

**Group: May 1738**

**Project: Flying flashlight**

**Advisor: Professor Gary Tuttle**

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

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○ **Weekly Summary**

A lot of progress has been made over the past week for our project. The frame was cut on several pieces of acrylic to allow for backups in case our drone crashes. Moreover, since the frame was cut, several components of the quadcopter were mounted on the frame. Assembling the various components now has helped us realize we need to create more accessories for the frame. This is because good cable management is critical in when creating a stable quadcopter.

In addition to the progress of the physical parts of the quad, several steps have been made forward with the software aspects. There has been successful communication between an Arduino Uno and the flight controller. Specifically, we created a demo where a joy stick controls the throttle and yaw inputs to the quad copter. This demo also allowed us to see how the motors react and what exactly needs to be tuned.

○ **Past week accomplishments**

- Several versions of the frame were cut in the design department with the same material (except with different colors).
- The project plan V2 was revised and reviewed by group members. Our main revision was with the timeline and deliverable. Otherwise we were confident with all the other content.
- PPM communication between the microcontroller and the flight controller was established. Furthermore, a way of controlling the motors was also tested and successful.

○ **Pending issues**

No urgent issues have arisen so far. We now need to make sure our quad has good cable management.

○ **Individual contributions**

<b><u>NAME</u></b>	<b><u>Individual Contributions</u></b>	<b><u>Hours this week</u></b>	<b><u>HOURS cumulative</u></b>
Peter	Created PPM communication between the flight controller and Arduino uno. Also created an elementary controller by using a Parallax joy stick to simulate throttle and yaw movement. This demo successfully controlled the motors. Also tested the motors using various power supplies to observe the current draw of the motors.	13	40
Brady	Completed most the project plan revision and helped with the preliminary cable manage/assembly of the quad copter.	7	34
Scott	Revised the project plan and helped recreate the gantt chart. Also assisted with quad assembly and PPM communication testing/calibrating.	6	34
Sebastian	Tested the motors and contributed a power supply for the project which has ample current rating capabilities. Initial motor testing was done with the power supplies in the Coover labs but were found to be inadequate with the current supply capabilities.	6	34
Joe	Used the solid works files to create the traces for the laser cutter. Went to the design department and cut several pieces of acrylic, of different color, for the frame. Proceeded to assemble components onto the frame.	6	35

○ **Comments and extended discussion**

The main focus for the rest of the semester will revolve around creating a wireless controller. Much of the basic knowledge is already in our heads so now it is just a matter of fleshing out exactly what we want. One of side objectives will be a way to create some sort of hub for connecting power from the power supply to the quad. This will allow for clean cable management and stable tethering.

- **Plan for coming week**

One goal will be to achieve wireless communication from one Arduino (to be with the user) to the other Arduino on the quadcopter. This will allow us to test certain limits on what the user controller can do. Additionally, we will start to investigate different ways to create a power connector hub for the ESCs, controller and the power supply.

- **Summary of weekly advisor meeting**

We did not meet with Professor Tuttle this week.