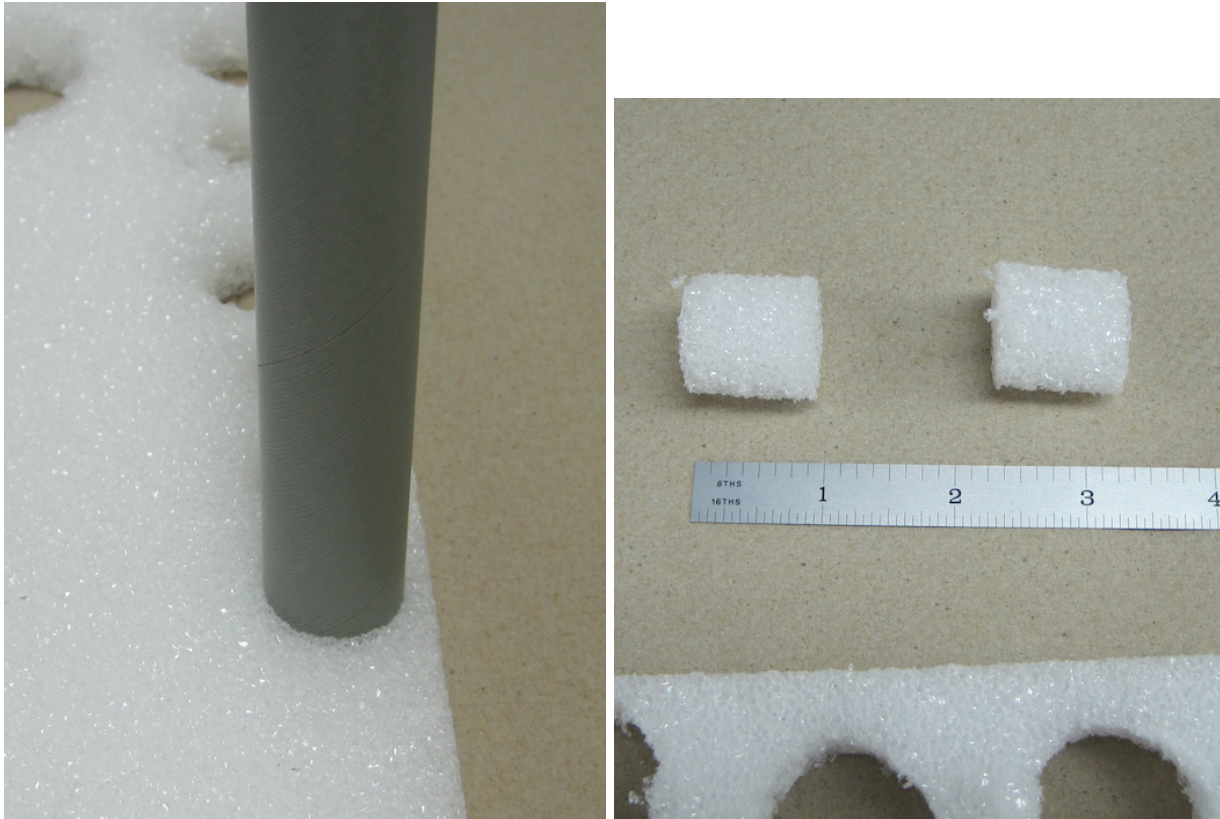


Quest Triton-X Addendum for E80

The payload section of the Triton-X must be modified to permit the altimeter to be installed and removed easily. Once installed the altimeter must be held securely and protected against damage. The payload section must also have ventilation holes installed so that the pressure inside the payload section is the same as the free-stream pressure outside the rocket for the altimeter to work properly.

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). Regardless of what Prof. Duron or the proctors he has misadvised say, the white foam is roughly 1 in thick, is rigid, and comes in sheets. Do not use any other foam in the lab.



2. Use a .75 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 .75 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 moderate 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. Set this assembly aside.

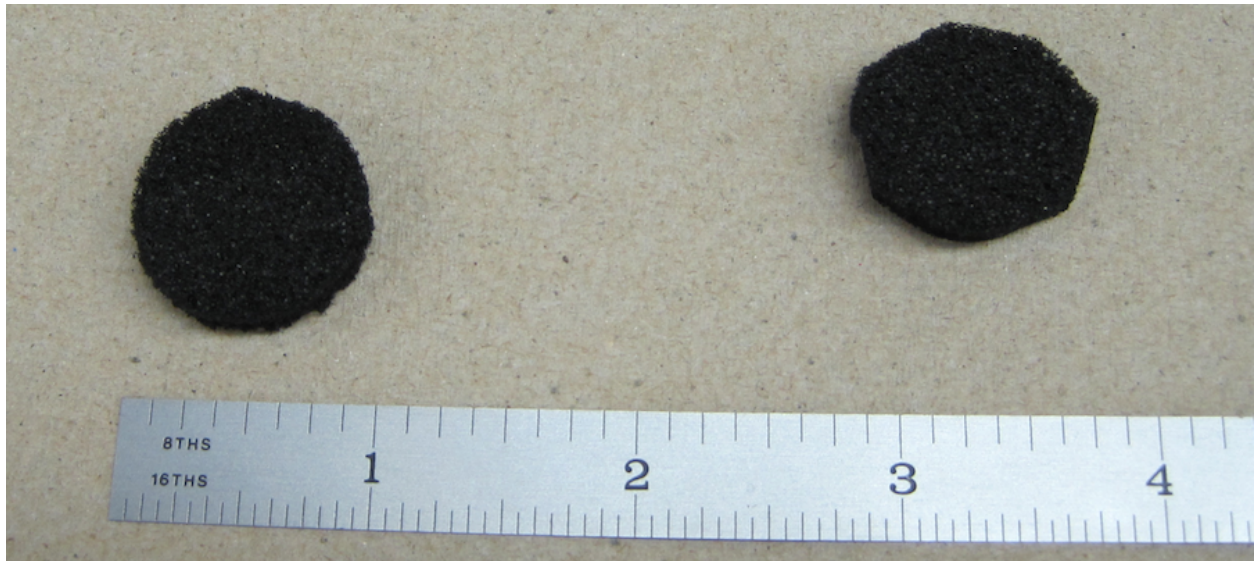
9. Push the other foam plug back into the payload tube to about 1-in depth. Do not abrade or remove the compacted foam.

10. Push the Nose Cone into the same end of the tube as the foam.

11. Hold the assembly by the Nose Cone and insert the .75 in dowel into the other end of the Small Payload Tube. Push the dowel toward the Nose Cone until the foam is pushed around the plastic loop on the Nose Cone and then push the Nose Cone and foam plug out of the Small Payload Tube.

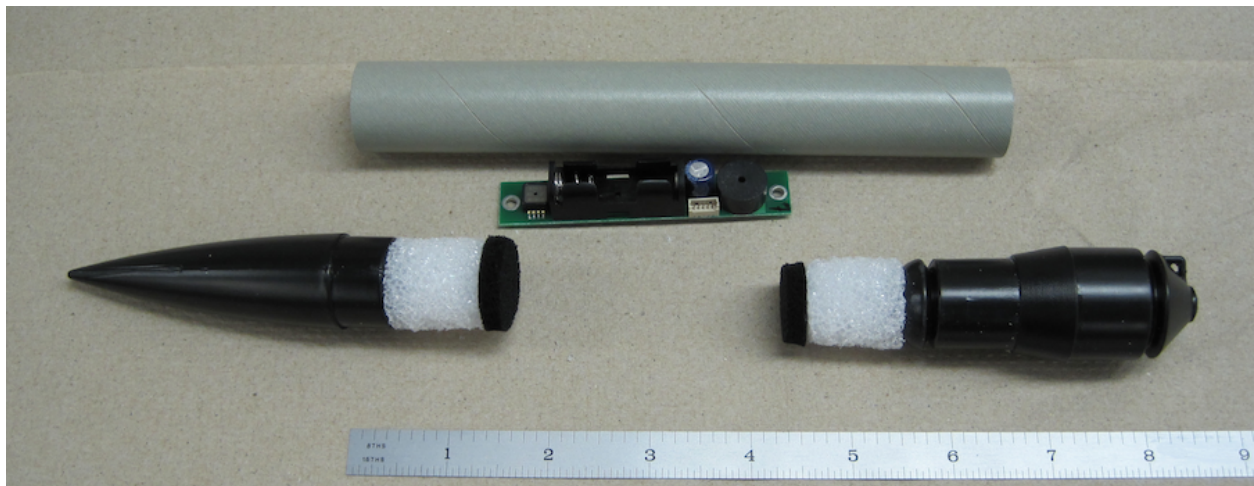
12. Remove the foam. Apply a moderate amount of plastic model cement and reattach the foam to the Nose Cone. Set this assembly aside.

13. Cut three disks of conductive foam to the diameter of the Small Payload Tube. Regardless of what Prof. Duron or the proctors he has misadvised say, the conductive foam is roughly $\frac{1}{4}$ in thick and comes in sheets. Do not use any other foam in the lab. It's easiest to push the Small Payload Tube gently into the conductive foam to create an outline and then trim around the outline with scissors.



14. Trim one of the conductive foam disks with scissors until it is slightly smaller than the payload tube inner diameter. Use white glue and glue it onto the end of the foam plug attached to the Blow-Molded Transition.

15. Use white glue and glue one of the remaining foam disks to the foam attached to the nose cone. The completed assemblies should look like the photo below. The intent is that when assembled, the altimeter will be held in place by the two conductive foam disks.

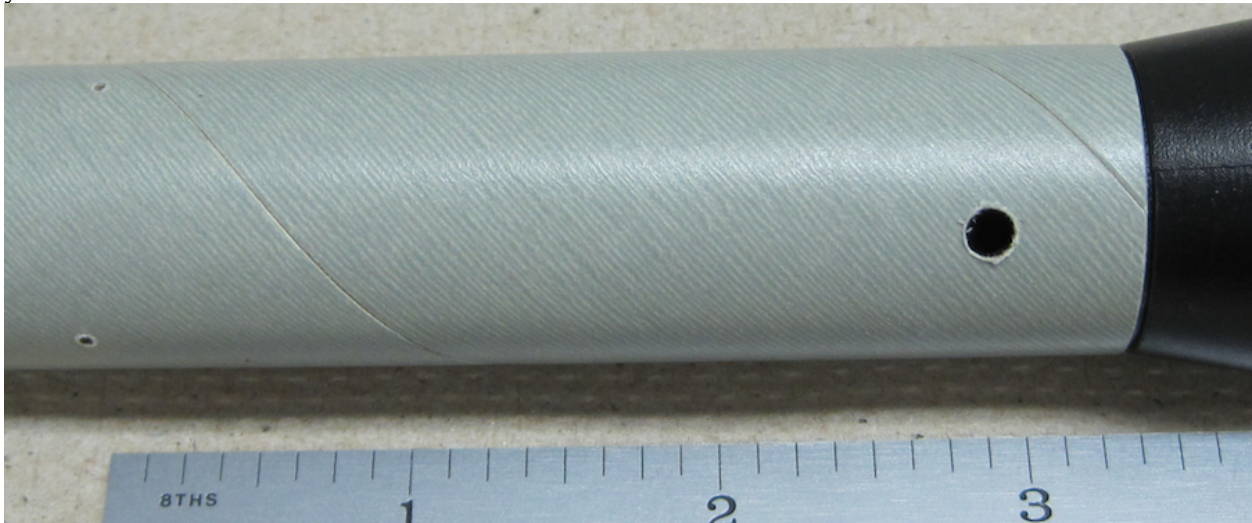


16. Apply a generous amount of plastic model cement inside one end of the Payload Tube. Insert the conductive foam – white foam – nose cone assembly into the end with the glue until the Payload Tube rests against the shoulder of the Nose Cone.

17. The conductive foam – white foam – blow-molded-transition assembly should slide easily into the other end of the payload tube. If it doesn't reshape the foam parts until it does.

18. Insert the conductive foam – white foam – blow-molded-transition assembly into the payload tube. Drill holes for static vent $3.250 \pm .050$ (or at a position you calculate) from the blow-molded-transition end of the Small Payload Tube. Holes should be spaced at 120° around the tube. Calculate the hole diameter from the [Adept Rocketry guidelines](#). Use the +100% size option. Do not make them smaller than .050 regardless of your calculations. Smaller holes plug too easily.

15. Drill a hole for a plastic rivet. The hole should be $.500 \pm .010$ 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. 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.

17. 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.

18. 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.

19. The third conductive foam disk can have a slot cut into it for centering the altimeter in the payload bay if you desire.