Week #9
March 28th, 2006
Andrew Harris

Work Completed:

This week we all spent a lot of time in the machine shop putting the finishing touches on our design. At the end of last week we had the whole top part of the board completely assembled and working well. (The top part of the board being the arm and leg stabilizers). This week we worked on completing the underside of the board – being the aluminum and PVC members who’s purpose is to reduce flexion in the board. On Tuesday Christen, Bhavin, and I were in the machine shop and we countersunk the holes on the top side of the transfer board for the aluminum pieces, and drilled holes into one of the aluminum pieces. The following figure is a digital image of me tightening a clamp onto one of the aluminum pieces while it is on the milling machine in the machine shop:

![Figure 1: Drilling the Aluminum](image)

Later that same afternoon Christen, Bhavin, and I began tapping the newly drilled holes in the aluminum by hand in the design lab, however that was taking a lot of time so Bhavin finished tapping them in the machine shop the following day.

In lab on Friday we bolted the pieces of aluminum to the transfer board using the silicon bronze bolts and then we tested their effectiveness by lifting Seth while he was on the board. The following figure is a digital image of this test:
Figure 2: Testing the Flexion

This test went well however we decided that we definitely had to secure the PVC crossmembers with bolts through the aluminum pieces. On Monday Bhavin took the aluminum pieces to the machine shop and drilled holes through them and tapped the PVC crossmembers so that we can securely fasten them all under the transfer board.

Also in lab on Friday we drilled holes in the board in order to put bolts through for securing the handles that we go in to the board. We used the drill press in the Bronwell building and afterwards Christen countersunk these holes as well. The following figure is a digital image of us securing the handles onto the board:
Future Work:

The only things we still need to do before the design is totally completed is actually bolt the PVC crossmembers under the transfer board and secure the handbar to the transfer board. We changed the positioning of the aluminum pieces to better reduce flexion and in doing so we actually got in the way of the positioning of the handbar. This problem however is an easy fix because we will have no problem shortening the handbar.

Project Review:

We are currently ahead of schedule because we plan on being completely done with assembling our design within the next couple of days – the latest being by lab this Friday. This is very good because we will actually get an extra week in order to test our design and make any necessary alterations. I do not foresee any major alterations being made however because I have been sure to test the positioning of the arm and leg stabilizers as we have been assembling them.

Hours Worked:
In lab: 6 hours
Machine Shop: 4 hours
Other: 1 hour
Total: 11 hours