

## Quest Penetrator Addendum for E80 Spring 2011

Replace Step 4 with the following steps

1. Using the small payload tube punch out two plugs of the 1-in thick white foam (one at a time).



2. Use a 1-in diameter dowel to push the plugs back out of the tube.



3. Brush or abrade the compacted foam on one of them to remove it (the compacted foam) and smooth the end. Push the foam back into the payload tube to about 1-in depth.
4. Push the Blow Mold Transition into the same end of the tube as the foam.
5. Hold the assembly by the Blow Mold Transition and insert the 1-in dowel into the other end of the Small Payload Tube. Push the dowel toward the Blow Mold tube until the foam is pushed around the plastic loop on the Blow Mold Transition and then push the blow mold transition and foam plug out of the Small Payload Tube.
6. Without changing the orientation of the two parts, compress the foam onto the Blow Mold Transition until its shape conforms largely to the Blow Mold Transition.

7. Remove the foam. Apply a generous amount of plastic model cement and reattach the foam to the Blow Mold Transition.



8. Carefully sand the outside of the foam plug glued to the Blow Mold Transition until it slides freely into the Small Payload Tube.

9. Using a long swab or stick put a ring of white glue approximately 5 inches from the end inside the Small Payload Tube.

10. Put the remaining foam plug in the end of the Small Payload Tube. With a smooth continuous motion use the 1-in dowel to push the plug to a depth of  $5.50 + .10 / -.05$  from the end of the tube.



11. While holding the Small Payload Tube vertically pour a small pool of white glue onto the foam plug, trying to keep it off the sides of the tube. Use a long swab or stick to form a fillet of glue between the tube and the foam from the small pool. You can tilt the tube to help the glue flow.

12. Cut three disks of conductive foam to the diameter of the Small Payload Tube. Carefully push one of the disks up the tube until it rests against the foam plug. Do not move or dislodge the foam plug.

13. With the 1-in dowel partially inserted into the tube to support it drill holes for static vent  $3.250 \pm .050$  from end of the Small Payload Tube. Holes should be spaced at  $120^\circ$  around the tube. Calculate the hole diameter from the [Adept Rocketry guidelines](#). Use the +100% size option. Do not make the holes smaller than .050 regardless of your calculations. Smaller holes plug too easily.



14. Remove the dowel and insert the Blow Mold Transition into the Small Payload Tube.

15. Drill a hole for a plastic rivet. The hole should be  $.375 \pm .010$  from the end of the Small Payload Tube, and  $5/32''$  ( $.156 + .004 / -.000$ ) in diameter. Drill simultaneously through both the tube and the transition. Be sure to use a plastic rivet in the hole for your launches.



16. Glue the nosecone in place as per Step 4 A. of the printed instructions that came with your kit. Do *not* do Step 4 B.

17. Take a second foam ring, cut it down to slightly smaller than the diameter of the Small Payload Tube and glue it to the end of the foam plug atop the Blow Mold Transition.



18. In Step 5, attach the parachute you put together to the loop in the white shock cord attached to the lower portion of the rocket. Attach the Top Flight parachute to the payload section.

19. Regarding Step 6, we recommend you put your parachutes inside your rocket only when you are prepping for launch. Leaving them inside the rocket can lead to them taking a set and not unfurling in flight. The results are not happy.

20. Regarding Step 7, the circumferential stickers add strength to the body tubes. They should be added. The others are optional. However, please put one of your Section and Team Stickers on the booster section, and one on the payload section. With so many identical rockets, it's easy to get confused without ID on your rocket.

21. The third conductive foam disk should have a slot cut into it for centering the altimeter in the payload bay.

