

June 2007

# JAKE'S WERKSTATT



ISSUE 6

## CONSTRUCTION OF THE WeCoHe PANTHER AUSFÜHRUNG G -PART 3

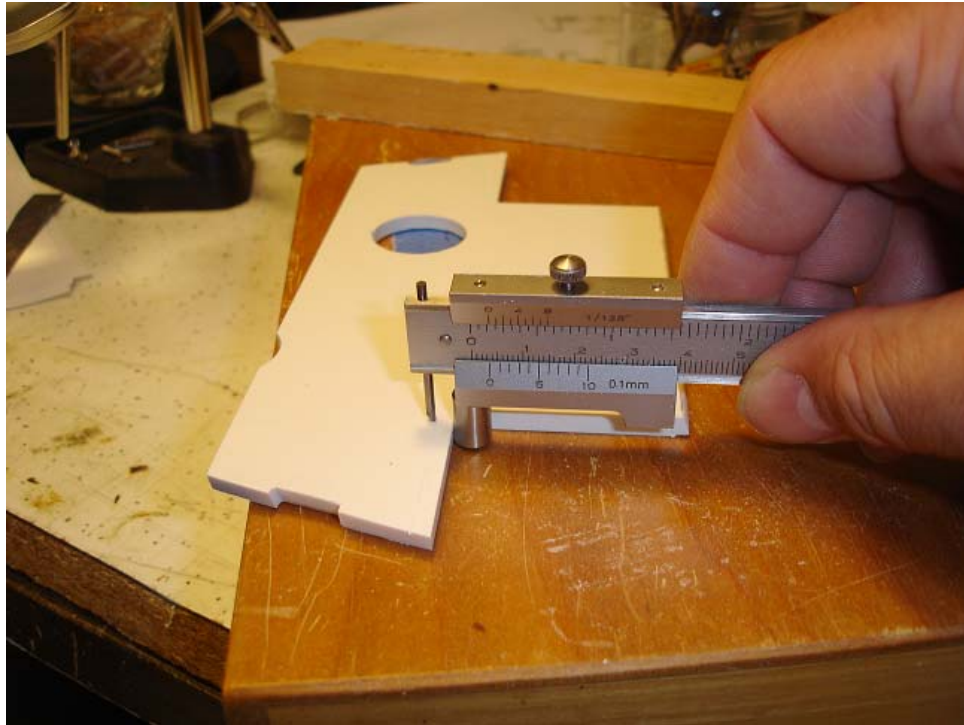
### Assembling the Sanded Panels

Now that all of the armor panels have been sanded, it's time to start putting them together. Unlike a conventional kit where you can build complete sub-assemblies then move to the next sub-assemblies within established parameters (the hull is already built and provides the guidelines), the work on this project does not allow for that, as you are establishing the parameters, and each is dependent on the other. Fail one, and it winds up being a compound problem, as other pieces will be out of alignment, which will put other pieces out...and so on. This is hands down the most difficult part of constructing this model. To throw gas further on the fire, the first guide-set of angles that were provided had some angles that were wrong, and more that you had to figure out from which aspect the angle was based on. Luckily, I figured them all but a couple, which will require some M1-A1 sanding, elbow grease, and some filler to correct, but not a big deal. The first set of instructions has been issued and now has all the correct information and it's very nicely done, well thought and laid out, especially for a model of this scope.

Before talking about joinery, here's a tool I acquired about half-way through sanding the angles from Germany via Herr Loewer at CustomRCModels. It's an anreißnadel which basically means 'scribing-caliper', and they're not too expensive. I was using my digital vernier caliper for marking before, but that's a bad practice for a measuring tool. You dial in the corresponding setting, place the tool at the required distance with the roller at a right-angle to the surface and scribe away. Very handy.



**Comparing size: The vernier caliper and scribing caliper**



**Using the scribing caliper to mark the inside of the forward glasis to denote the area to be sanded.**

The upper hull requires the utmost attention to detail during assembly, more so than any other aspect of this model. In the photo below, brass tubing has been temporarily glued to the underside of the upper hull deck in order to keep the deck as flat as possible while pieces are attached to it. After this is done a proof fitment of the pieces to be assembled is done in order to limit last second surprises when the liquid glue brush is positioned ready to go.



**The bottom of the upper hull deck with brass tubing positioned to keep bending of the deck at a minimum.**



**Proof-fitment of the pieces to be assembled, noting any problem issues.**



After any problems that revealed themselves during the proof-fitment are identified and corrected, it's time to start gluing. To aid this process, I made some angles from .80" styrene, and spot-glued those at the nexus of the two angles while some serious gluing goes on between each joint. Note that only the sides are being glued to the deck, one at a time, the front glacis for now is only providing temporary support.

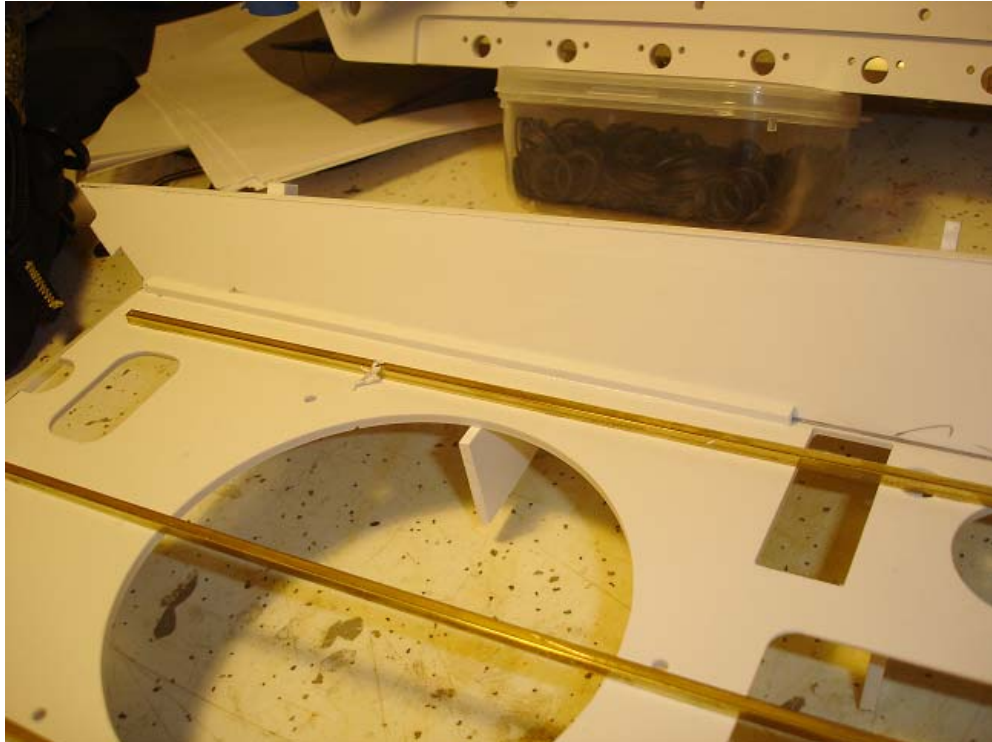


**Here temporary angles are positioned while the side hull pieces are being glued.**

Use liquid cement for gluing. What kind is not very important, just as long as it makes a cohesive bond between the two pieces. I have about 3-5 different kinds and use whichever my hand picks up first. The liquid glue will capillary along the joint and you must be careful as the glue excess will run out the bottom and ruin the detail of the upper deck in no time. Do it in stages. Unless the model is going to be a shelf-queen and only be on display, you're going to need to increase the strength of the joint. In the photo below you can see a method for doing this. Taking a strip of styrene whose surfaces roughly correspond to the surfaces to be mated to, glue it in place, then go over the whole joint with liquid glue, again being careful the glue excess doesn't run out between the cracks. This fillet piece will melt, and applying slight pressure along the pieces length, push the piece into any gap below it. The glue evaporates pretty quickly so keep applying it as needed to work the piece at the joint. When done, what's left is a vastly strengthened joint that will endure a lot of abuse.

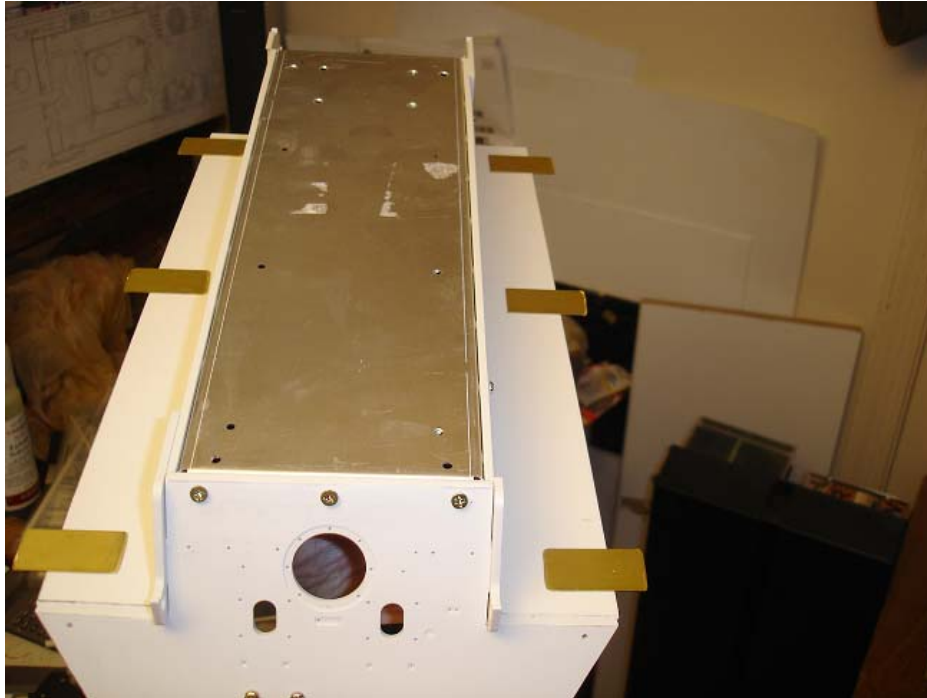
This is a good time to basically talk about cohesive and adhesive bonds, glues, and their applications. I've had this topic surgically implanted by Dave Merriman enough times to where I can recite it backwards. The big picture is you want the strongest bond attainable for the particular piece to be glued. Each has advantages, disadvantages, and their applications. A cohesive takes two pieces and joins them into one piece, by basically melting the surfaces of the two pieces together. An adhesive just sticks one part to the other, the glue vice the parts being the bond. We've talked about using a glue to make a cohesive joint, but sometimes either it's not

possible, or you'd destroy the piece, so you need an adhesive. You use an adhesive for things like gluing dissimilar materials, or with delicate parts. People do a lot with CA, and a lot of times it's good. An example of what not to do is use CA to join the structure pieces, or better yet, CA with baking soda. A very fast assembled joint, but if you drop it, the bond shatters like glass. Not a good thing to have happen. Enough of all that. Anyway, you want a solid structure before you apply what gets put on it later, and mine's going to receive: auto-body filler; Squadron putty; lacquer primer, various model oil paints; weathering washes and weathering what-not, and the last thing you absolutely don't want to happen is for a crack at a joint to develop. Make it right the first go around.



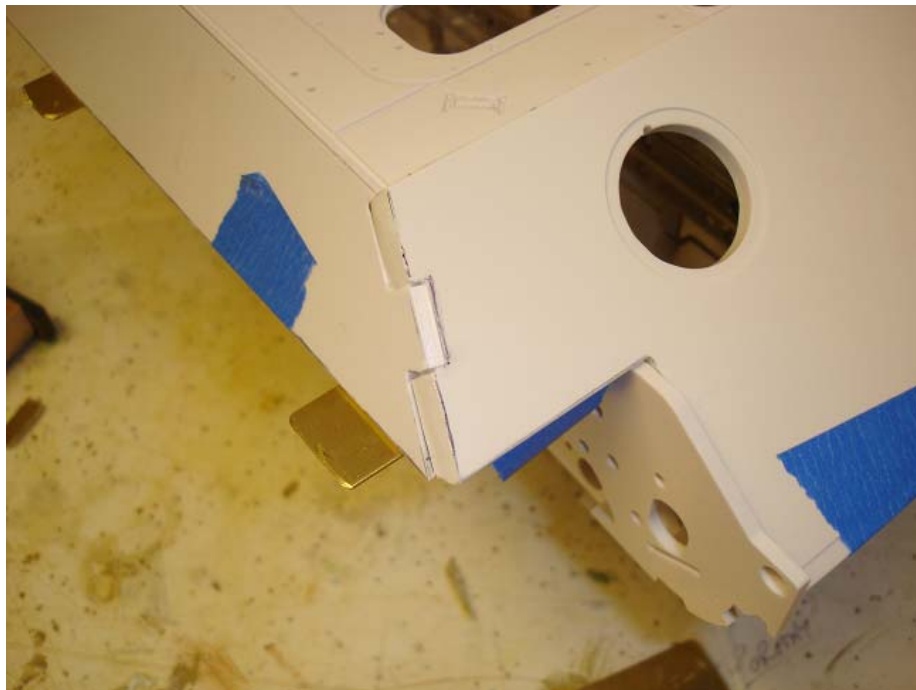
**Here a fillet is being glued into the awaiting joint.**

After the sides are glued to the upper hull, the next order of business is to glue the front glaxis to the upper deck and hull sides. Again you'll want to proof-fit and work out the problems, but some additional parameters are needed which will require some work on the lower hull. The lower hull is going to get some additional aluminum pieces that aren't ready yet, so it can only be temporarily mocked up with the exception of the two side plastic panniers. These have been glued to their side panels and positioned at 90° to the hull. On the underside of these panniers, brass strips have been temporarily glued into place. The purpose of these is that the sides of the upper hull will set on them and keep the hull at the required height. The rear glaxis is temporarily installed to give the exact position (forward and aft) of the upper deck, so the front glaxis can be installed. All of these temporarily glued alignment items leave a good deal of glue residue on the structure. It's not a big deal as they will wet sand out, but you want to do yourself a favor and don't glue them onto a detailed portion that you'll have to correct afterward. Keep to the flat smooth surfaces.

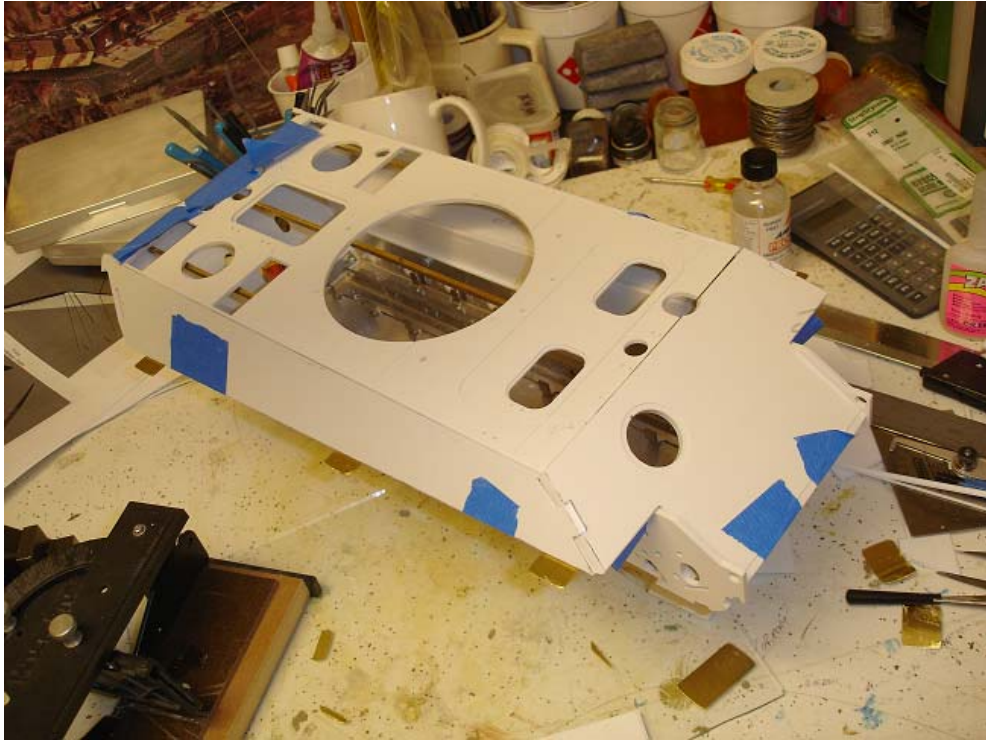


**The temporarily assembled lower hull with brass mounting strips installed.**

Now the forward glacis is installed and glued into place. At first it is temporarily glued, then turned over when dry, then additional strengthening from the underside is accomplished. Note also that I've used blue 3-M painter's tape to further temporarily bind the structure while gluing is going on.



**The forward glacis is now joined to the rest of the upper hull.**



**All the upper hull pieces are now joined. Strange how even on a 6 ½' work table, I still only get about 2' of work-space.**

Now that the upper hull is done, next will be filling, sanding, and further strengthening and aligning of the structure. I'm really having a blast building this WeCoHe Panther, not as much as the Nautilus, but still a blast.

***Jake***

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