



BUILDING INSTRUCTIONS

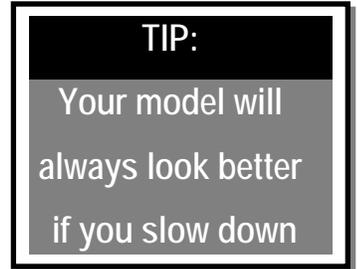
Building a model out of paper is really not new. It is, in fact, a lost art that used to be extremely popular before the First World War! If you take your time, you can make a Museum Quality paper model for display. You should expect to spend around 2-3 hours. On the other hand, if you just want to spend some time with the kids, get your scissors out and start gluing! Either way, you will have lots of fun!

SUPPLIES NEEDED:

- **Sheets of cardstock**
 - ✓ >60 lb. bond paper (these may sometimes be labelled as cover weight, coverstock, cardstock etc.).
 - ✓ These papers are readily available at office supply stores.
 - ✓ These papers should run through your computer printer without issue, however, you should check your printer settings as it may have a 'thick paper type' for better print result.
- **Wooden skewers or chopsticks to use as dowel.**
- **One scrap or unneeded CD to use as base.**
- **One sturdy ruler.**
- **One Craft knife**
 - ✓ e.g. X-Acto® or equivalent. "Break-away" blade box cutter style is preferred (you always should work with a sharp blade).
- **One pair of scissors.**
- **White PVA glue**
 - ✓ Always use very sparingly!
 - ✓ Always apply glue to paper with a toothpick or unrolled paper clip, never directly from the bottle!
- **Markers**
 - ✓ Different markers color for edges of your model.
 - ✓ Use mainly grey color but you can color match.
- **OPTIONAL**
 - ✓ Hole punch (to make holes to pass dowel through).
 - ✓ Toothpicks (to apply glue).

BEFORE YOU BEGIN:

- Look through each step of the Instructions package carefully. They show you how to put the model together and in the order that works best.
- Assembly should take at least twice as long as you think. If you build it faster (you can), you are rushing the build! Your model will always look better if you slow down... It always does!



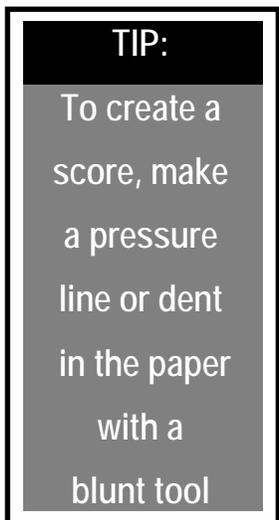
PRINTING AND GENERAL INSTRUCTIONS:

- Make sure the cardstock is compatible with your printer (office supply stores may have several different types, depending on whether you are using a laser or inkjet printer).
- Print out the model parts on cardstock.
- Keep everything at the same scale (i.e. print at 100% or at 'shrink to fit' or the parts won't go together correctly).
- If the printer won't accept the cardstock because of paper jams or other mishaps during printing, print on regular paper and glue to cardstock or very thin cardboard (spray glue is ideal for this because other types may not hold correctly, and might cause the paper to buckle).
- Score along all folding lines (center of solar panels, interior lines on tabs, etc.)
- Have fun with the model! Don't be afraid to try building the shape. In the worst case, you'll have to reprint the sheet and try again!

SAFETY:

- Be sure you are working with sharp knives, dull knives are unpredictable.
- Work on a flat, stable surface and keep body parts out of the way of the knife!

TIPS:



- Avoid cutting out parts before you're ready to assemble that particular portion of the model (whole sheets are harder to lose than little tiny parts!)
- Cut out inner shapes (like the pass through holes for the solar array arms) before cutting the outer edge.
- To make a mountain fold, aka, a peak fold, fold the paper so that the fold is pointing up.
- To make a valley, fold the paper so that the fold is pointing down.
- Score along folding lines before cutting out shapes. To create a score, make a pressure line or dent in the paper with a blunt tool, such as a dead ballpoint pen or screwdriver. Many folds should be scored so they have a clean fold line. This technique adds a lot of detail to a model. You'll notice a lot of real cars on the road apply this same technique to add detail to door panels and fenders.
- How to roll tubes perfectly?

- ✓ In most case, problems with working with the paper vs heavier parts breaks down to the most basic element of model making: Slow down! The golden rule in paper modeling is Work slowly, Speed comes later. Think about what you are doing, and if it doesn't feel right, back off and try a different approach.
- ✓ On making tubes, especially on the very long ones, the first trick is to make sure you pre-curl the paper around a smaller wooden dowel (a round pencil is a staple in a professional paper modeller's tool chest!). You want to get the paper so curled that it basically holds the tube shape without any glue before you attempt to glue (a perfect example of the 'Slow Down' principle!). If it doesn't, you are going to have trouble gluing; it will get messy as you fumble with it, etc. Also the edges should really be over curled, so it dimples in before the glue is applied - you can smooth it out later. Many builders rush the pre-curling step, and go quickly to the glue. They will pay for not properly pre-curling paper.
- ✓ If you can't get a finger into the tube for some back pressure when you glue, you'll want to run a smaller diameter wood tube through the inside and apply pressure with that. Professionals usually keep a set of long ratchet sockets of various size diameter steel cylinders.
- ✓ Now sometimes the size of the tube is just not agreeable to either of those situations. The last method to insure that the tube is perfect is to make it twice - as in make an identical one slightly smaller than is necessary out of a scrap piece of paper. This one doesn't have to have perfect seams. Then take the printed part and wrap it around this inner support tube. If you made the inner tube too big, you can just redo it a bit smaller. If it is too small, wrap additional sheets/strips of paper to thicken it up so that when you wrap the actual tube part, it's seam lines up just right.
- ✓ You may also want to take old magazines/junk mail and roll them and insert them into the bodies to keep them from getting dented, and makes them heavier and keeps pressure on the tube to keep them round. Although, for flying models you will not want to do this!
- ✓ **DO NOT USE TOO MUCH GLUE!** Glue should be applied with a toothpick or an unfolded paper clip, and spread very thin.



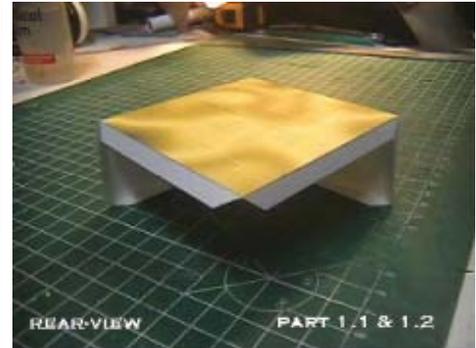
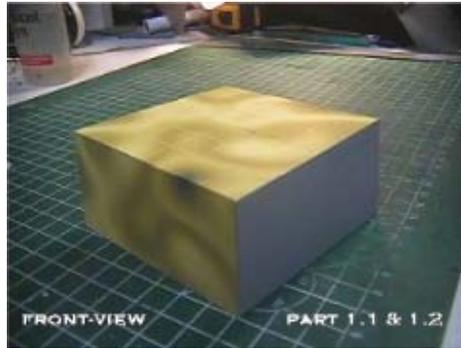
Ok, let's start building!

**First, let's print out the design.pdf on plain paper.
You will need to reinforce some items with card stock.**

STEP 1

Parts 1.1 and 1.2. (from Page 2 of design.pdf)

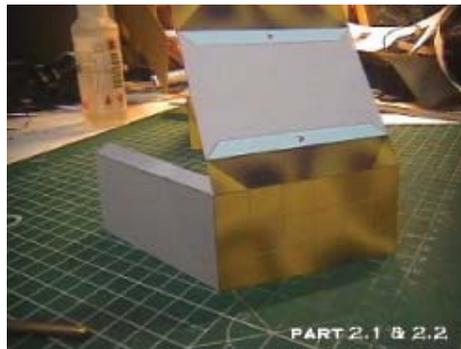
Cut out these parts, score along fold seams and attach as per images.



STEP 2

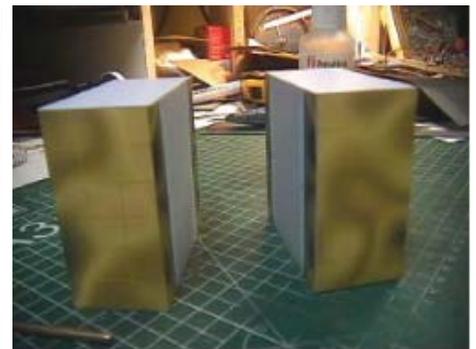
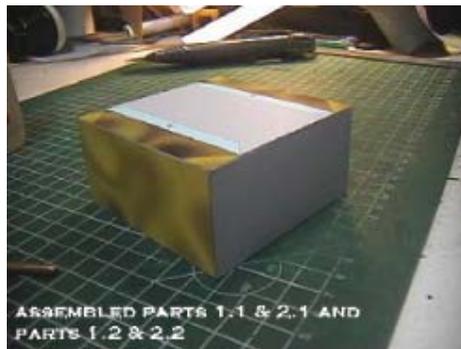
Parts 2.1 and 2.2 (from Page 3 of design.pdf)

Cut out these parts, score along fold seams and attach as per images.



STEP 3

Assemble Parts 1.1/2.1 with 1.2/2.2. as per image



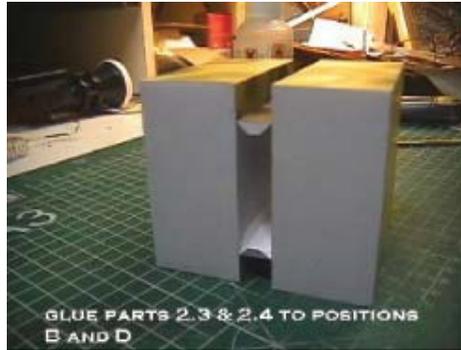
STEP 4

Cut out parts 2.3 and 2.4 and score along fold lines.

Glue parts 2.6 to back of these parts to reinforce. Using sharp object (pointy end of skewer for example) puncture holes in middle of these parts. You will later be placing dowel through here.



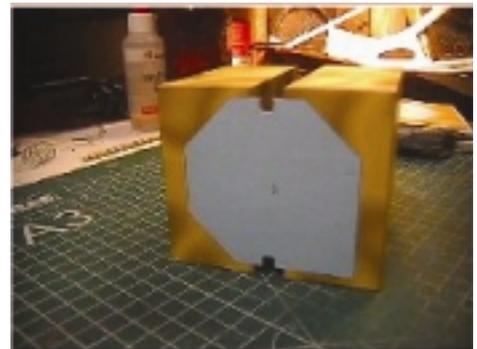
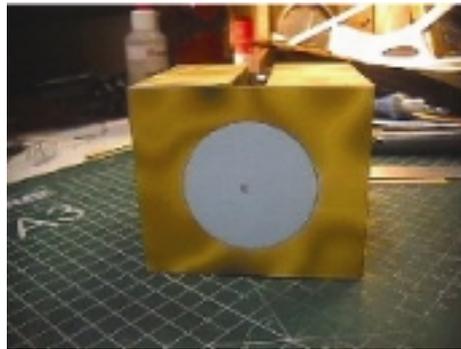
Once dry, glue parts 2.3 and 2.4 to positions C and D to previous 2 parts as shown.



STEP 5

Parts 3.2 and 3.3 (from Page 4 of design.pdf)

Cut out and glue Parts 3.2 & 3.3 to grey area sides of 2.3 & 2.4



STEP 6

Part 3.4

Cut out part 3.4



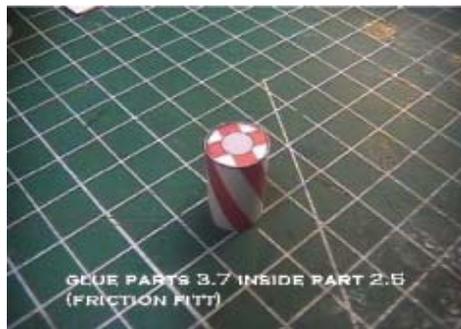
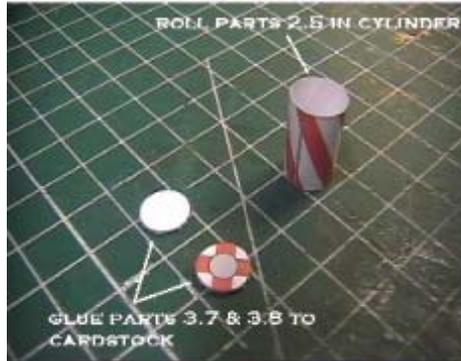
STEP 7

Part 2.5 (from page 3 of design.pdf), 3.7 & 3.8

Roll 2.5 around a pencil and glue into cylinders. (note: there is one extra)

Cut 3.7 out and glue to 2.5

Cut 3.8 and glue to Part 3.4



STEP 8

Part 6.1 (from Page 8 of design.pdf)

Roll into tight cylinders and attach to part 3.4.

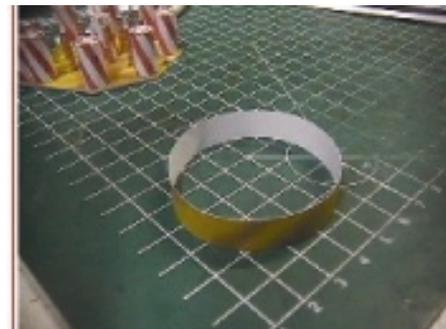


STEP 9

Parts 3.5 & 3.6 (from Page 4 of design.pdf)

Cut 3.5 and glue as shown

Cut 3.6 and glue inside 3.5 as show



STEP 10

Parts 3.1

Cut 3.1

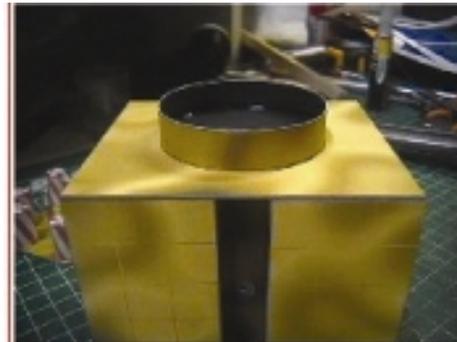
Glue 3.5 / 3.6 to 3.1



STEP 11

Parts 3.2 3.1 / 3.5 / 3.6

Glue assembly to bottom of main body on position B



STEP 12

Parts 3.3 / 3.4

Glue antenna assembly 3.4 to main body on position C



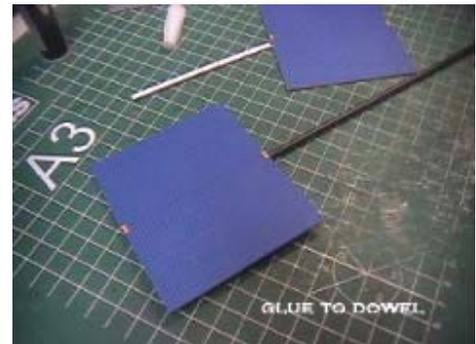
STEP 13

Parts 4.1 (x 2) (from Page 5 and 6 of design.pdf)

Cut first part 4.1, fold on fold line and glue.

(should have two panels, one side blue one side black)

Glue to Dowel



Use spacer (from between panels on part 4.1) to glue each side same distance apart.

Poke dowel through main body and add second parts 4.1.



STEP 14

Part 5.3 (from Page 7 of design.pdf)

Cut 5.3 and glue to a garbage CD to make stand

Using scrap paper, make the stump.

Part 5.4

Cut out and glue into cylinder. Glue to stump on CD.



STEP 15

Part 6.3 (from Page 8 of design.pdf)

Cut and trim to size needed to cover dowel on each side of main body.

Part 6.2

Cut and roll into tubes. Place two on top of main body as shown.

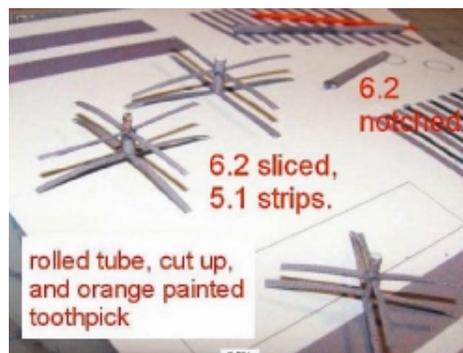


STEP 16

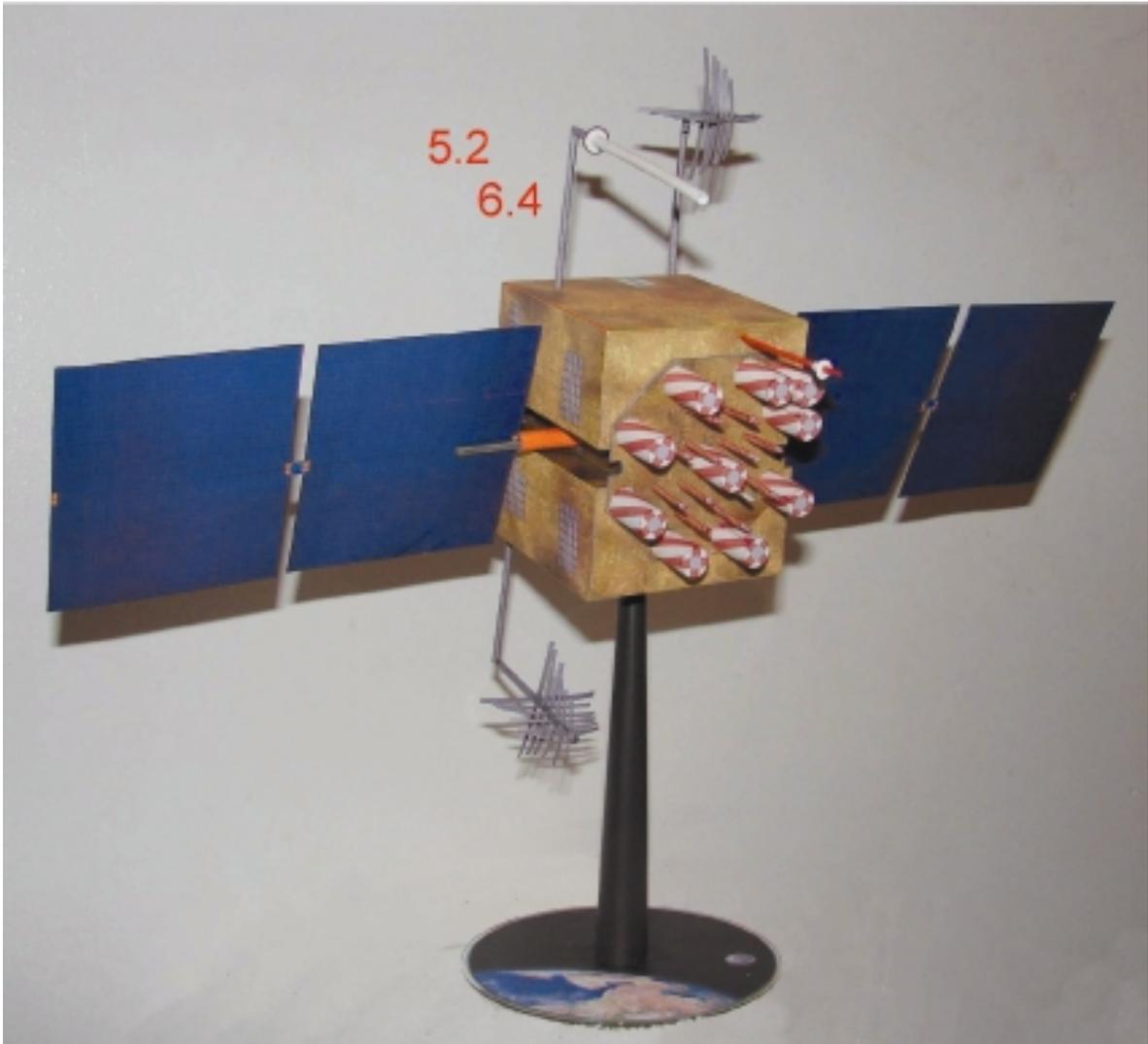
Cut up additional tubes from part 6.3 to create antennas.

Cut Parts 5.1. and attach to antenna.

NOTE: You can make small slits in the tubes to make attaching antenna pieces easier.



Attach Antennas to Main body as shown.



CONGRATULATIONS!