

Jan. 30, 2008

Notes on the construction of the InterMountain Railway ISS kit

General comments:

1. Adhesive: I built my model with the Testor's Liquid cement #3502. This bottle includes a small brush that is conveniently part of the cap. HebcO TENAX-7R cement is an alternative that seems to bond parts slightly better, but this brand does not include a brush in its cap. Both of these adhesives are available from good hobby shops, and seem to work much better than the old, thick glue from a tube.

You may also consider using "Super glues," the cyanoacrylates or CAs. One example at the hobby shop is "Plasti-Zap". These adhesives also work fine... the only problem is you must be SURE of what you're doing, since the CA cures in 30 seconds or less and once it cures, the bond is *permanent*. If you want to go this route, I've had good luck with Plasti-Zap. *I recommend using the liquid cements over the super glues. The cements give you more time to work.*

2. You may want to also have a nail file on hand. This is useful for scraping the paint off of parts that are to be cemented together. If you don't scrape the paint off, the joints may not stick very well. In some cases, you can't even get the parts to slide together unless you remove the paint. You can also use a razor blade or X-acto knife to carefully scrape paint off of pieces.
3. The assembly instructions are a bit unconventional. The parts are divided into a bunch of different bags, and you often have to extract a few parts from several different bags. Be sure to keep the remaining parts in their respective bags so that you can easily identify them for later steps.
4. Eventually I started labeling the bag numbers next to the part numbers on the exploded views. This made it easier to locate the parts. Refer to the Parts Drawings sheets to identify the individual parts.
5. Whatever you do, take your time and be patient. Have fun!

Specific assembly comments:

0. *The assembly sequence has changed since the IMR ISS kit was designed.* If you'd like your model to be up-to-date, the book **Reference Guide to the International Space Station**, available from http://www.nasa.gov/mission_pages/station/news/ISS_Reference_Guide.html or by purchase from Amazon, provides some good details of the current correct design of the Assembly Complete ISS.

According to the author, Gary Kitmacher, **"the IMR kit includes a Russian 'power tower', including a module that sticks up vertically on top of the SM, and a solar array on its top. These are gone. The IMR kit includes an FGB-like module with four other modules forming a cross or X on the bottom side of the ISS. These four modules in the X are gone, though the FGB-style module is still in the program. Plus there is an additional FGB-style module that is not included in the IMR kit. The IMR kit also includes the US Hab Module. It is no longer in the program."**

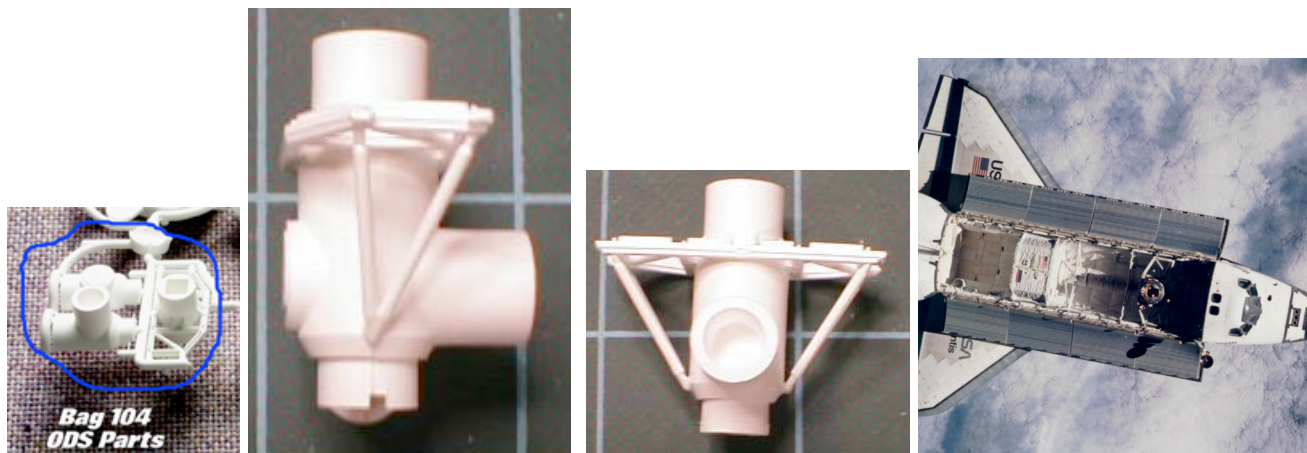
So mostly it's eliminating some pieces from the IMR kit, but the current IMR Assembly Complete configuration needs to be augmented with one additional FGB-style module (available by buying either the Glenn Johnson Realspace resin components or the 2A configuration IMR \$25 kit.)

The Pirs docking/airlock module will also be moved from the nadir docking port to the zenith docking port of the SM. Unfortunately, removing, or moving components from the IMR kit is usually difficult and results in some breakage."

The instructions following describe my comments on the original sequence.

1. Step 2, Module A: I found this step fairly confusing. Proceed slowly and carefully. I'd recommend that you *don't cement these parts together until the rest of the kit is done*. I accidentally used the wrong end caps for the node, but fortunately they were usable for the other modules in the kit. The first sentence says to "remove one each of P044 and P046," but I think they may have meant P042 and P043 respectively.
2. Step 3 (Module B), third paragraph, should read "From Bag 115." Fourth paragraph, there are two each of parts P13 and P14.
3. Step 8 (Module H): you're going to make two sets. The last sentence is cut off! My guess is it should read something like "Please note, positioning of part 90 and different parts 88 and 94." Also, you'll have to trim off one of the posts under the radiator in order for it to fit.
4. Step 9 (Modules L): This time you'll make eight sets. Be sure that the pins are up on 9 and 10 and the arrays match. When assembling the long solar panel arrays, do NOT put the glue on the inner surface of part 9 (where the long pole inserts into) before inserting part 8 (the long pole). If you do, the long pole will not fully insert because of the glue build-up in the contained space. Instead dry-press the pieces together, and then use a little bit of liquid cement at the seam where they join to 'seal' it.
5. Step 10 (Module O): Should say bag 103, not 102. Make two sets.
6. Step 11 (Module P): again, make two sets. The panels must be cut to fit, and the cuts don't necessarily line up with the lines printed on the panels. Please measure before cutting.
7. Step 12 (Module Q). Should say Bag 103. Make two sets.
8. Step 13 (Module R). Like the comments for Step 2, please be careful on this one. Don't glue until you're sure all the correct parts are assembled and oriented correctly.
9. Steps 15, 16, 17 (Modules T, U, V). These robot arms are **EXTREMELY FRAGILE**. Remove the paint from the robot hinge pin areas so that they move smoothly. Be very gentle when assembling.
10. Step 18 (Module E): also includes Bag 116. Be very careful in aligning the array support rods -- the ends are bent to spread them out. Don't assemble until you've checked all four on each side. Also, note that the panels have wide and narrow markings at their ends. The wide part is nearer the base.

11. When you're done with the assembly, you'll still have some parts left in the bags. I guess that these would be used if you did the full assembly sequence, but they don't seem to be needed for the assembly-complete version. *But see next paragraph.*
12. Your ISS model looks even more dramatic when a shuttle is docked to it. Parts for the Orbital Docking System (ODS) that allow a shuttle to dock with ISS are found in Bag 104 (photo, below left). There is one cylindrical part with an attached truss, and two more cylinders that fit on top and bottom (they have a key to keep the parts oriented properly). There are two pairs of V-struts as well. Photos of the assembled ODS are the middle two below. A photo of the shuttle Atlantis with the ODS is shown below, right. Once you mount the ODS assembly in a 1:144 shuttle, you can dock it to your ISS model. You'll need one of the square plastic bars to join the two. If you don't have a matching shuttle, you may order a Revell 1:144 shuttle kit from us for only \$20 (unassembled and unpainted).



If you'd like to make your model "museum quality," we also sell a scale enhancement kit for \$35 (retail is \$40). The enhancement kit is a bunch of fine detail parts that are not included with the kit or assembled version. It consists of very small parts such as robot arm grapple fixtures, shuttle trunnion hard points, antennas, truss fittings, etc. These parts make the model look even more realistic! There are photos at <http://www.intermountain-railway.com/iss/iss.htm> (look for "Enhancement parts"). If you'd like one of these upgrades, give us a call or order on our web page. Be warned that there are a lot of TINY parts and that some painting is needed. The good news is that instructions are now available for free on the Dynamic Modelling website: download them from dynmodel.com/ISS-enhance-notes.pdf.

We hope that you find these comments helpful. For more information, call us at 1-949-552-1812 or email us at info@dynmodel.com.

Sincerely Yours,

Don Edberg, Owner

Dynamic Modelling

4922 Rochelle Ave. • Irvine, CA 92604-2941 • USA • 949-552-1812

info@dynmodel.com <http://dynmodel.com>