Work Completed

We concentrated this week on the design of the support system that will be used to hold the bearing block. The original support system was going to be based on wooden dowels that would go through the bolt holes. They (the dowels) will then provide the primary support for the actual bearing block. The bottoms of the dowels would be attached to the wooden block as the base, while the tops of the dowels would be unattached. Figure 1 shows a picture of the design.

The bolt holes of the bearing block have a diameter of 0.452 inches. The wooden dowel that was purchased had a diameter of 0.5 inches. Since the dowel is slightly bigger than the bolt hole it must be sanded down to fit tightly into the bolt holes of the bearing block. This was done by hand because if a power sander was used it would have the potential to snap the dowel or decrease the diameter to fast for us to control. Approximately 0.05 inches were taken off of the dowel. This was measured using a set of calipers that Bill let us use. Once completed the bearing was able to easily slide onto the dowel. We decided that the bearing block should be able to slide down the dowel and have a few inches that can be seen above the dowel. The dowel had to be above the bearing due to the fact that as the wheel is spun the bearing could be slightly vibrating. The vibration could have caused the bearing to fall off of the dowel which would be disastrous.

The size of the base of the game will affect all of the components inside the game. Original dimensions of the box were 18” x 18” x 6”. The base also had to be at least a quarter of an inch in thickness in order to supply the necessary support of the game. A proper base was found at www.usplastics.com. A picture of the chosen base can be seen in Figure 2.
Figure 2: Base of the Game

The base chosen is made out of a heavy duty plastic with dimensions of 21.5” x 13” x 6.75”. This base is a little bit longer and a little less wide than previously planned. Inside the box there must be enough space so that the wooden block and all electrical components can fit. The chosen base also has ribbing along the bottom of the box so that there will be additional sturdiness. The color of the box was chosen to be blue so that the visual appeal of the entire project is still up to par. This will help because the box will not need to be painted. However, stickers will be applied to the outside that will read “Wheel of Fortune”. To help keep the stickers attached to the game a coating spray will be applied.

Mike Zenker was finally reached this week. He informed us (through Bill) that he was able to find a wheel mold that we can use. He said that he will visit the supply warehouse and once that is done a possible shipping date can then be provided. He told us that the diameter will in fact be twenty-four inches. This is an important piece of knowledge because this will allow us to begin construction of the pie-pieces.

Future Work
The bearing block support system will be completed throughout the next week. An appointment for the machine shop has been established. Right now it is tentatively set for either Wednesday, February 28, 2007 or Thursday, March 1, 2007. This all depends on when the actual base of the game arrives as it will be easier to construct the bearing block support system with the base readily available. Hopefully the mold well will arrive next week so that further work can be done on the actual wheel. The PVC sheets will be cleaned, sanded, and layered with epoxy. However, the painting of the wheel will be put on hold until the pie pieces are cut. This will help us to begin construction of the wheel as soon as the wheel mold arrives.
Project Review

This week was a success towards the completion of the project. Even though it (the project) was delayed when the initial design for the bearing block needed to be changed, the new design seems to be something that will work out much better. The base of the game and the wheel itself will hopefully be completed before spring break so that testing can begin as soon as possible. This is a good thing because it means we are ahead of our initial timeline.

Hours Worked
11 hours