

  
**DELTA IV HEAVY**  
Paper Model Kit



# DELTA IV HEAVY

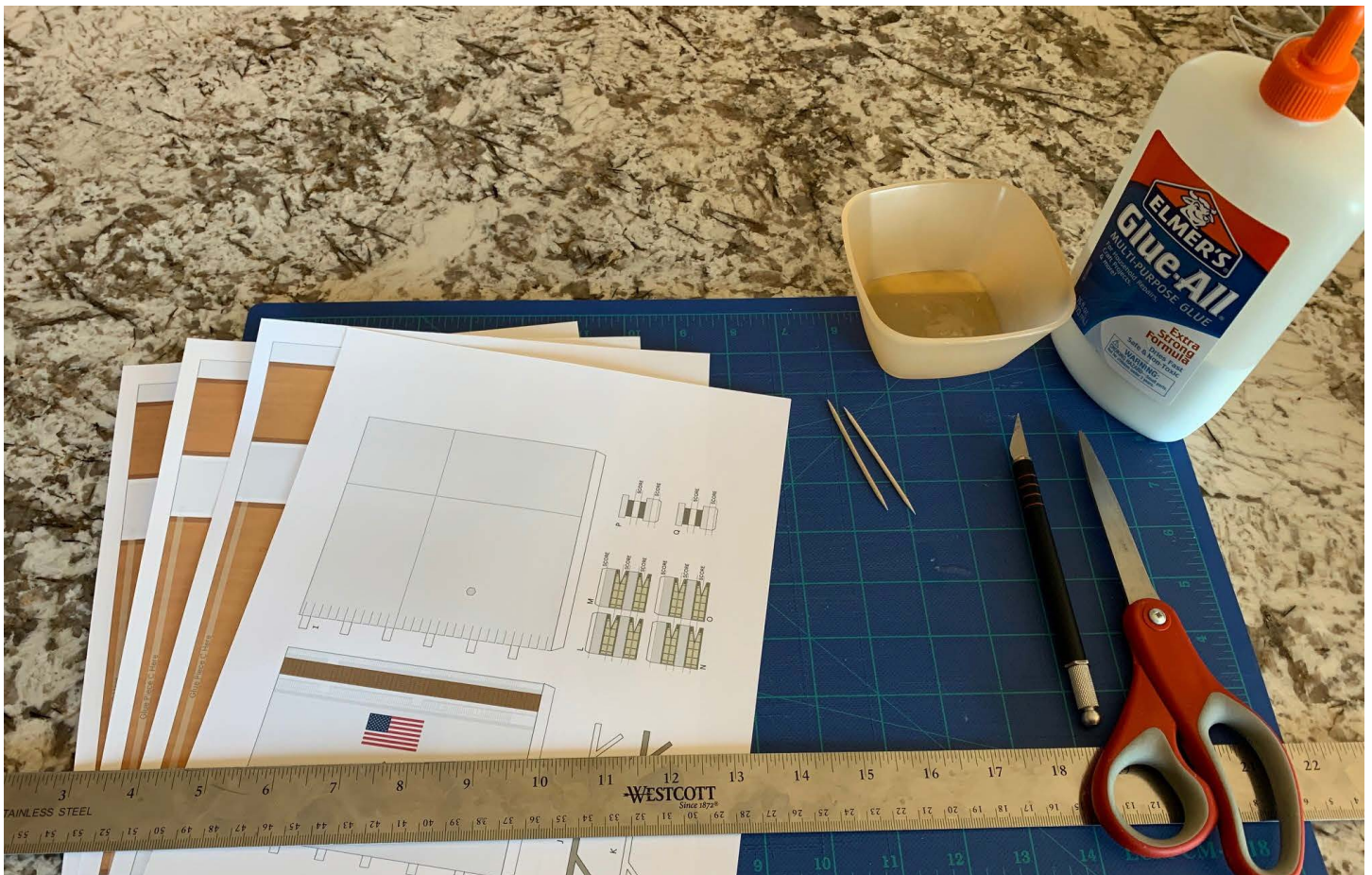
This paper model kit is designed to help you build a 1:150 scale model of the Delta IV Heavy rocket with your printer and basic tools. As with all paper model kits, your level of success will depend on your precision and the time you take. It is recommended to let the glue fully dry in each step before the next. Please take care not to cut yourself and do not leave children unattended with sharp tools.

## Your Delta IV Heavy paper model kit will require:

- 8.5" x 11" cardstock prints of the 5 pages at the end of this document, (save paper and ink by only printing the pattern pages 13-17 and view the instructions online)
- A cutting mat
- Scissors and/or an x-acto knife (children should not use x-acto or be left unattended with cutting tools and anyone attempting this kit should take care to avoid injury from cuts)
- Glue (super glue or other adhesive is not necessary)
- A straight edge or ruler

## Optional supplies:

- A few toothpicks for applying glue to small areas
- A small dish to hold a dollop of glue while building
- A long wooden dowel or chopstick to help you apply pressure to glued areas far into the rocket body (not shown in photo below)



## STEP 1

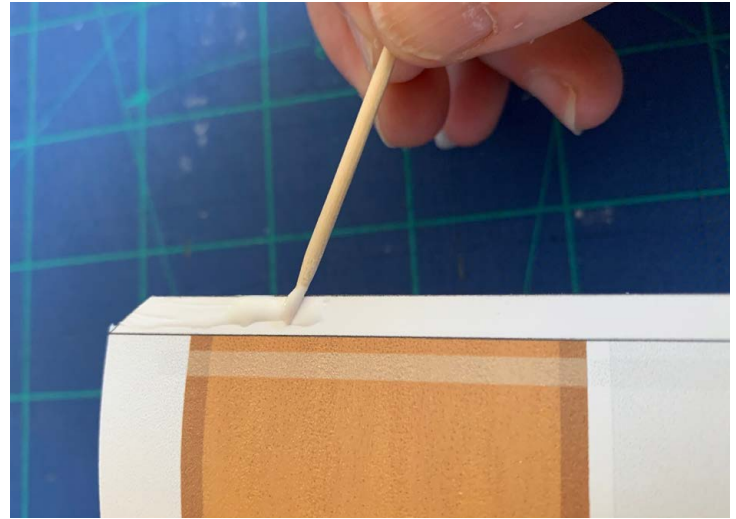
### Make the Common Booster Cores (A)

You will have three pattern pages that are the same, these are the Common Booster Cores and will be built together.

Trim out piece A, from each page. Apply glue to the white strip on the side of each piece.

Gently curl the booster to make a tube and hold the glue until it dries in place.

Make three Common Booster Cores and set them aside.



## STEP 2

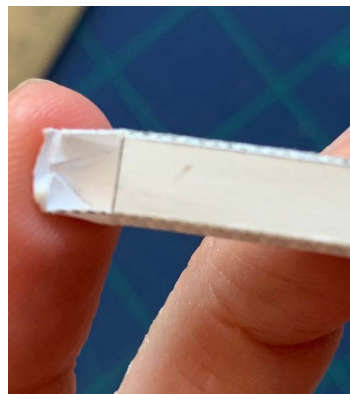
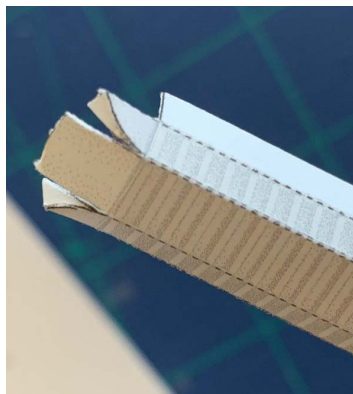
### Make the cable tunnel (B)

With the open blade of your scissors or an x-acto blade, you will lightly score the dotted lines on part B. For an x-acto, you will want to either use the back of the blade or extremely light pressure to avoid cutting the score lines. You may want to practice this first on a blank area of the cardstock. These will be fold lines.

Trim out part B and fold on the score lines to make a long box, and glue the piece together on the long side.

Once completed, bend the ends down and glue the triangular sections under the end pieces to form angles.

Make three cable tunnel pieces and set them aside.

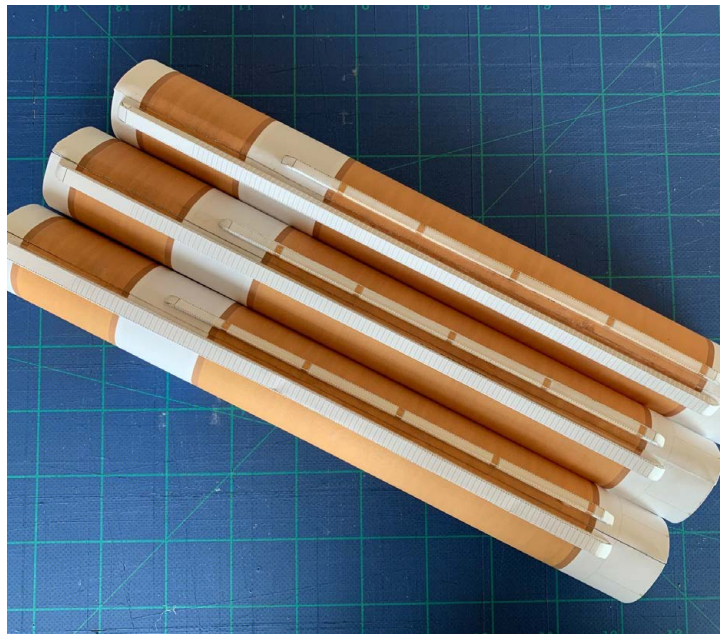
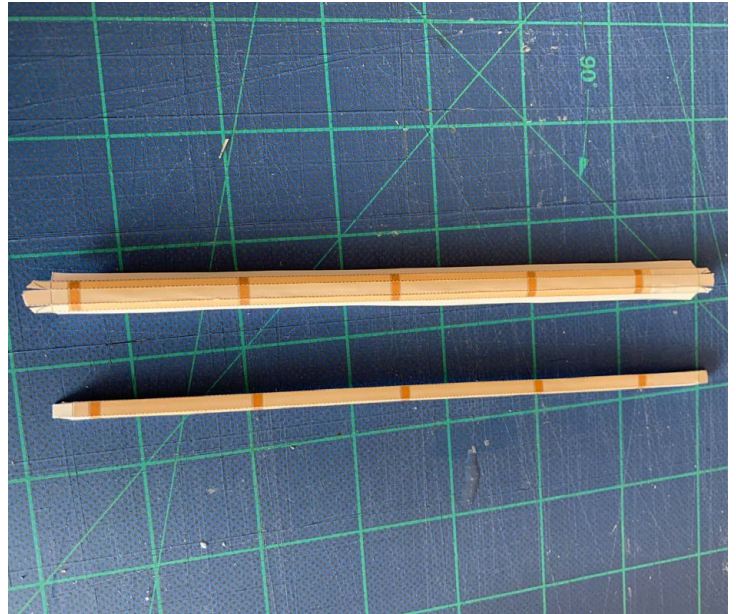


## STEP 3

### Make the LO<sub>2</sub> feedline (C)

First, score part C the same way you scored B, to make fold lines. Next, trim out the piece and fold. Lastly, glue the piece together in the same way by first gluing the long side, then creating angled end caps.

Make three feedlines and set them aside.



## STEP 4

### Attach cable tunnel (B) and feedline (C) to Common Booster Core (A)

Next add glue to the back of part B and C and stick them to part A on the locations called out.

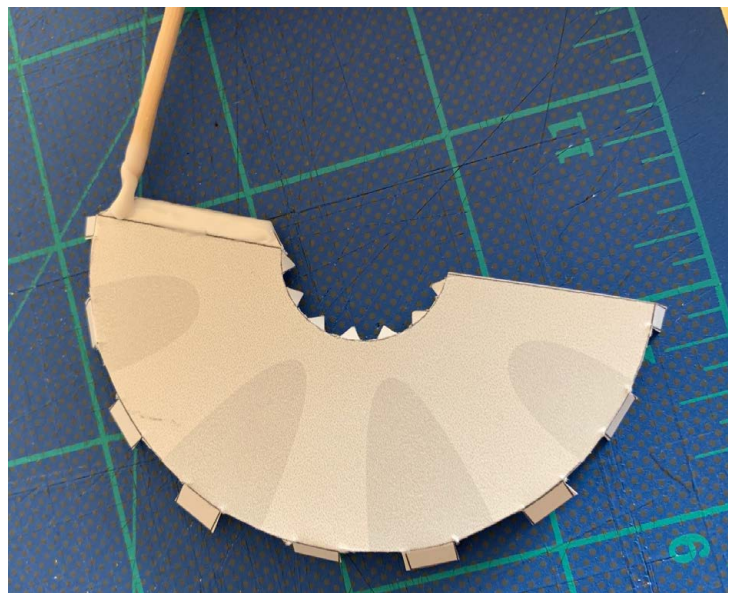
Do this to all three Common Booster Cores and you'll have the body of the Delta IV Heavy.

## STEP 5

### Make the thermal shield (D)

Trim out part D, fold the triangular and rectangular tabs down, away from the print. Add glue to the end tab and gently wrap the part into a cone shape. Hold this piece until the glue dries.

Make three thermal shields.



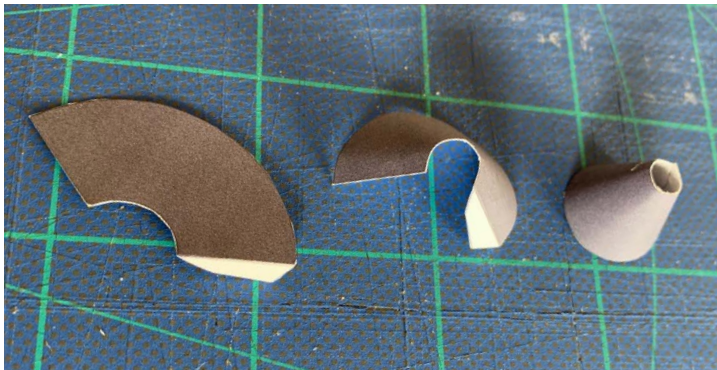
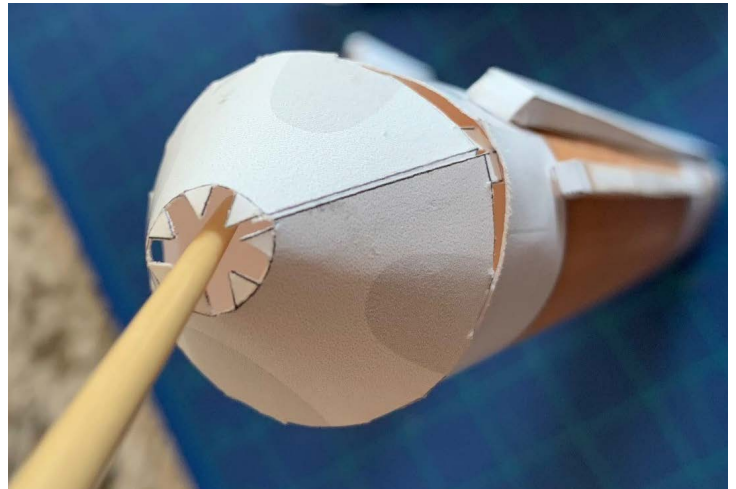
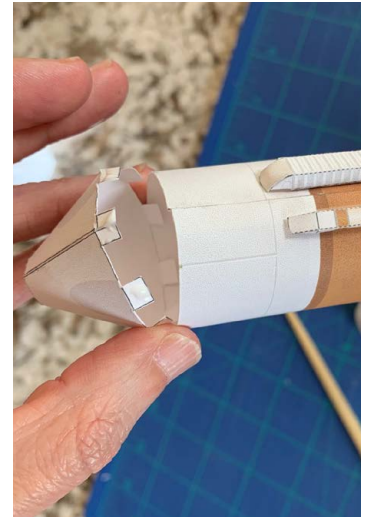
## STEP 6

Attach the thermal shield (D) to the booster (A)

Apply glue to the rectangular tabs of part D. Line up the seam of the heat shield with the seam of the booster and carefully tip the part into the bottom of the rocket body (part A) which has the larger white section.

You can use a wooden dowel, chopstick or any thin tool to reach into the small hole and push the glued tabs into the booster tube until the glue dries.

Repeat until all three boosters have thermal shields attached.



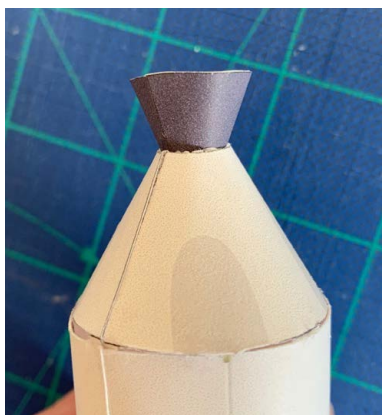
## STEP 7

Make the RS-68A engine nozzle (E)

Trim out part E and slowly curl into a cone shape. Glue the end together and hold until the glue dries.

Once dry, apply glue to the triangular tabs on the thermal shield (part D) and insert the engine nozzle (part E) into the hole in the thermal shields (part D) as shown. The glue will dry and hold the engine in place. Take care to center the cone shape before the glue dries.

Add engines to all three boosters.



## STEP 8

Make the nose cones and top of the payload fairing (F & G)

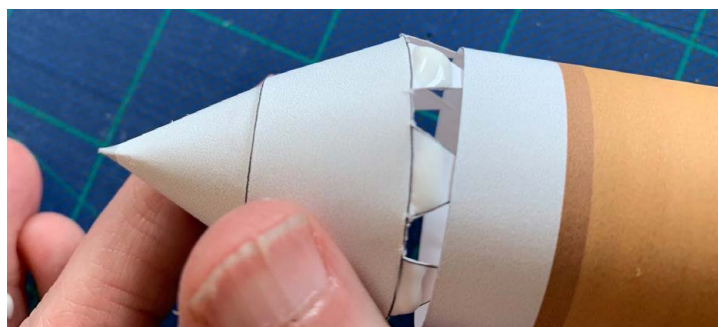
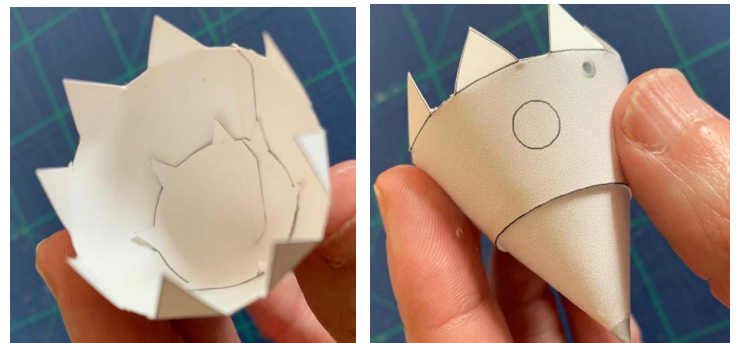
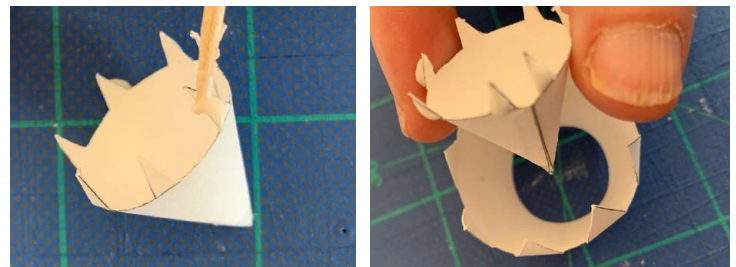
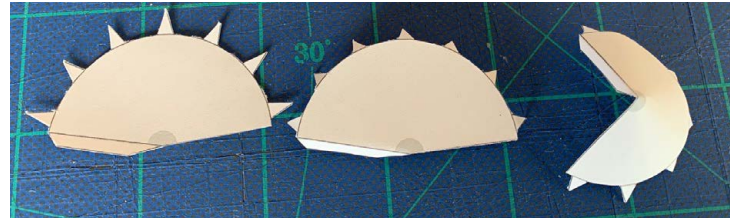
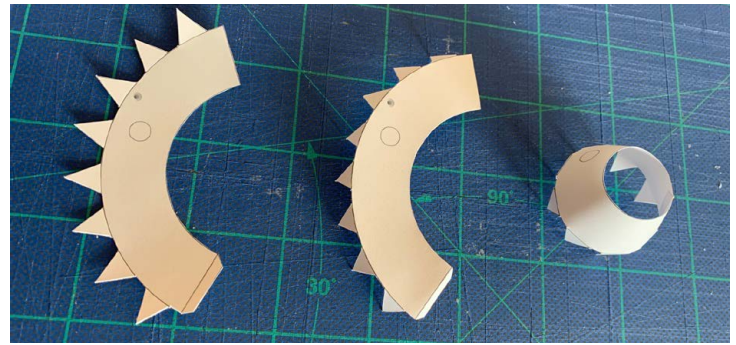
Trim out part F, the base of the nose cone and bend the triangular tabs down. Next, wrap the part around, gluing the ends.

Trim out part G and do the same, bending the triangles just slightly on this piece and making a cone when glued.

Once all pieces are dry, apply glue to the triangles on part G, the cone, and drop it into the bottom of part F, point going in first, as shown.

Center part G within the cone and from the inside of the cone, apply pressure to the glued triangles until the glue dries.

Make three nose cones.



## STEP 9

Attach two nose cones to two boosters

**Do not attach all three nose cones to the boosters. At this step, we only need TWO.**

Attach two nose cones to two booster cores by applying glue to the triangles and inserting each into the top of two booster parts. Be sure to line the seams up on the back to keep everything aligned. These are now the side boosters.

The third booster will be the center booster and will need an upper stage.

## STEP 10

### Finish the center section

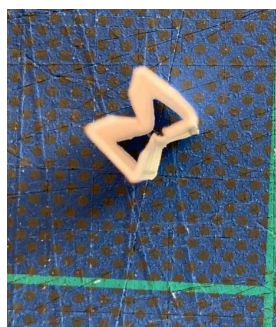
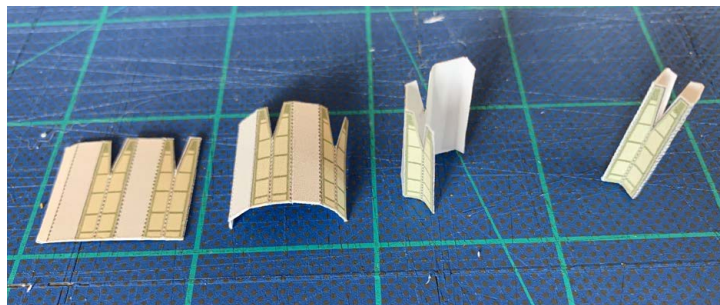
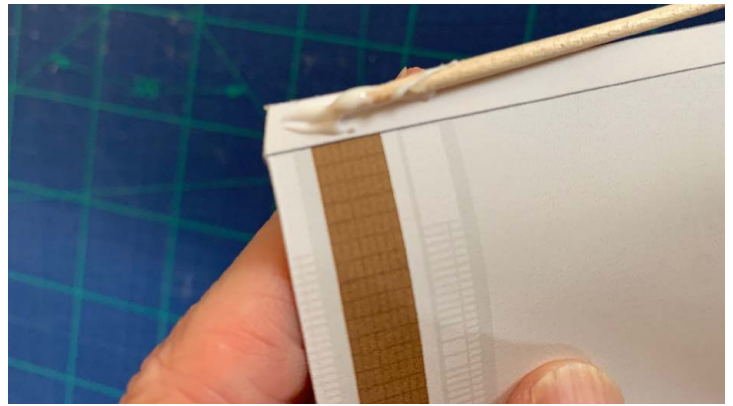
Trim out part H and I, and wrap them gently into tubes, gluing the long ends together.

Glue the upper stage piece, part H, to the top of the center part by applying glue to the rectangle tabs and inserting the piece into the final center booster tube, lining up the seams and making sure the logos are upright. You can use a wooden dowel to press the tabs into place.

After the glue has dried on part H, do the same with part I, the all-white piece. Line up the seams on the back before you glue it to the top of the upper stage (H).

Once that glue on part I is dried, you can glue the last nose cone (now a payload fairing) to the top of the center booster.\*

\*See instructions on step 9 for how to attach the final nose cone shape to make a payload fairing.



## STEP 11

### Create bottom attach fittings (J-M)

Score lines for parts on dotted lines to create fold lines on parts J, K, L and M, then trim out the parts. Fold, wrap and glue each piece to create a box with two flexing bends in the middle, shown in an above-view on the left.

The flexible nature of this piece will allow the paper to attach to the curved surfaces. (No, the real ones don't flex on our Heavy!)

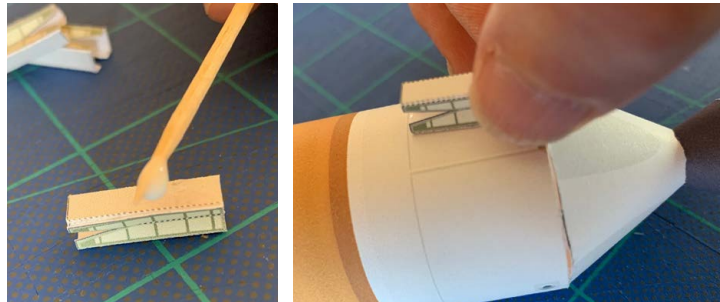
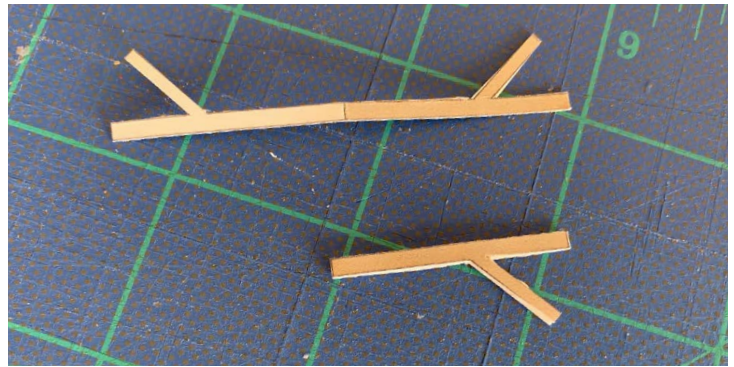
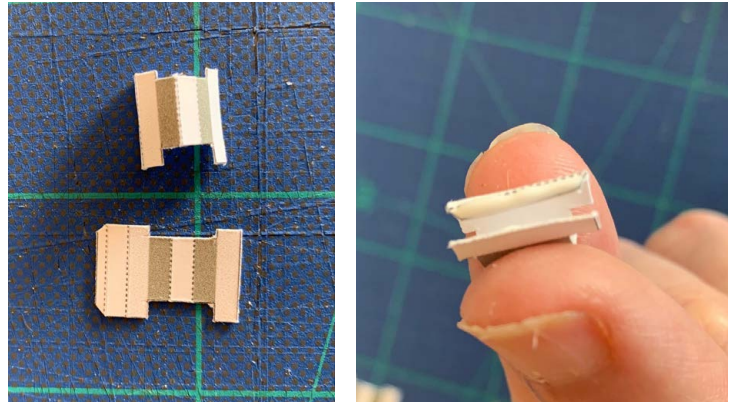
Make four of these bottom attach fittings.

## STEP 12

### Create top attach fittings (N-S)

Score lines for parts on dotted lines to create fold lines on parts N and O, then trim out the parts. Fold, wrap and glue each piece. You will make two of these attach fittings.

Next trim out pieces P, Q, R and S and fold them in half, gluing them in-between to make them stronger. The brown color will be the front. You will need four of these pieces.



## STEP 13

### Finish the Rocket

Start with the center booster and attach bottom attach fittings to the left and right of the booster using the photos as guides. add glue to the white portion of each bracket and stick them a little distance from each other as seen in the “aft view” of the rocket.

Once the glue is dry on the center booster, glue the brackets to the side boosters by flexing them into place. It is helpful to do one at a time and wait for glue to dry.

Once both side boosters are attached at the bottom, you will need the box-style attach fitting at the top (part N and O). Glue each of these on the left and right portion of the center booster, where the white is on the center booster and the gray is facing the port and starboard side boosters. See photo for location.

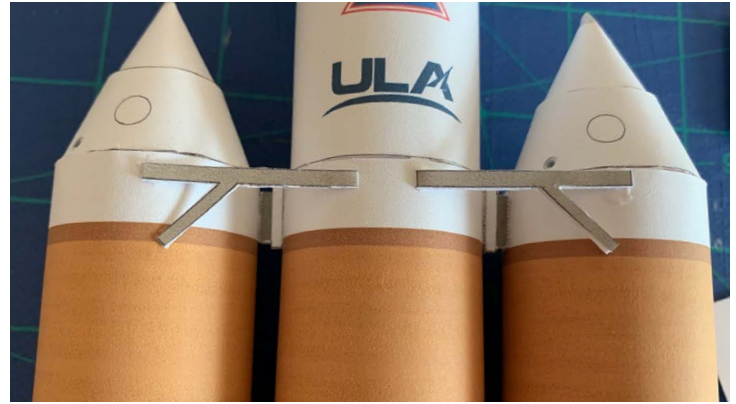
Once the glue has dried, glue them to the side boosters.





Next take parts P, Q, R and S and glue them to the front and back of the rocket as shown in the photo. Let these dry and you have completed the Delta IV Heavy!

An optional model stand comes with this model. See instructions to build on the next page.



## COMPLETED DELTA IV HEAVY



# MODEL STAND

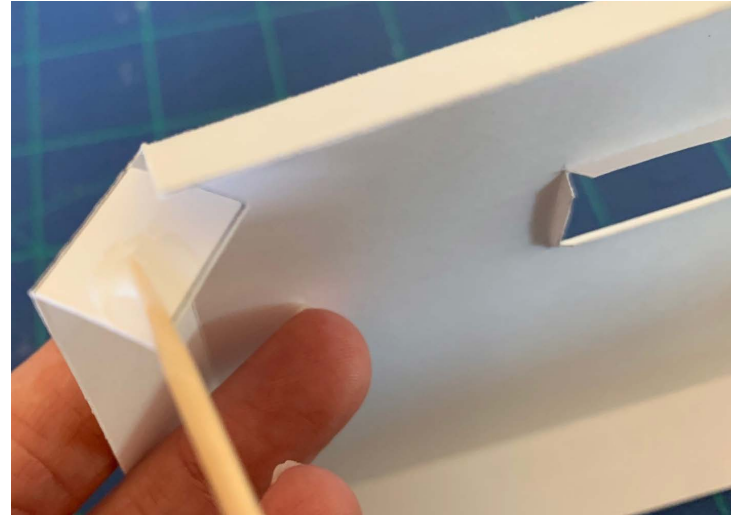
## STEP 1

### Make the base of the stand (T)

Trim out part T, as shown, and be sure to score all fold lines in this stand model. The folds will need to be crisp and 90 degrees to provide a sturdy stand for the rocket.

Remove the black section marked "cut out and remove." The white portion of this area can be scored and the corners cut to allow each tab to fold down. See photos on the right.

Add glue to corners of the box to make the base for the stand. Allow glue to fully dry.

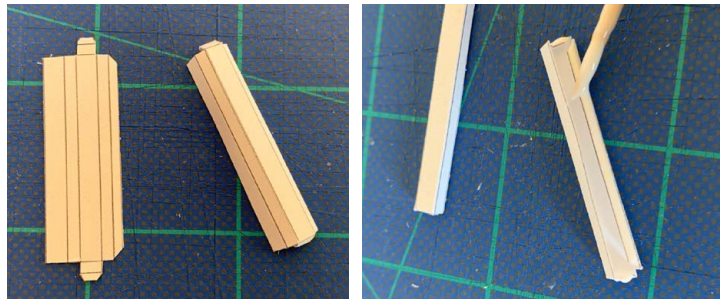
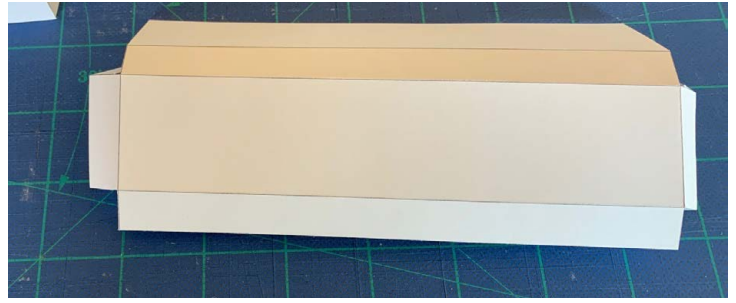


## STEP 2

### Make the support tower (U)

Trim out part U from the pattern, and again, score all the fold lines for a clean fold. Add glue to corners to make the shape in the photo, a tall, thin box.

Insert the support tower (U) into the base (T) and even the length with the side walls of the base. This will ensure that the support tower is touching the ground or table when it stands and will provide further support. You can also add glue to the folded tabs to secure the base to the tower, once you have the positioning correct.



## STEP 3

### Make the support arms (V & W)

Trim out parts V and W, scoring the fold lines, then fold and glue together to make small boxes.

Next, glue the support arms to the sides of the support tower, at the very top, so that the widest surface is attached to the tower. See the photo for reference.

Let glue dry.

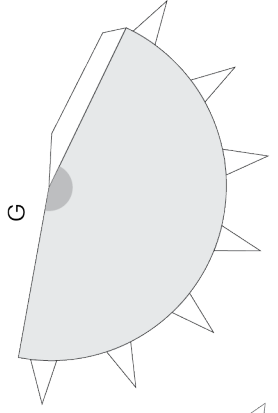
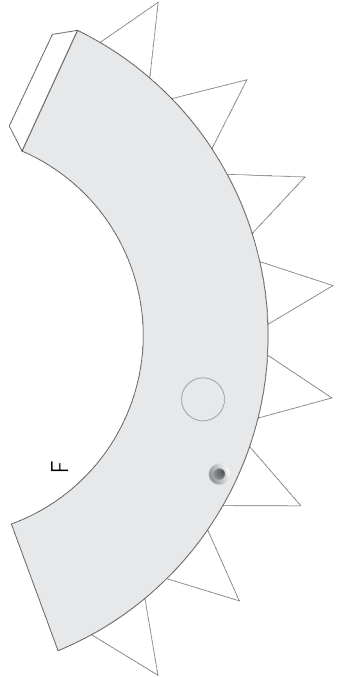
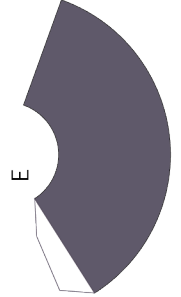
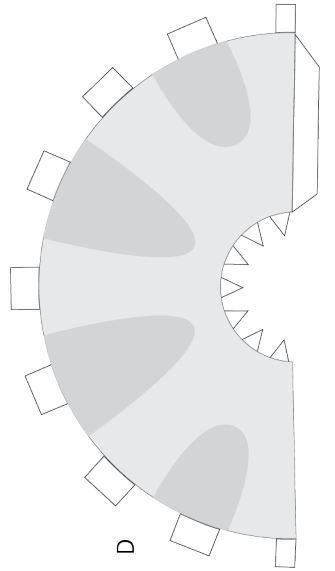
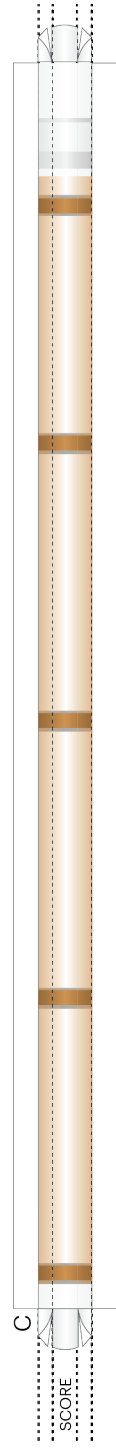
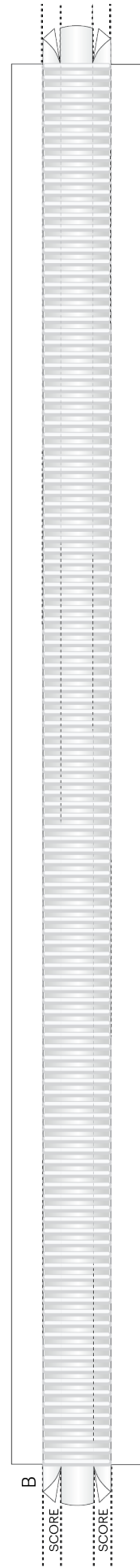
Add the rocket! The support arms should fit nicely in between the boosters and hold the Delta IV Heavy rocket on the stand securely.

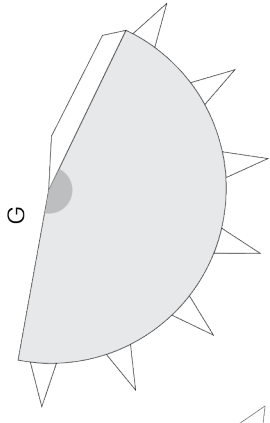
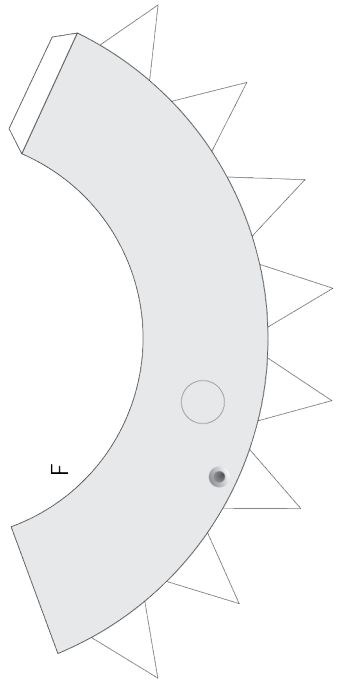
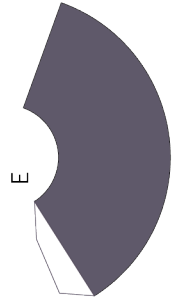
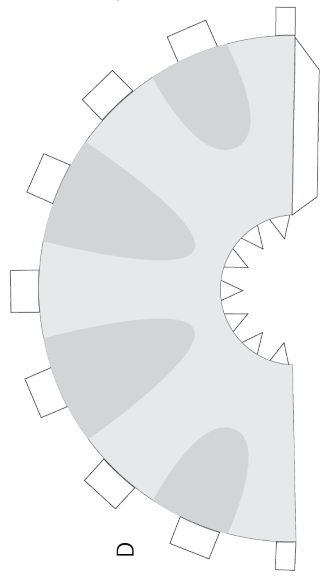
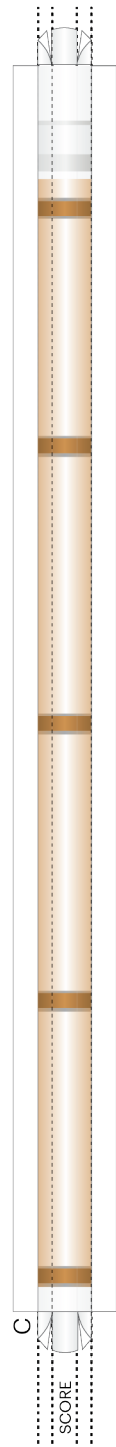
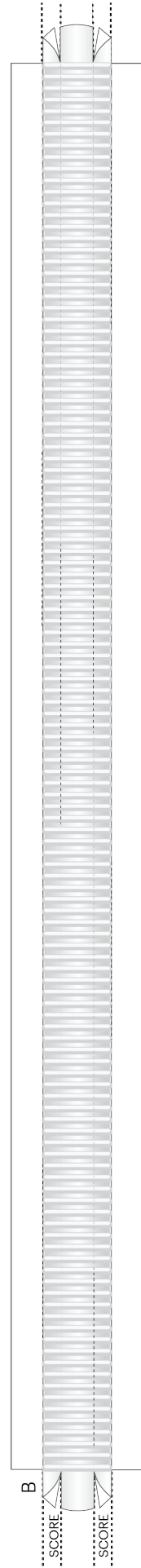


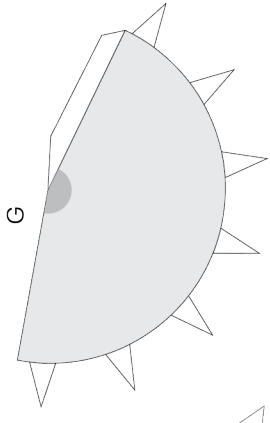
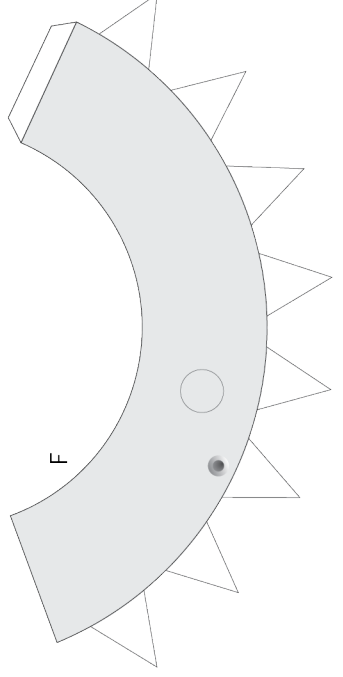
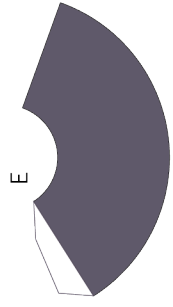
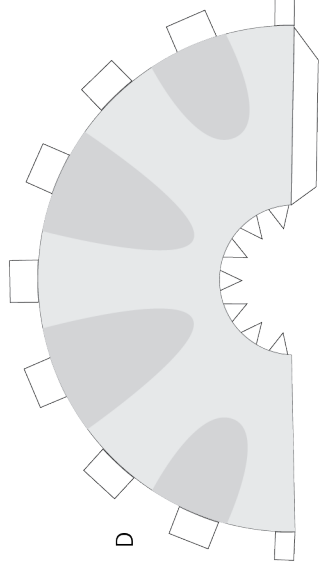
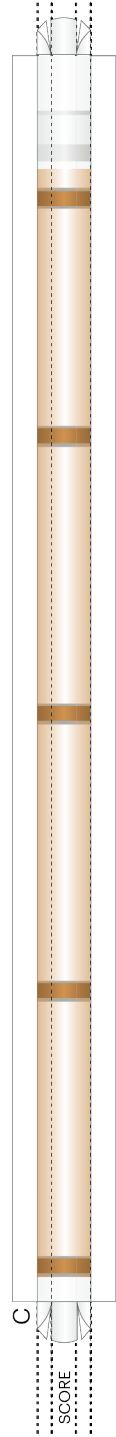
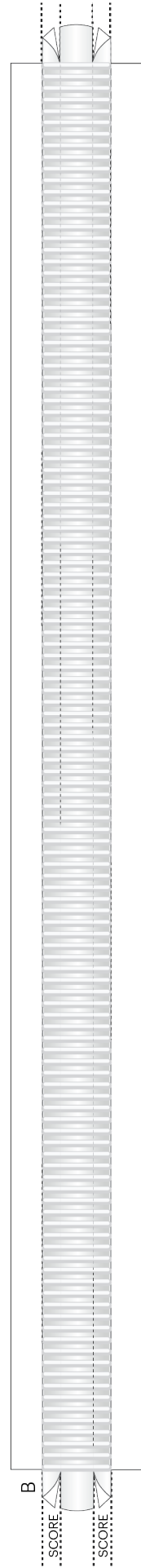
# DELTA IV HEAVY

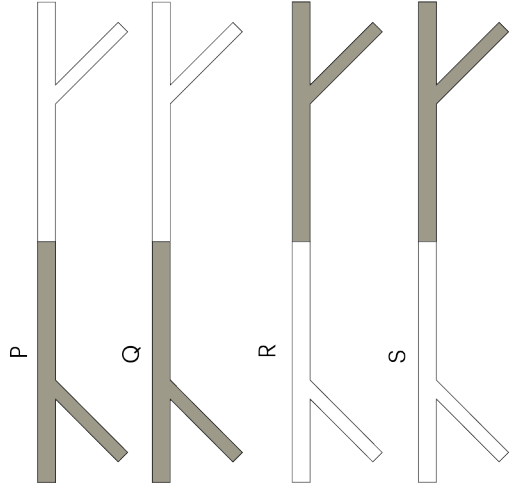
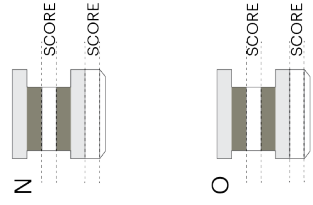
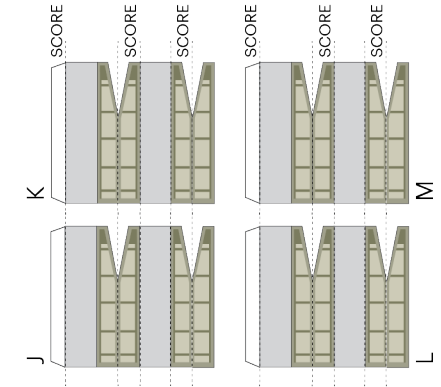
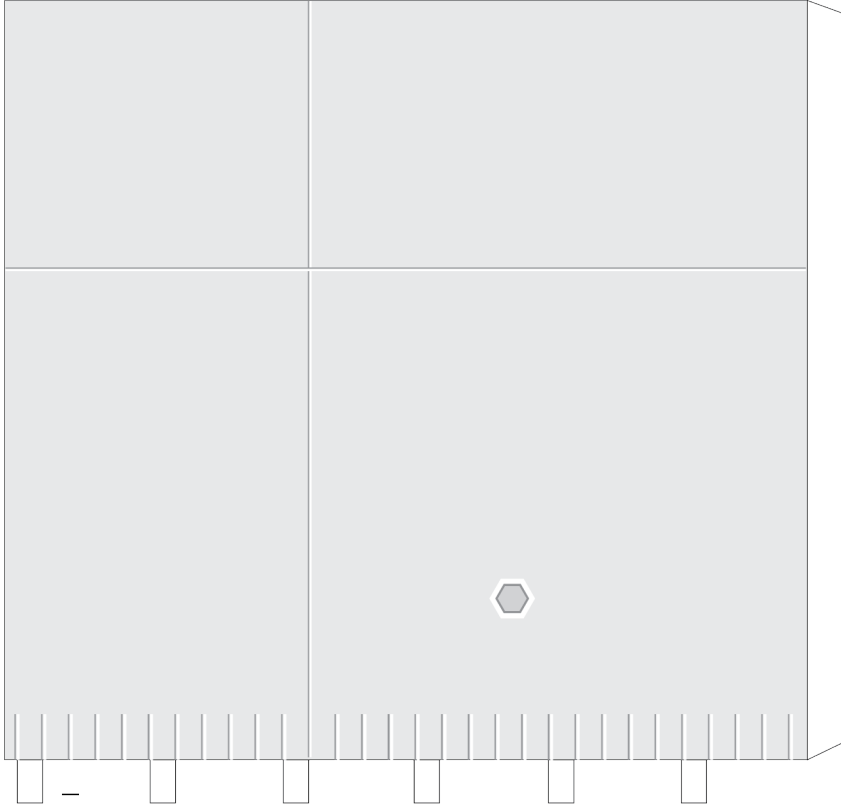
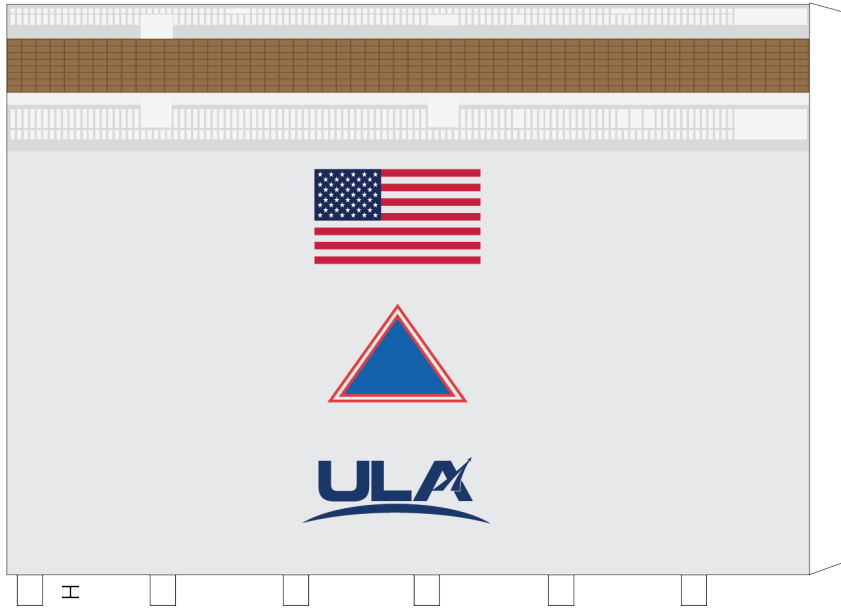
With Model Base













# MODEL BASE

Score all folding lines on this page

