Project Identity

Adjustable Art Table
Week 3 – February 6th 2006
Richard Sierra, Kristen Haldeman, Bruce Bassi

Work Completed

During the week since the last report, our design had to be changed dramatically. The table being designed was not what the client needed at this point in time. The client requested a longer table which would accommodate 2 users on each side of it. This new information was a big surprise to the group. A modified design had to be planned out which would incorporate all of the parts we had ordered, as well as the parts the group was planning on ordering. The table still had to meet the basic requirements for our client even with a decreased budget. Much brainstorming by the group was required at the beginning of the week.

This past week, Kristen contacted Patty Mitchell of Passion Works Studio and spent time going over her expectations for the project. After much discussion she learned that the original information we received from Brooke Hallowell was not the same as Patty’s expectations. After meeting with the team and Chris, Kristen spent the next two days figuring out a way to still use the gas springs that were ordered. She concluded that the springs were charged to exactly half of the weight of the current tabletop, and by doubling the area of the tabletop the additional weight could be a problem. She contacted the people from Easylift Gas Springs and they said that they would be unable to change the force the springs were charged to because they had already been manufactured and ready to be shipped. This prompted Bruce to obtain a new tabletop. Kristen also dealt with the problem of the tubing for the hydraulic release which controls the springs. With a larger 72x30 inch tabletop, it would be impossible for the hydraulic release to just be placed on one side and still control both gas springs. Kristen was able to talk with a representative from Easylift who said that they would be able to increase the lengths of the tubing so that it would reach both sides of the larger table. The hydraulic release with the new dimensions is shown below. The original dimensions for this were 25” for each tube.

Figure 1: Parallel Hydraulic Release with New Dimensions
This past week, Rick worked on designing a whole new frame setup to accommodate the larger tabletop. Rick worked for a few hours trying to design a new frame that was very stable, yet still cheap enough so that the decreased budget would not be exceeded. Since people would be sitting on both of the long sides of the table, no bars were able to be placed on the ground connecting the sides. This would impinge upon the artists’ amount of leg room. The tabletop Bruce found was made out of a plastic resin material. This meant that if someone decided to sit on the table directly in the center, it could possibly start to deform in that particular area if there were no support beams directly underneath it. Rick also decided that the locking uni-bearing vertical legs from the 80/20 catalog should also be incorporated to add extra stability to the table when locked. These legs would each be on the same side of the table as each of the gas springs. This would help the user in the ease of raising and lowering the table. A drawing of the entire frame setup of the table can be seen below in figure 2. Once Rick was decided on how the frame was going to be setup, he helped in creating a new parts order from the 80/20 catalog. The order turned out to be almost identical to the previously proposed order. On Friday, Rick talked with Tracy about returning our tabletop which was purchased from Officemax. This would hopefully add money back into the depleted budget.

Figure 2: Complete frame design of table
This past week, Bruce performed some research on longer tabletops. He searched Walmart, Home Depot, Lowes, Office Max, Office Depot, and Staples to find one that would meet the new specifications for our client. Bruce found that the best option was to go with a resin folding tabletop from Staples because of its good price and free shipping. On Tuesday night, Bruce and the rest of the group decided to look at the tabletop first-hand. It was concluded that the legs could be taken off and 80/20 could be attached instead. Kristen and Rick sat around the table to demonstrate how big the table was and that multiple people can sit on the table comfortably while Bruce took a picture. This picture can be seen below in figure 3.

![Figure 3: Picture of Group Members Sitting Around the Tabletop](image)

The group decided to go with this table from Staples. Bruce was also responsible for making a purchase order for the new 8020 parts and a separate purchase order form for the new table from Staples. He got a price quote from Victor Mott of 80/20 and submitted the purchase order and price estimate so that the parts will be received by this week. Bruce updated the budget as well.

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
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<tr>
<td>Handle</td>
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<tr>
<td>Old Tabletop</td>
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<tr>
<td>New Tabletop</td>
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<tr>
<td>Gas Springs</td>
<td>194.06</td>
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<tr>
<td>8020 Parts incl. shipping</td>
<td>250.00</td>
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<tr>
<td>Release Button</td>
<td>86.77</td>
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<tr>
<td>TOTAL</td>
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*Table 1: Budget*
As you can see, without returning the old tabletop, there is about $60 left to spend. Since we found out that we can return the tabletop with no problems, there will be about $130 left when that is done.

On Saturday, Bruce designed a base structure in AutoCAD. Bruce’s diagrams that he drew in AutoCAD appear below.

![Figure 4: AutoCAD design of the frame, drawn to scale.](image-url)
Figure 5: AutoCAD design of the Unibearing and Brakes Connecting to the 1010 Extrusions
Notice that the two cylindrical solids to the left represent the gas springs. There need to be mounting plates that would connect the gas spring to the bottom of the tabletop. Obviously these mounts are not drawn.
**Future work**

During the upcoming week, all of our parts are expected to arrive. This includes the new tabletop as well as all of the 80/20 parts. All of the parts will be analyzed for any flaws. Bruce will be detaching the table legs from the tabletop. Rick is going to take measurements of all of the parts needed for the framing so Kristen can take them to the machine shop and cut them to their proper lengths. If the parts get machined quickly enough, Bruce will start putting the base and framing together. Plans are also set for Bruce to brainstorm a few different ways to cover up the gas springs so they will not become damaged during their use. This will involve some creative thought. In the future weeks to come, Kristen and Rick will be designing and making the mounts for the gas springs in the machine shop. The aesthetics of the table will also be brainstormed upon. This is still a very important aspect to the art table in term of marketability. Hopefully, the group will find out if the old tabletop will be able to be returned to Officemax. Once again, the timeline was revised accordingly. A newly revised timeline can be seen in the appendix.

**Project Review**

The sudden turn of events in our design was a big shock to everyone in the group. Even with the big change in the design, the group pulled together and stayed calm when it was needed most. Everyone more than fulfilled their objectives for the week. As of now, we are not as much behind as we could have been under these circumstances. Some fallbacks include our original tabletop and handle being useless and non-refundable, as well as a more limited budget to work with. If the tabletop is able to be returned, our budget will be replenished by about 70 dollars. Tracy will be notifying the group of this by Monday. Right now, there seems to be no immediate difficulties that would prevent the group from completing the art table. This art table will get completed on time with at least the minimum specifications met for our client.

**Hours Worked**

Kristen – 9 hours  
Bruce – 11.5 hours  
Rick – 12 hours
## Appendix

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
<th>Predecessors</th>
<th>Resource Names</th>
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<td>Machine shop certified</td>
<td>4 days</td>
<td>Tue 1/3/06</td>
<td>Fri 1/6/06</td>
<td>Rick</td>
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<tr>
<td>Machine shop certified</td>
<td>4 days</td>
<td>Tue 1/3/06</td>
<td>Fri 1/6/06</td>
<td>Rick</td>
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<td>Load autodesk and 8020 software onto comp.</td>
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<td>Wed 1/11/06</td>
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<td>Browse 8023 catalog</td>
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<td>Analyze parts received</td>
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<td>Fri 1/20/06</td>
<td>Fri 1/20/06</td>
<td>Rick</td>
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<td>Mon 1/23/06</td>
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<td>Mon 1/30/06</td>
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<tr>
<td>Create visio drawing of base</td>
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<td>Find new tabletop</td>
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<td>Go to see the tabletop</td>
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