## X-37b Card Model Instructions

Hi there. My name is Justin M and this is my **first** card model designed from scratch: The **X37b**!

I sure chose a hard model to design, but it was well worth it. As I write this the X37b is in orbit poking around secretly for the US Air Force. I felt with the end of the Shuttle program there wouldn't be any pretty birds flying into orbit an more. Made me kind of sad. Well that turns out to not be true, I think the X37b is a pretty bird too, **a space bird**, so it deserves to be a card model for space geeks like myself! This card model I think is moderately difficult. Just remember to score fold lines, keep your fingers clean, and above all take your time. There might be some minor mistakes due to this being my first, but I think I've illuminated most of the errors. Any questions or comments, please email justinwm2006@shaw.ca Have fun!

**1-** Start with the assembly of part 1, the Main Engine and RCS section of the X37b. Its an odd shape, so will take a few extra tabs to assembly cleanly. Use the tabs that correspond to v shaped cuts in part 1, parts 1a to 1g.

Take you time, make sure our fingers are clean, and if you have a pair, use pointed tweezers to glue the tabs into place.

Tabs 1b and 1c should line up with the edge of the openings for the wings, I've marked the alignment in red.

Glue only one side of the tabs into place first, let dry completely then glue the other side of the tabs. Completely dry before bending into the final shape and gluing the final large side tabs.

**2-** Next the back of the engine section. Before cutting out both parts 2a and 2b, very lightly score the fold lines along the tabs on 2b. Glue 2a onto 2b

**3-** Glue the two wider tabs of part 2 to the bottom portion of part 1. Let dry before attempting the rest of the glue up on the back portion. Focus on gluing a few tabs at a time, allowing to dry before proceeding, (otherwise it'll break apart on you). Use the open end of part 1 to reach inside to hold firmly till dry. Remember, clean fingers!

**4-** Roll part 3, the Experiment Bay section, along its width using a thick piece of dowel. Try not to curve the bottom section, but focus on the top bay section instead, between the bottom edges of the wing openings. Glue the large tab in place.

**5-** Glue the Experiment Bay to the Engine section starting with the two large tabs on the bottom of the craft. For the rest, use the available openings to reach your fingers in for a clean hold as the tabs dry. Do not glue the supports (3a to 3d) into place yet as they will block your reach!

**6-** Very lightly score the red line on part 3b and glue parts 3a and 3b together. They will help the Experiment Bay section keep its shape. Glue the combined pieces about a 1/3

of the way down the upper portion of the experiment bay doors, close to the wing openings.

**7-** Very lightly score the red line on part 3d then glue 3c and 3d. Glue this support about 6mm into the front of part 3, as before starting with the larger bottom tabs.

**8-** Glue the air break, part 4, into place. Center lengthwise in the middle of the white section, about 12mm down from the back of the Engine with the hinges facing the nose section.

**9-** Cut out part 5, the nose attachment tab, and glue to the inside of the front section of the Experiment Bay. Be sure to align so that the smaller tabs face the front towards the nose.

**10-** Start on the nose section with part 6. Add the small blue tabs much the same way as the Engine section; glue one side of the tab in place, let dry, then proceed to glue the adjoining nose portion to the tab. Glue part 6a (once dry) to the nose, followed by 6b to cap it off.

\*Optional. If you feel the nose needs to hold it's shape better, glue 6c to 6d and attach just inside the nose cap about 6 mm. Be careful to center the support.

**11-** Glue the complete nose section to the end of the Experiment Bay. Try to bend the bottom portion of the nose to the match the slightly squared-off shape of the bottom of the craft. (If you used optional parts 6c and 6d, this should have taken care of the shape.)

**12-** Construct the wings by building the rib supports first. Begin by cutting out part 7, the wing shaped rib support. Glue rib cross sections **a** and **b** first. (Be sure to cut away most of the purple line before doing this.) Continue assembly by gluing the vertical rib braces into place (**iii** thru **i**). On part 7a there are small pink dots. Glue these tabs to the sides of part ii where there are corresponding pink dots. For the smallest ribs, reinforce these by gluing a pair face to face using the green dots for reference. Fold the tabs apart to form a T shape and glue to the wing .

**13-** Cut out part 8, the Wing and Belly Tile Surface. Very lightly score the doted blue line and the lines where the white tabs meet the black wing and belly. These tabs will be folded up and over part 7, the rib support. Once the two large tabs on the back of the wing are folded up, glue parts 8a and 8b into place.

This part will be glued to the bottom of he craft, so try a dry fit. Align so that the wing matches the openings in the main portion of the body. If there is overlap on the back of he craft, trim now before glue up. Do the same for the front section where it meets the edge of the nose. Once everything is aligned, glue into place, and using a small ruler for pressure, flatten the wing bottom piece as the glue dries to the main body.

**14-** Try a dry fit of the rib support. Do NOT glue yet. It should fit through the wing openings in the main body. Align the back of the rib support with the large tabs at the back of the wings. Check to see if the tabs on the forward portion of the wing folds

cleanly against the rib support. If not, now is the time to trim the front edge back. Once you're happy with this, remove and set aside.

**15-** Cut out part 9, the upper wing surface. The light grey lines representing the RCC wing edge should be cut, and slightly pre-bent or rolled using a round toothpick. Lightly score the blue tabs, and fold under the upper surface. Starting with the back of the wing, glue the back tabs of the wing surface to it's corresponding area on the rib support. Add a small amount of glue to the three main vertical ribs, and glue the forward tabs of the wing surface into place. Let dry while holding the surfaces together.

**16.** Once dry, very carefully manoeuvre the wing into the wing opening on the main body. This is tricky so take your time. If you feel the need to trim the openings, I suggest a small cut at the back of the wing openings first, then a small shaving off of the front openings. Use a new blade for this.

Be sure that the wings are centered over the bottom wing part. To start the wing glue up, fold the large white tabs at the back of the wings on the rib support UNDER the upper portion of the wing surface. Apply a little glue and hold in place until dry. Repeat for the other side.

**17-** Now start to glue the RCC panels into place. Using clean dry fingers, glue a few at a a time, aligning with the bottom of the wing and over the remaining white tabs on the rib support part. Hold in place until dry. Start in the center section of the wings and work your way outward.

There might be some overlap of the RCC panels beyond the bottom of the wing, especially near the front. Don't worry about this. Trim when dry and color in any exposed white card with a grey felt marker when done.

**18-** Glue to together parts 10, 10a and 10b. Score al the fold lines lightly to ease construction. Part 10, the body flap, much like the Shuttle's body flap, glues to the faint grey box on the back of the engine section. Parts 10a and 10b glue just a millimetre or two either side of the body flap, flush with the bottom of the wing.

**19-** Assemble the two vertical stabilizers, parts 11 and 12. Lightly score the center lines and all the fold lines. Glue onto the body where you see the faint blue outlines on the engine section.

**20-** For the engine nozzle, part 13, color with a black marker on the opposite side of the nozzle so that the nozzle is black on either side. Cut out, form around the end of a pointed pen top, and glue the tab in place. Use your pointed tweezers for this part. Glue onto black dot on the back of engine compartment.

**Congratulations!** You've just completed your first card model of the US Air Force X37b. I wonder what it's up to now?

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