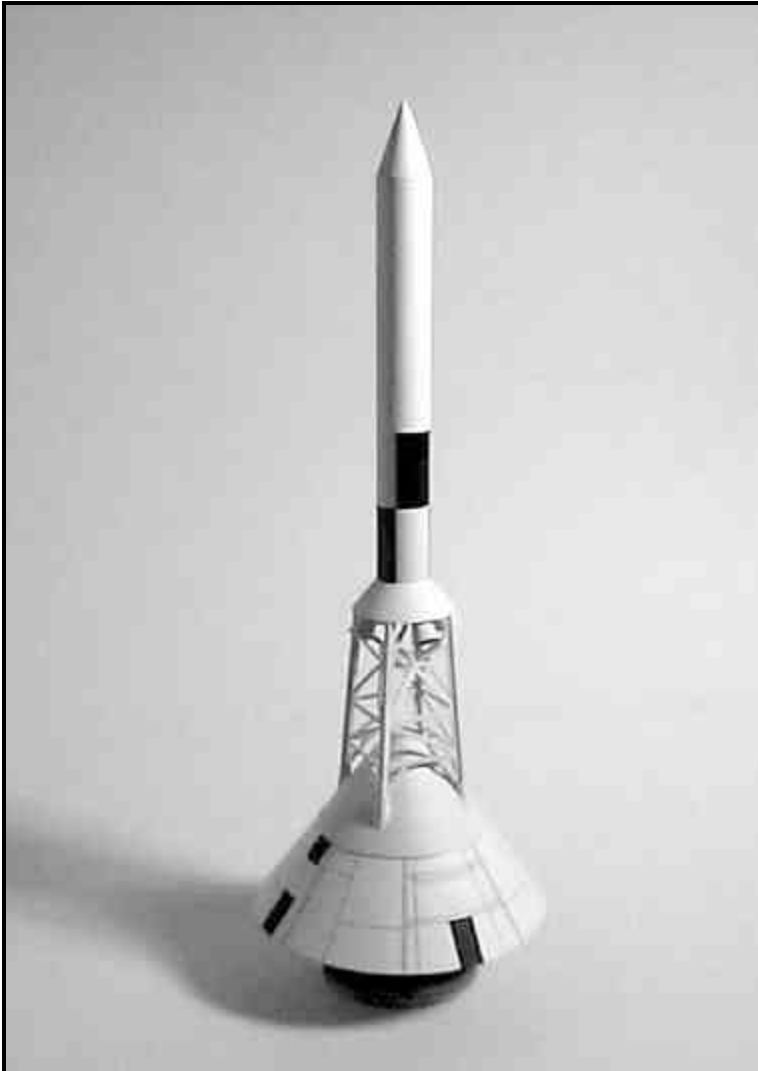


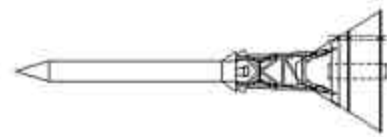
# KosRox

This model rocket is a 1/26.5 scale rocket of the Apollo pad abort test rocket. It was used to test the Launch Escape System (LES). The LES rocket consisted of a four nozzle rocket motor set atop a supporting tower. It was designed to lift the capsule away from an exploding Saturn 5 booster.



## Apollo Capsule Parts List

Qty	Part Description
1	Tower Tube (8.75")
1	Motor Tube (3.75")
1	1/8" Launch Lug (2.375")
1	3/16 Launch Lug (4")
1	Capsule Shroud (printed)
1	Capsule Shroud (blank)
1	Capsule Nose cone Shroud (printed)
1	Capsule Nose cone Shroud (blank)
1	Tower Shroud
1	Forward Bulkhead
1	Aft Bulkhead
1	Capsule Balsa Nose Cone
1	Elastic Shock Cord (24")
1	Tower Base Bulkhead
1	Tower Kit
2	1/8" dowel (9")
4	Jettison Nozzles
1	Kevlar Shock Cord (24")
1	Motor Thrust Ring
1	Streamer (36")
1	Tower Balsa Nose Cone
1	Clay Weight
1	Instructions



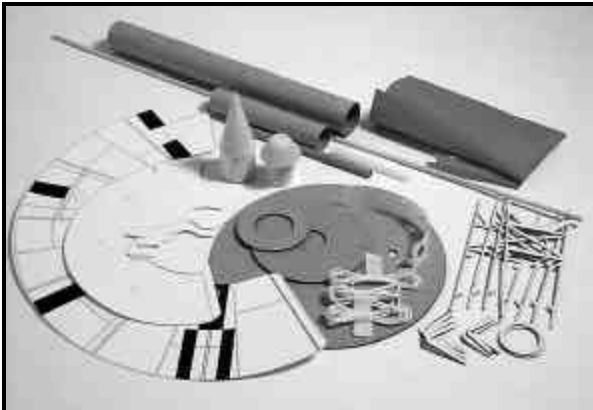
Read and follow the NAR safety code during all your model rocketry activities.

This model rocket kit is provided free of any warranty.

KosRox can not be held liable for damage to persons or property caused by the use, abuse, misuse, failure to comply with instructions or improper storage of this product.

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## Apollo Pad Abort Test Capsule

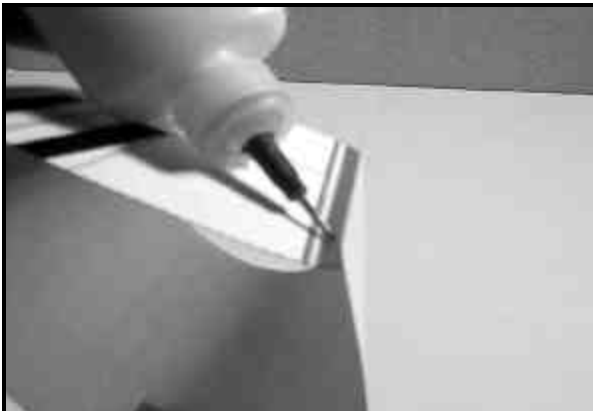
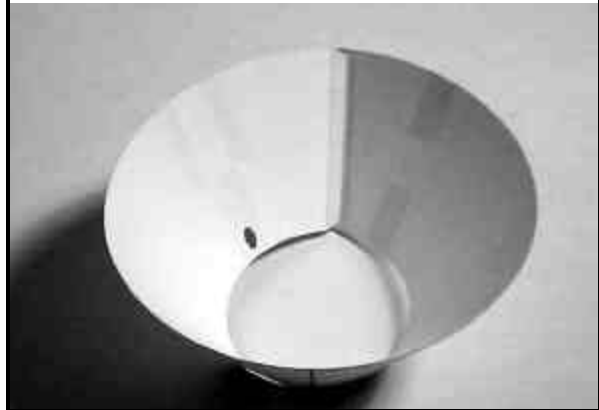


### Step 1

Locate and identify all parts. Use the parts list on the first page to help identify the parts.

### Step 2

There are two large shroud wraps. On the inside, tape each shroud wrap into cone shape as shown. Use the angles on each tab as a guide to align the overlap. Make sure to keep the printing on the outside of the cone.

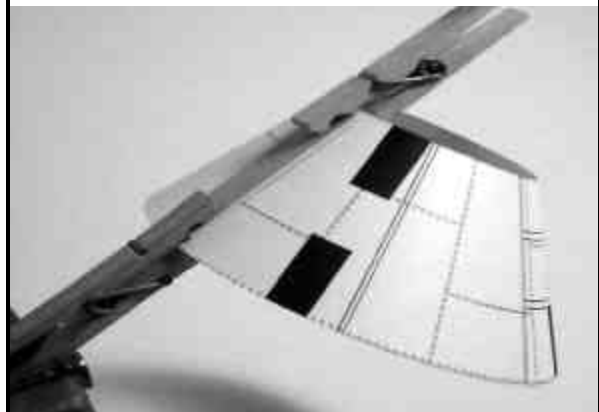


### Step 3

With tape still holding the shroud sides together, open the overlap and apply glue.

### Step 4

Clamp the seam flat using a couple of pieces of spare wood on the inside and outside of the shroud wrap overlap.



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## Apollo Pad Abort Test Capsule

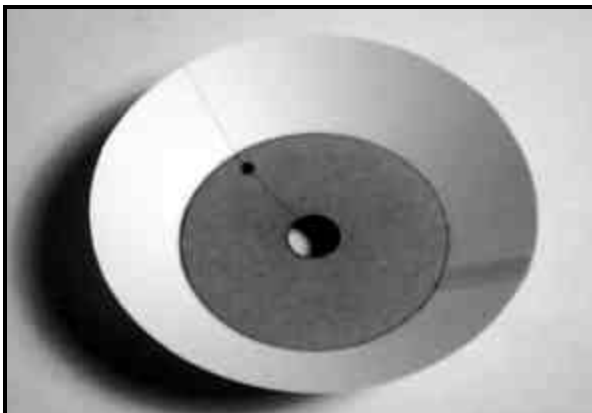
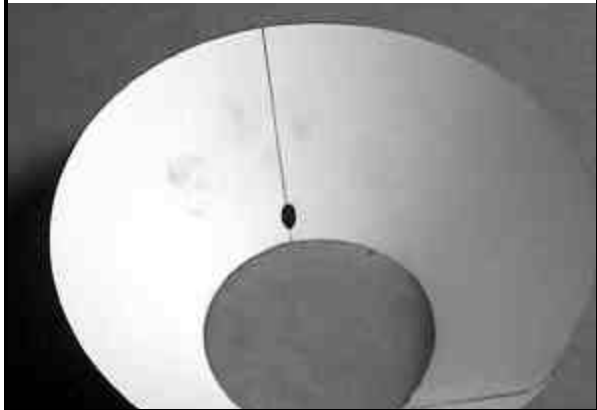


### Step 5

Repeat steps 2 through 4 on all five shroud wraps. When you are done, you will have two large (capsule) wraps, two medium (tower base) wraps, and one small (jettison tower base) wrap.

### Step 6

Start with the large capsule shroud wrap without the printing on it and draw a vertical line up the inside. The line must go through the center of the launch lug hole and be as near vertical as possible.

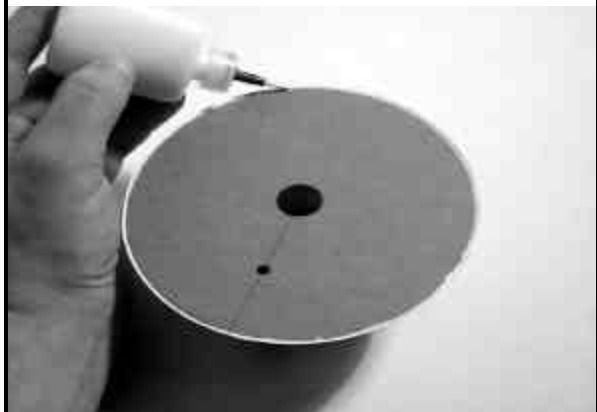


### Step 7

Draw a line through the center of each hole on the forward bulkhead as shown. Line it up with the line on the inside of the shroud (from the previous step) and glue it in place keeping bulkhead square with shroud base.

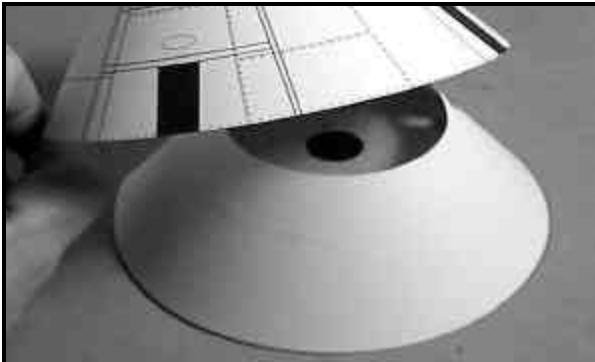
### Step 8

Draw a line through the center of each hole on the aft bulkhead as shown. Line it up with the line on the inside of the shroud (from previous step) and glue it in place.



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## Apollo Pad Abort Test Capsule

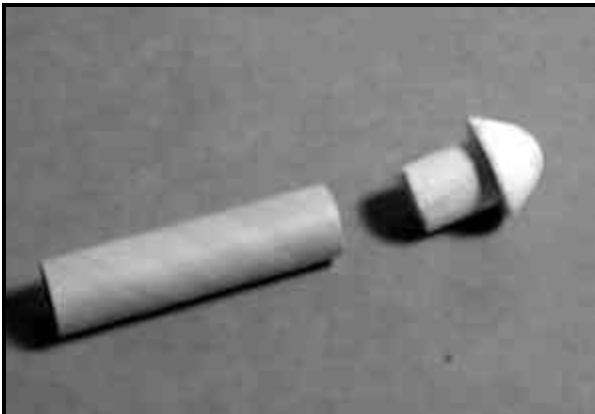
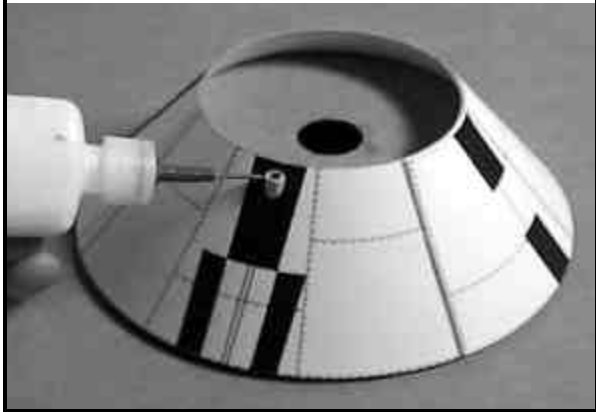


### Step 9

Spray mat sealer on the inside of the printed Capsule shroud. Using epoxy, glue the second shroud onto the top of the first one making sure the launch lug holes align. The sealer will keep the epoxy from soaking through the paper shroud. **Do not** use contact cement (or equivalent).

### Step 10

Fit the launch lug into capsule and glue in place.



### Step 11

A small amount of sanding may be required to allow an easy sliding fit of the capsule balsa nose cone into the motor tube.

### Step 12

Insert motor tube with balsa nose cone into capsule (do not glue yet) . Apply glue to the bottom edge of the nose cone where the medium wrap will overlap.



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## Apollo Pad Abort Test Capsule

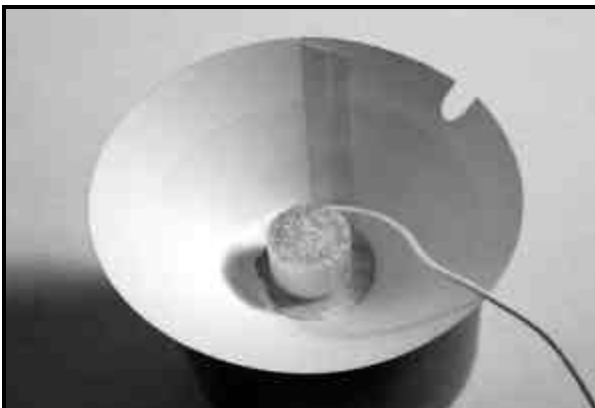
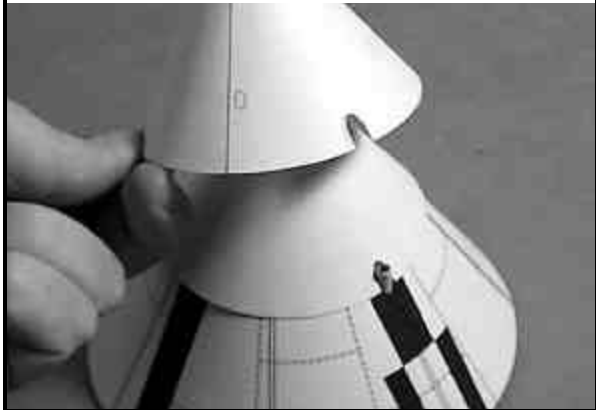


### Step 13

Place the medium shroud (the one without the printing on it) on top of capsule. using the motor tube, apply slight upward pressure to seat the nose cone into place. Hold for a couple minutes while the glue sets.

### Step 14

Glue the second shroud onto the top of the first one. Make sure launch lug notches align. Do not use contact cement or equiv. - this type of glue does not allow for minor repositioning once pieces are in contact with each other. Use epoxy.



### Step 15

Remove the nose cone assembly. While supporting it upside-down, glue the elastic shock cord into the valley between the balsa cone and the shroud. Be careful that it does not interfere with the balsa shoulder that slides into the motor tube.

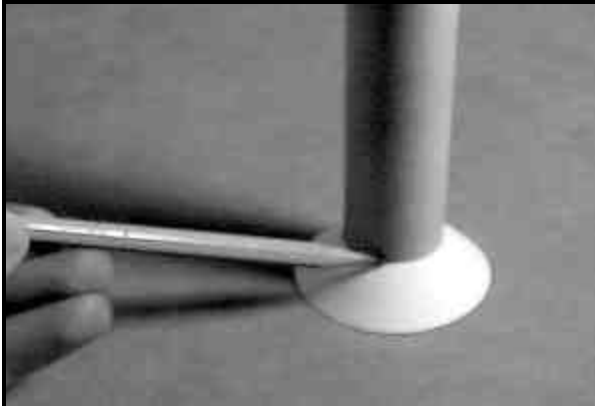
### Step 16

Glue the base ring to the tower tube. Let this dry before proceeding.



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## Apollo Pad Abort Test Capsule

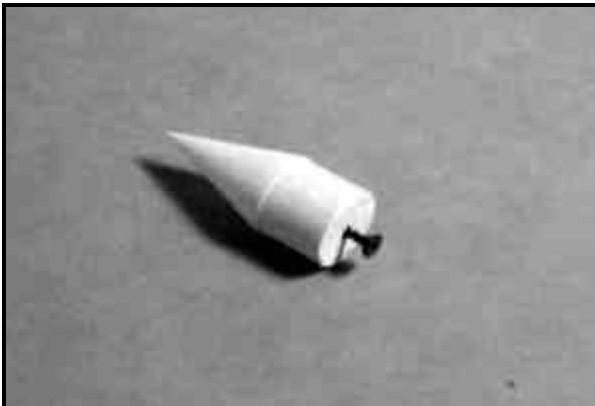


### Step 17

Test fit the small shroud onto the tower tube (do not glue yet). Draw a line around the tube at the top of the shroud.

### Step 18

Slide shroud up a little and apply glue to the tube at the line drawn in previous step. Also apply glue to the edge of base bulkhead and slide the shroud into place.

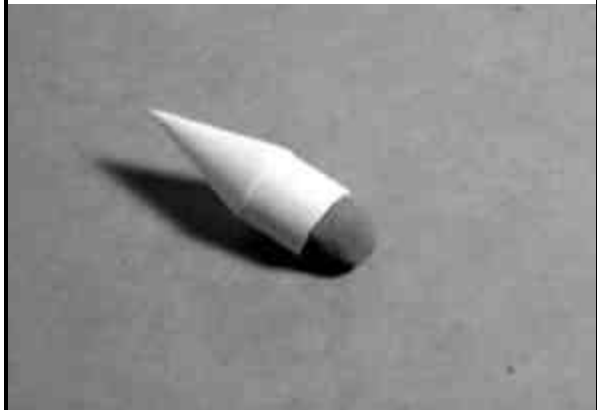


### Step 19

Insert a screw into the base end of the tower balsa nose cone. This will give the clay nose weight something to adhere to.

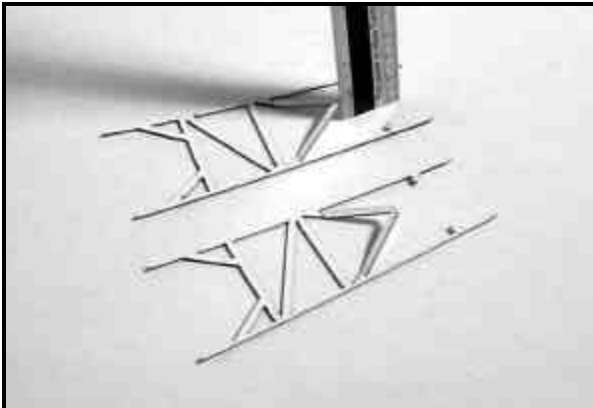
### Step 20

Form the clay nose weight onto the base of the nose cone. Insert nose cone into top of tower tube.



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## Apollo Pad Abort Test Capsule

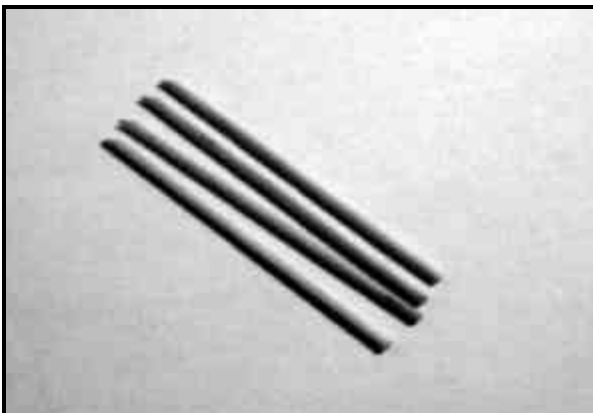
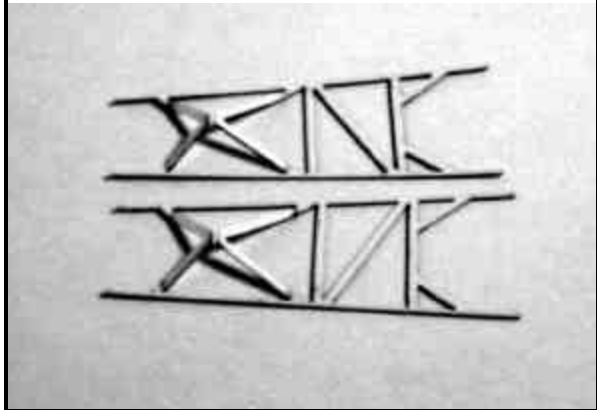


### Step 21

Prop up the longer “V” shaped pieces to the tower structure by 1/4 inch as shown. Glue using CA (Cyanoacrylate). Do this to all four tower sides.

### Step 22

Now glue the shorter “V” pieces to the tower side structures. The point of the short V piece should line up with the point of the longer V piece. Do this to all four tower sides.

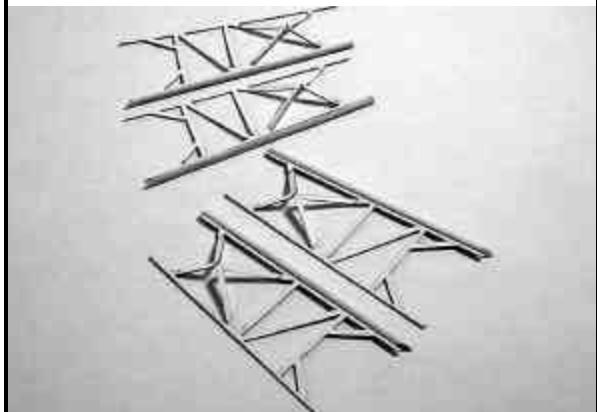


### Step 23

Cut the 1/8 inch dowel into four equal pieces of 4 3/8 inches. Cut one end square and cut the other end with an angle of 30 degrees. (The overall length, square end to point of angled end, should be 4 3/8 inches).

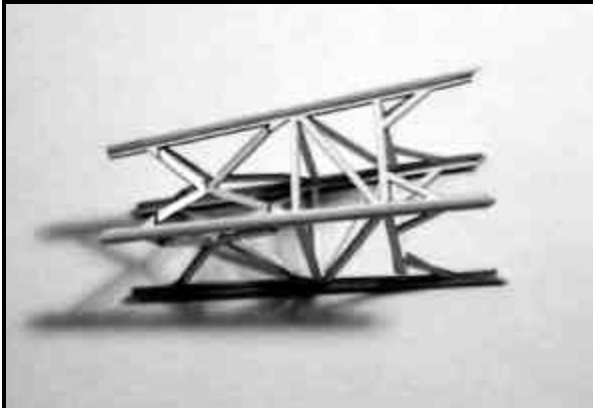
### Step 24

Position the square end of the dowel flush with the top end of the tower side. Glue the tower sides to the 1/8 inch dowels using CA. The “flat” face of the angled end of the dowel should point inward toward the future center of the tower structure.



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## Apollo Pad Abort Test Capsule

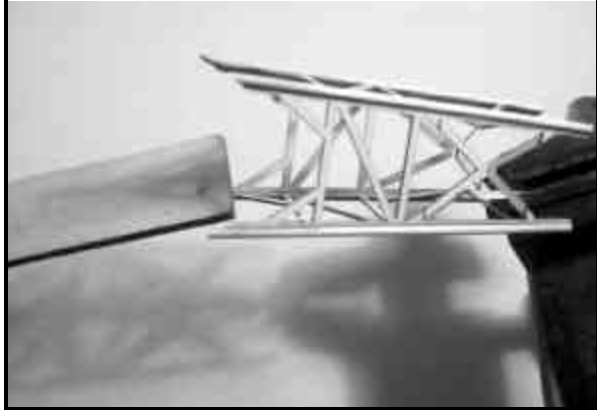


### Step 25

Position the sides together, one side at a time and glue using CA.

### Step 26

Using a small sanding block, sand the ends of the tower structure to create a good fit on the capsule nose cone.



### Step 27

Cut four equal pieces from the 3/16 tube 5/8 inch long. Each will have a square end and a 30 degree angle on the other end. Make sure the angle is correct to allow for proper fit on the capsule nose cone surface. Extra tube length is provided if needed.

### Step 28

Slide the tubes from the previous step onto the tower legs. Apply glue onto each tower leg and position tower on top of capsule nose cone. Make sure tower is vertical. While the glue is still wet, slide the tower base tubes down and glue into position.



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## Apollo Pad Abort Test Capsule

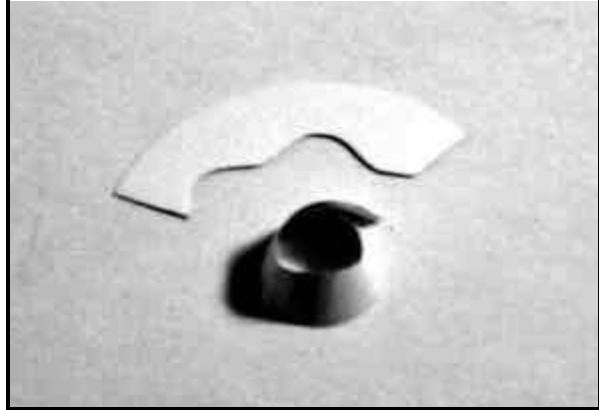


### Step 29

Glue the tower tube to the top of the tower structure. Carefully slide the structure ring (not shown) into the space at the open area of the tower supports. Glue with CA.

### Step 30

Pre-Curl each of the four jettison rocket nozzles..



### Step 31

Glue each nozzle using a tapered bottle cap to help nozzle stay circular.

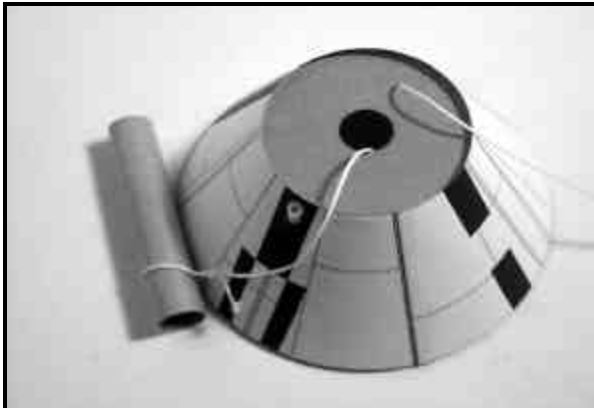
### Step 32

Glue each nozzle to the bottom of the tower tube as shown.



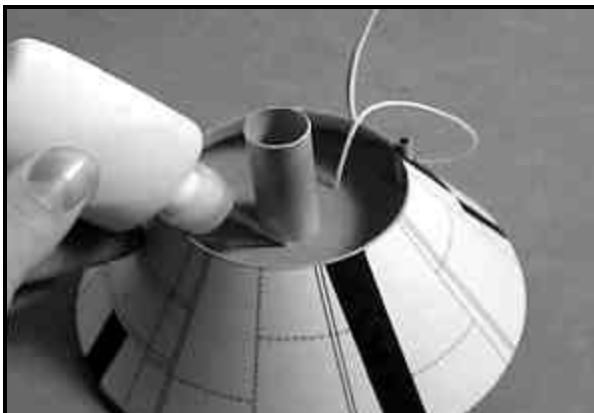
# KosRox

## Apollo Pad Abort Test Capsule



### Step 33

Put a small hole in forward bulkhead and feed the shock cord string through it. Tie a loop in the end of the string that will fit around the motor tube. Put the motor tube back into the capsule shroud trying to keep string looped around it.

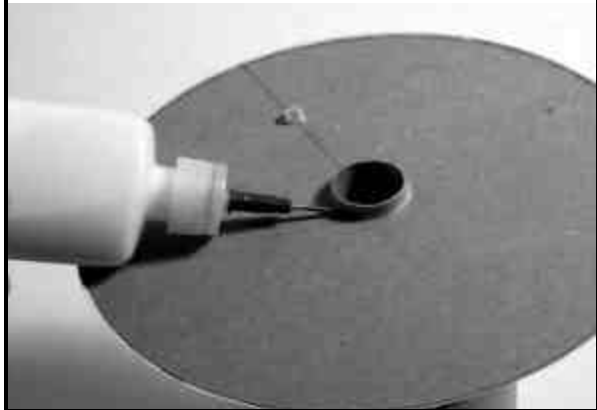


### Step 35

Glue motor tube to forward capsule bulkhead.

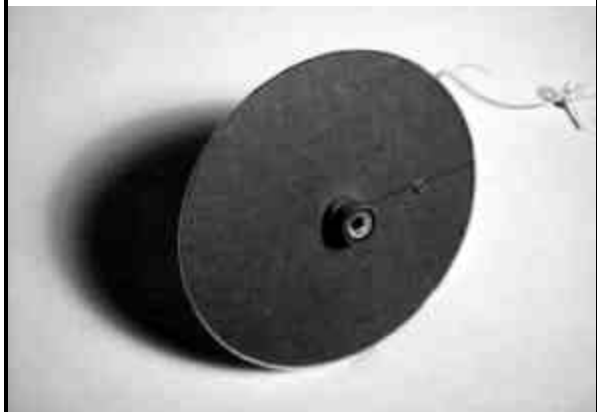
### Step 34

With motor tube in place and capsule nose cone on, position the motor tube and glue bottom of motor tube to aft capsule bulkhead.



### Step 36

Using a used motor, glue the thrust ring into the motor tube. Position ring so that about 1/4 inch of the motor remains out of the tube. Be careful not to glue the motor into the motor tube (remove it immediately after positioning the thrust ring).



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## Apollo Pad Abort Test Capsule

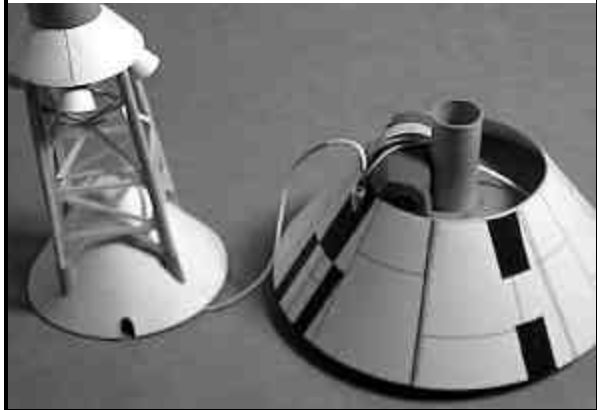


### Step 37

Tie the free end of the shock cords together (one from the capsule base and the other from the capsule nose cone). Using masking tape, tape the streamer to the elastic part of the shock cord.

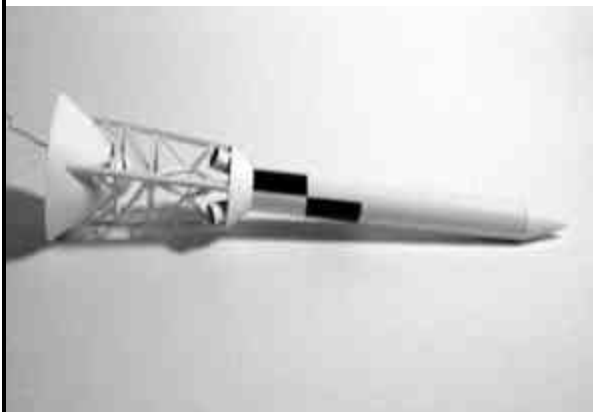
### Step 38

Care must be taken when packing the streamer and shock cord as to not cause them to jam during ejection. (to help the streamer deploy at ejection, wrap the shock cord around streamer so nose cone ejection pulls the streamer free)



### Step 39

Paint the Capsule nose cone, tower and tower tube assembly white. Apply a roll pattern to the tower tube.



### Step 40

Paint the Capsule shroud with a clear mat sealer. This will protect the printing.

Insert a motor and use masking tape to secure in place. Use a B6-4 for the first flight.

When launching the capsule, make sure launch rod is very clean and smooth. Otherwise the capsule may bind on liftoff.

The Capsule can be built without the streamer if landing place will be in soft grass.

A small piece of recovery wadding is suggested to help keep the bottom of the balsa nose cone from charring.