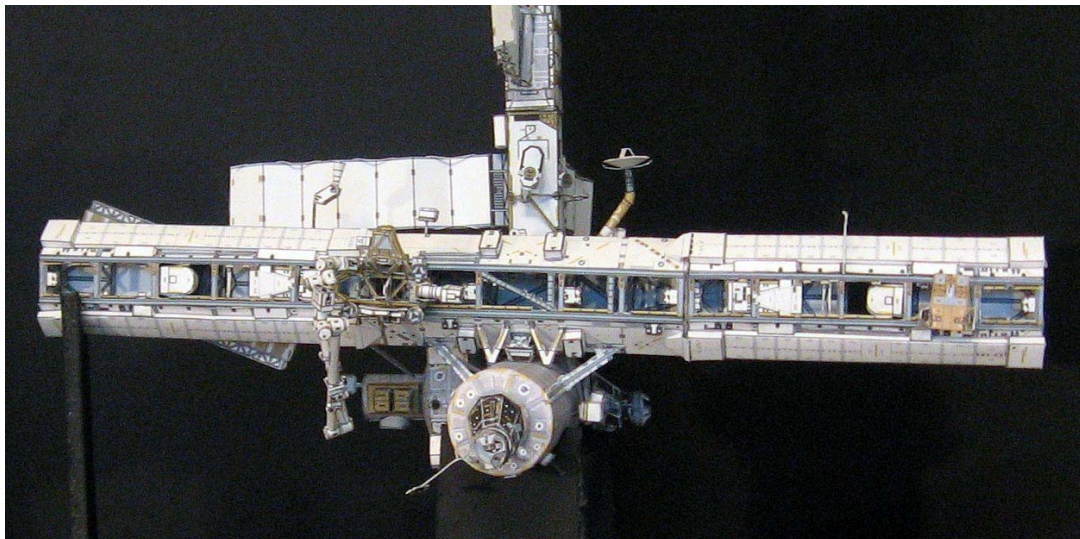




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Assembly Manual for STS-112 and STS-113 payloads (S1 and P1 trusses)



This is a combo kit containing parts to build both the S1 and P1 trusses. Both trusses are a mirror image of the other.

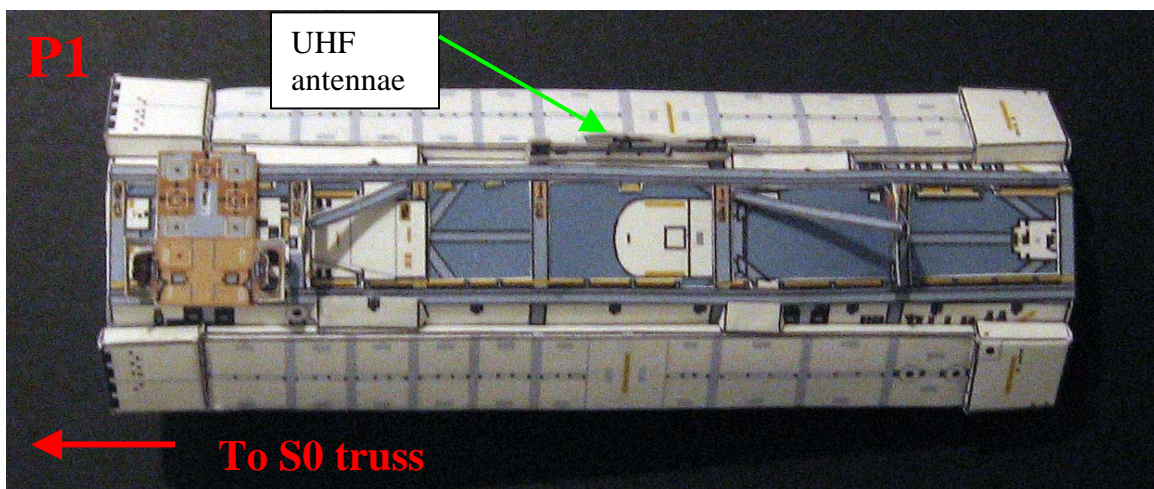
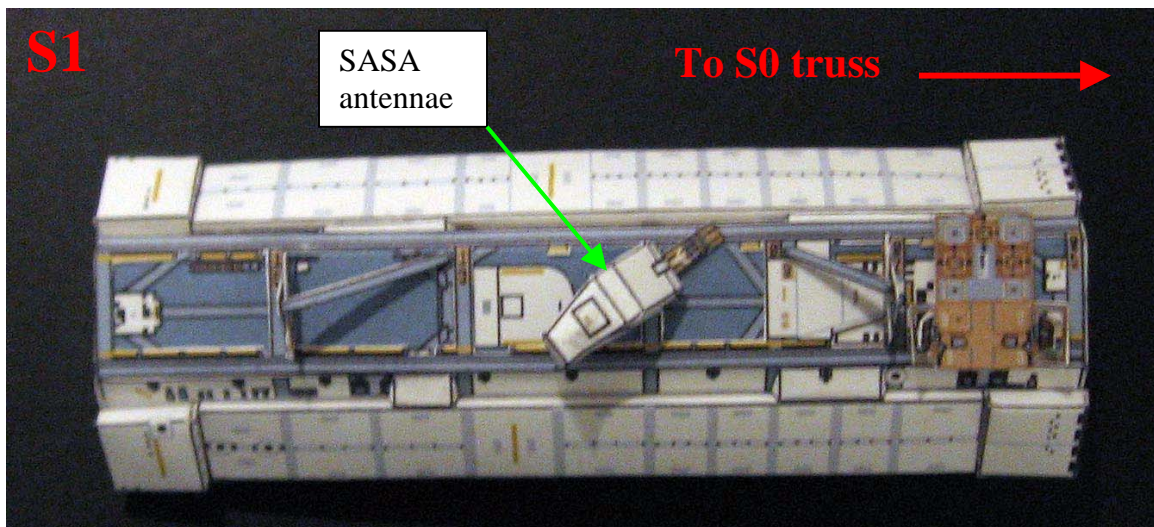
In total there are 6 models to build:

1. S1 payload bay version (1:144 scale simple model)
2. P1 payload bay version (1:144 scale simple model)
3. S1 space station version in 1:144 scale
4. P1 space station version in 1:144 scale
5. S1 space station version in 1:100 scale
6. P1 space station version in 1:100 scale

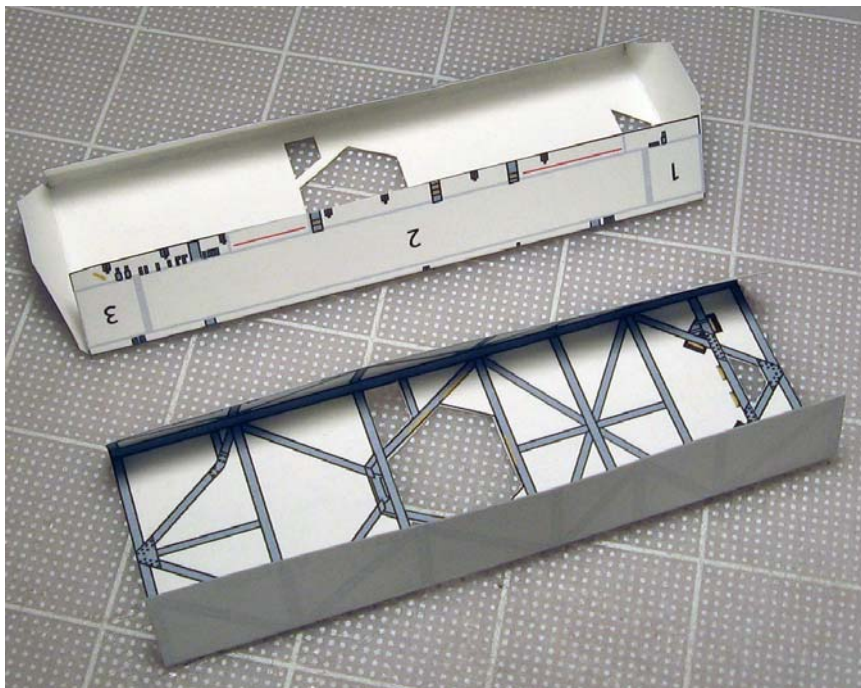
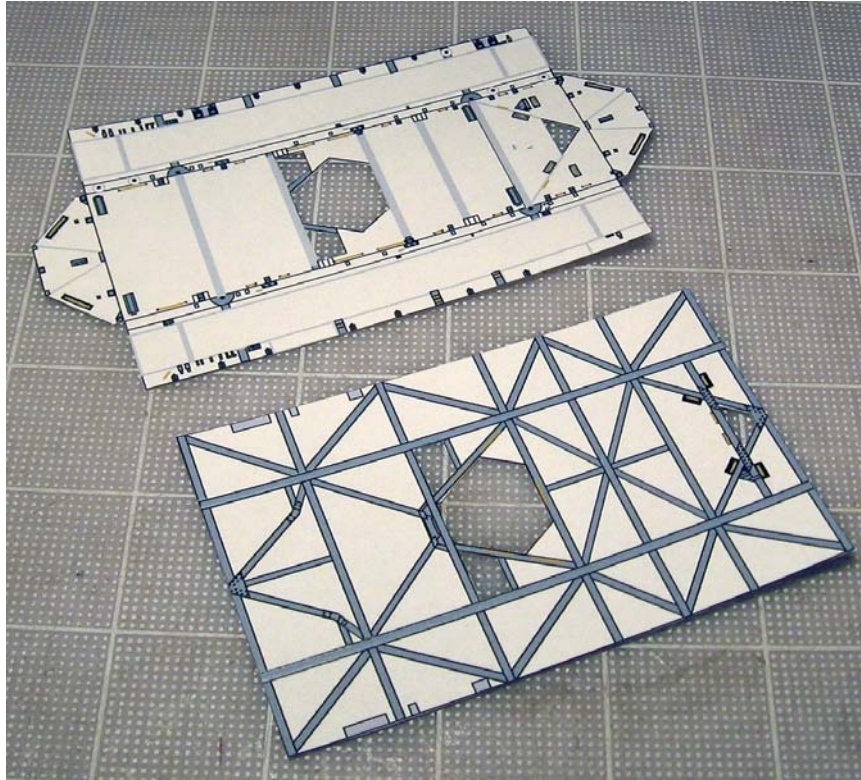
The “**Shared parts sheets**” contain the rest of the parts to build the trusses. You can print these sheets as many times you want in order to complete the models.

Due to time constraints it was very difficult to complete all 6 models for this presentation. More photos will be posted at my main website showing the trusses from different angles once attached to the S0 truss.

Differences between the S1 and P1 trusses

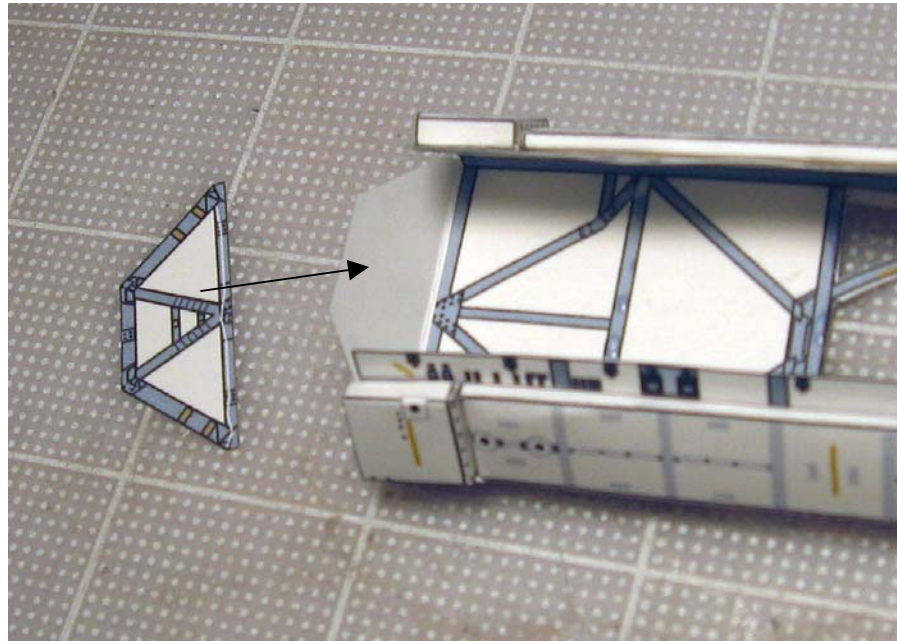


The photos on the previous page showed the main differences between these trusses. Note that they are a mirror image from one another. Both have CETA carts, these are CETA1 and CETA2 for the S1 and P1 respectively. The models shown are the simple models in 1:144 scales.

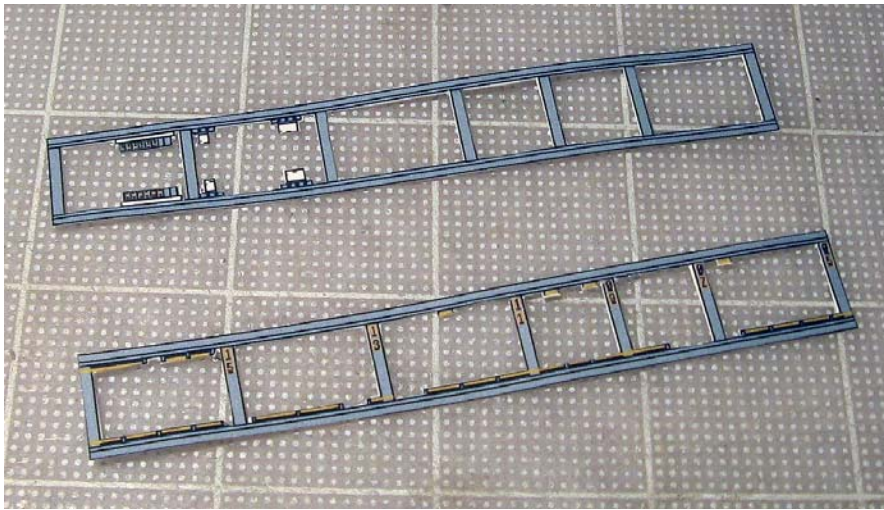


Following the same technique used for the S0 truss, the S1 and P1 trusses are built the same way. Two parts are used for the main body. The top part is the “skin” of the truss and the bottom part is the interior. Fold carefully and cut out the parts where indicated before gluing them together.

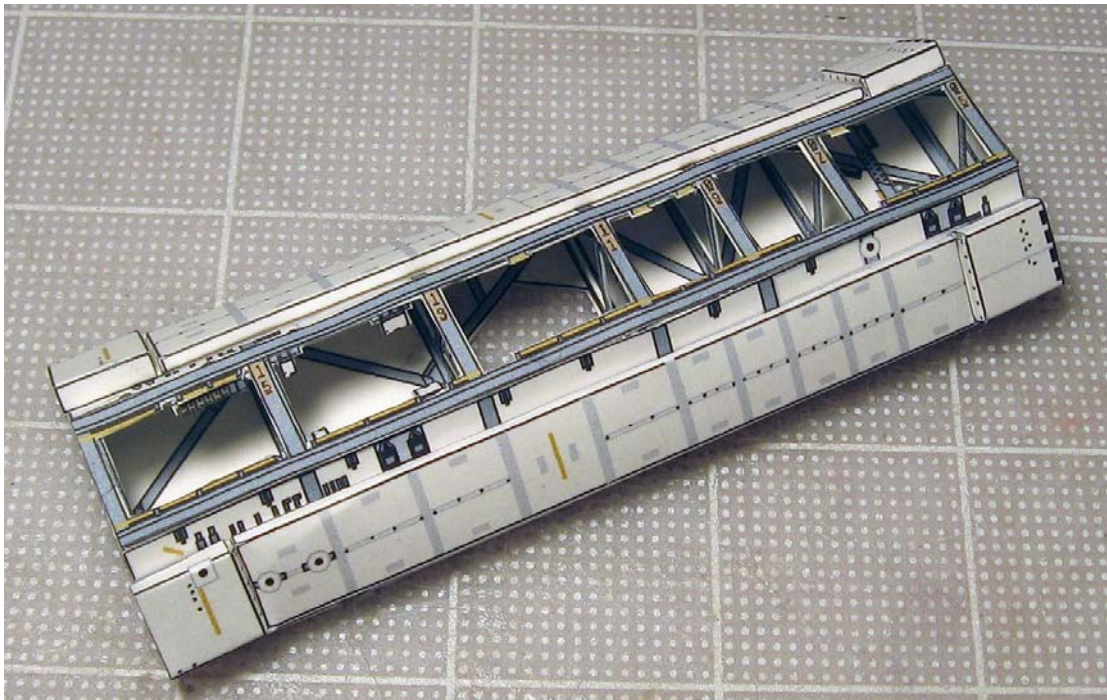
The only walls not to have the triangular areas cut are the walls at both ends. These are glued. (arrow)



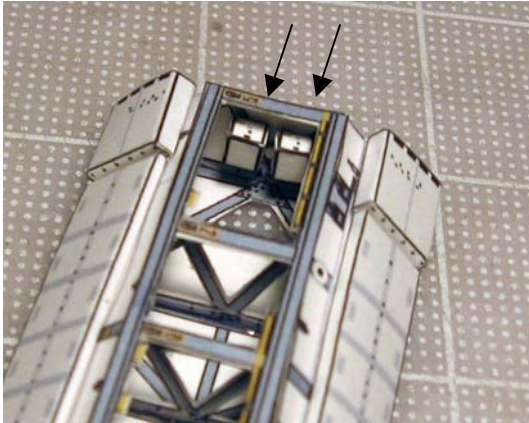
Glue each “wall” for each bay indicated by numbers. Also add the rectangular boxes on all 4 corners and middle sections indicated by numbers as well. Match the orientation of the numbers.
Note that each wall has a black tip that indicates that tip is the bottom end of the wall.



These 2 parts are glued to each other to form the front railing section of the truss. Note that this is only for the 1:144 scale models.

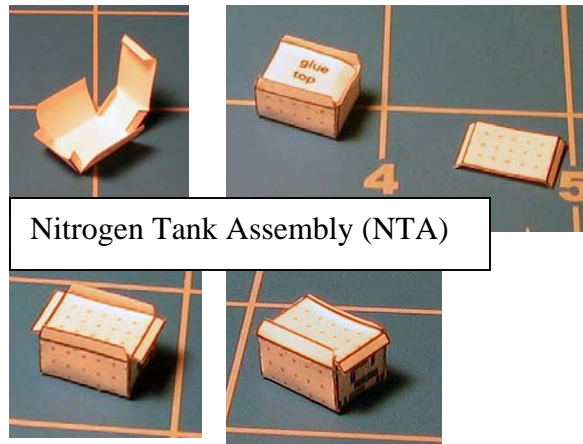
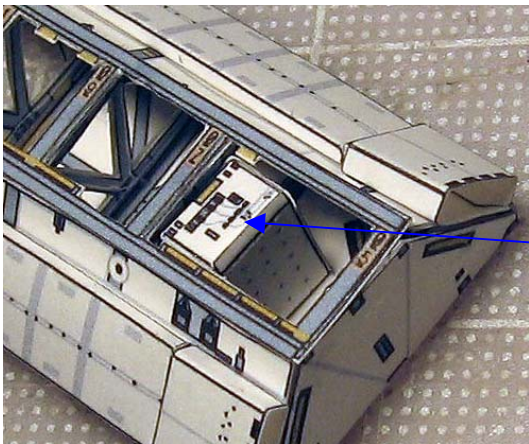


Adding the interior boxes (Shown for S1 truss, unless specified)

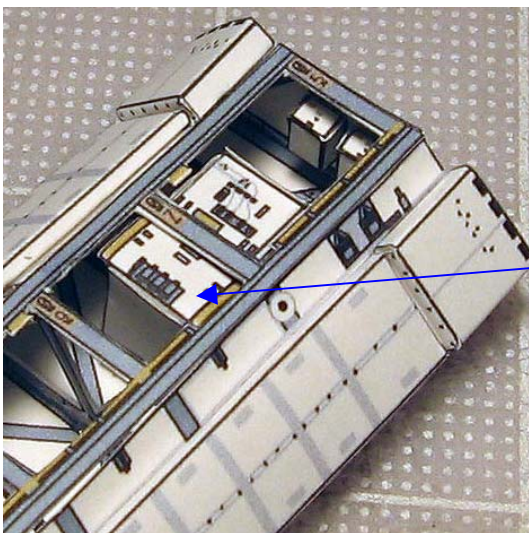


These 2 boxes are from top to bottom:

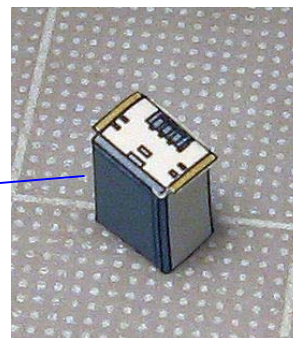
- AC baseband signal processor (ACBSP)
- S-band transponder (XPDR)

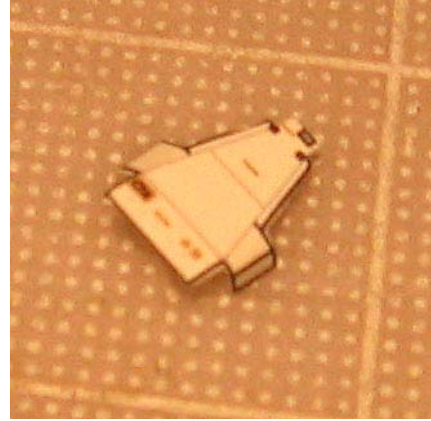
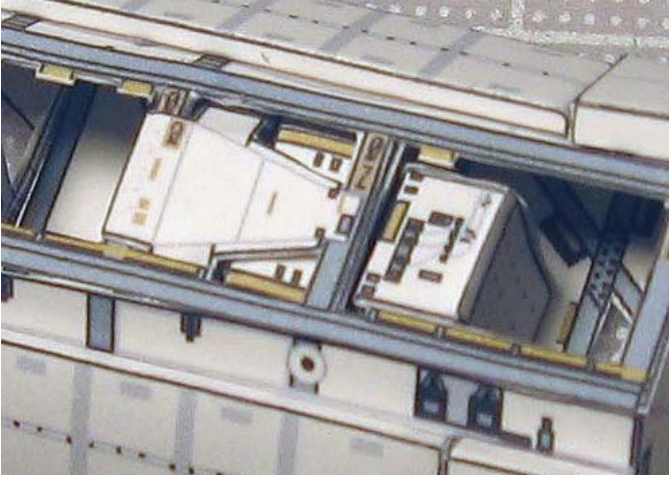


Nitrogen Tank Assembly (NTA)

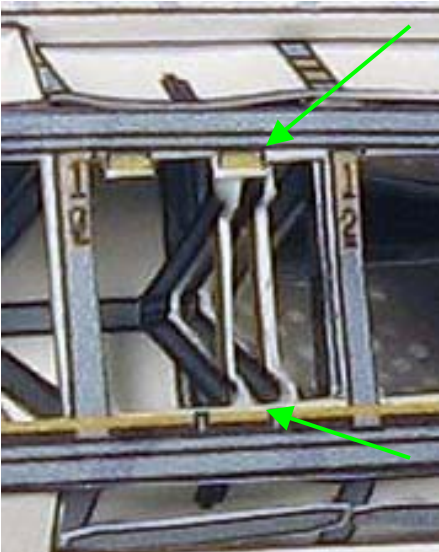


Pump Module Assembly (PM-A)





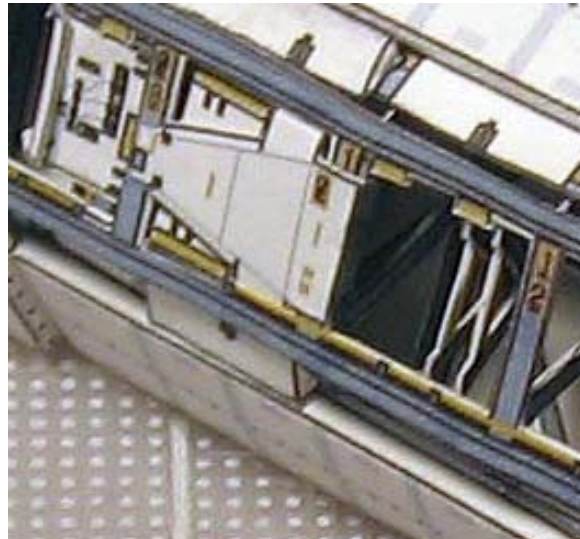
This is a cover that goes on top of the PM-A box.
Note that this part will cover one number on the bay beam. For S1 the number “9” will be covered completely, and for P1 the number “0”.



These are the keel pins stowed in their respective bay. In this case, photo shows the P1 model.

Note that there has to be a separation between the 2 parts, and both are glued on one of the small golden tabs on top and at the backside of the railing on the bottom.

In order to glue these parts, use a tweezer. Grab from the handrail of each keel pin, go inside the truss and then pull towards the railing so it can be glued to the backside of the railing.



Assembly of the Flex Hose Rotary Coupler

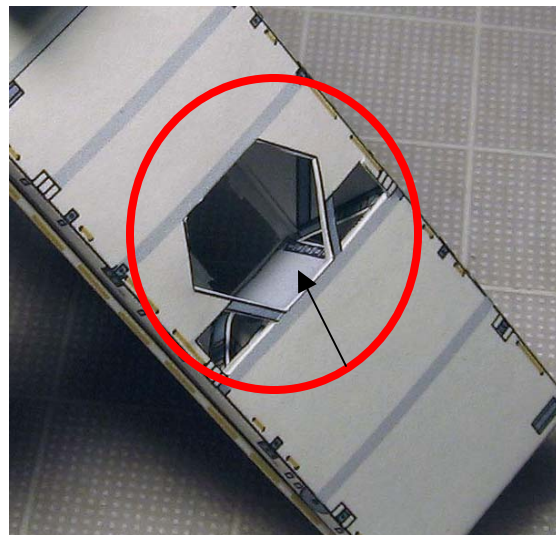
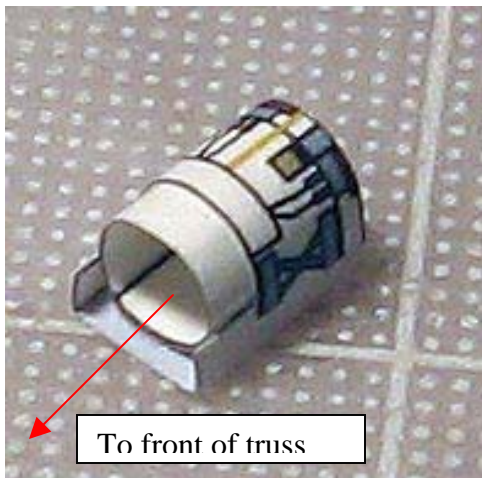
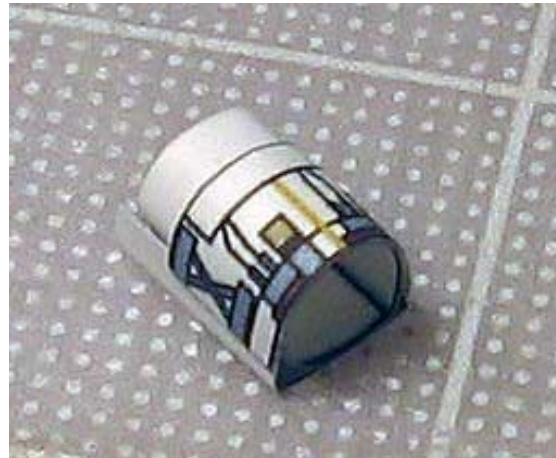
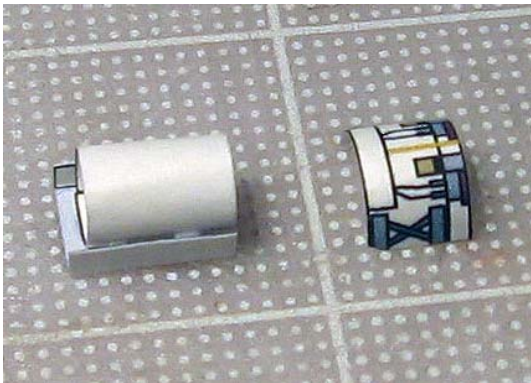
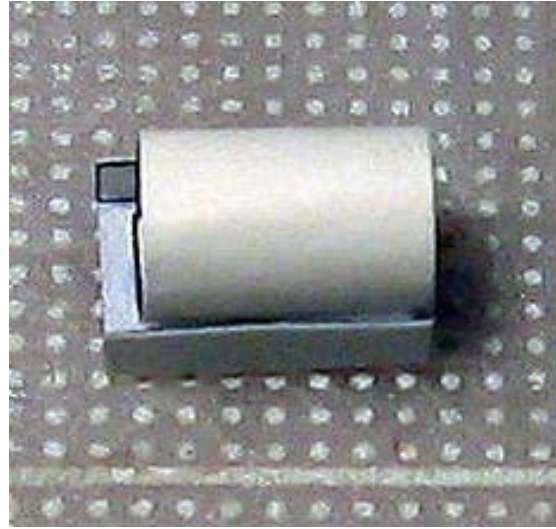
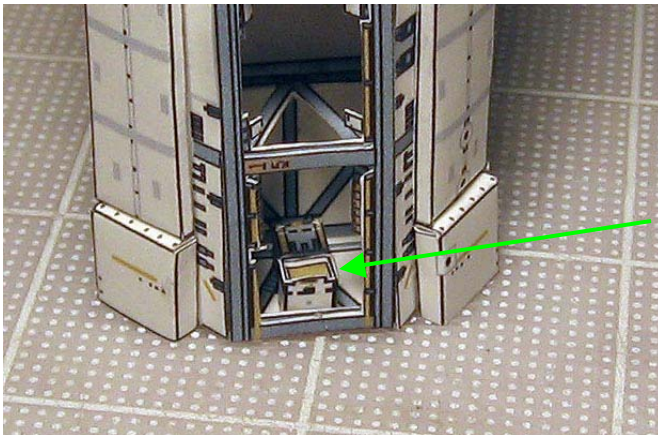
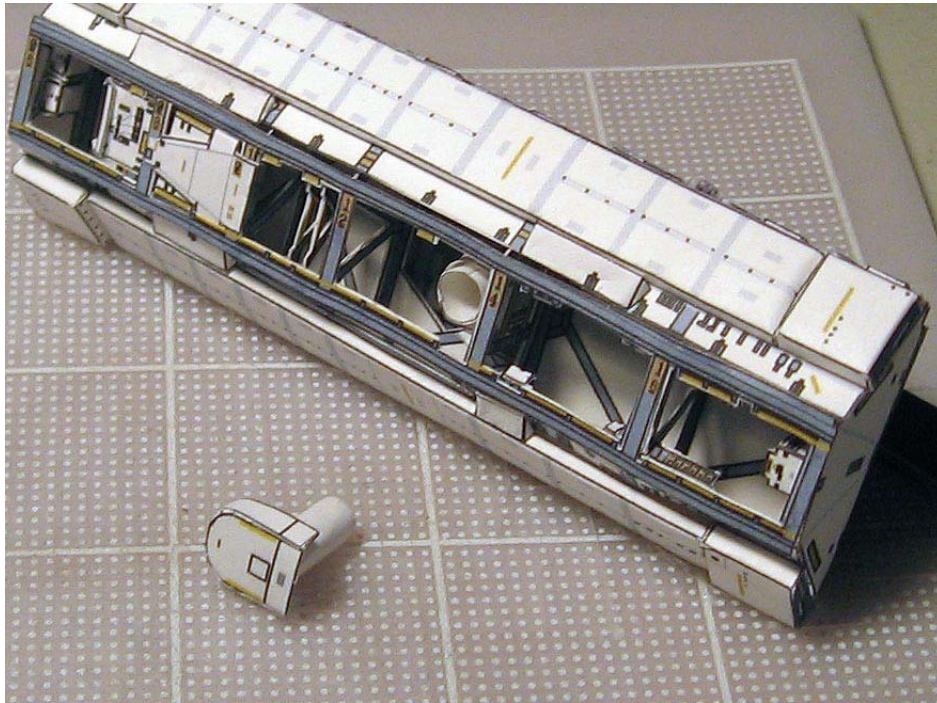
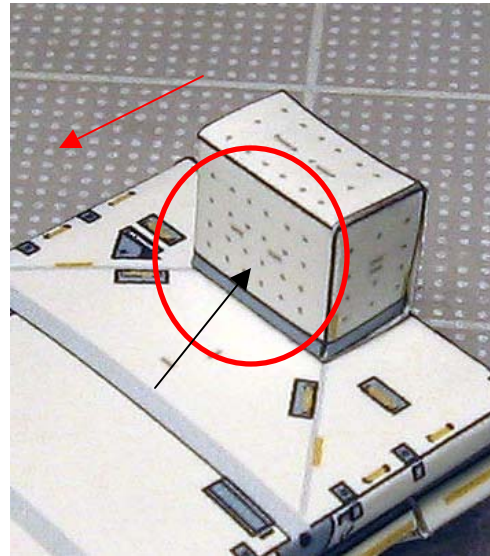
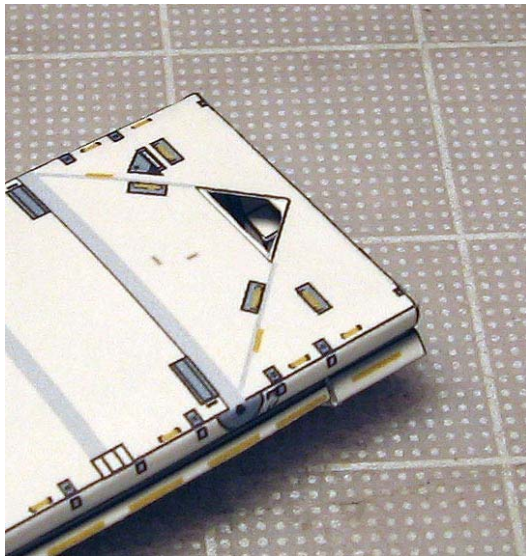
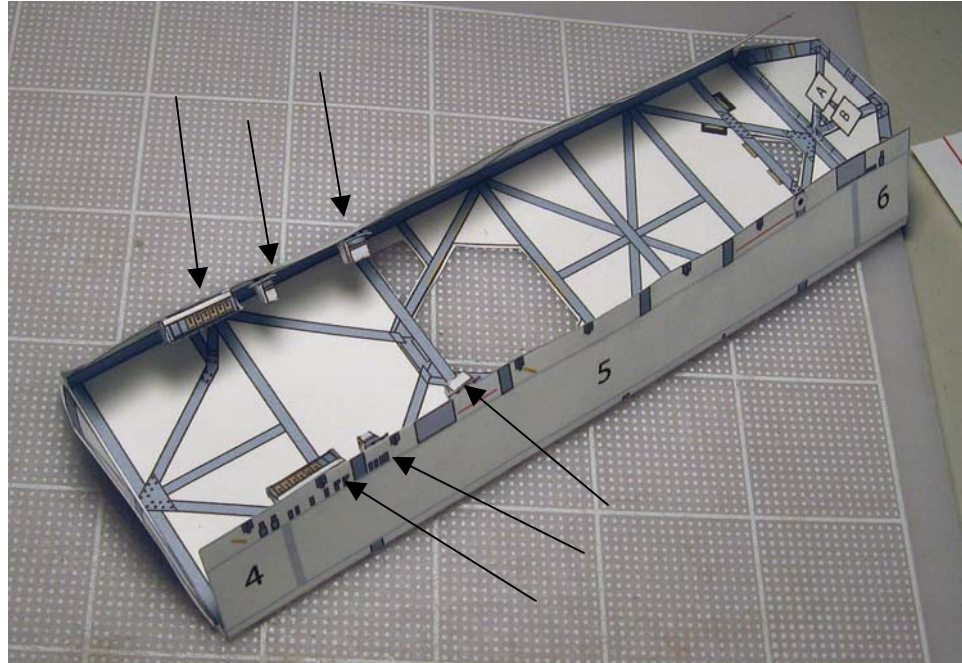


Photo on previous page shows where the FHRC is glued. (red circle)
Let it dry completely before inserting the matching cylinder that will make
the radiators to rotate.



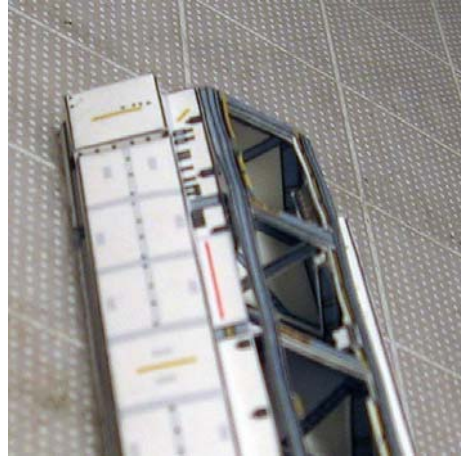
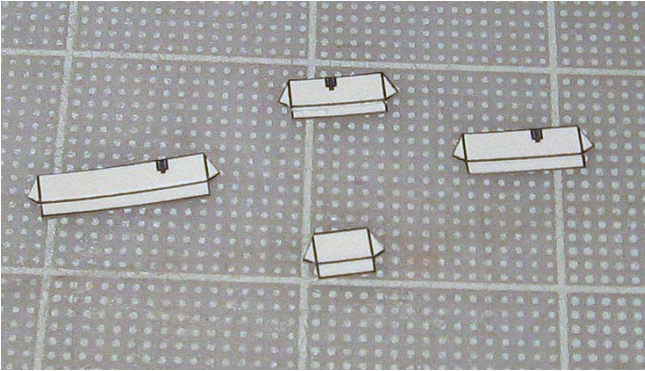
The last box is the
DC-DC converter
unit (DDCU)

Note that for the 1:100 scale models, there are other small boxes to be glued inside the truss. These are the Rotary Joint Motor controllers, the MDM's and the zenith and nadir RPCM's.

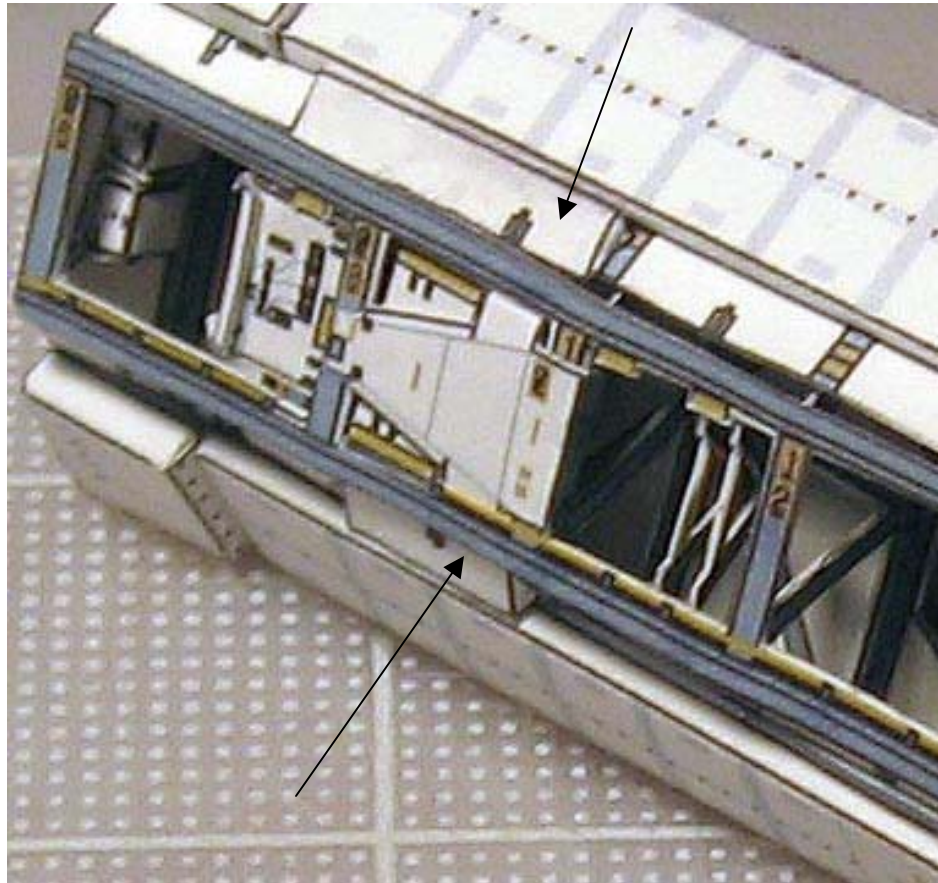


Another box is glued to the back of the truss. This is the Ammonia Tank Assembly (ATA). For orientation purposes, the face that has the 2 small golden lines (arrows) should face forward to the front of the payload bay.

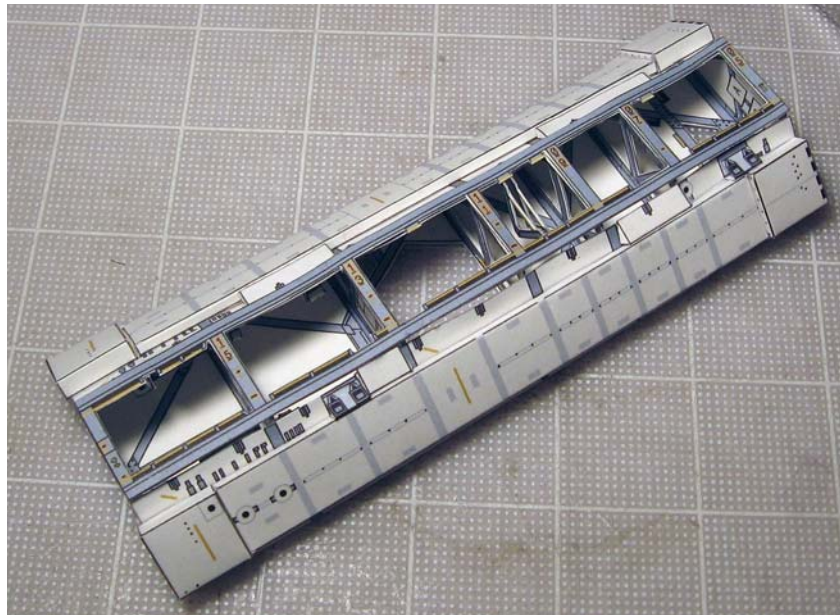
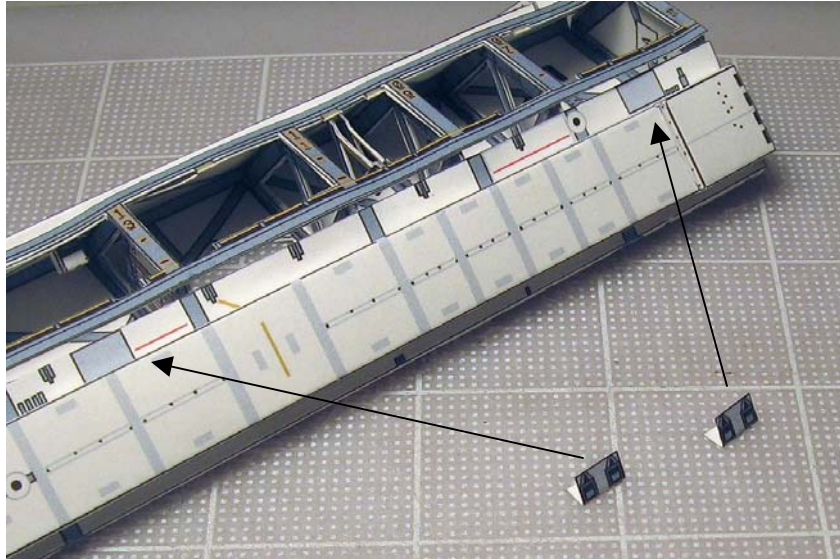
Adding front covers to the truss



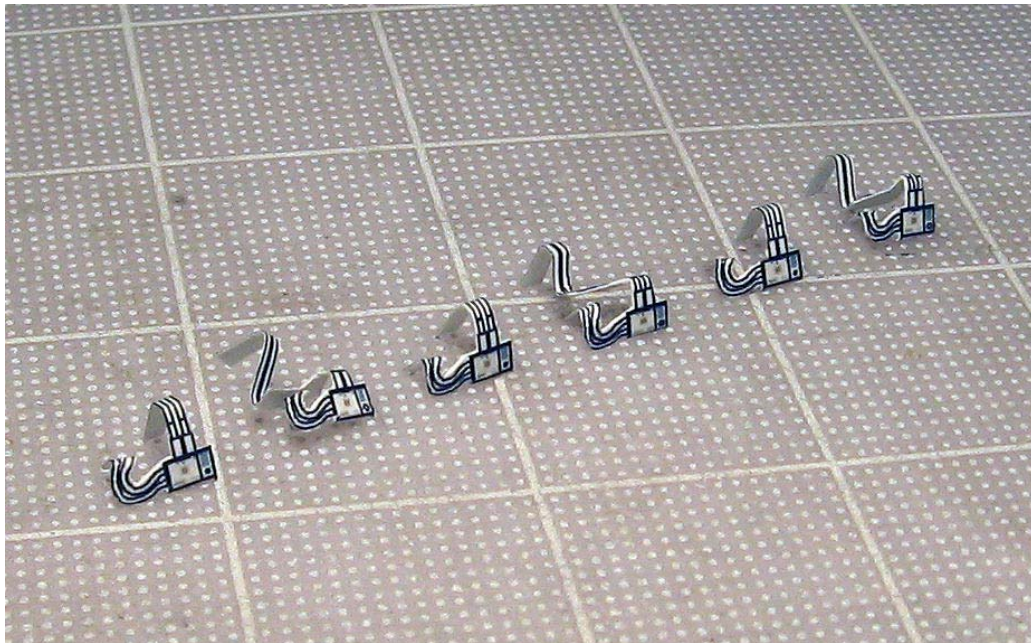
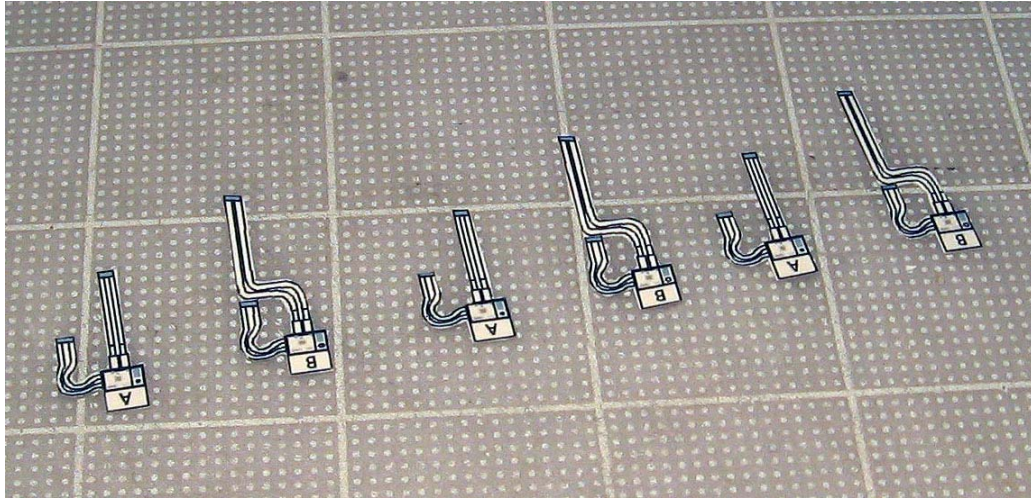
Add these covers on top of their respective areas with a red line. There are 4 for each truss. Is a mirrored distribution for each truss.



For the 1:100 scale truss, add these UMA's part (Umbilical Mating Assembly)



Building the Radiator Beam



These are the Radiator Beam Valve Modules (in total of 6). They are lettered A and B. Note how the A's are folded differently from the B parts. Try to fold as photo shows. Then glue them on top of the respective triangular beam that shows the letters A and B.

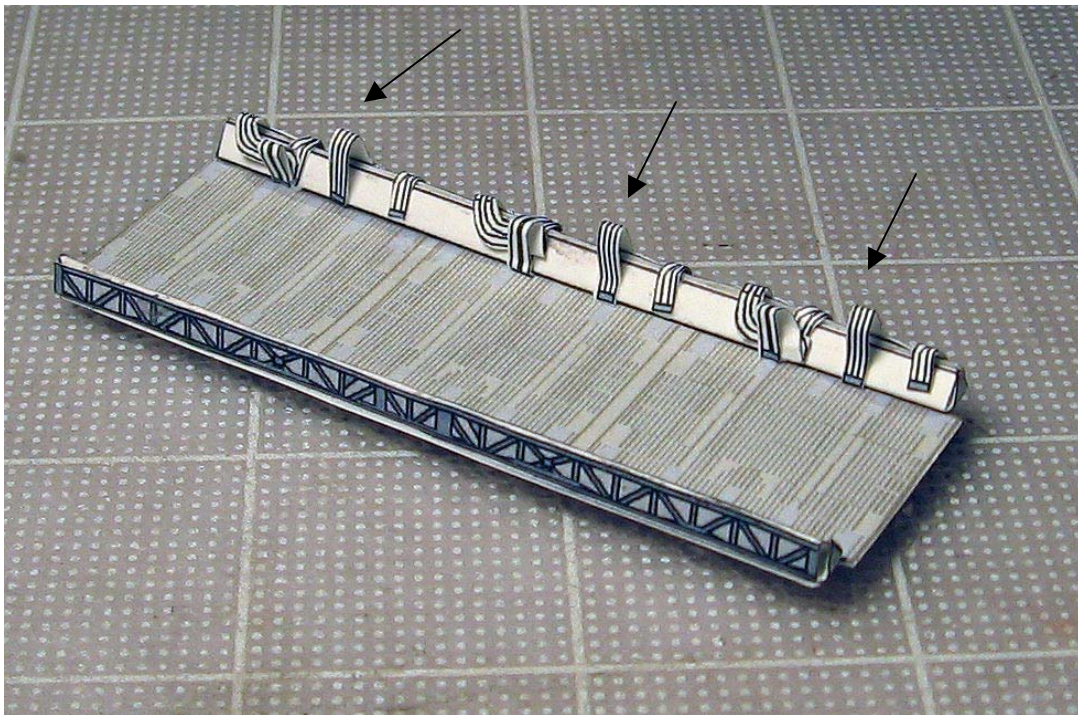
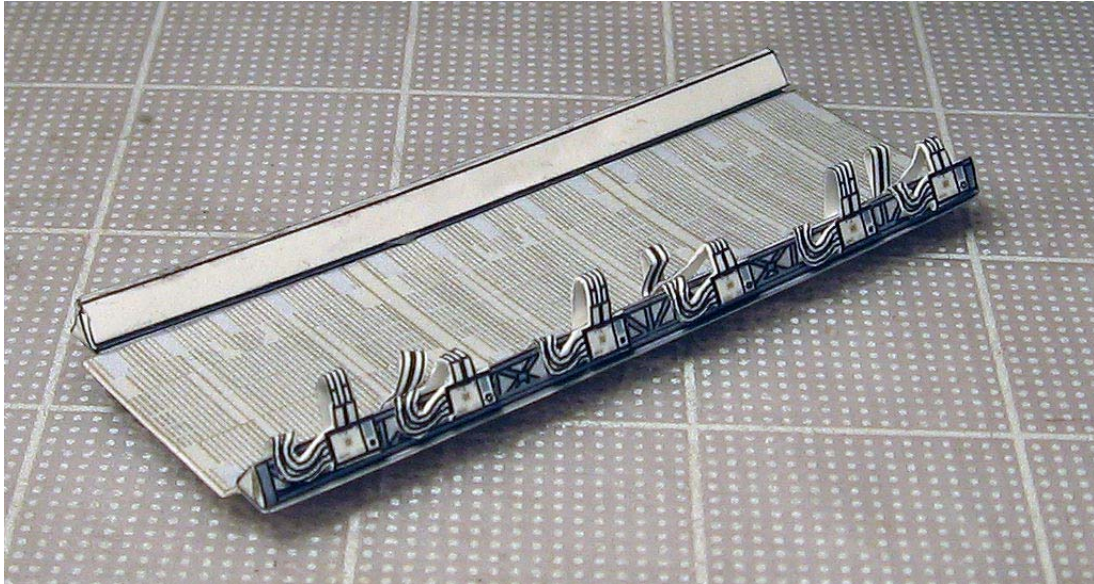
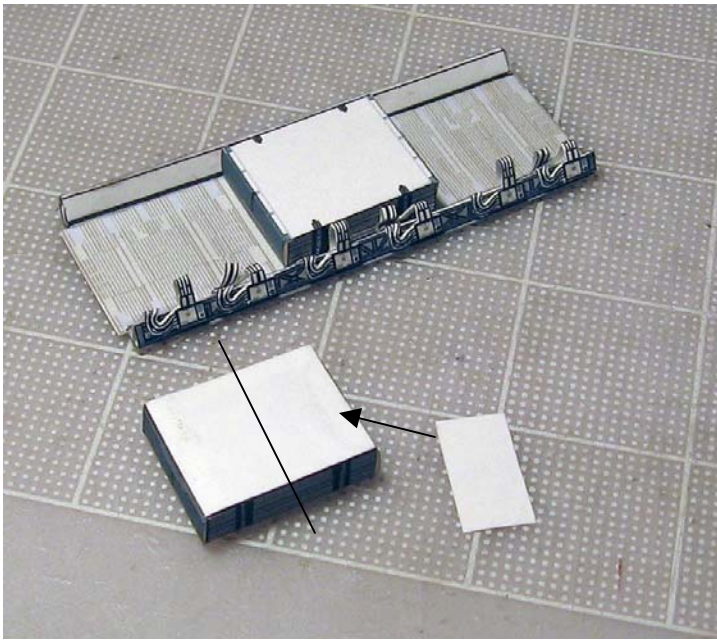
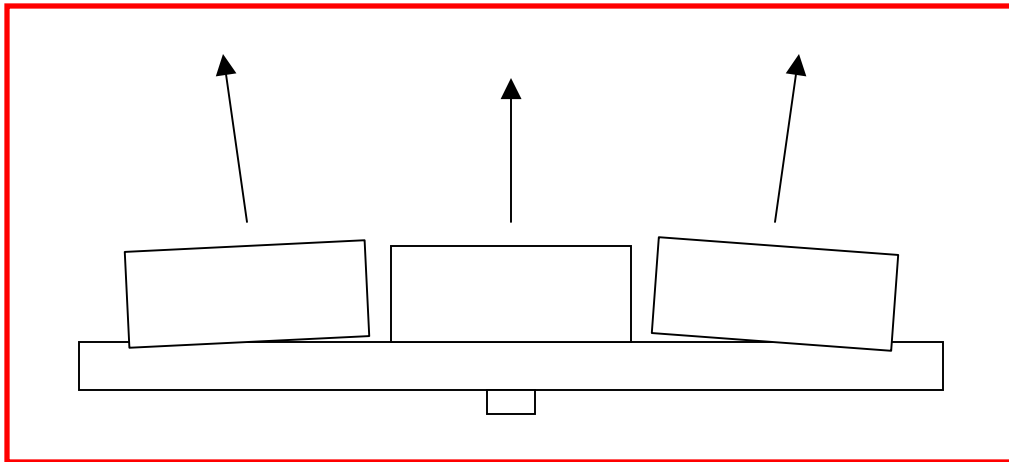


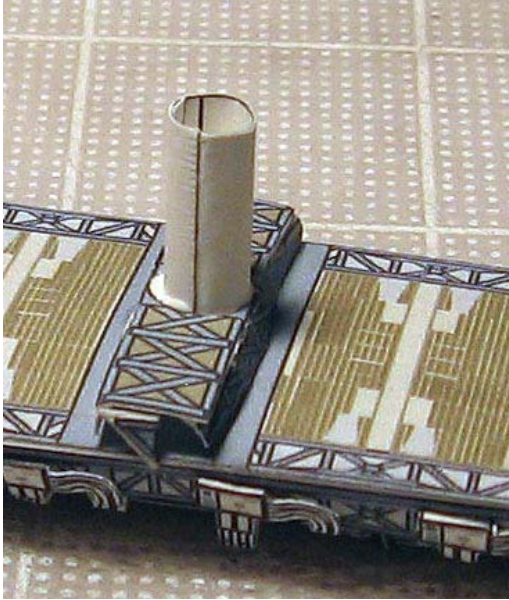
Photo shows a draft model of the truss. Colors will vary for the final model. Note how the A parts go straight up and down to the bottom of the white triangular beam. (arrows)



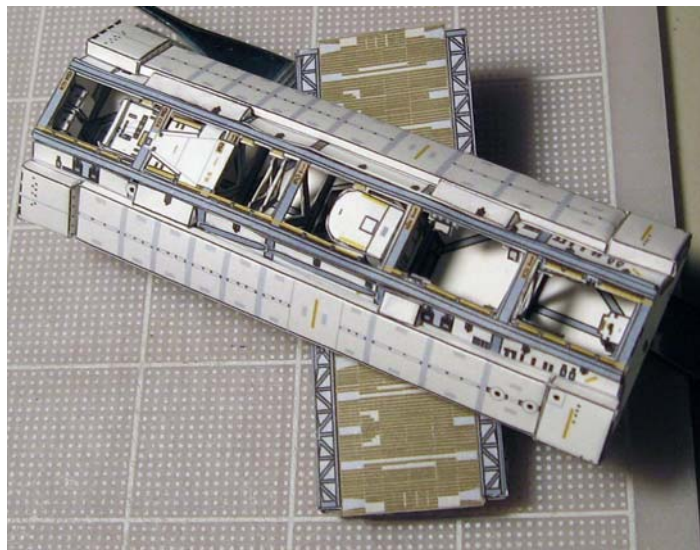
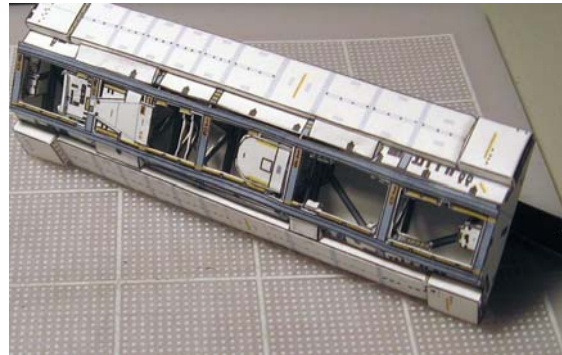
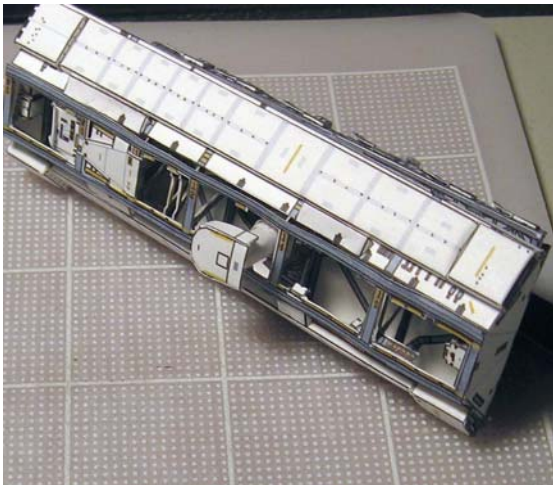
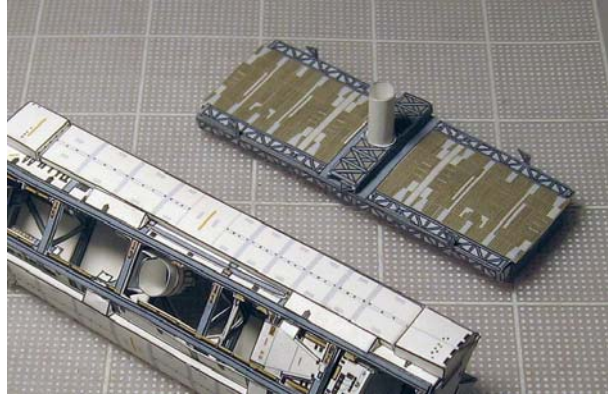
When adding the stowed version of the radiators (boxes), the lateral ones have a one piece cardboard that is glued to the bottom of the box covering one half. This piece will “elevate” that part of the box slightly. (see diagram)



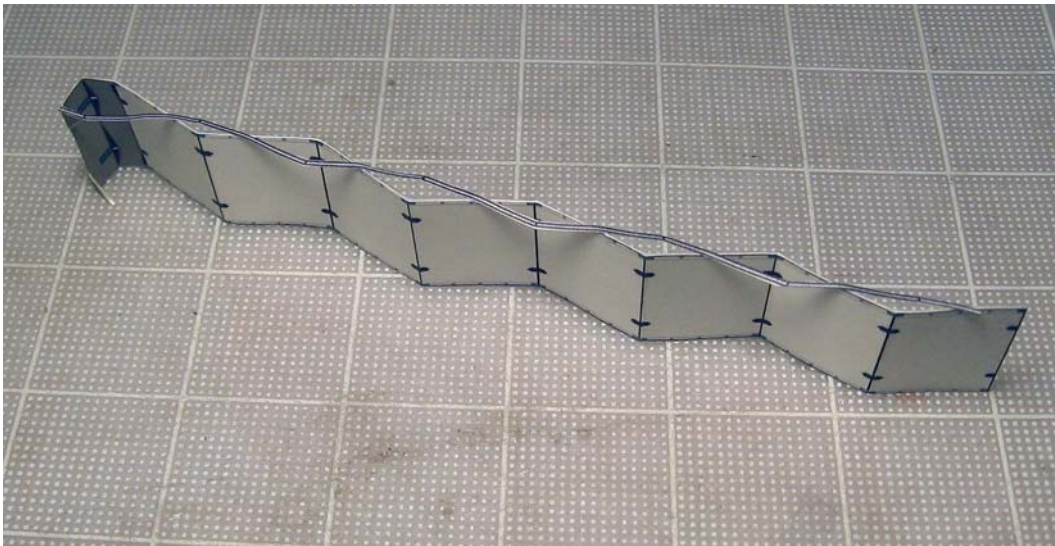
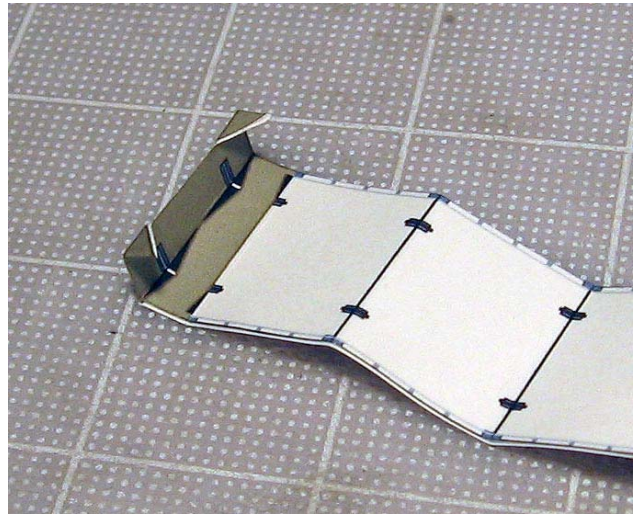
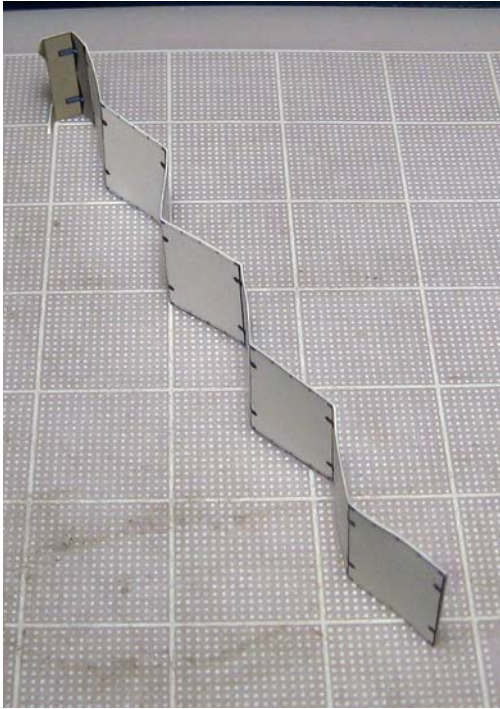
This part is glued to the back of the Radiator Beam.



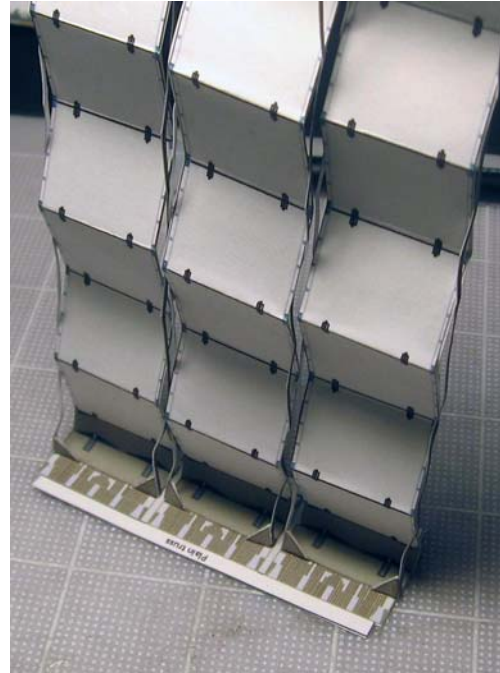
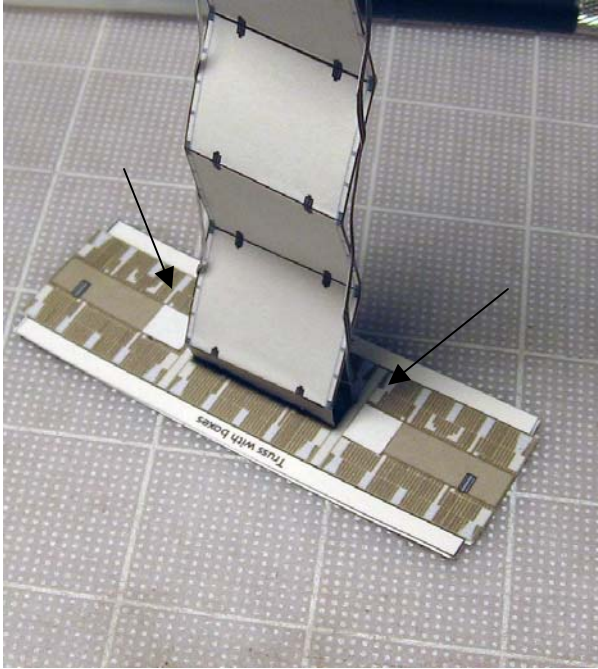
This cylinder will fit inside the FHRC box already glued to the truss from the back.



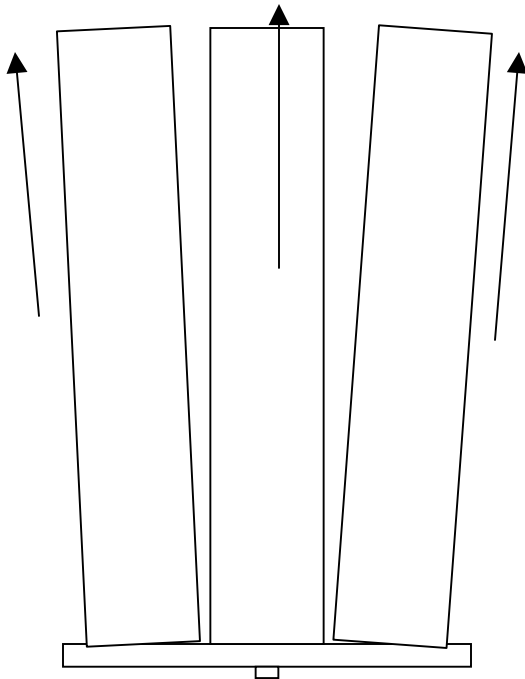
Adding the Radiators in deployed position



Follow photos for reference how to build the radiators.

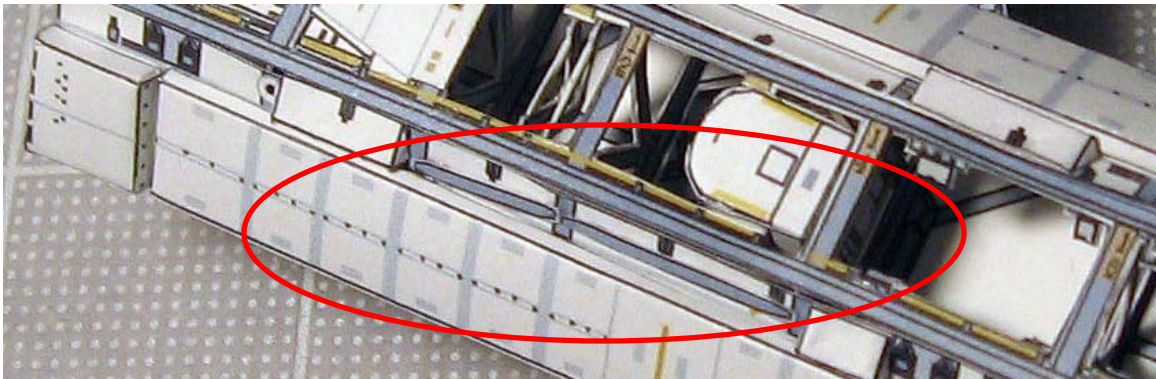
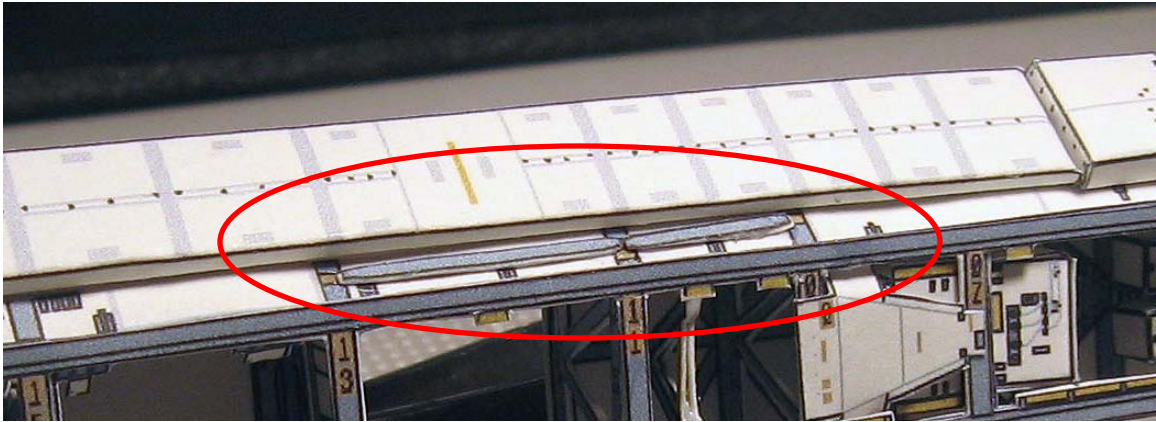


The same way as the stowed radiators, there are 2 pieces of cardboard that needed to be glued first where arrows show (only for the lateral radiators).

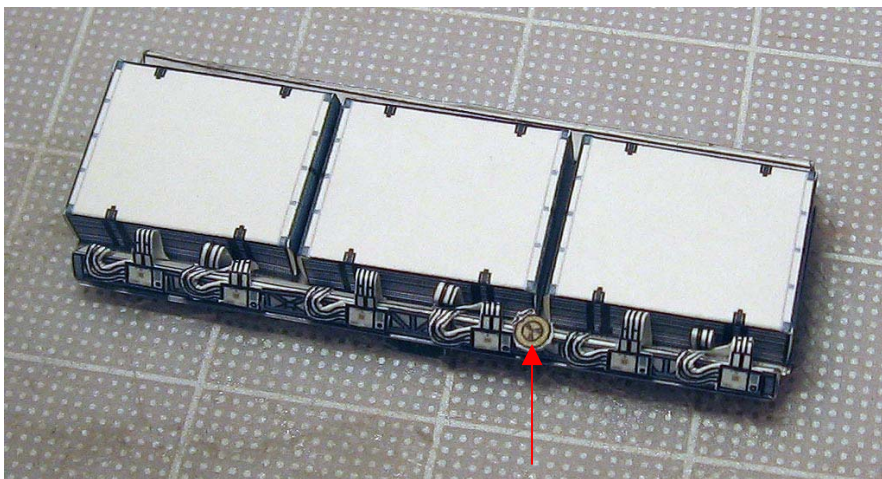


These pieces of cardboard are supposed to make an angle for the lateral radiators. (slight)

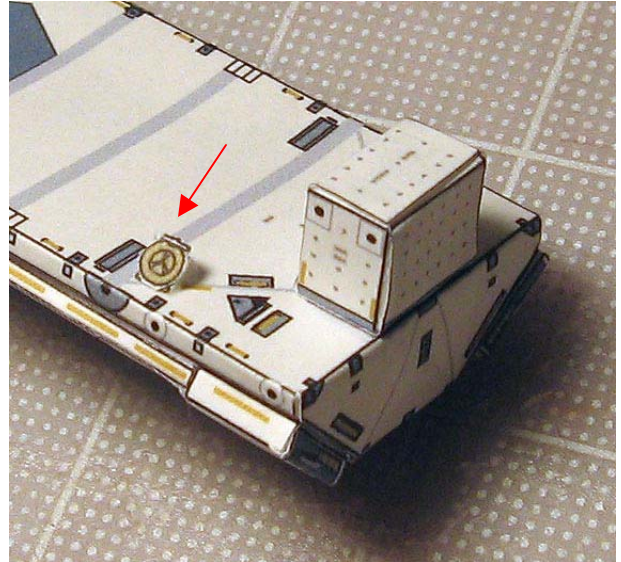
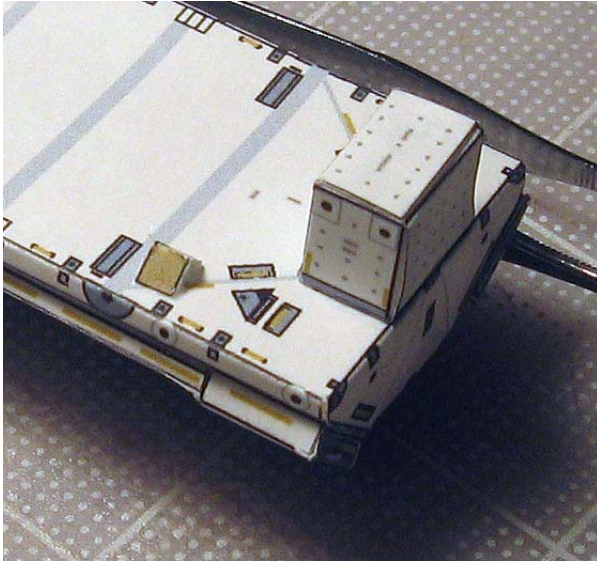
Adding extra details (Drag links) and more....



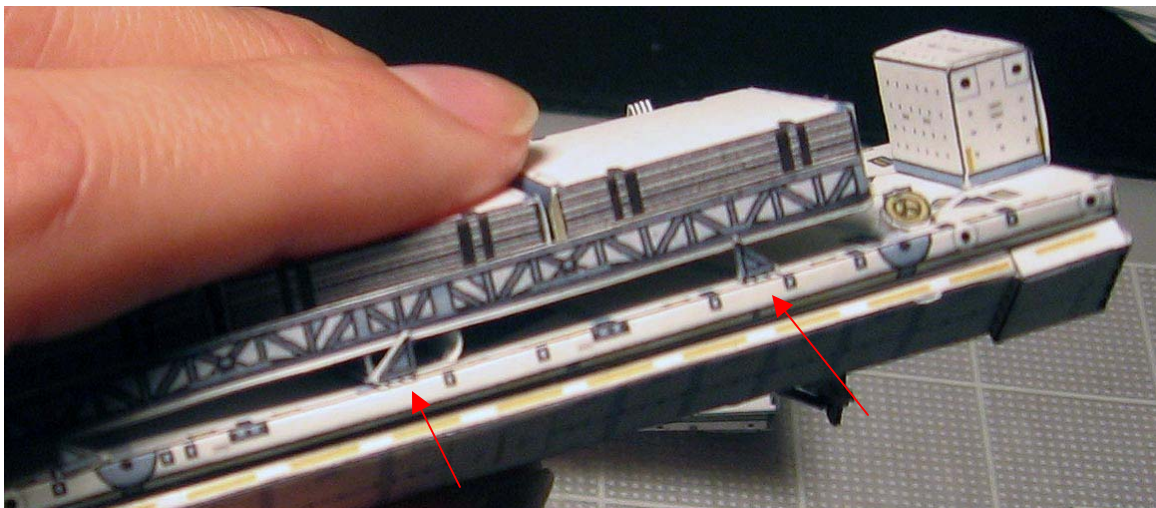
Photos show how the Drag Links for both the S1 (top) and P1 (bottom) are located. As a reference, look for the small golden rectangles drawn in the areas shown.



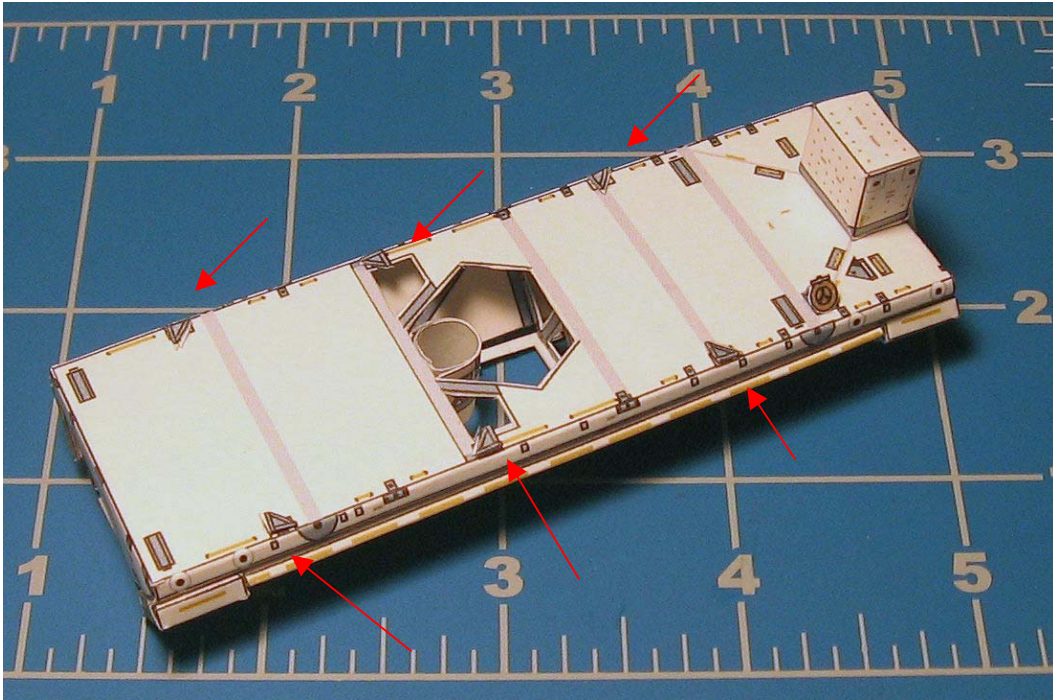
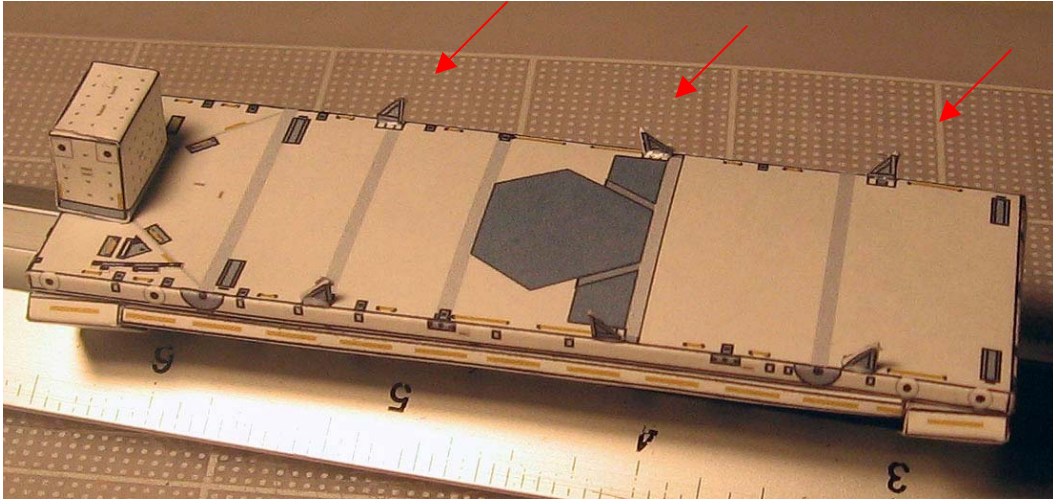
Add the Grapple fixture to the radiator beam as shown.



Grapple fixture for P1 only

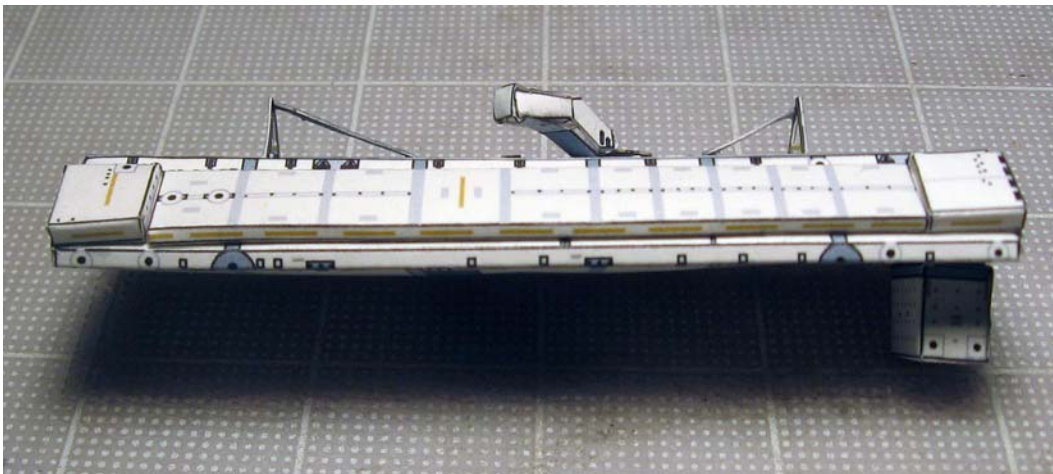
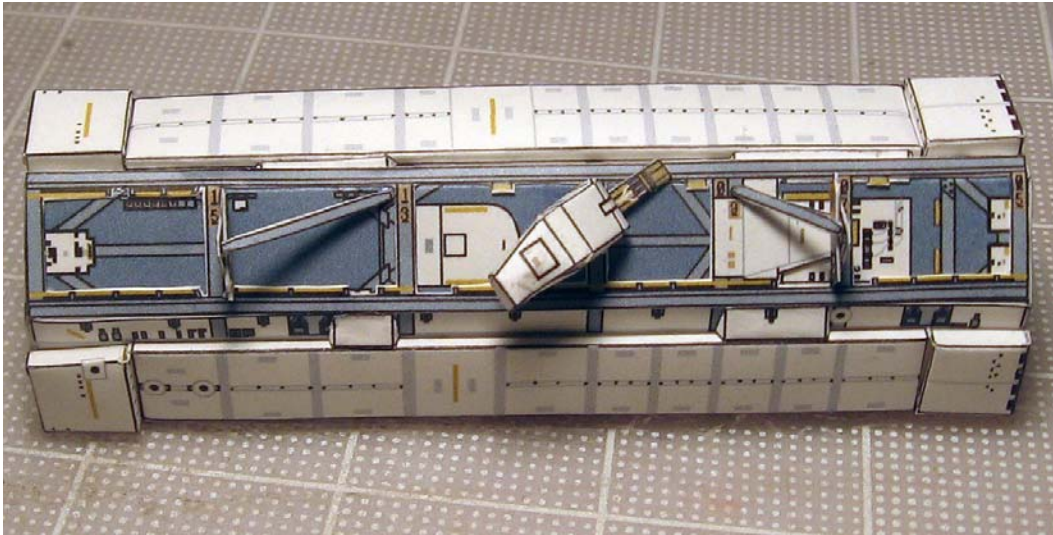
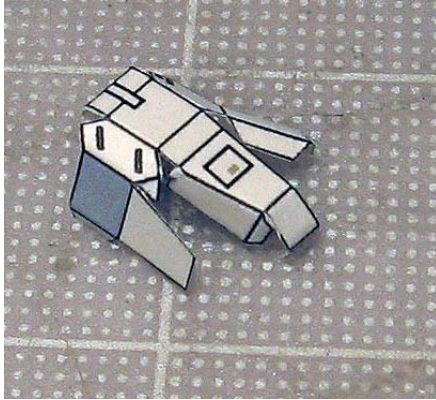


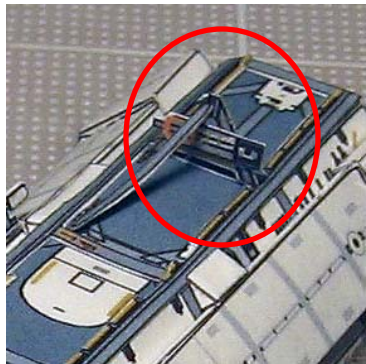
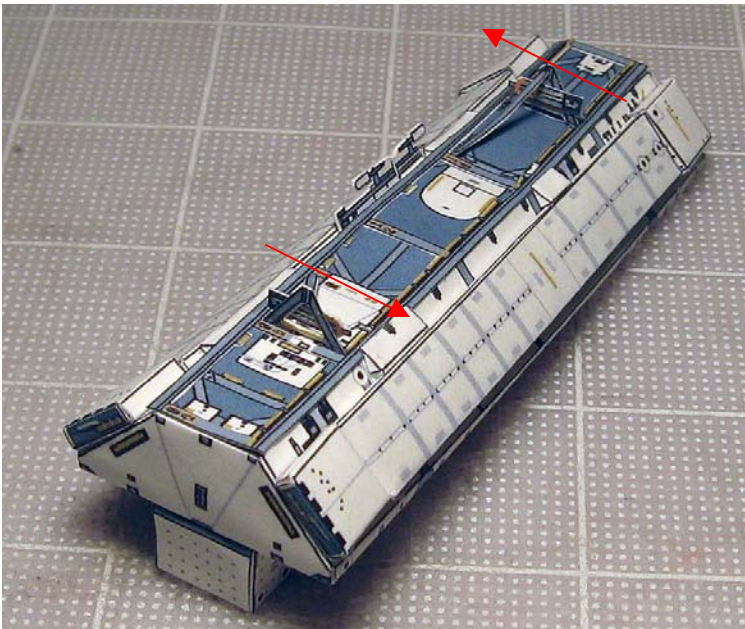
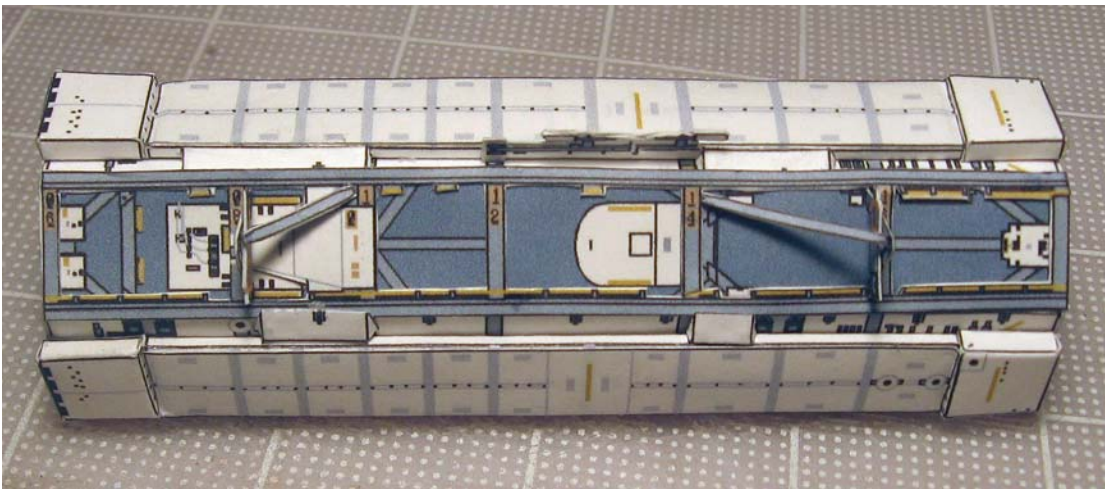
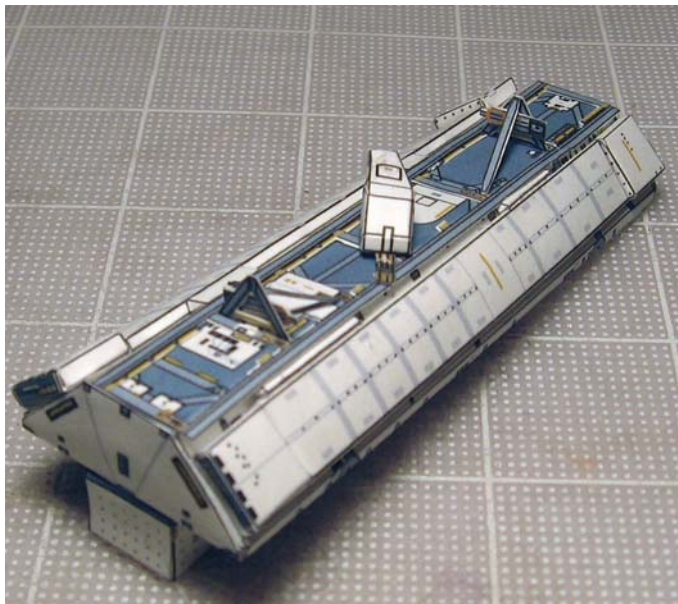
The small triangular parts are the **Radiator Beam Launch Locks**. For the payload bay version, these parts are glued to the Radiator Beam platform. There are 3 on each side for these models.
During the Space Station configuration, these parts are glued flat on top of the platform. Photos below explain.



Photos are from the 1:144 scale models.
Top is a single model, and bottom is a fully interior detailed version.

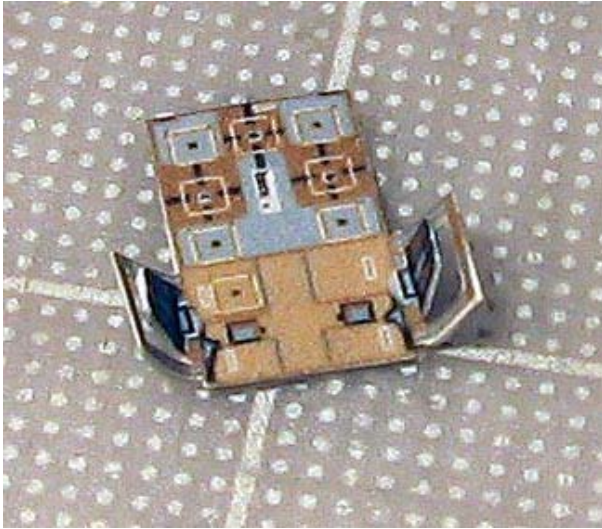
SASA, UHF and camera Stanchions



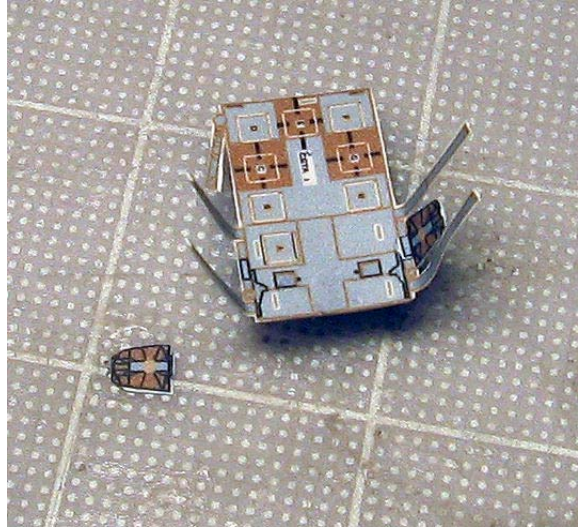


Close-up of a camera stanchion. The red arrows indicate their orientation in the truss.

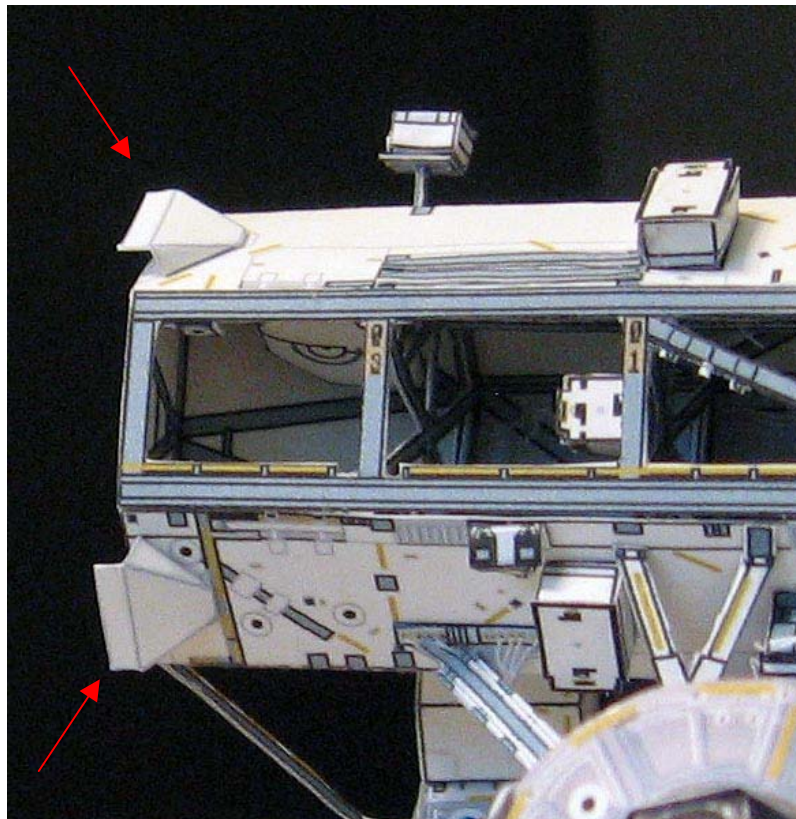
CETA carts

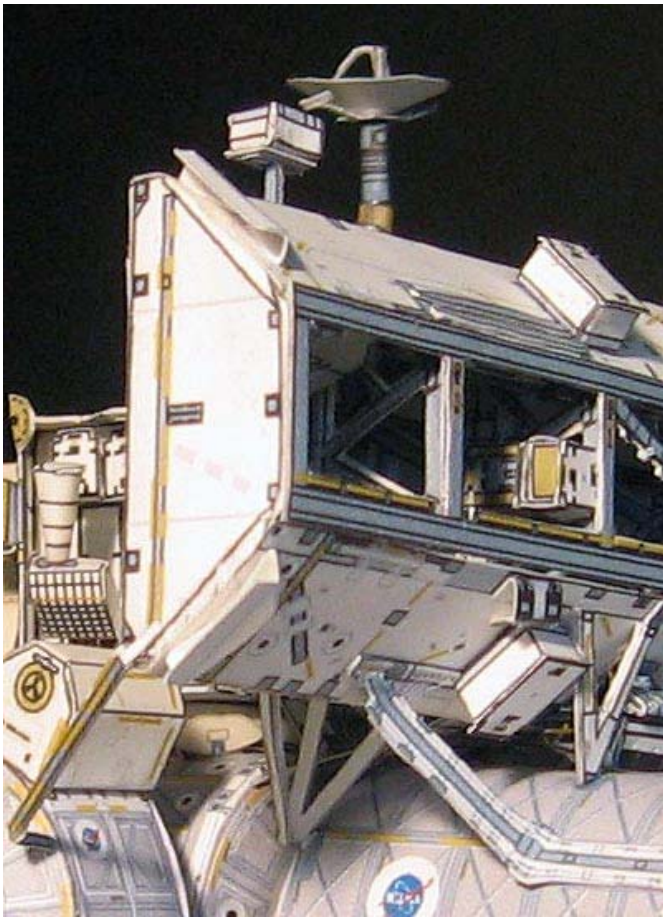
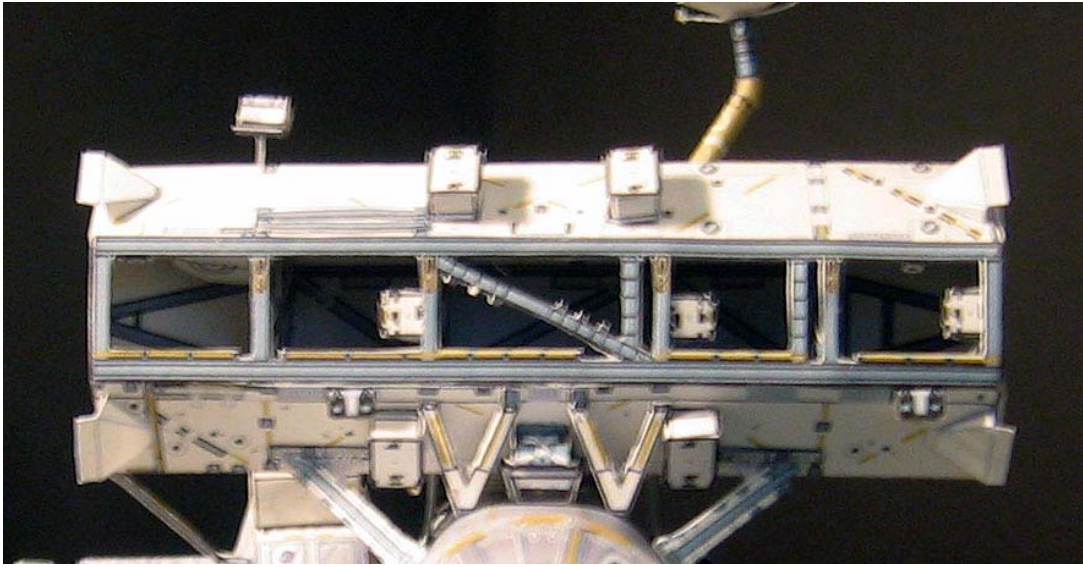


CETA cart in payload bay configuration.



CETA cart in space station configuration.



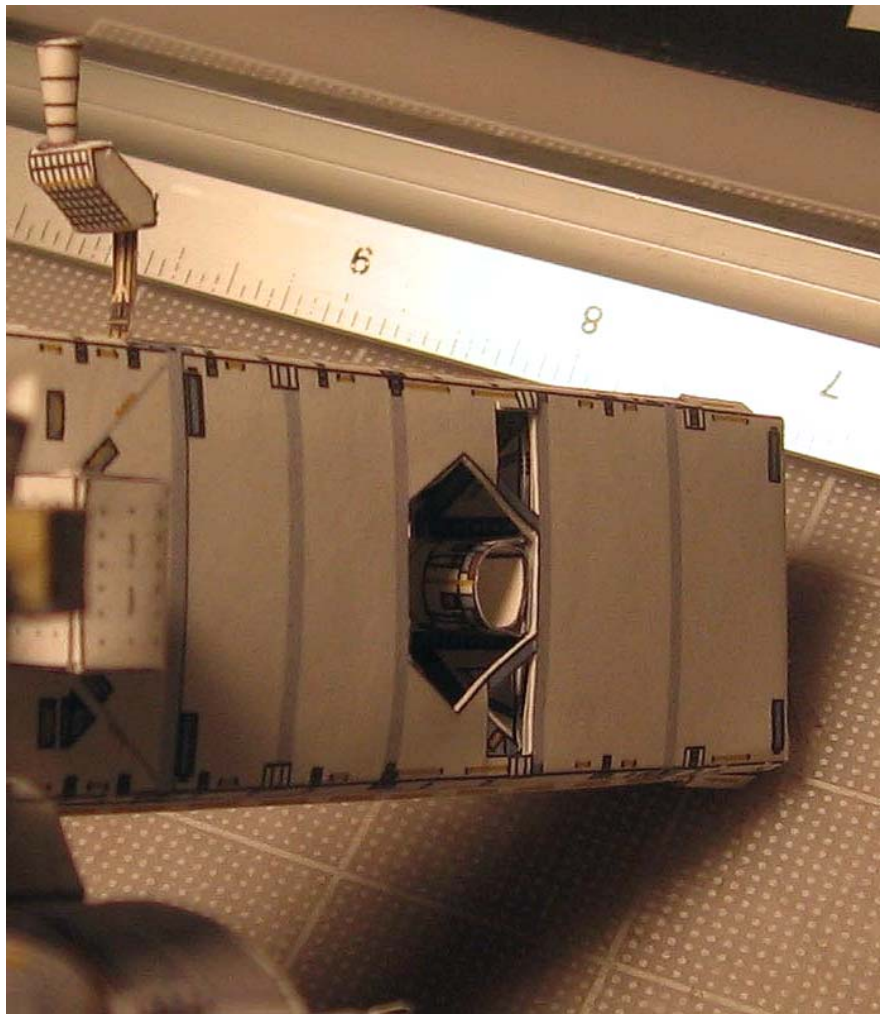




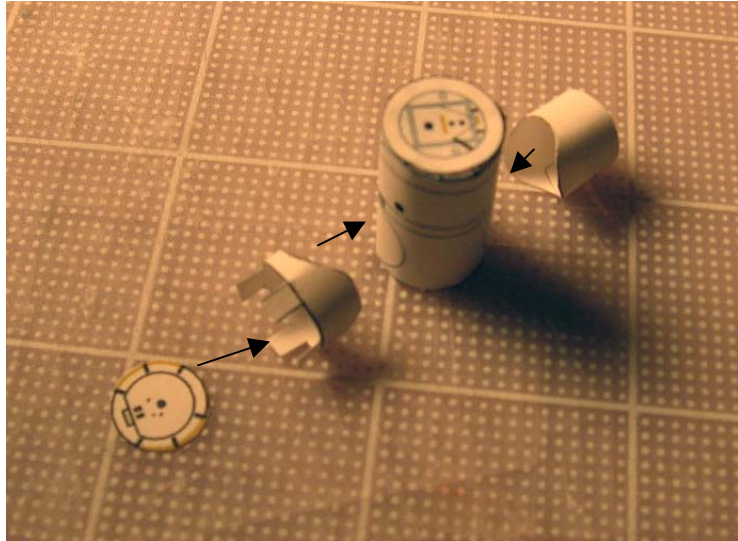
For both the SASA (top) and UHF (bottom) antennas, the tip has to be cut in an angle as photos show in order to glue to the respective trusses.



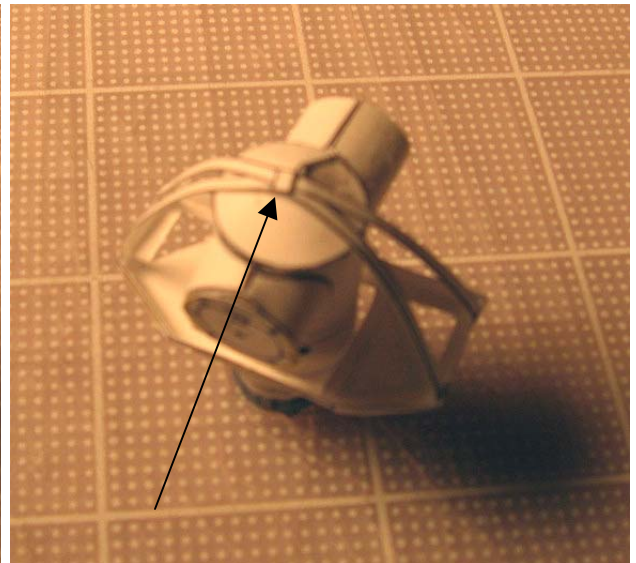
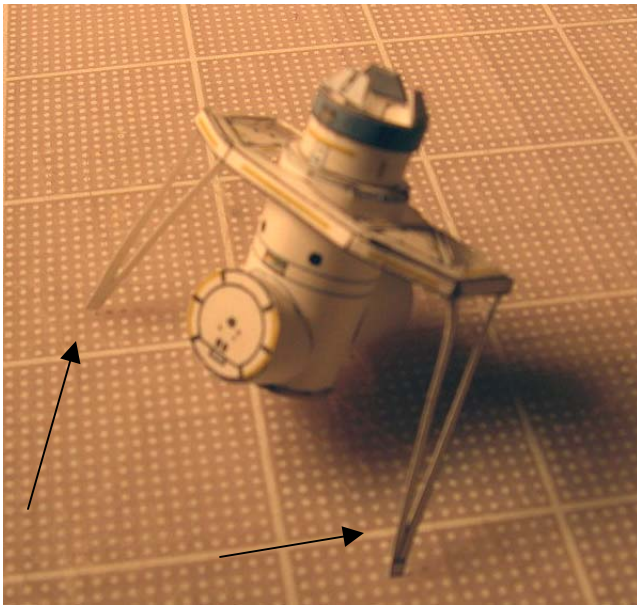
A view from behind for reference



Building the Orbiter Docking System



Make a cylinder and glue the elements indicated on this photo.

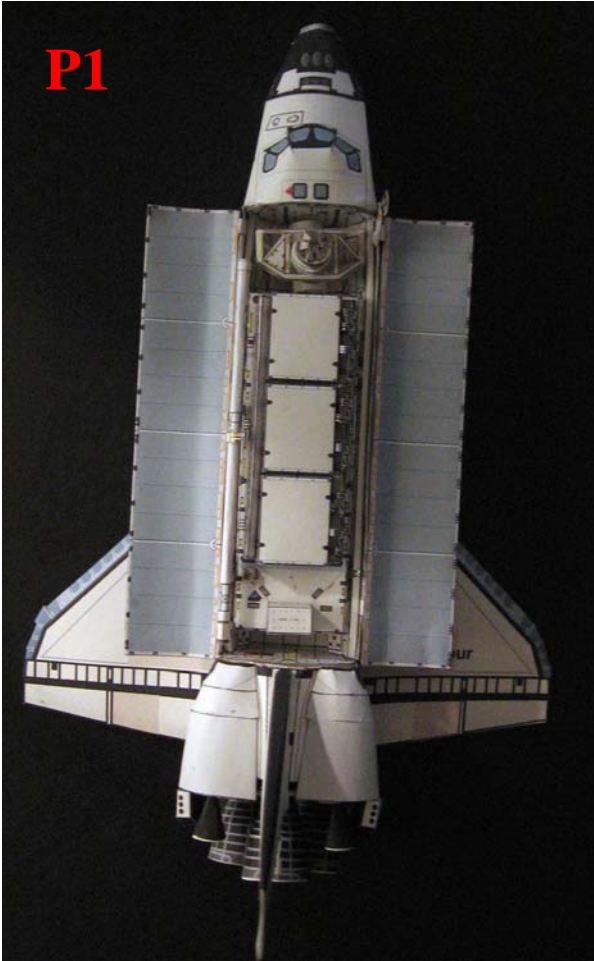
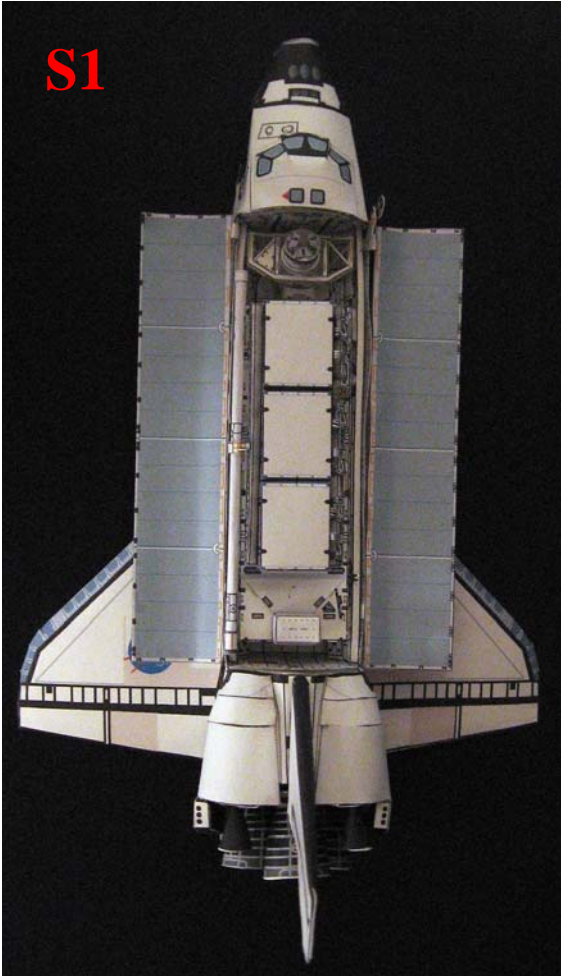


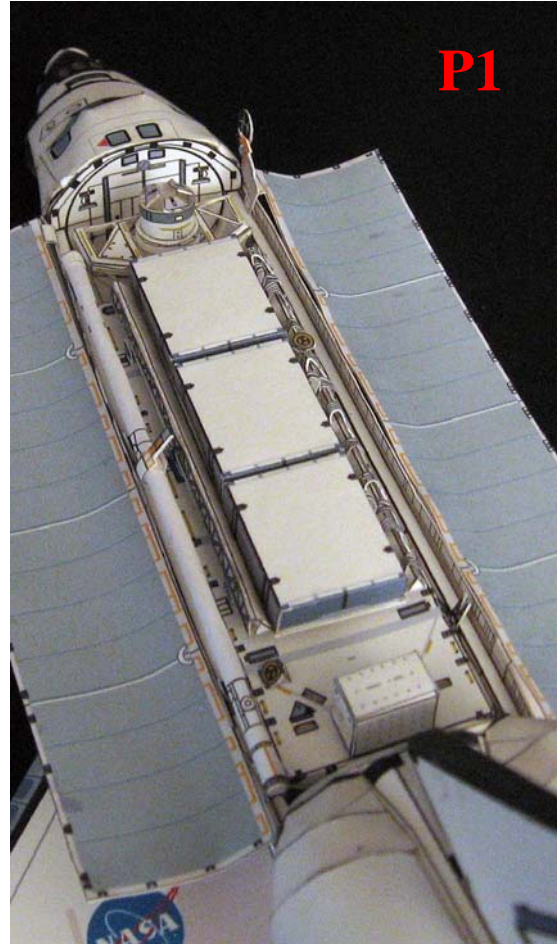
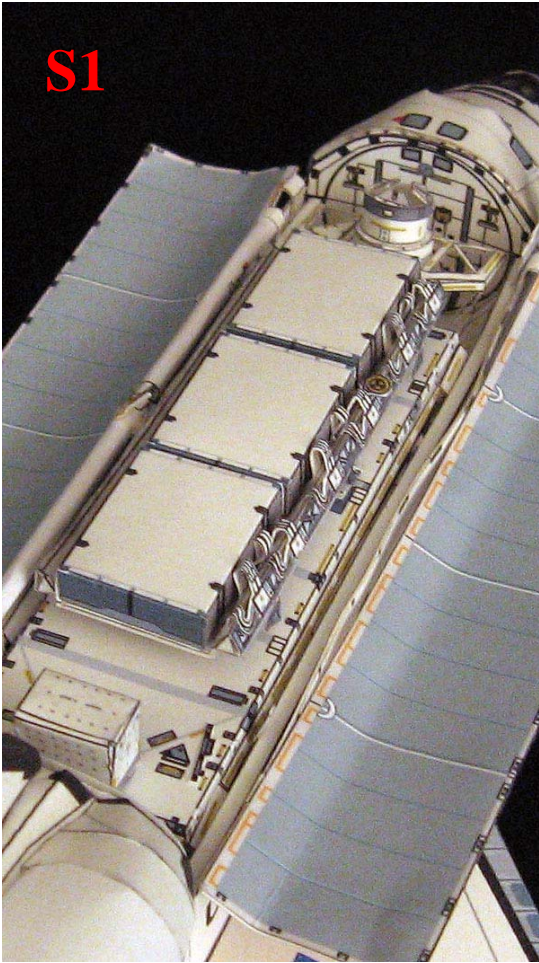
Photos show the position of the other elements when building this Docking System. Note how the side thin parts are glued at the bottom of the Docking System.



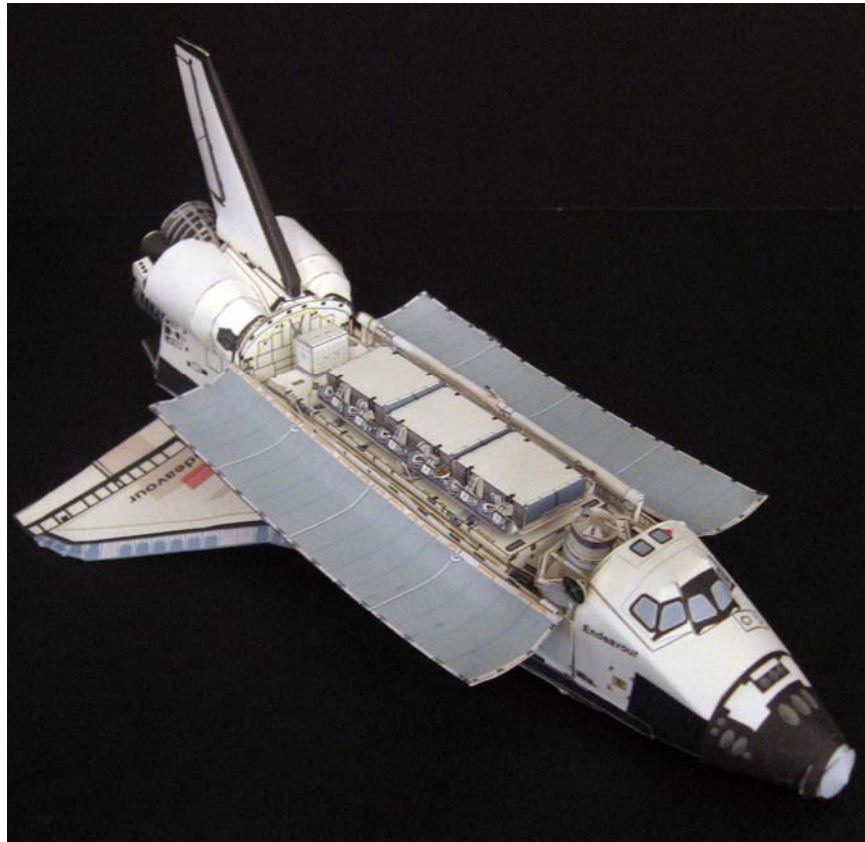
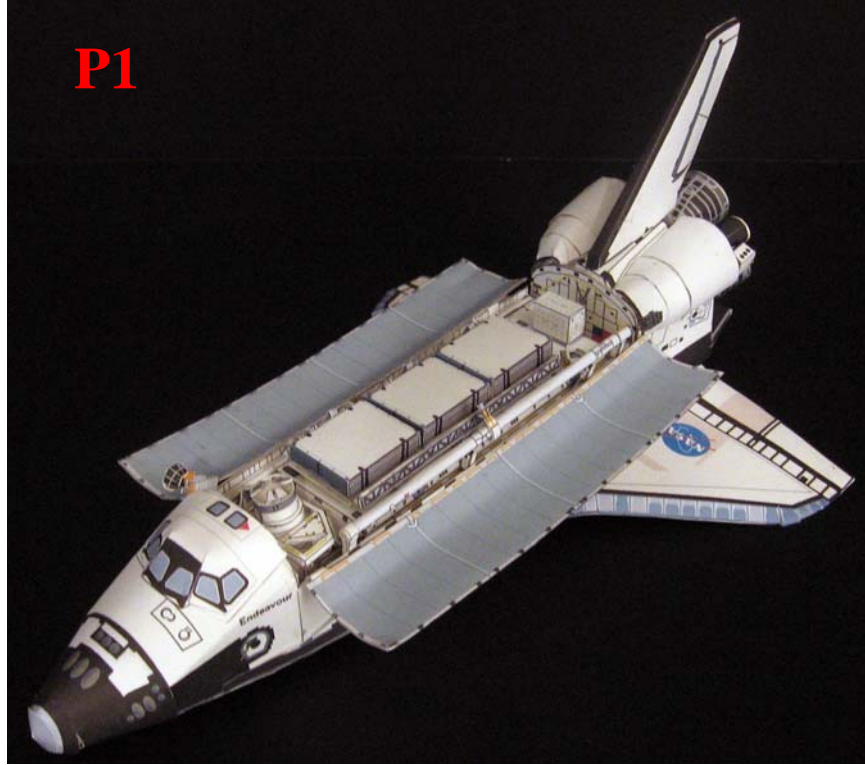
Note location of KU-band antenna that is glued on the tab from the right payload bay door.

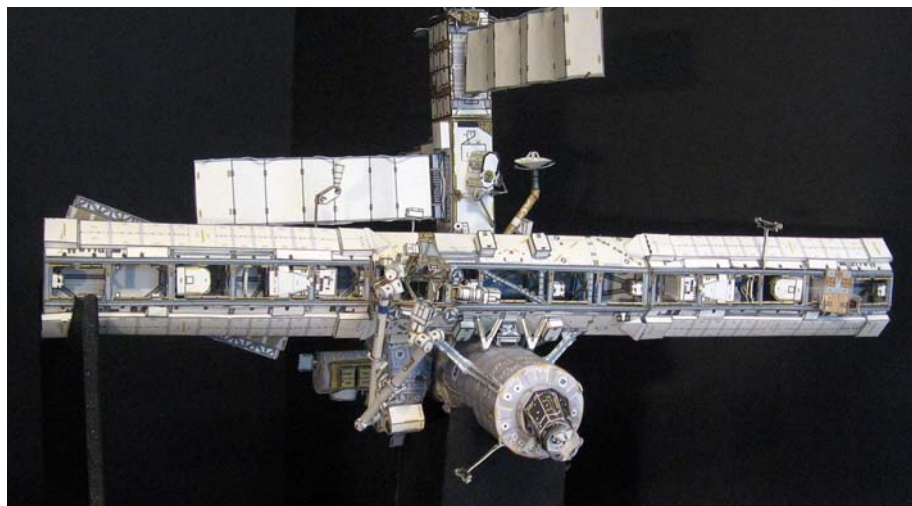
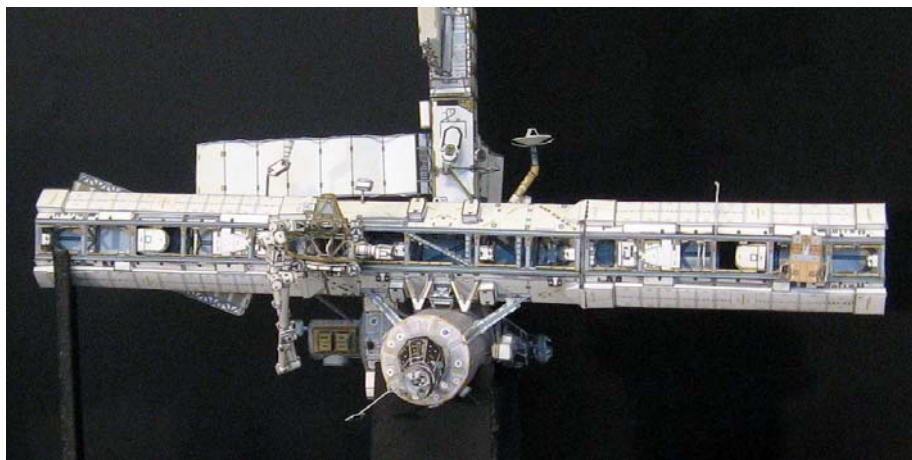
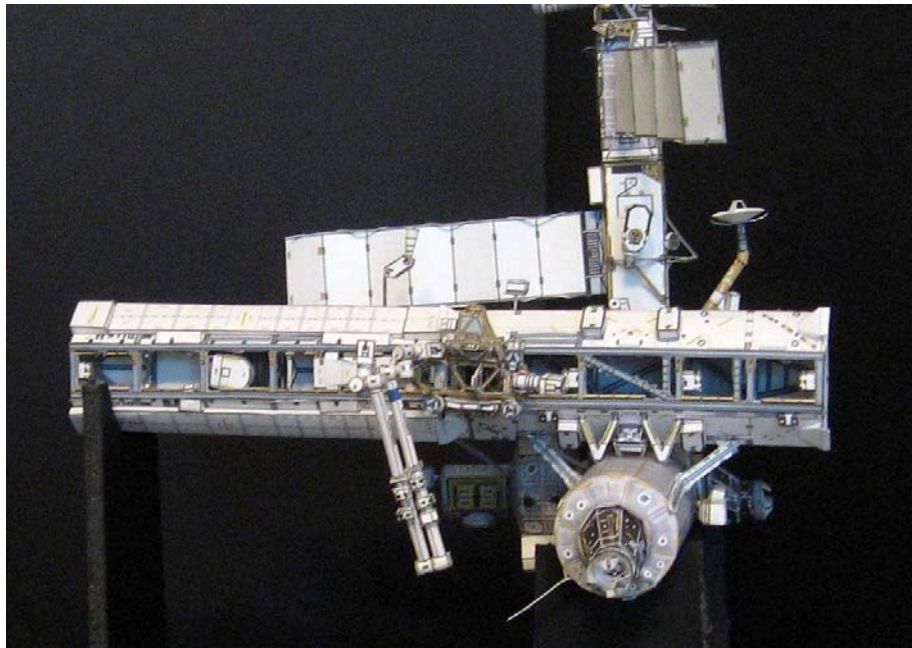
REFERENCE PHOTOS

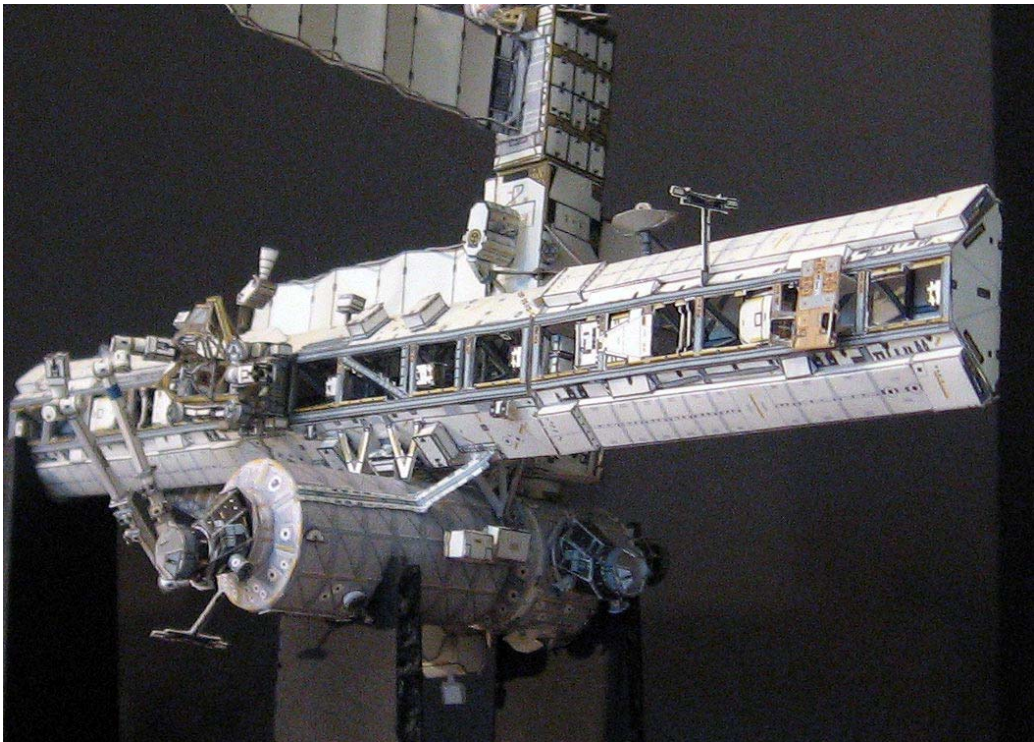
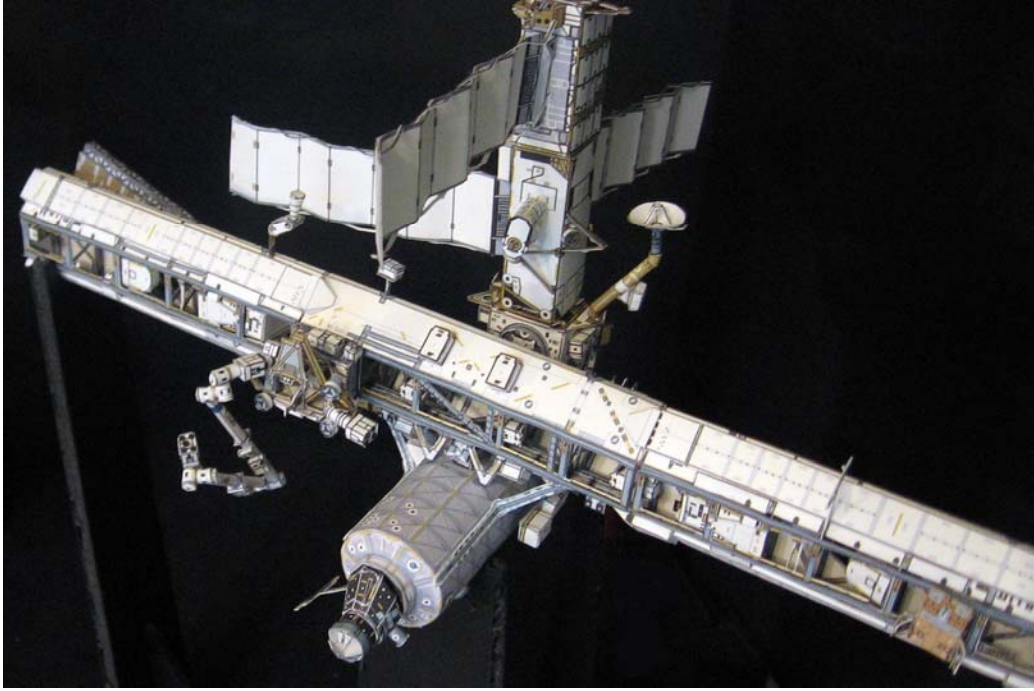




P1







Enjoy!

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