**Project Identity**

Monitor Lift & Paint Cap Remover Project

Progress Report #5- Katie Zilm

Week 5: October 5- October 11

**Work Completed**

**Monitor Lift Project**

On Friday we received confirmation that our sponsor will be investing in a new 27” flat panel monitor. We also hooked up the DPDT switch so that it acts as a reverse switch.

We attached it to the linear actuator and tested it to be sure it functioned properly.

When the toggle switch is held up the shaft of the linear actuator goes up. When the toggle is held down, the shaft of the linear actuator goes down. We chose a momentary switch because it will be safer than a non-momentary one. This way the lift will only move when somebody is manually holding the switch one way or another and it will automatically stop moving/tum off when it is not being touched (it is an On-Off-On switch).
To the left- switch is held ‘down’ and shaft of the actuator goes down. To the right- switch is held ‘up’ and shaft of the actuator goes up.

Last week we finalized how we would attach the actuator to the platform. We were planning on making the motor base (see in diagram below) out of aluminum. Aluminum was chosen for its high strength, relatively low weight for a metal and its good bonding strength to metals (by welding). However, after visiting the machine shop, we decided to use a piece of high density plastic that we acquired from the senior design closet instead. A piece of metal

The piece of plastic was cut down to a smaller size and then a hole with a diameter of 1.168” was milled completely through it vertically. Another hole was drilled horizontally through the plastic. The second hole’s diameter is 0.50” and
lines up with where the hole on the bottom of the actuator is. The second hole is approximately 3 inches long.

Next a pin was fabricated from a rod of aluminum that had a diameter of 0.5”. It was lathed down to 0.48” so that it would fit snugly through the hole in the motor base and through the hole in the end of the actuator. The pin is 3 inches long. The end of the actuator was inserted into the first hole and the pin was then inserted into the second hole. A rubber mallet was used to fit the motor base onto the actuator and the pin through the second hole. The motor base is securely attached to the actuator and the motor base will be secured to the platform by the means of four screws. Threaded holes will be drilled into each corner of the motor base. The screws will come though the bottom of the platform and through the motor base where they will be set.

**Paint Cap Remover**

Last week we made and tested the holder for the paint tube. This week we drilled a hole into the holder and secured it to the shaft of the motor. This was done by the means of a set screw.

A piece of the plastic that is left over from the monitor lift project (the plastic that was used for the motor base) may be used for a ‘wall’ that the vise will be attached to. In addition, a piece of plastic or aluminum will be secured to the wall below the vise. This piece will have a hole cut out of it that will fit the motor (see below).
This wall/base will be our focus of the paint cap project in the coming week. As long as the paint tube is not bent or folded in half, this setup should work even if the vise is stationary and not height adjustable.

**Future Work**

**Monitor Lift**

In the coming weeks we will work on building the portion of the lift that houses the monitor and securing the actuator/motor base to the platform once we know that dimensions of the new monitor.

**Paint Cap Remover**

The wall/base will be our focus of the paint cap project in the coming week.

**Project Review**

**Monitor Lift**

The monitor lift project is moving along well. However, before we can do much more we need to know the dimensions and physical features of the new monitor.

**Paint Cap Remover**

The paint cap remover project is progressing well. When the vise that we ordered arrives and the base/wall is built we will be able to assess where we are at better.

**Hours Worked** 14