

Journal 6

1/16: Tuesday

Today we broke down into our subgroups to work. My subgroup the Refurb team, worked on the seat restraints. Grant ordered the remaining parts needed for the new bar restaurant. Grant and Grace experimented with PVC pipe for the bar, attempting to heat it up and bend it at the right angle to pivot around the driver. I went back to the drill press to finish the last piece of the frame. I needed to cut the 1.5" hole in the petal arm, the original plan was to cut the hole and then cut the tube, but there was a miscommunication and I had cut the angles before punching the holes out. Sohum was worried about cutting the hole with only half of the holesaw making contact. After measuring and centering the hole, I carefully started to cut the hole. I went slow and constantly soaked it with cutting lube, it took about 10 minutes to make the cut. It was almost close to a copy of the other one.



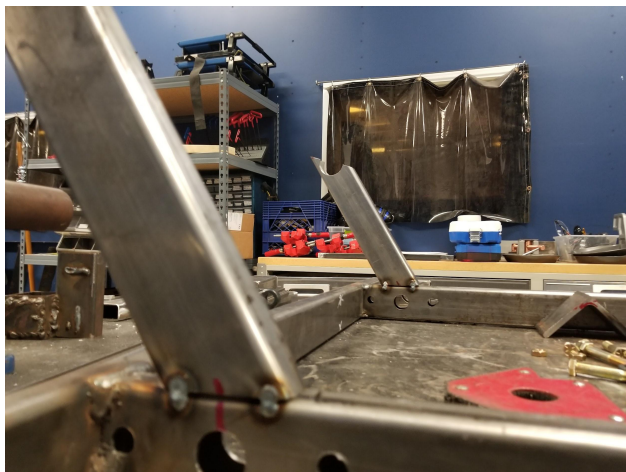
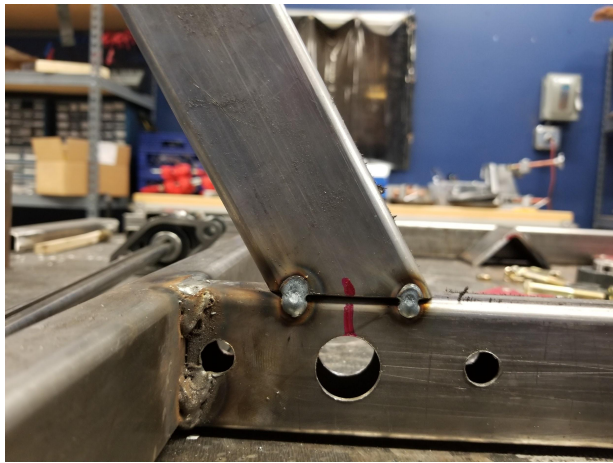
After showing the new petal bar to Sohum we discussed our disappointment with the welds that we were making. We agreed that the welder should be making prettier welds, there was a problem in the system. Sohum, Mark, and I agreed that I should tune it in, so we could sleep easy and strengthen our welds. I scavenged for the same exact metal we were using to build the rover so my tests would be replicated on the actual rover. I measured the thickness of the metal, then tuned in the welder to the recommended power and speed setting. I layed 2 beads down the side with unsatisfactory results. The metal was still turning brown all around the weld and coming out lumpy. I opened the welder and noticed that the hose fitting was slightly falling off the lead, creating a possible agron leak. Sure enough after I slid it back on and tighten it up, my welds were back to looking great. I informed Sohum and we were both excited for the next welds that we would be putting on the rover.



Apon rapping up class our subgroup came together and gave a update report. The PVC pipe was pinching when they were attempting to bend it. They figured the way to get the correct bends for the bar, it would be best to cut out a foam mold and shape the PVC to the mold.

1/18: Thursday/FLEX

Today I was excited to finish welding the frame together, because I had gotten the welder tuned in. I set up the petal arms directly over the axle and tack the petal bar on. The welds prevented the flange bearings from sitting flush on the frame, I need to go back and grind the small tacks smooth. I did not fully weld the petal bars on because I wanted to get Sohum to check if it was perfectly straight. If the bars are at any angle it would derail the chain.



My subgroup and I attempted to build a rough prototype of the seat restrain. We used a piece of conduit pipe for the bar and a small carabiner that Grace had in her backpack. We bent

the tube to what we thought would be a good angle, we did this so we could get a reference of what would be a good angle to make the final product. We used the bender in the welding shed, unfortunately the bender was not meant for pipe and it pinched it in the corners just like the PVC did. We continued just so we could get the angles. My original idea was to make the pivot side taller than the latching side, but with the prototype we made it symmetrical with the highest point in the center. After bending a rough triangular arch, we clipped the edges off and punched a hole in the latching side so we could mount the carabiner on the end. The carabiner's sharp curves made it hard to get it through the pipe, and we ended up breaking the spring that latches the carabiner. We then got the clever idea of switching the carabiner to the frame and the latch that snapped into the carabiner on the seat restraint bar. We