

Lightning Riders
Team Meeting Minutes 2/7/08
By: John Mrugala

1. Discussion of expected progress by the first design review by subsystem:

Motor Controller – The new motor controller from Kelly Controller has made it into U.S. Customs as of February 1st but has yet to make further progress. We have shipped the Scrubs DVDs to the rightful owner in England and have been advised by Kelly Controller we should be receiving the original controller from England. We discussed what prototyping/testing is planned when the motor controller arrives. After some discussion, we decided to speak with Clint Manning as to possible access to a heavy duty power supply (high current output) in order to test the motor with the controller before obtaining/using batteries.

Mechanical – The Northern Electric machine shop has completed machining the mounting piece which will connect the universal joint of the motorcycle drive chain to the motor, as well as the plate to mount the motor to the motorcycle. John Sember will be looking over the next week as to how to mount the motor onto the chassis.

Website – Vince Cano has made several updates to the team's website as follows:

1. Added a team member biography page with pictures of team members and short biography summaries
2. Updated the main description page with a more detailed description of the project and its goals

A suggestion was made by Dr. Schafer to add a link to the Notre Dame Energy Center webpage and we believe this would be a beneficial addition.

Battery Pack – After researching the specifications behind the NiMH single cell batteries and the necessary redesign of the battery pack and charging circuit, we have decided to return to the lead acid battery design, mainly for reduced complexity. John Sember completed a AutoCAD model of the motorcycle chassis and how the different Optima lead acid packs would fit. After his modeling and fitting rough size mockups into the actual chassis, we believe the 38AH red top pack will give us the best performance and still be able to fit in the chassis.

Battery Charging Circuit – Brian Bak did further research into the sample charging circuit provided on a Siemens thyristor parts document. After discussion in the meeting, we were unsure about some of the parts in the circuit diagram and needed further consult before proceeding. Brian planned to meet with Dr. Fay to see if he had any recommendations/knowledge of the different parts in question.

User Interface and System Controller Software – Steve Govea and John Mrugala successfully resolved the button input issue they had over the past week. They were able to add two more buttons to the circuit, increment and decrement a counter in the program, store the value in a SPI serial EEPROM and retrieve it to the LCD screen. They ran into an odd issue with the programmer in that the program on the microcontroller went haywire if the programmer was

unplugged. Dr. Schafer recommended checking the Low Voltage Programming settings on the controller as well as setting the programmer pins to outputs. Also, the EEPROM wouldn't always return the correct value and Dr. Schafer suggested slowing down the read/write time because the write process is slow on the EEPROMs. These suggestions will be implemented in the next week.

2. Other news:

- We will be meeting with Dr. Joan Brennecke on Friday 2/8/08 to update her on the status of our project.

3. The next meeting is scheduled with Dr. Schafer for 10:00 AM in the ELC on 2/14/08.