The travel computer mount was officially finished this week. The L bars were shortened to fit the needs of the client. All that is left to do is obtain the release forms with the appropriate signatures and then the mount can be given to the client.

Figure 1: Finished Travel Computer Mount

My objective for the week was to work on the sewing and reupholstering of the harness and customized child seat. We needed to sew through seatbelt material; therefore we needed a strong sewing machine. The sewing machines we originally found on campus were not capable of doing this task. I was able to find a commercial sewing machine through a friend of my mom (Gail). It is a walking sewing machine, which pulls the material back as the sewing apparatus "walks" over it. This aids in sewing through the tough fabric.

Figure 2: Commercial Sewing Machine Used
Once I found the correct equipment to use, I was ready to begin. I brought the harness, chair, and the material we had already bought to Gail’s house. Immediately, we found that the already cut silver vinyl pieces we thought would work to reupholster the seat were not going to work. Furthermore, the vinyl we purchased had a felt backing. This made the material not waterproof as we originally thought. We then went to Jo Ann’s fabrics to purchase new material. We were able to find a navy blue vinyl that had a vinyl backing. Now with the correct material, we created a pattern. The seat would be reupholstered in a “slip-cover” fashion. The arms would be cut into round edges to cover. The fabric would be sewn inside out the unfolded to ensure the seams were inside the material and not against the body. The fabric will go about halfway up the seat and would be bolted under the side seatbelt bolts. This creates a point of attachment for the fabric to the seat. The fabric will also be glued onto the seat with a spray adhesive. Since I am not even close to being able to sew well, Gail has offered to finish the slip-cover shape to reupholster the seat. It should be done by the end of the week.

Figure 3: Bolt Attachment Point for Fabric Reupholster

The next objective was to sew the seatbelt and buckles to the attachment points. The buckles create the connection between the waist harness and the safety chair backing. On the seat, there is already one buckle attached to the left strap. However, we removed the clip from the right side of the harness. We added a clip to allow the straps to be adjustable. The clasp was the clasp originally intended to clip into the left strap. We cut the end of the strap so the length of the end was about three inches long. The straps were attached together with a reinforced X stitching technique.
The next step was to work on the waist harness. There were two seatbelt clips to be attached to the front of the harness. These two clips attach the front of the seat to the harness to the clips of the seat shown above. The right seatbelt and buckle is looped through a loop of the harness. This securely attaches the clip to the harness. However, there is no loop to attach to on the left side of the harness. The material must just be looped around the back straps of the harness and could potentially fall off when the harness is fully opened. Since nothing can be done about this and it does not affect the connection during usage, it is just something that must be accounted for when opening the harness for usage. The seatbelts were sewed to connect the ends of the strip into a loop using the X reinforced stitch method as previously done. Since the seatbelt material is very thick, slow and steady was the key to properly sew this. Even at the slow speed, we still broke several needles during this process.

We also sewed the pockets for the carabiner to attach to the harness without slipping. The original plan was to sew the two strips of seatbelt laid horizontal and vertically to each other on the inside of the harness. Padding would then go over the pocket to provide comfort to the user. This was decided not to work. Instead, the pockets were created on the outside of the harness away from the body. The carabiners would then clip to the back of the harness and therefore do not come into contact with the body.
We had originally purchased shoulder pads to pad the carabineers and the straps of the harness against the user’s thigh. This padding was to cover the carabineer and provide an additional level of comfort to the user. However, after initially sewing the shoulder pad around the thigh straps, they appeared to be flimsy and not appealing to look at. After looking around Gail’s workroom, we were able to find a piece of sheepskin to pad with. We rolled a square of sheepskin into a cylinder with the fur side out (so the fur would be against the user). This was sewn together around the strapping. The same thing was done for the other thigh strap area. To pad the back of the harness, we cut a longer strip of sheepskin the length of the padded area of the harness. This was sewn directly to the harness. The padded back provided additional comfort to the user in addition to an increase in padding against the bumps of the carabineers.

Also, I finally got into contact with the Ashford town inspector to confirm if a permit was needed to install the crane. He informed me that the town did not need a permit. The only issue would be with the health inspector as he would just want to verify the cement foundation and crane was not being installed over the septic tank
or the reserve septic area. This will be brought to the attention of the Stenglein family as they are deciding on an area to put the trampoline.

Next week, my goal is to find a bungee or spring apparatus to use to aid Sean in jumping on the trampoline with the support system. The team will also need to decide on a company to pour the cement foundation.

I worked 12 hours this week.