

Instruction for assembling the *Lemanski Dart CAP Rocket*

Materials Needed

Rocket pattern printed on white heavy index card stock (approx. 110 lb weight)

Scissors

Elmer's type glue and/or Stick Glue

10-12 inches of flat 1/8 inch elastic

approx. 10 to 15 grams modeling clay

3" by 24" parachute material or very light, brightly-colored material for the streamer

3 spent Estes rocket motors to help form the rocket tube

launch rod or small Phillips screw driver to form the launch lug

1 toothpick

ruler or straight edge

scotch tape to secure the rocket engine in place

Construction

1. Carefully cut out all pieces.

2. Roll the main rocket body (1. Rocket tube). Glue into shape.

Tip: Roll the tube around spent engines to see how the lines on either side of the CAP seal meet.

3. Tri-fold and glue (5. engine stop ring) and shape into ring. With a stick, apply a ring of glue 2.5 inches inside the bottom of tube.

Note: Use a spent engine to push the engine ring into position leaving approx. ¼ inch of the engine sticking out the bottom of the tube. Press the ring into place against tube body with a stick or screwdriver.

4. Glue (7. shock cord attachment) to both ends of approx. 12 inches of 1/8 inch elastic.

5. If you are using a pre-manufactured nosecone, skip to step 6.

a. Form (2. nose cone) into shape and glue.

b. Wrap (8. nose cone collar) around top of rocket tube and glue last inch into place.

Tip: Insert a spent engine into top of tube to help shape nose cone collar.

c. Slip collar off of tube and tack inside tab of collar.

d. Glue white tabs of nose cone to inside of collar making sure nose cone is straight.

e. Glue one shock cord attachment into nose cone above the collar.

f. Roll approx. 10 to 15 grams of modeling clay into a thin "snake" and feed clay into nosecone, pressing into place with the eraser end of a pencil.

Note: If modeling clay is unavailable, glue a fishing weight or 2 pennies into nose cone

6. Fold all three (3. fin) along the leading edge marks. Fold white tabs down and fold gray tabs up.

7. Fold (4. fin stiffener) along dotted lines.

8. Smear a thin coat of glue to entire back side of (4. fin stiffener) and insert into (3. fin). Then form fin by gluing white fin tabs

9. Attach fins to rocket tube and gently squeeze the fins to round the leading edges.

10. Roll (6. Launching lug) into tube and attach to rocket tube.

Note: Make sure launching lug does not interfere with fins.

Note2: Use a launch rod, large nail, or small screwdriver to help form launch lug.

11. Glue other end of (7. shock cord attachment) to top end of rocket tube.

12. Construct a streamer or parachute and attach to approximate middle of shock cord.

TIP: Several coats of spray-on "clear coat" strengthens the fins and makes the rocket look good as well, or you can use a color spray paint and decals to give your rocket your own unique look.

If you have any questions or you have suggestions about how to improve the design, contact Bill Jackson at bjackson@plata.com

Launching

Refer to CAP Model Rocketry Program ([CAPM 50-20](#)) and observe all safety considerations found in the [NAR Safety Code](#) whenever conducting rocket launches.