



## CONSTRUCTION OF THE WeCoHe PANTHER AUSFÜHRUNG G -PART 4

### Metal Work-Pickling and Strengthening

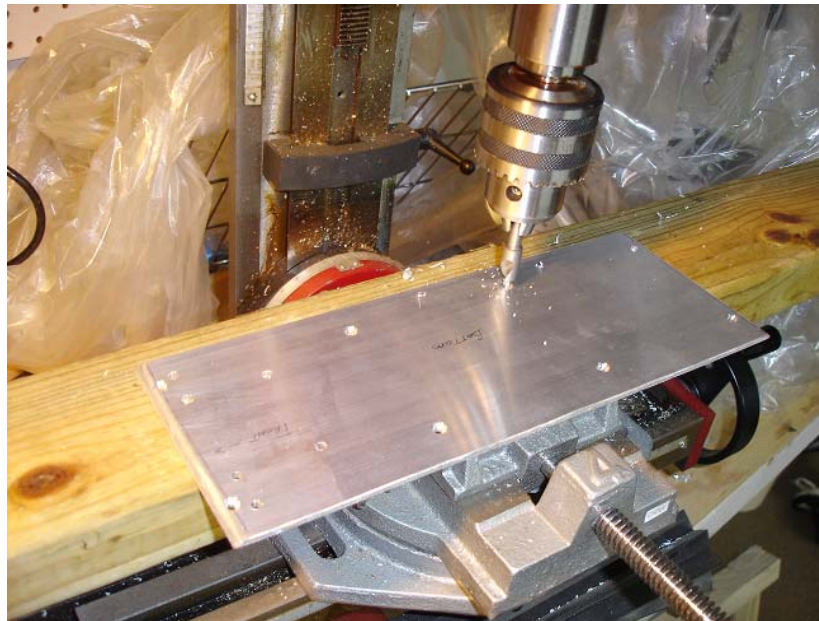
Part 4 continues with work on the upper and lower hulls of the tank. When working outside of the original scope of work, especially when the work demands continuous assessment/reassessments of the design, it's good to mock up the pieces that will come into play, in order to reveal problems BEFORE they are built. Below the Panther is mocked up while checking both hull and turret interfaces. Doing this revealed some issues that will need to be addressed in both areas. Mocking up pieces is a continual process, and should be done at each major juncture of the build.



**The mocked-up Panther Ausf. G**

Before starting the builds on our Panthers, both Willy Loewer and I went over what areas we wanted to improve. Willy's a hardcore RC guy who builds for outright sheer terror in both strength and durability, and I'm a detail freak, so we have continuously been throwing and taking ideas out of the pot to make this as near a one-time build as possible. I can also add that Daryl Turner has provided his own spice bag into the pot and has inspired some of the directions of the build areas also. After getting the basic lower hull assembled it is time to add an 1/8"

strengthening plate to the bottom. I've cut this plate so that it will not be seen unless you turn it over and will incorporate both the screw mounting holes of the hull stays, and the twin gearbox sets. The width is even with the hull plastic but not to interfere with the swing arms. The forward and aft ends were beveled on a mill, and the screw holes countersunk to receive flathead screws that will seat slightly below the face of the plate. The bottom strengthening plate will dramatically decrease the twisting of the hull, as well as provide a more substantial mounting base for components.



**Bottom strengthening plate after it has been cut, angles beveled, and mounting holes drilled and countersunk.**



**These flathead screws required a countersink with angles of 90°. My toolbox had two countersinks and neither was a 90°, so I had to get yet another.**

Prior to mounting the strengthening plate, I felt this was a good time to pickle the plethora of metal that is being involved. Just with the hull, and not counting the stainless steel screws there are eight different types of metal. If not familiar with a particular metal, it's good to test a small portion before applying acid on it. Such metals as zinc and white metal react quickly, and may even need the zinc chloride acid watered down to a degree for pickling. Other metals take much longer like aluminum and steel. The reason for pickling is to microscopically prepare the surface for painting. Priming is not enough. If you've run RC vehicles over the ground you've seen how fast the primer and paint come off of an unprepared surface. Now real-deal Brian Stark, the resident guru of car surface preparation/restoration says he uses a metal primer that has a metal etchant that's integral in the primer. Brian makes his living off this stuff, so I consider it gospel, but as I recall the stuff cost a ba-zillion dollars, I'll check sometime. For now, we're doing it the old school way, so haul out your rubber gloves. The product I use is the photo-etch solution (primarily zinc chloride) that you get from Radio Shack for about \$5 which will last a long time. Additionally, photo-etched metal has already gone through the process, so doesn't need additional pickling.

The overall process is basically put some solution on the metal with a rag (for broad areas) or acid brush (for small areas), work the solution until the solution starts to darken, then you must halt the pickling process by neutralizing the acid. I always have a big bowl, or bucket full of water with a lot of baking soda dissolved in it. When you put the item in the neutralizing solution, keep working the areas over with a separate rag or brush, as the acid sometimes creates a layer that simple immersion may not get to. Just keep rubbing the surface until confident that you've addressed it all. One last thing, do this on a surface you don't care jack about, and move everything else to the side. Accidents do happen.



**In this photo, seven different metals are shown to be pickled. The swing arm (made of zinc) and the lower drive housing guard (made of white metal) seen mounted on the forward end of the hull were immersed for 1-2 seconds.**



**This is the first time I've pickled nickel-silver, so I tried a small piece, noting no issues, and commenced on the lower drive housing on the left. Seen un-pickled is the bow machine gun housing on the right. Immersion time was about 10 seconds.**



**The metal pan, stays, and strengthening plate took the longest to pickle. The broad plate and pan were done with a soaked rag, and the long stays were done with an acid brush, all the time working the acid over the surfaces.**



**Here is the strengthening plate after pickling and being mounted to the lower hull.**

***Jake***

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