Travel Computer Mount

The travel computer mount designed for Sean Stenglein will support his Dynavox Vmax assistive communication device in a vehicle. The computer will attach to the mount via a quick release base from Daessy. The base will be supported by a horizontal bar that connects to two L bars with elbow joints. These L bars will be welded to a front attachment plate that will be screwed to another plate. The screws will be tightened to secure the plates around the posts of the passenger seat head rest to secure the mount in the car. A sheet of rubber will line each plate to increase friction and absorb shock. The final design is shown below in figure 1.

![Figure 1. Travel Computer Mount final product.](image)

At this point the quick release base has been secured on the horizontal bar. The L bars have been attached to the horizontal bar via the elbow joints. Three holes have been made in each of the attachment plates to pass screws through. Two circular pockets were also made on the front attachment bar. The free ends of the L bars can be inserted into these pockets to ensure a stronger hold. I spent approximately 5 hours working on the mount this week. Figure 2 shows the holes and pockets made in the attachment plates. Figure 3 shows the progress made so far with the L bars fitted into the circular pockets of the front attachment plate.

![Figure 2. Attachment plates.](image)
Figure 3. Travel Computer Mount progress.

The mount should be complete by the end of next week. On Monday we will be contouring the attachment plates in order to create smooth edges and reduce the overall weight. That evening we will be visiting the Stenglein’s to discuss our progress and future plans, and we will plan on a day to go back and test the mount in their vehicle with the Vmax. The length of the L bars may have to be modified. On Tuesday we will be welding the L bars to the front attachment plate, and lining each plate with a sheet of rubber.

We have stayed within our budget, and we do not plan on needing any additional parts. We have spent approximately $600 on the mount.

Assistive Jumping Device (AJD)

The assistive jumping device will allow Sean to safely jump on a trampoline for exercise. The device will consist of a harness that will move up and down a vertical rail as the user jumps. The rail will be supported by a jib crane. The user’s position over the trampoline will be controlled by a crank and pulley system. Figure 4 below shows what the final product will look like.

Figure 4. The Assistive Jumping Device
At this point we have received the supportive child seat that we will be modifying to create the harness. We discussed ways to modify the seat. We will have to remove the bottom portion and recover the exposed end with the leftover vinyl to make it weather-proof. We ordered a pelvic climbing harness that will be attached to the waist belt of the seat to complete the harness. I spent approximately 3 hours researching and contacting companies this past week to figure out how each of the parts we will be using were built and how they work. Figure 5 shows the unmodified child seat.

![Figure 5. Supportive child seat that will become the base of the harness.](image)

We have ordered the pelvic climbing harness and the crane trolley, but have yet to receive them. I have also been in contact with the contractors that make the fall protection rail that we will use as our vertical rail. I am waiting back on them to finalize the order, which should be done on Monday January 26th.

Once the mount has been completed, we plan on devoting all of our time to completing the AJD. Next week we will be speaking with the Stenglein family and the crane contractors to discuss how we will go about installing the crane in the Stenglein’s yard. We will also finalize our orders for the vertical rail and trolley.

During the following two weeks we will be modifying the child seat to create a suitable harness for a standing user. During the first week we will remove the bottom portion of the child seat and reupholster the raw end with vinyl from the removed portion. We will attach the pelvic climbing harness to the remaining seat in throughout the following week.

In one month the harness should be complete and attached to the trolley of the vertical rail. The trolley will have to be modified significantly, and we will have to devise some sort of bracket to attach the harness. We will have to disengage the spring-loaded safety lock of the trolley so that it will move up and down easily. Then we will have to bolt the trolley to a bracket that will be bolted to a sheet metal case that will hold the harness.