General Information

The MCRN Donnager is a vessel that appears in the TV series 'The Expanse'. This is a fan made representation of and tribute to the ship and this fantastic show. It's taken me a considerable amount of time to design and texture this model and is available for anyone to build for themselves free of charge. All I ask is for feedback, this is my first attempt at a from scratch design and build so any and all feedback is welcome as are suggestions on how to improve or rework any parts of the design.

The Expanse, MCRN Donnager and are the property of Legendary Entertainment I do not claim any rights or trademarks to these or their designs.

Paper Weights + Other Model Components

170gsm has been used for all outer parts and components
1.0mm 480gsm card has been used for structural support parts.
Regular printer paper has been used for the joining strip page.
The antenna uses a combination of 0.6mm toothpicks and 1.5mm bamboo skewers, coloured using standard water based felt tips

I would highly recommend using black or dark grey soft pastel pencils to assist with hiding white spots on the model, I used Gioconda brand pencils

Thanks

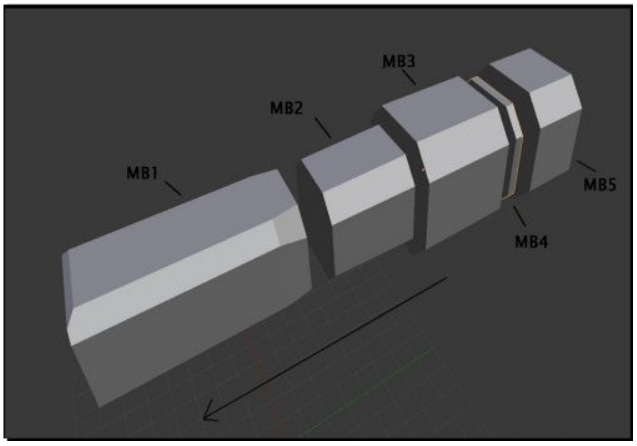
I would like to thank all the folk over at http://www.papermodelers.com for the support during my build log I would like to especially thank

Paperschnitzel for providing me with a link to the software that made converting the blender to paper form so much easier. This saved me a massive amount of time and work.

dunarispace for providing the title page image above, it's nothing short of fantastic.

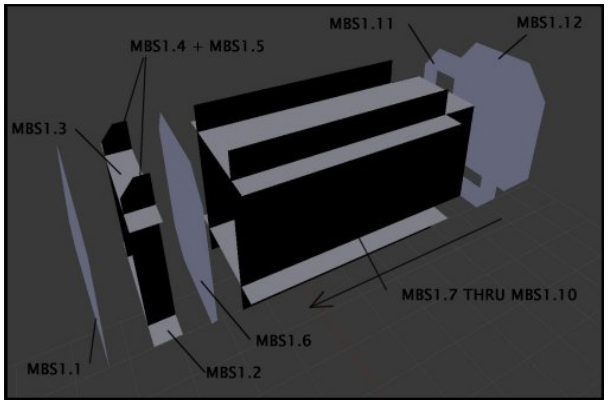
Contact

Feedback, info, suggests either email me at cheesy_wotsit33@hotmail.co.uk or drop a post in to the build log here
http://www.papermodelers.com/forum/alternate-dimensions/42560-expanse-mcrn-donnager-2.html

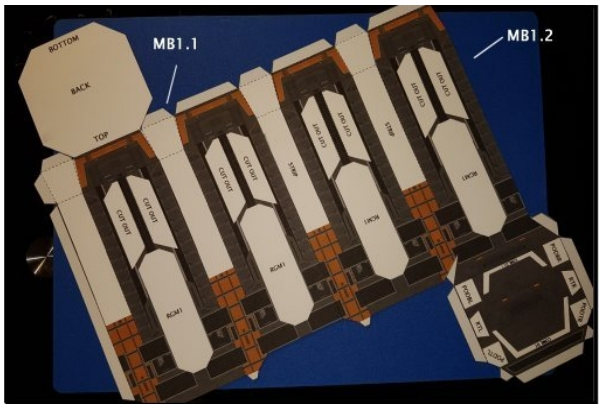


The main body is split in to 5 sections, these are listed MB1 (front) through to MB5 (back).
Each section is made up of an internal support structure and an external skin.

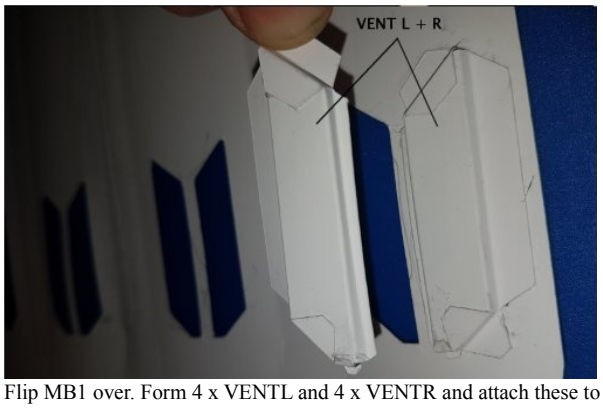
Internal support structures will usually have an 'S' at the end of their part listing. E.G MB1 is main body 1 external skin with MBS1.1, MBS1.2, MBS 1.3, etc.. being the internal support parts



Form the internal support structure of MB1 as shown. MBS1.1 is the front of the structure with MBS1.12 being the back. Pay attention to the orientation of the parts. Parts will have T and B indicating TOP and BOTTOM.



The outer body of MB1 is made up of several parts. MB1.1, MB1.2 and 4 x VENTL and 4 x VENTR. First cut out MB1.1 and MB1.2 and join the parts together using JOIN STRIP1. This part will be referred to as MB1 from now on.

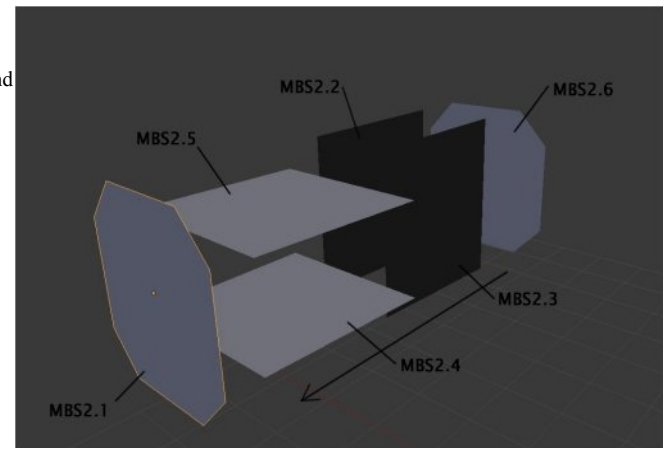


Flip MB1 over. Form 4 x VENTL and 4 x VENTR and attach these to the back of MB1.

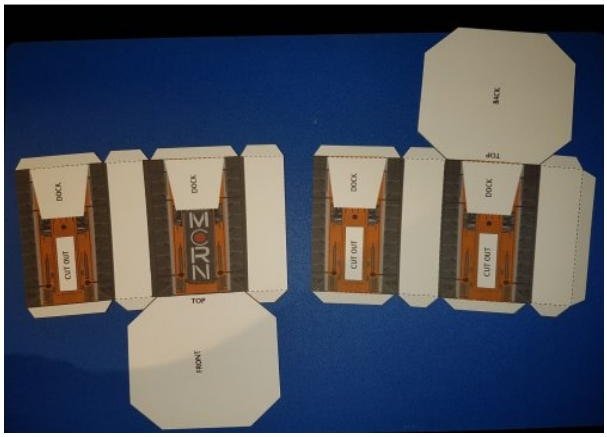
MB1 with the detailing VENTL and VENTR attached.

Form MB1 around the structural part. The best way to do this is to partially form the front of MB1 as shown above and then insert the structural insert inside. Once in position finish forming MB1 around to give the of the five main body parts.

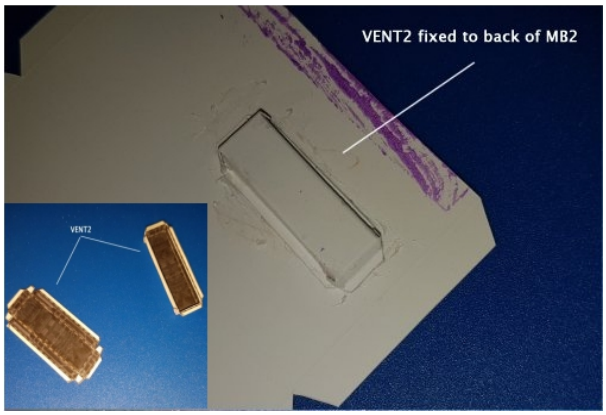
Main Body Part: MB2



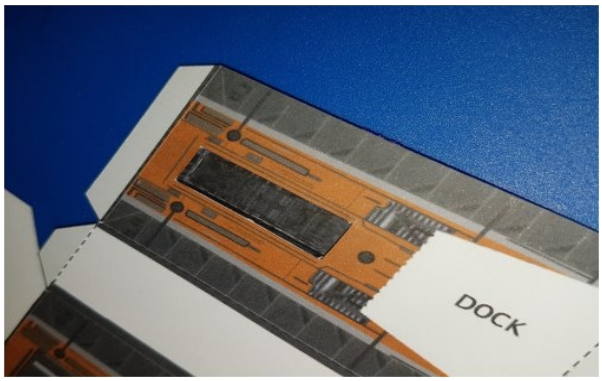
Form the internal support structure of MB2 as shown. Pay attention to the orientation of the pieces as indicated on each of the parts. The front MBS2.1 is narrower than the rear part MBS2.6



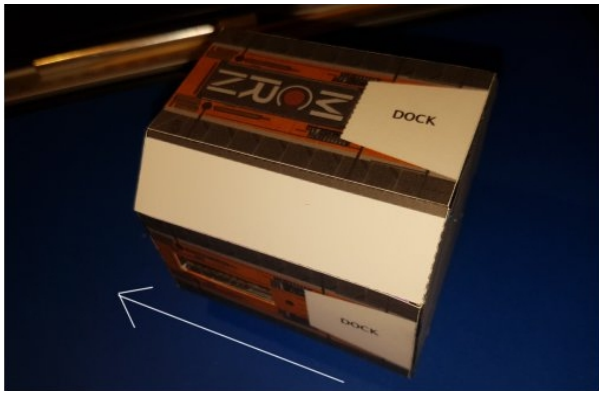
The outer body of MB2 is made up of several parts. MB2.1, MB2.2 and 3 x VENT2. First cut out MB2.1 and MB2.2 and join the parts together using JOIN STRIP2. This part will now be referred to as MB2. Cut out the 3 x locations marked 'CUT OUT" on MB2.



Flip MB2 over. Form 3 x VENT2 and attach these to the back of MB2 at the cut out locations.

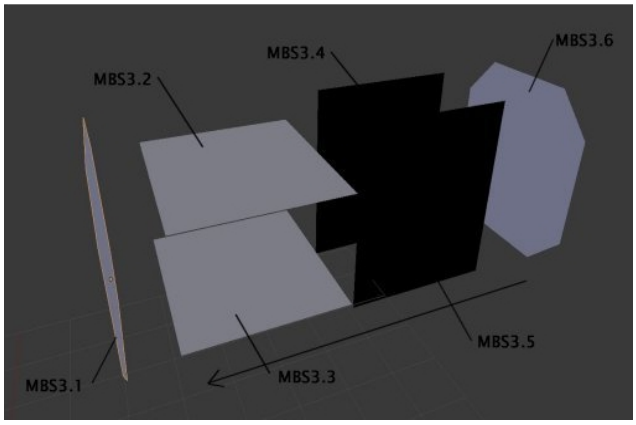


MB2 with a detailing VENT2 attached.

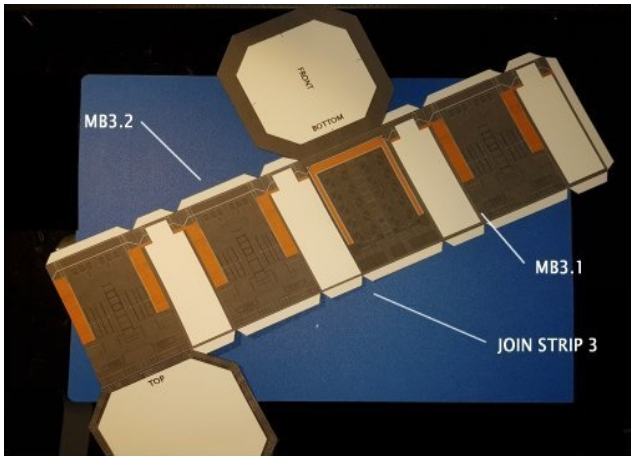


Form MB2 around the internal support structure to complete the second part of the main body.

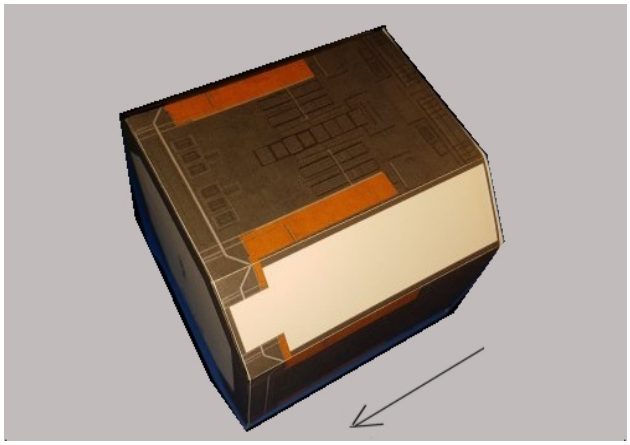
Main Body Part: MB3



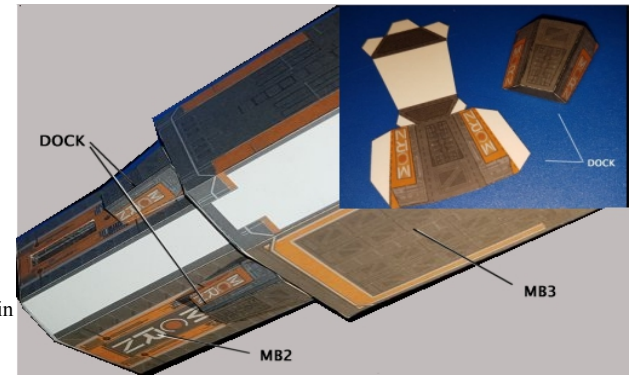
Form the internal support structure of MB3 as shown. Pay attention to the orientation of the pieces as indicated on each of the parts. MBS3.1 is the front with MBS3.6 the back.



The outer body of MB3 is made up of two parts. MB3.1 and MB3.2. Cut out and join these two parts together using JOIN STRIP3. This will now be referred to as MB3.

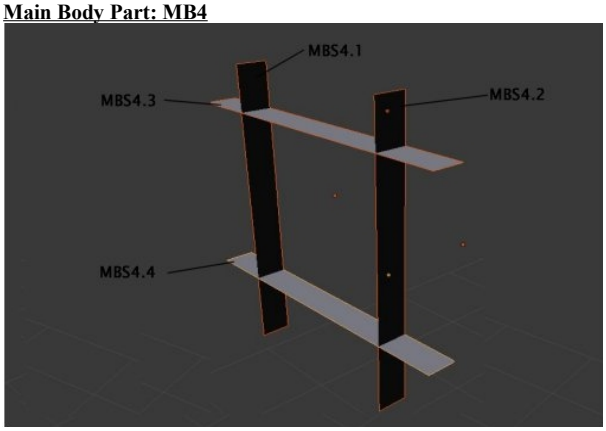


Form MB3 around its internal support structure to complete the third part of the main body.

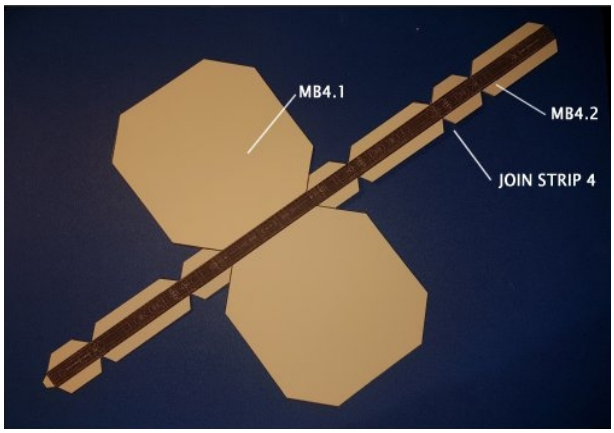


Form 4 x DOCK. Join MB2 and MB3 together and attach the 4 x DOCK parts as indicated. The 4 X DOCK parts can be used to help with aligning and centring MB3 and MB2 as they are being joined.

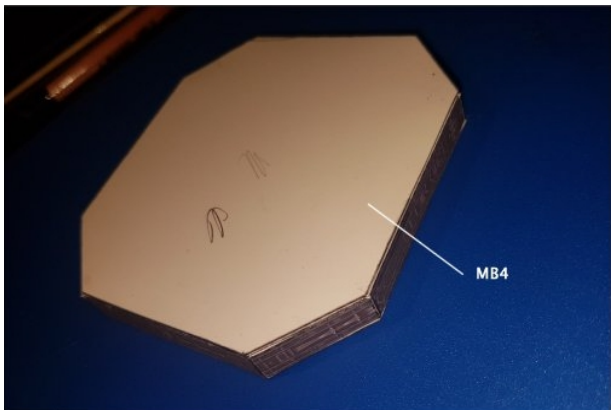
Main Body Part: MB4



Form the internal support structure of MB4 as shown. Orientation doesn't matter as the parts are all the same and the finished body part is symmetrical about it's X , Y and Z axis.

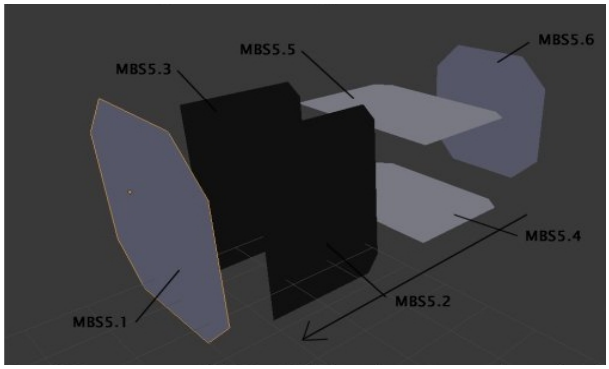


The outer body of MB4 is made up of two parts. MB4.1 and MB4.2. Cut out and join these two parts together using JOIN STRIP4. This will now be referred to as MB4.

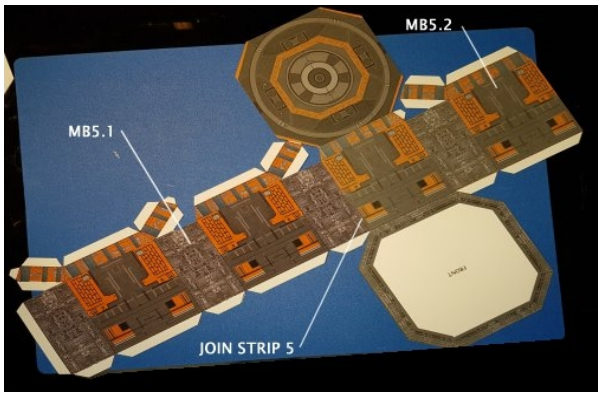


Form MB4 around its internal support structure to complete the fourth part of the main body.

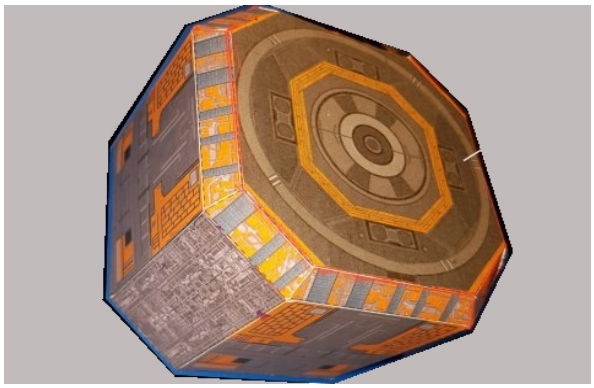
Main Body Part: MB5



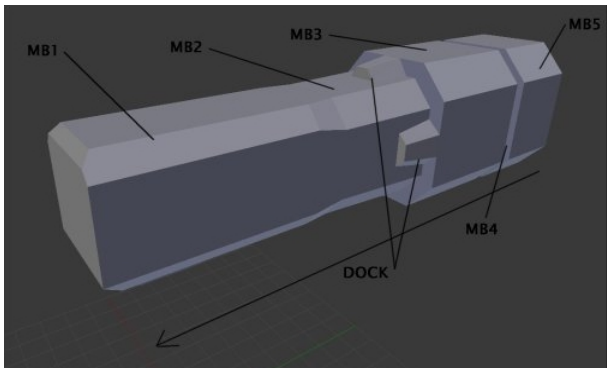
Form the internal support structure of MB5 as shown. Pay attention to the orientation guides shown on each of the parts. MBS5.1 is the larger front part with MBS5.6 being the smaller back part. MBS5.6 also has alignment guides on it to help get it in the correct build position.



The outer body of MB5 is made up of two parts, MB5.1 and MB5.2. Cut out and join these tow parts using JOIN STRIP5. This will now be referred to as MB5.

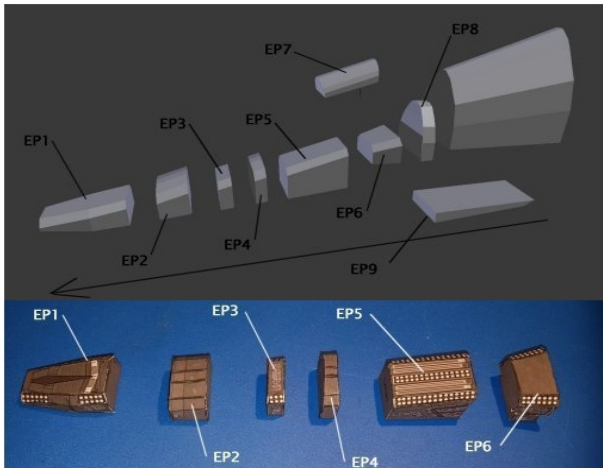


Form MB5 around its internal support structure. For best results start by forming and sealing the front of MB5. Then insert the internal support structure from the back of MB5. This will help in forming the final shape of this part. Once the internal support structure is pushed firmly inside form the back end of MB5. This completes the fifth and final part of the main body.

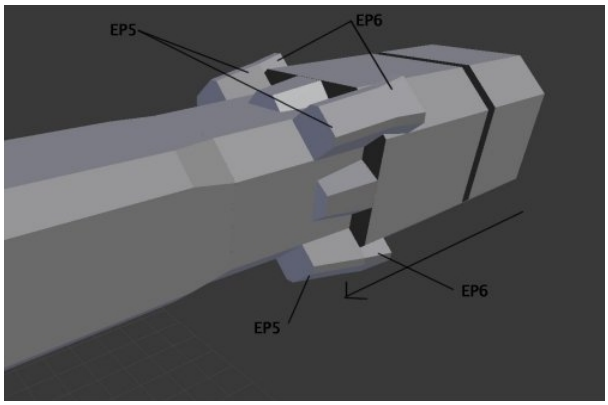


Join MB1, MB4 and MB5 to the already formed MB2, MB3 part to complete the forming of the main body. This shall now be referred to as MAINBODY.

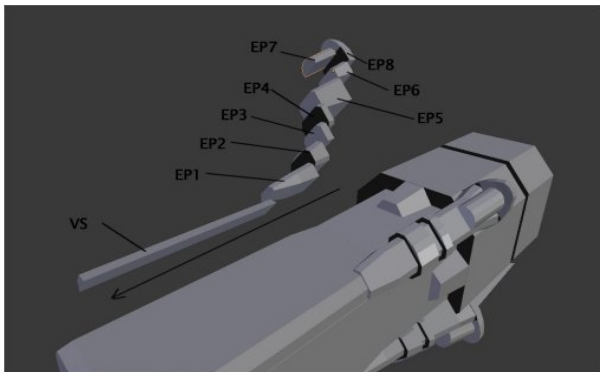
Engine Nacelles - Detail 1



The model has four engine nacelles with each nacelle being made of 17 parts labelled EP1 – EP17. This part will cover the first stage of the engine nacelle build covering parts EP1 – EP8. Start by forming 4 of each of these parts. **DO NOT APPLY THESE PARTS TO THE MODEL YET.**

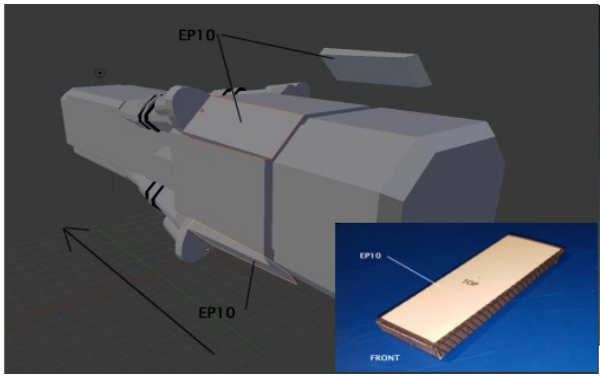


Start by applying EP5 and EP6 to MAINBODY



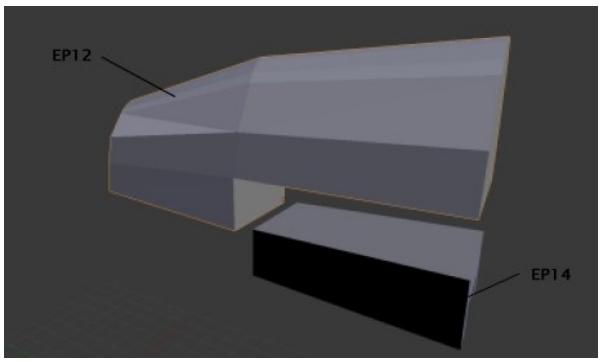
Form 4 x VS parts. Apply the remaining engine nacelle parts EP1 – EP4, EP7 and EP8. The best order for application is: EP4, EP3, EP2, then EP1. As each piece is applied use a little pressure for a short time to squeeze the parts together as this helps to form and hide any gaps between the pieces. Once EP1 is placed, again use a little pressure applied to the back of EP6 and the front of EP1 to squeeze the structure together.

Once all four sets of engine nacelle parts are applied and set: VS, EP7 and EP8 can be applied.

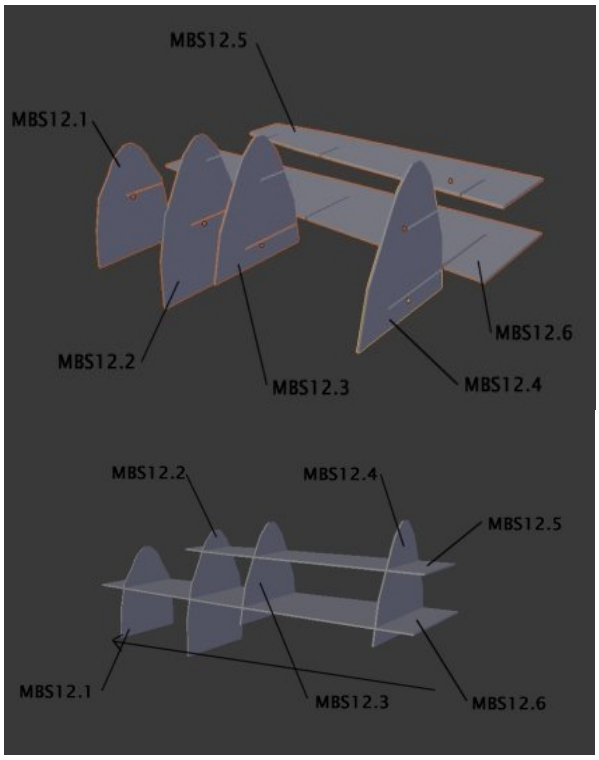


Form 4 x EP10. Now apply to the MAINBODY as shown. Pay attention to the orientation labels on the part. The wedge edge goes towards the rear of the model.

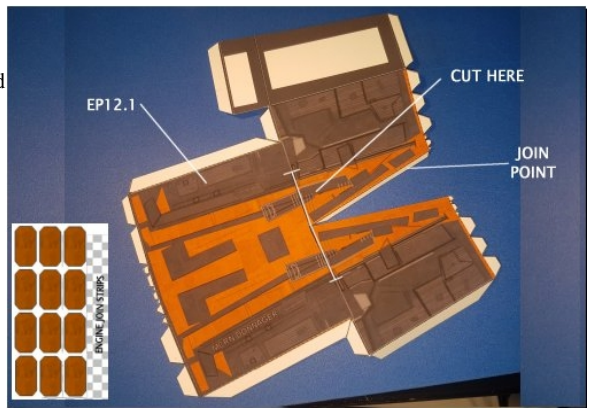
Main Engine Nacelles: Body



The main engine nacelles are made up of 2 outer parts and 2 internal structural support parts. EP12 is made up of several sub parts labelled EP12.1 – EP12.4. EP14 is made up of two sub parts EP14.1 and EP14.2



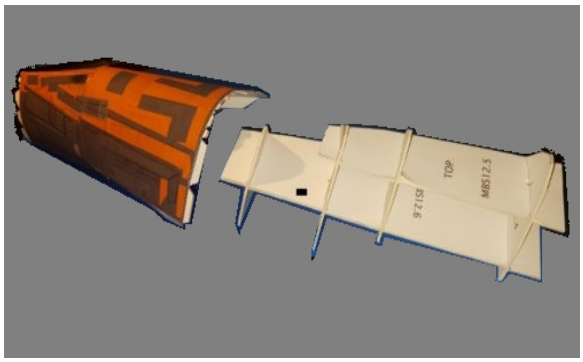
Start by forming the internal support structure of MB12 using parts MBS12.1 – MBS12.6. Their are 4 nacelles so four structures will need to be made. Pay attention to the orientation of the parts as shown.



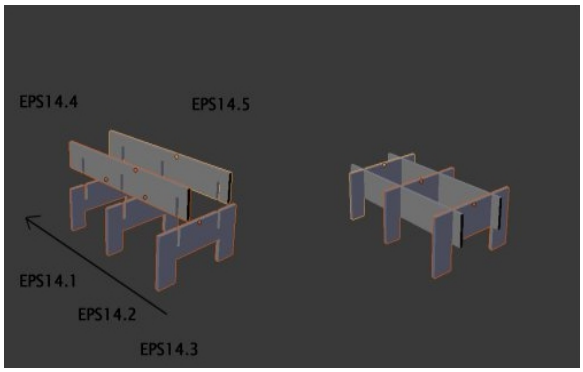
Cut out EP12.1 ensure that the middle cut line indicated with CUT HERE in the diagram above is cut as this is key to folding this part.

Start by forming a partial curve with the part by joining the structure at the indicated join point. Joining the front sections together along the length of this white join line will introduce the curve in to the part.

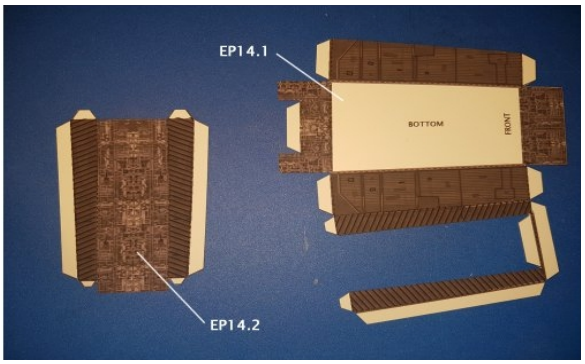
Their are 12 x ENGINE JOIN STRIPS provided. Their purpose is to be glued in side the part EP12.1 at the 'CUT HERE' line. They are designed to help mask any imperfections introduced during the cutting and folding process and are entirely optional.



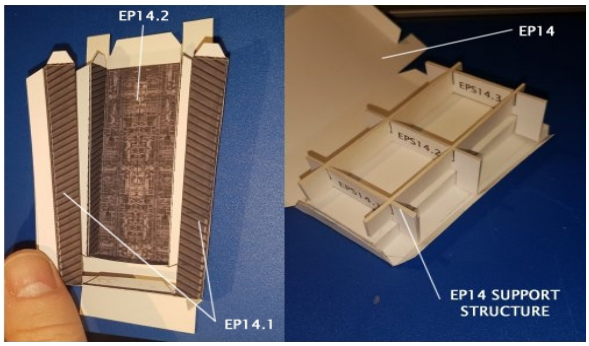
Insert the internal support structure in EP12.1. Push the part firmly inside as this will now help to form the final shape of this part.



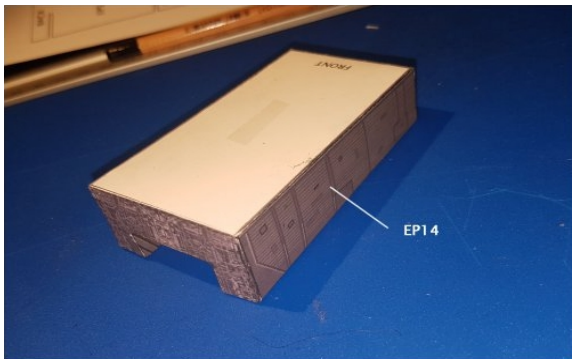
Form the internal support structure of EP14 as shown using parts EPS14.1 – EPS14.5. Pay attention to the orientation of the parts. EPS14.1 is the front and is smaller than the larger EPS14.3. EPS14.4 and RPS14.5 have labels ' F' and 'B' to indicate the front and back of the parts.



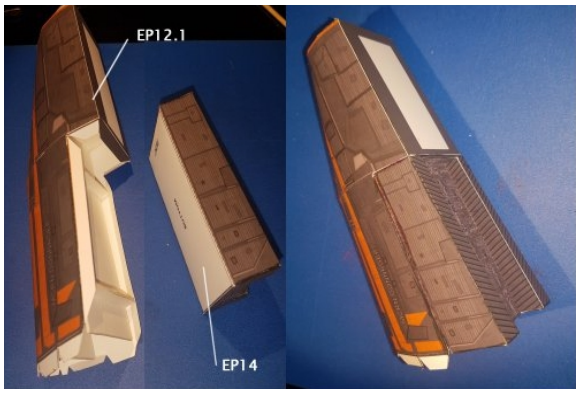
EP14 is made up of two parts: EP14.1 and EP14.2



Partially form EP14.2 and 14.1 and then join these two parts together. This part will be referred to as EP14 from now on. Flip EP14 over and insert the internal support structure in to it as shown. Make sure that the front and rear of both parts are aligned otherwise the parts won;t fit together.



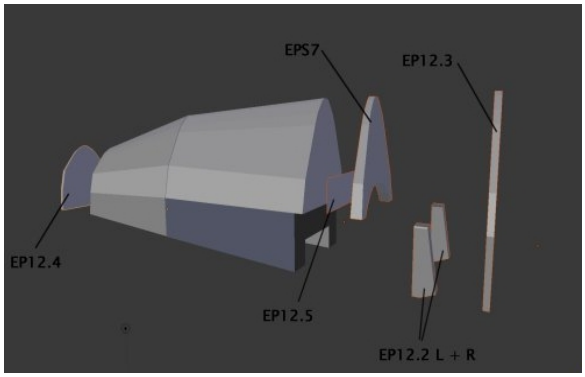
Finish forming EP14 as shown.



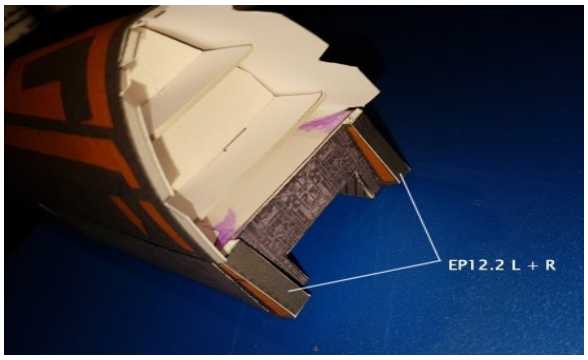
Join EP12.1 to EP14 to give the main structure of the engine nacelle. Attaching these two parts together will help to give the final form and shape to the engine nacelle. Make sure to apply a firm amount of pressure to the bottom and sides of the nacelle to help with make sure that the part are firmly attached in the right place.

Repeat the steps above to create the main structure for all four engine nacelles.

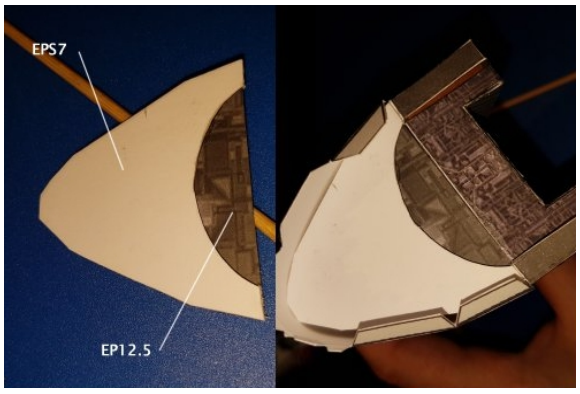
Engine Nacelles - Detail 2



This covers the final detail parts for the four engine nacelles. The detail parts are made up of five pieces and one structural support part. Start by applying EP12.4 to the front of the nacelle.

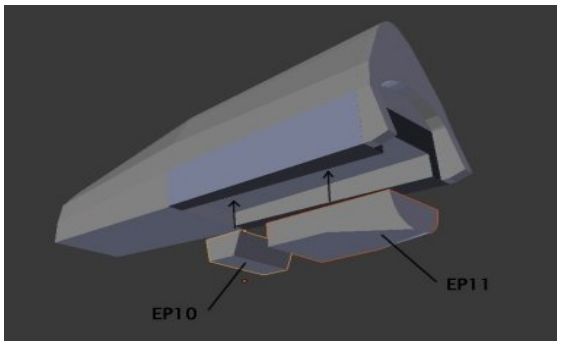


Form and apply parts EP12.2 L + R to the back of EP14 at the indicated locations.



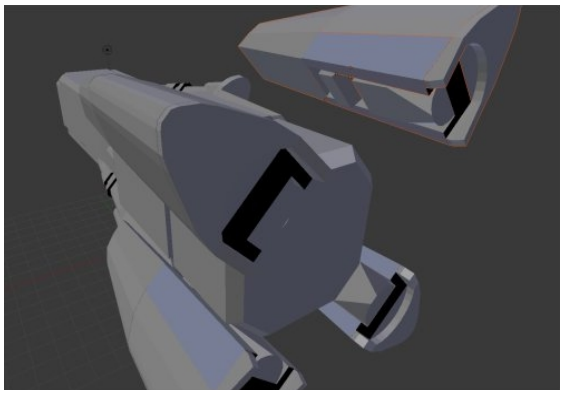
Attach EP12.5 to the back of EPS7. Now insert this piece inside the back of the EP12.1. This piece once inserted is not designed to fit 100% flush with the inside edge length of the engine nacelle. The reason is that it helps to give a slight curve to the final end piece EP12.3 once this has been applied. Finish by applying EP12.3 to the rear of 12.1. This is a completed engine nacelle and will be referred to as ENGINE NACELLE from now on. Repeat the above steps for the remaining 3 nacelles.

Engine Nacelles - Application



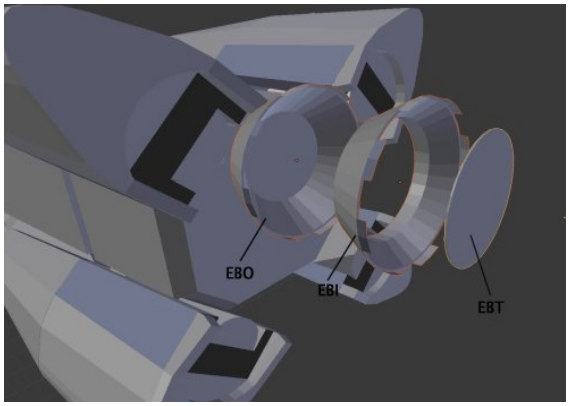
Form parts 4 x EP10 and 4 x EP11. EP10 has a different shaped front and back so an 'F' is located on the forming tabs to help with the orientation of this part. Attach EP10 and EP11 to the inside of ENGINE NACELLE.

Repeat the above steps for the three remaining engine nacelles.

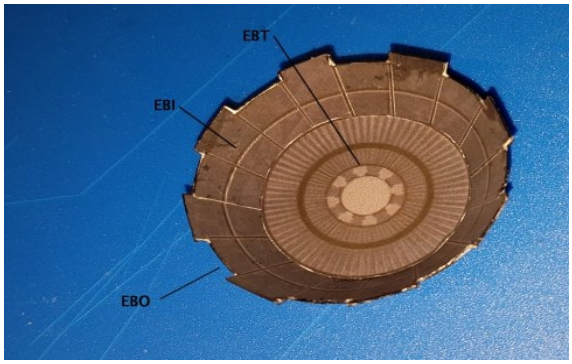


Attach the four ENGINE NACELLE to the MAINBODY

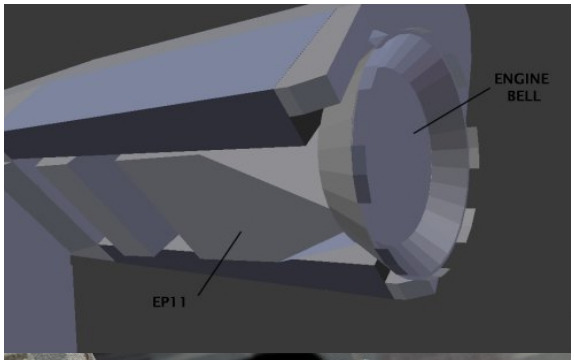
Engine Bell

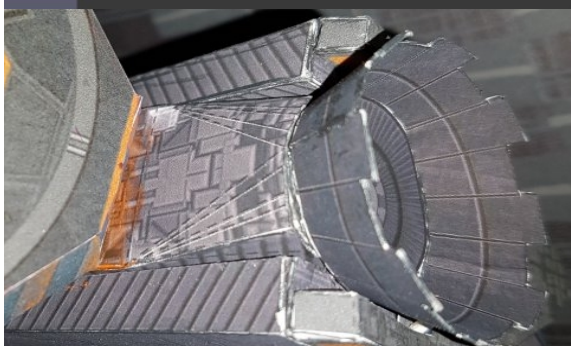


Each ENGINE NACELLE has it's own engine bell. Each bell is made up of 3 parts EBO, EBI and EBT.



Form EBO to create the outside of the engine bell. Form EBI to create the inner part of the engine bell. Now attach EBI to the inside of EBO and finish the ENGINE BELL by attaching EBT to the inside back of EBO.

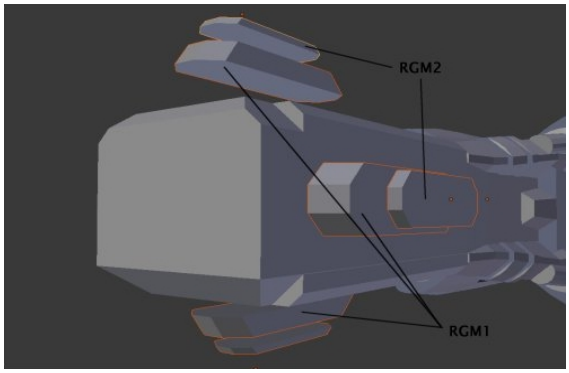




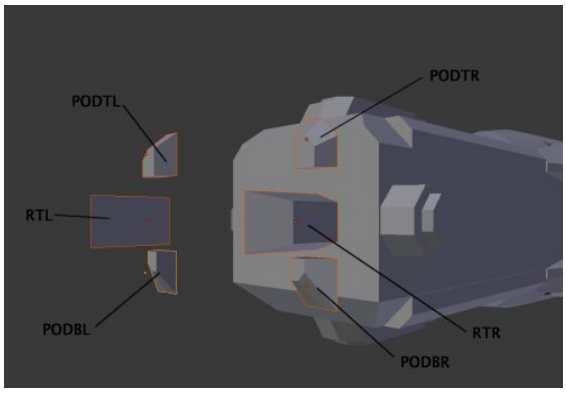
Now attach the ENGINE BELL to the back of ENGINE NACELLE. Use EP11 as a positioning guide for ENGINE BELL. The curve of EP11 should roughly match the curve of the engine bell once aligned.

Repeat the steps above to form and attach the remaining three engine bells.

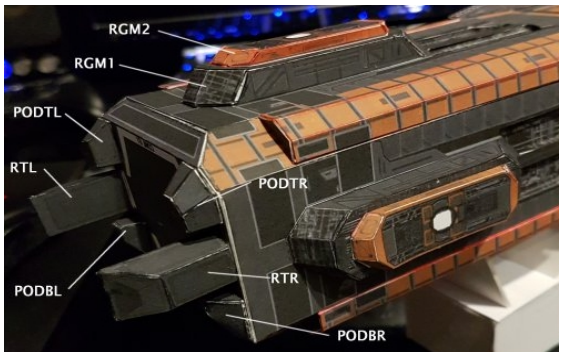
Main body Detail – Rail gun and Front Cowls.



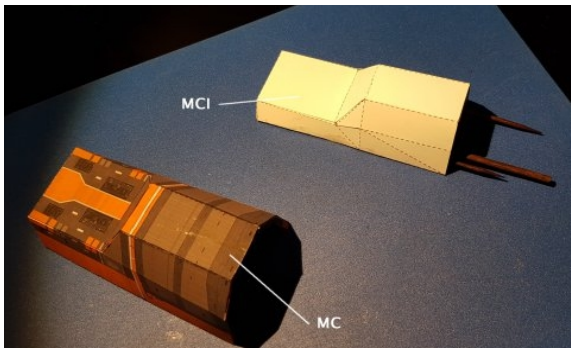
The rail gun mounts are made up of two parts RGM1 with RGM2 attach on top. Form RGM1 and RGM2 and attach to MAINBODY on all four side at the positions indicated on the model.



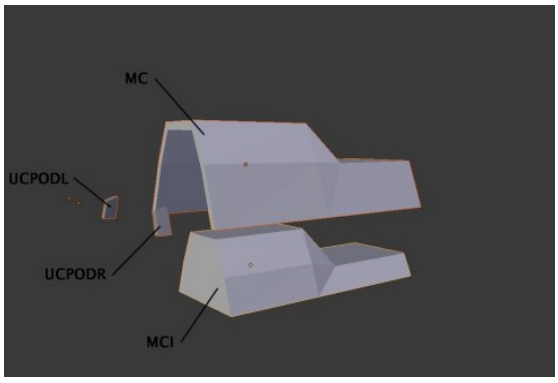
Form the following parts: PODTRL, PODTR, PODBL, PODBR, RTL and RTR and attach each of these parts to the indicated positions on the front of MAINBODY.



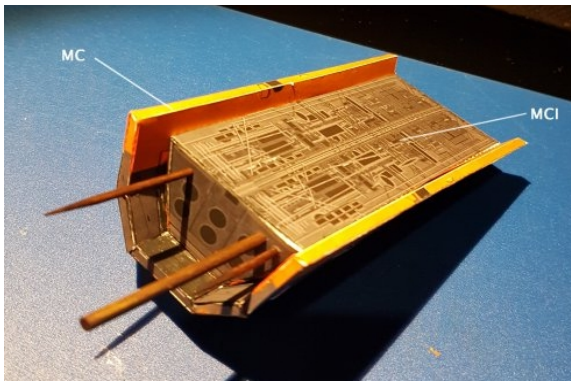
Rail gun mounts and front detail parts attached.



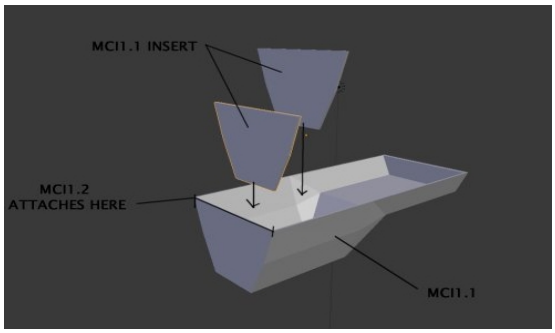
The two completed Upper Cowl (Missile Cowl) parts.



The upper cowl (Missile Cowl) is made up of four parts. Form the first three parts: MC, UCPODL and UCPODR and then attach UCPODL and UCPODR to the front of MC as shown.



Insert MCI inside MC. Ensure the back of the two parts line up. Then apply a small amount of pressure to the bottom of MCI while also apply pressure to the outside of MC at the edges. This will assist in seating MCI in position while also helping to give MC the correct shape.

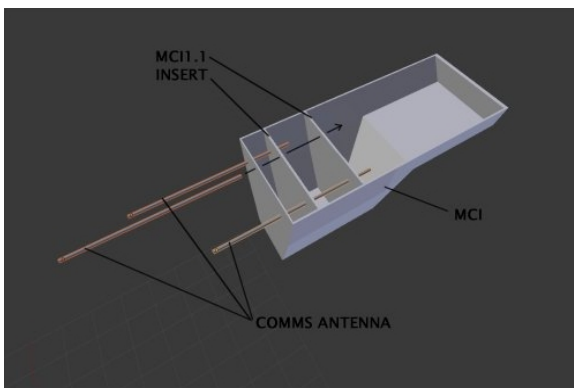


MCI is made up of two parts exterior parts MCI.1.1 and MCI1.2 and two internal support parts (2 x MCI1.1 insert) designed to hold what will make up the antenna and comms arrays. First cut MCI1.1 and the inserts 2 x MCI1.1INSERT. These parts have punch hole location designed for the comms antennas to go through. Make sure to punch these prior to form the part.

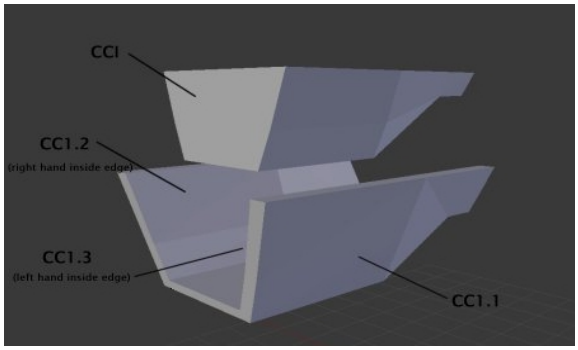
Form MCI1.1 as shown and insert the 2 x MCI1.1INSERT

The comms antenna are made up of three wooden toothpicks / bamboo skewers. These have been coloured to match the model using a combination of black and brown standard water based felt tip pens. The model allows for the maker to have up to 6 antenna in a size and thickness they chose however as a guide. My version uses

2 x 0.6mm diameter toothpicks inserted to give an antenna length of 3.5cm.
1 x 2.5mm diameter bamboo skewer inserted to give an antenna length of 4.5cm.



Insert the antenna through the front of MC1.1 and through the two internal support parts using the punch holes as guides. Once inserted attach MCI1.2 to complete the forming of the part MCI.

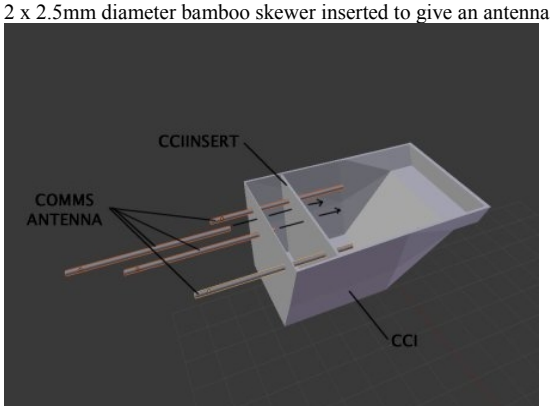


The lower cowl (Comms Cowl) is made up of four parts: CC1.1, CC1.2, CC1.3 and CCI. Form the part CC1.1 make sure to attach CC1.2 and CC1.3 at the indicated inside edge position.

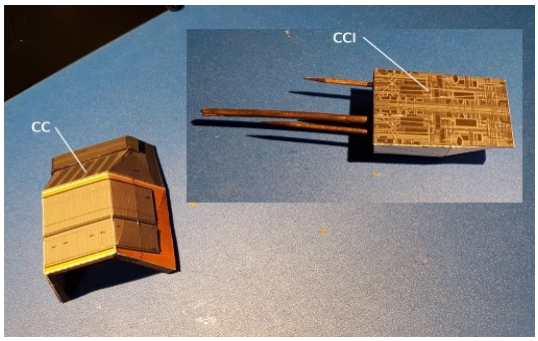
First cut out CCI and the insert part CCIINSERT. Make sure to punch the matching guide holes on these parts prior to forming as these will be used for supporting the comms antenna.

Up too six comms antenna can be used on this part the size and length is up to the model maker and again they are coloured using a combination of brown and black water based felt tip pens. As a guide my model uses.

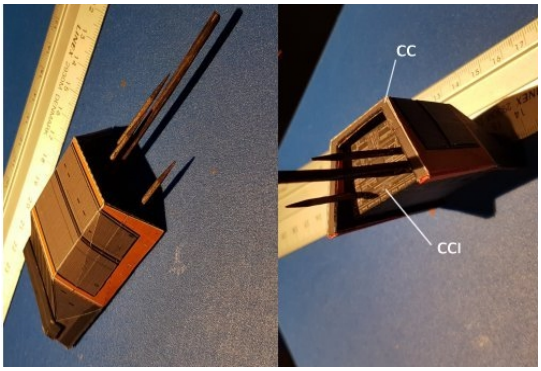
2 x 0.6mm diameter toothpicks inserted to give an antenna length of 3.5cm and 4.5cm
2 x 2.5mm diameter bamboo skewer inserted to give an antenna length of 6cm and 8cm



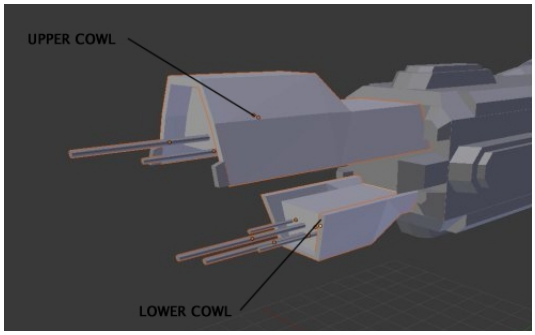
Insert CCIINSERT inside CCI and then push the antenna through the pre punched guide holes on CCI and CCIINSERT. Once done finish forming the part CCI.



Completed parts CC and CCI.

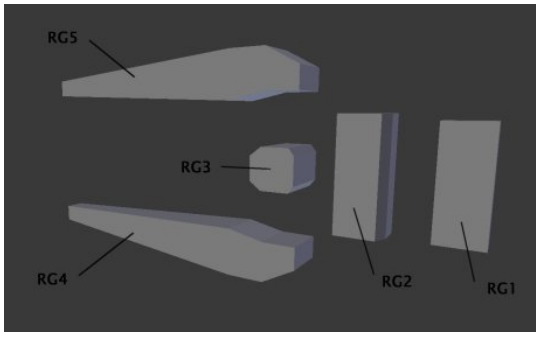


Insert CCI into CC. Ensure that the back of the two parts line up correctly. Then apply a small amount of pressure to the bottom of CCI while also apply pressure to the outside of CC at the edges. This will assist in seating CCI in position while also helping to give CC the correct shape.

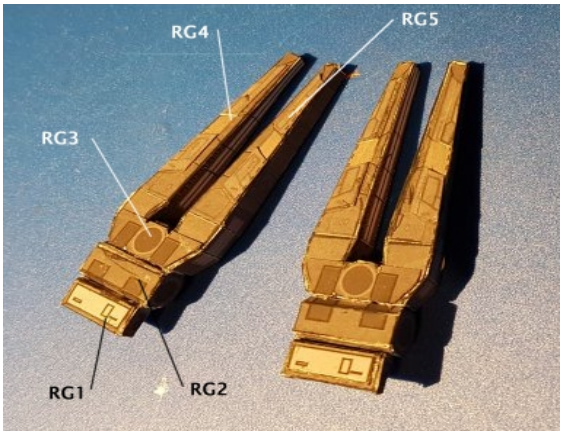


Attach the completed UPPER COWL and LOWER COWL to the MAINBODY at the indicated positions.

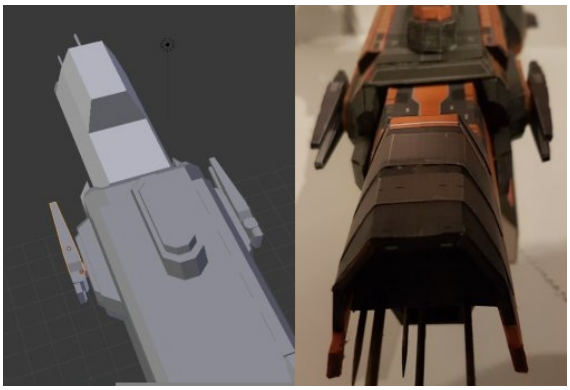
Rail gun



The rail gun is made up of five parts RG1 – RG5 with an additional detail tidying part listed as RGCOVER. The Donnager has four rail gun mounting points so can in theory have up to four rail guns mounted if the modeller wishes. The in Universe version of the Donnager has only two rail guns mounted on the left and right side of the vessel the explanation being that the technology to power four rail guns has not yet been developed but being Martian they have designed the ship to be upgraded when needed.

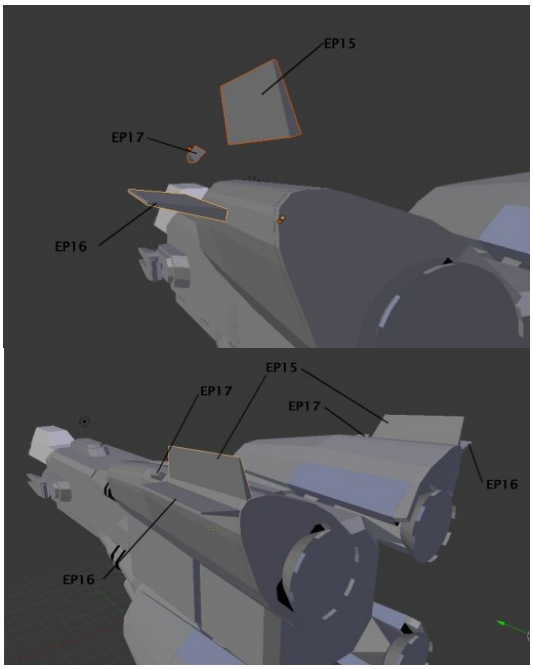


Form the parts as shown and attach together to form the two rail guns Depending on modeller skill RGCOVER has been provided to help hide any modelling or detailing errors caused during the forming of the parts. This part is completely optional and is up to the modeller if they wish to use it.



Attach the two rail guns to the left and right side of the model at the indicated location on the rail gun mount position RGM2. If sticking to the in universe version then use 2 x RGBLANK on the top and bottom rail gun mounts to hide the mounting position indicators.

Final Engine Detail



The final engine nacelle detail parts are made up of 4 x EP15, 4 x EP16 and 4 x EP17. Form these parts and apply to the locations as indicated on the diagrams above.