

Group: May 1738

Project: Flying flashlight

Advisor: Professor Gary Tuttle

Members: Peter Bonnie, Brady Koht, Sebastian Roe, Joseph Wickner, and Scott Melvin

*Sorry for the confusion of the weekly accomplishments and contributions, we will try to fix that issue in this weekly report and the ones in the future. The confusion arises from the weekly report template since it makes it look like the report should be listing what each group member did.

○ **Weekly Summary**

Fortunately, almost all of the parts of the quadcopter did arrive last week. Thus, our need to buy a ready-to-fly quad was deemed unnecessary. Instead, much of the week was spent working on the design document and the frame design. Solid works was the program of choice for creating the frame, we are expecting that the frame can be cut out by the weekend using a laser cutter from the design building. The LED's from superbrightleds were tested, to an extent, to prove that they would suffice for our application. The testing was limited due to the low wattage ratings of the resistors.

○ **Past week accomplishments**

- Most of the solid works frame design was completed on Friday which accounted for the dimensions of the quad and mountings of the motors. On the following Sunday much of the design was rechecked and modified to be able to mount the flight controller. Additionally, acrylic sheets were bought so laser cutting could be accomplished this week.
- Further updates to the website were made over the weekend. An easy method of uploading files to the website was shared with the group.
- The design document was started on Friday and was about 80% completed by the end of the weekend. The rest of the document will be completed and revised by Friday.
- The LED's were tested but with limited current going through the circuit.

- **Pending issues**

The LED's must be tested with higher wattage resistors so that more current can flow through the LEDs. This will allow more, brighter light to be available and allow us to determine if 4 LEDs are appropriate.

- **Individual contributions**

<u>NAME</u>	<u>Individual Contributions</u>	<u>Hours this week</u>	<u>HOURS cumulative</u>
Peter	Tested LEDs and realized we needed different testing equipment. Helped with design document feedback.	5	21
Brady	Created much of the solid works design and the design document.	6	22
Scott	Solid works revision and design document creation.	6	22
Sebastian	Updated the website and tested LEDs. Assisted in providing feedback for the design document.	6	23
Joe	Bought sheets of acrylic so that the frame can be cut. Also helped update the website and revised the solid works design.	6	23

- **Comments and extended discussion**

The calibration of the flight controller through the GUI will be fairly easy. However, using a microcontroller to replicate a correct PPM signal might be difficult. We will discuss further which microcontroller we would like to use of the ones already available. We previously decided to use Arduino but we need to test the capabilities of the MCU to be sure it is the correct choice.

Since most of the parts have come in a more hours will be put in each week so that we can stay on time.

- **Plan for coming week**

Two main objectives for the weekday are getting the frame cut and completing the design document. Once the weekend arrives more work will be down to test the LEDs and getting the flight controller configured so that it is ready to fly when mounted to the frame. More research will be put into finding an appropriate power source for the quadcopter.

- **Summary of weekly advisor meeting**

We did not meet with Professor Tuttle this week.