Work Completed

The work I completed this week was mostly focused in the organizing, planning and moving forward of the project. I was unable to show much in the way of physical progress because I am waiting on the arrival of the Acrylonitrile-Butadiene-Styrene material that I choose to make the output device case out of. This material was chosen for many reasons but some of the most important include its being tough, impact resistant, and already established use in small protective appliance housings. The ordering of the ABS was somewhat of a tedious process all on its own, and required me to write a supplemental letter to Jennifer about how to make the purchase. Once this material arrives I will have no problems completing the output device in a short period of time.

![Figure 1: General Purpose Forming Grade ABS material.](image)

Another area I worked was in researching the problems that can arise from creating a splice between copper and aluminum wires. My previous experience in the electrical field made me aware that problems can occur, so I researched it, and sure enough we could have had a problem if we just spliced the two together. The difference in the materials electric potentials made the splice an ideal candidate for galvanic corrosion to occur. What happens in galvanic corrosion is essentially the material with the lower electric potential becomes oxidized which can lead to a break down in the mechanical strength. If the wires that experienced the loss of mechanical strength were subjected to any mechanical forces they could potentially break and this is a perfect condition for a fire to start. The way to overcome this problem is to coat the metal with the lower electric potential, in this case aluminum, with an anti-oxidizing agent. The agent that I’m familiar with and chose to use is a product called penetrox. Penetrox was
also difficult to order because it is inexpensive and most of the suppliers I found would not accept orders fewer than twenty dollars.

![Penetrox-A Anti-Oxidizing Compound](image)

_Figure 2: Penetrox-A Anti-Oxidizing Compound_

Another thing I did this week was helping Tristan with filling out a purchase requisition form for the enclosure he wanted to order for the input device. When he originally filled it out he made some errors so I redid it for him and showed him the proper way to do it.

The last thing I did this week was to work on animating the friendly character I designed. It is our desire to have the character appear to be walking around the screen rather than to just seem to float from point to point. This can be achieved by implementing a number of key frames. In each key frame a small aspect of the character is moved, when this is done in numerous consecutive key frames it causes an animation effect which is more or less the foundation of Flash programming. Once the key frames are assembled and the character appears to be walking these frames can be implemented into a loop. This loop can be used repeatedly in a circular pattern, which will case the scanning effect that we are going for.

**Future Work**

My work for this week is once again depending on the arrival of materials. My primary focus is to complete the output device. Unfortunately output device completion has come to a stand still while I wait on the necessary materials for construction. The ABS material should be in the mail but the penetrox may take longer to get here. Fortunately the case can be almost completely finished without the penetrox because it’s only the electrical connections that rely on the anti-oxidizing compound.

![Example of wires overheating due to galvanic corrosion](image)

_Example of wires overheating due to galvanic corrosion_
The other work that I completed was in the character animation. I completed a number of different cycles in which the character appeared to be walking around a room. None of these cycles is yet up to the standards, which I hope to meet for smoothness and realistic value. I feel like a couple more tries this week should be enough for me to really nail it. Tristan has also taken on this task so between the two of us this should be accomplished in no time.

**Project Review**

At this point in our project I feel like we are still doing good but I am starting to feel the pressure of the twelfth week deadline steadily approaching us. The output device should definitely be completed on time, the question is when, and once again this all depends on when we receive the materials. We should have had the order in earlier but we just missed having it done by Friday at five o’clock when everyone leaves the BME office for the weekend. I feel like the input device will be done on time but like the output device it’s a matter of when. The input device is working and has been tested but it offers a lot of potential problems in the way of mounting and package engineering. The only other aspect of the project that I’m concerned about is the Flash programming. The Programming is a very large and tedious portion of the project, which will clearly take many hours. Even once we have programmed everything we still need to assemble it all together. The sooner this is accomplished the more time we’ll have for working out glitches that may arise.

**Projected Timeline**

- Tues (10-09-07): Team meeting with just team members, weekly reports, update website
- Wed: Animate character, program Flash
- Thurs: Animate character, program Flash
- Fri: Animate character, program Flash, and work on output case

**Hours Worked**

12 hours