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**29mm Priority Stealth**



**Completed rocket with an Aerotech G40-4W motor**

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**Notes on construction:**

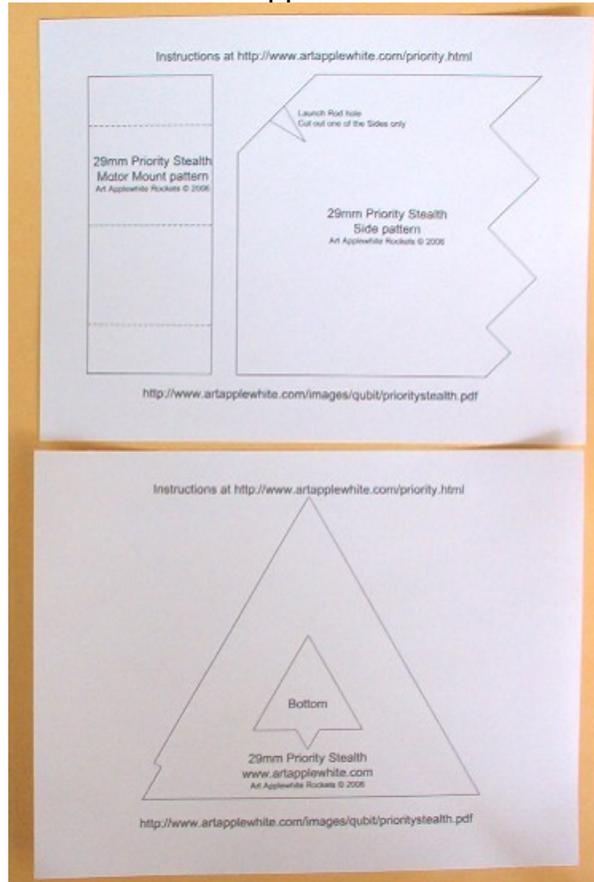
Elmers Glue-All is the only glue I recommend for this rocket. Yellow glue will not work as well because it shrinks too much and is visible when it dries.

The rocket as shown is made from a 6" x 6" x 5" Priority Mail box which I happen to have laying around. You may substitute any other similar corrugated cardboard box that is at least as big. This is a version of my Stealth design that uses corrugated cardboard instead of foam-backed posterboard for the main components. It uses a very reliable autorotation (helicopter) recovery technique for recovery. It flies straight, low and lands close to the pad. It rotates on both ascent

and descent. It's maiden flight was at NSL 2006 where it wowwed the crowd.

## Instructions

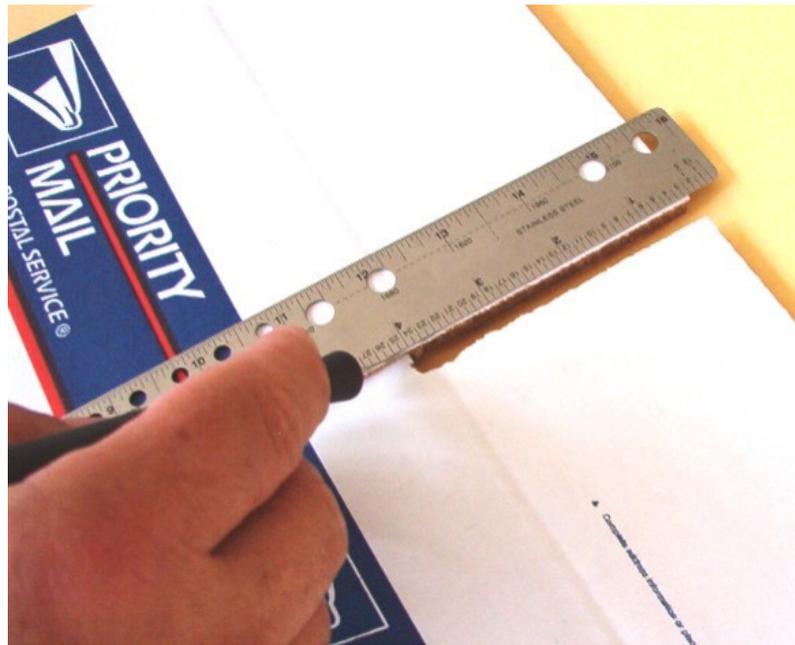
Download and print on plain bold paper the Pattern Guides (20KB PDF) from [www.artapplewhite.com](http://www.artapplewhite.com)



Lay the box down flat and cut just to the right of the overlapped seam.



Cut the box in half using a metal ruler and a sharp craft knife.



Set the right half of the box aside for later. Open the left half of the box and lay it flat.



Cut the two bottom flaps off at the fold and set them aside for later. Cut the top, right hand flap off 1/2" above the fold.



Tape one of the cut off flaps to the upper left hand flap. 1 inch wide clear packing tape works best for this and is nearly invisible. Make sure the edges of the flaps line up and the tape is centered, run the tape the full width of the flap and make sure the seam is flat.



Cut out Side pattern. Line it up carefully on the folds of the lower right side panel and mark around the edge with a ball point pen.



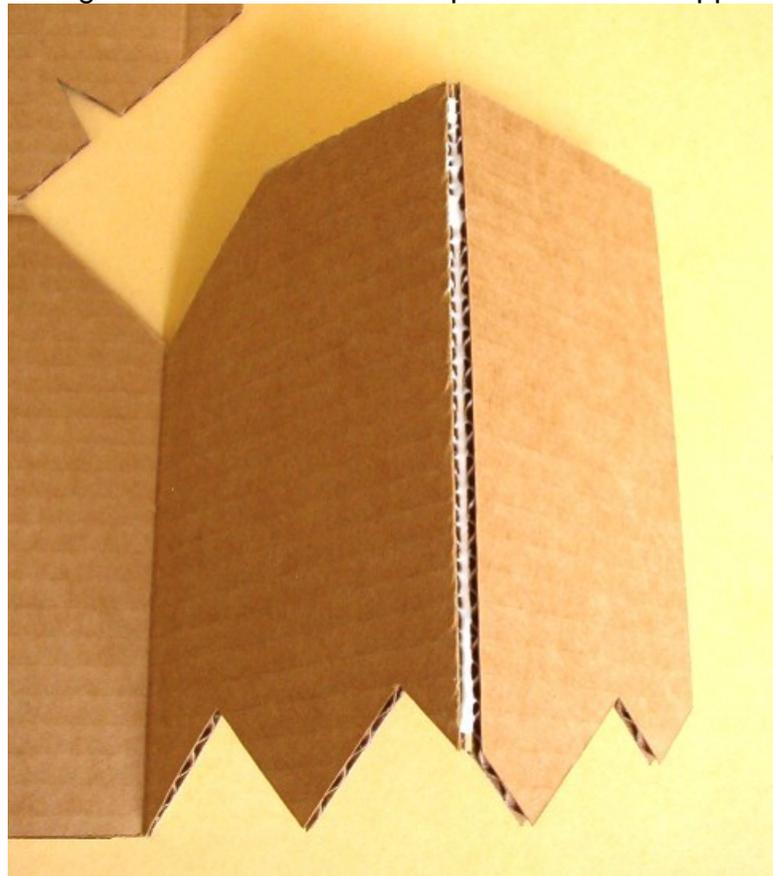
Mark the Launch Rod Hole only on the lower right side panel. Repeat marking the other side panels. Be sure to rotate the pattern 90 degree clockwise for the next panel. Go in the order of lower right, lower left, upper left. Make allowance for the slight narrowness (about 1/8 inch) of the upper left side panel. Extend the lines from the lower right side panel onto the 1/2 inch flap.



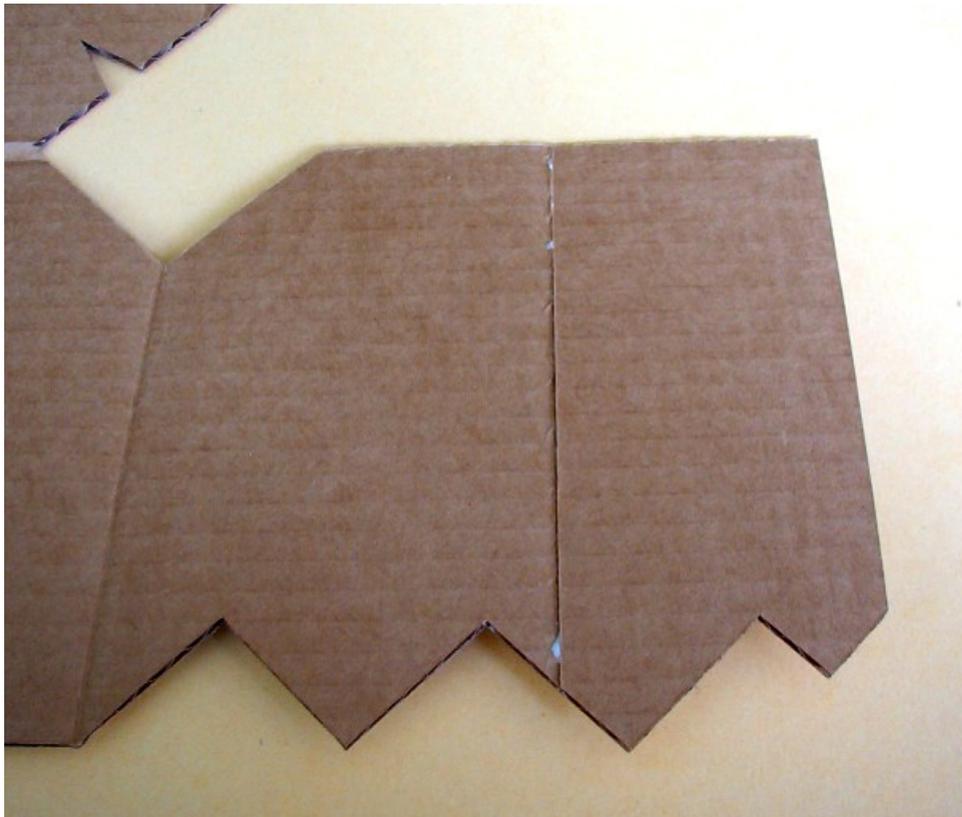
Cut on along the outside lines with a ruler and a sharp craft knife.



Run a fillet of glue on the inside of the tape seam on the upper left panel.



Lay the panel flat and let the glue dry. Do **not** tape the inside of the seam.



Spread glue thinly and evenly on the 1/2 inch flap and form the panels into a partial box shape.



Make sure the 1/2 inch flap is flat against the inside. Let the glue dry thoroughly.

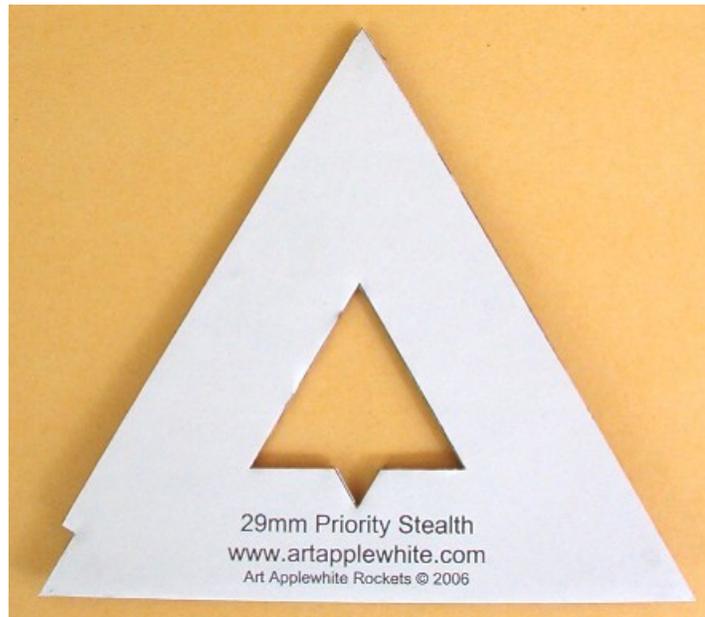


This completes construction of the Top.

If you haven't already done it, cut out the Bottom pattern. Spread glue thinly and evenly over the back of the Bottom pattern and glue it to right half of the box (set aside in a previous step).



Cut out the Bottom with a sharp craft knife and a ruler.



Place the Bottom into the inside of the Top and glue into place with a fillet of glue around all the edges. Make sure the Launch Rod holes are lined up.



Glue the Motor Mount Pattern to back of one of the extra flaps.



Cut out the Motor Mount. Crease the cardboard along the dashed lines using a ruler and ball point pen.



Fold the Motor Mount into a trapezoidal tube and tape it together with a wide piece of tape on the inside of the seam. Don't worry about the seam poking out a little at the point.



Insert the Motor Mount into the hole in the Bottom and slide it up until it just pokes out the Top. Make sure the seam on the Motor Mount is not lined up with the Launch Rod holes.



Run a fillet of glue around the joints between the Top and the Motor Mount and the Bottom and the Motor Mount. You may also want to make the bottom edges of the Motor Mount stiffer by saturating them with thin CA (Super Glue).



This completes construction of the rocket.

I recommend at least 2 light coats of clear enamel to protect the cardboard and glue from moisture.

**Recommended motors:**

**Any 29mm single use or reloadable motor with between 20 and 80 Newtons average thrust and a burnout weight of 85 grams or less.**

**Launch Preparation:**

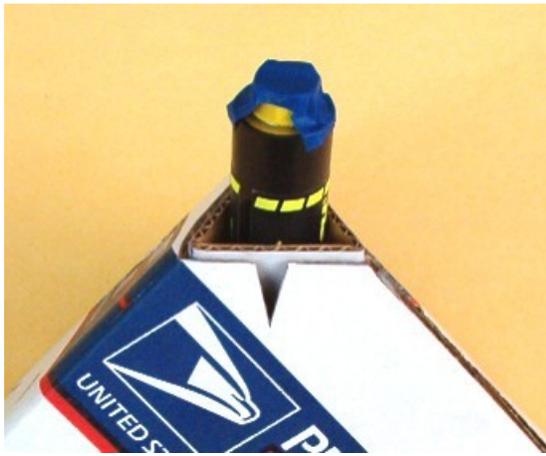
If the motor does not have a built in thrust ring, make one out of 5 layers of masking tape. Make sure the layers are straight and flat and the tape sticks well to the casing.



Insert the motor into the Motor Mount. The first time a motor is inserted into the Motor Mount it will be very tight. This ensured the motor will stay seated in the rocket .



To prevent the possibility of a fire, remove the ejection charge from the motor and plug the ejection port with a ball of recovery wadding. Hold the wadding in place with masking tape.



Support the rocket on a 1/4" launch rod, at least 6 inches above the blast deflector to prevent damage from the back blast. Be safe and enjoy!

Please send your comments and suggestions to Art Applewhite at [rocket877@aol.com](mailto:rocket877@aol.com)  
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