COUNTDOWN AND LAUNCH

1. Masking Tape

2. LAUNCH SUPPLIES (sold separately)
   - Porta Pad II Launch Pad
   - Eletron Beam II Launch Controller
   - Recovery Wedge
   - Igniter Plugs (with engines)
   - Recommended Engines:
     Single Stage: A8-3, B4-4, B6-6, C6-5
     Two Stage: F-16: Booster Stage: B6-6, C6-6
     Upper Stage: A8-3, B6-6, B6-6, C6-6, C6-7

3. KEY ALWAYS CUT UNTIL FINAL COUNTDOWN!

4. INSERT KEY. PUSH DOWN AND HOLD.

5. HOLD KEY DOWN AND PRESS LAUNCH BUTTON UNTIL LIFT-OFF!

PRECAUTIONS

NAR Safety Code

FLYING YOUR ROCKET
Choose a large field (500 ft. by 500 ft.) free of dry weeds and brown grass. The larger the launch area, the better your chance of recovering your rocket. Football fields and playgrounds are great. Launch only with bright, sunny and good visibility.
Always follow the National Association of Rocketry (NAR) Safety Code.

MISFIRE: TAKE THE KEY OUT OF THE CONTROLLER WAIT ONE MINUTE BEFORE GOING NEAR THE ROCKET! Disconnect the igniter clips and remove the engine, take the plug and igniter out of the engine. If the igniter has burned, a worked out but did not ignite the engine because it was not touching the propellant inside the engine. Put a new igniter all the way inside the engine without bending it, push the plug in place. Repeat the steps under Countdown and Launch.

NO DRY GRASS OR WEEDS

SUPPLIES In addition to the parts included in the kit you will also need:

- Sanding Pencil Ruler
- CA Glue
- Masking Tape
- Plastic Cement
- Spray Paint
- Cellulose Tape
1. FIN PREPARATION

A. Fine sand ballast sheets, both sides.
B. Carefully trace lines with modeling knife.
C. Sand all edges smooth except as noted.

2. MARK FIN AND LAUNCH LUG LINES

A. Cut out tube marking guides from top of page.
B. Wrap BOOSTER STAGE BODY TUBE marking guide around Booster Stage Tube as shown. Mark at arrows, label fins "F", boosters "B" and large fins "T". Remove guide.
C. Wrap UPPER BODY TUBE marking guide around Upper Body Tube as shown. Mark at arrows. Mark launch lug line "L". Remove guide.

3. SHOCK CORD MOUNT

SECTION 1
SECTION 2
SECTION 3

16. ATTACH NOSE CONE

A. Remove excess flash and clean the eyelet of the nose cone.
B. Pull tight.
C. Double knot.

PAINT SCHEME

Finish booster and upper stage separately. Mask off tube coupler on booster and upper stage engine mount. Spray each section with spray white primer. Let dry. Sand and repeat until rocket is smooth. Follow the paint scheme on the front panel or design your own. Let dry.

PREPARE PARACHUTE FOR FLIGHT

A. Insert 4-5 squares of loosely crumpled recovery webbing into rocket.
B. Spike parachute.
C. Pull through.
D. Repeat.
E. Wrap lines loosely, insert chute, shock cord and nose cone into body tube.

ENGINE PREP FOR 2 STAGE FLIGHT

A. Wrap cellotape tape around joint.
B. Wrap masking tape around middle of each engine to ensure tight fit in upper and booster stages.
C. Insert joined engines into upper stage. Connect booster stage. If too tight or too loose, remove or add some tape. Slide booster stage over engine and into upper stage.
11. UPPER STAGE ENGINE MOUNT INSTALLATION

12. ATTACH UPPER STAGE FINS

13. ATTACH LAUNCH LUG AND APPLY GLUE FILLETS

14. INSTALL NOSE WEIGHT

15. INSTALL SHOCK CORD MOUNT

3. BOOSTER STAGE ENGINE MOUNT ASSEMBLY

4. PREPARE BOOSTER TUBES
5. PREPARE FIN POD TUBES

Parts:
- Plastic nose cones (2)
- Body tubes (2)
- BOOMERANG CONES (2)

A. Apply a ring of cement inside the body tube and insert nose cone. Let dry.
B. Repeat for second tube. Let dry.
C. Apply a ring of cement inside the other end of the body tube and insert nose cone. Let dry. Repeat for second tube. Let dry.

Completed assembly.

6. ATTACH BOOSTER STAGE FINs

Parts:
- Booster stage engine mount assembly
- Booster stage fins

Note: Pay attention to the three fin marks and large fin marks.

A. Apply thin layer of glue to fin, wait 1 minute. Apply 2nd layer and attach fin to booster stage. Let dry.
B. Repeat for remaining fins. Let dry.
C. Apply thin layer of glue to large fin, wait 1 minute. Apply 2nd layer and attach large fin to "FE" line. Let dry.
D. Repeat for second large fin. Let dry.

End view.

7. APPLY GLUE FILLETS

A. Apply glue fillets to both sides of all fins. Smooth with finger. Let dry.

Completed assembly.

8. INSTALL BOOSTER TUBES

Parts:
- Booster tube line

A. Apply a line of glue along booster line. Center booster tube assembly on line. Flush with end. Let dry. Repeat for second booster tube. Let dry.
B. Repeat for other side.

End view.

9. INSTALL FIN PODs

Parts:
- Assembled fin pods

A. Apply thin layer of plastic cement on tip of fin. Wait 1 minute. Apply 2nd layer and attach fin to second centered on fin. Flush with end. Let dry.
B. Repeat for second pod. Let dry.

End view.

10. UPPER STAGE ENGINE MOUNT ASSEMBLY

Parts:
- Engine mount/tube
- Adapter rings
- Die cut centering rings

A. Carefully remove centering rings from card using a modeling knife.
B. Mark tube at 1" (25 mm) and 2 1/2" (64 mm) from end.
C. Apply a ring of glue just inside the end of the tube. Insert the adapter ring until flush with end. Let dry.
D. Push the centering rings onto the tube, at the 1" (25 mm) and 2 1/2" (64 mm) marks.
E. Apply glue fillets to both sides of each ring. Let dry.