pod. The engines should fit snugly. Wrap the base of each engine with tape, if necessary, to obtain a tight fit. Install an engine in the main body tube - be sure that this too makes a tight fit.

Fit the Pop-Pod assembly to the main body by sliding the slip collar over the engine - now let go. Does the assembly fall free of the rocket? It should. If need be, sand the inside of the slip collar to obtain a slip fit over the engine. This is most important if Nova III is to perform per design.

When placing Nova III on the launcher, place several wraps of tape around the launcher rod. The tape wrap should be thick enough to allow the slip collar to rest on the top of the tape wrap. The wrap of tape is all that holds the Pop-Pod assembly in place until thrust begins.

If you are using the RDC Sta-Put Launcher, the tape wrap is not necessary. The slip collar will rest on the 3/8 inch wood dowel that holds the launch rod.

Ignition

RDC has perfected an ignition system for use with all clustered-engine systems and we recommend the use of this system for Nova III launches. While smaller batteries may work, car batteries have given the greatest reliability with clustered ignition systems. It is imperative that all engines go simultaneously.

Attach the Ignitrite igniters to each of the rocket engines to be used for the flight. If any of the igniter protrudes over the outside of the center engine, trim off the excess. The slip collar must go freely over the engine with the igniter installed.

Engines

Always use booster engines in the Pop-Pods. Use an upper stage engine in the main body tube with the longest delay time possible.