

# Multi-Rotor Drone Logbook

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July 2, 2019

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## **1 Initial Meeting**

### **1.1 Team Members**

- Seth Berryhill
- Jacob "Cobi" Brower
- Jeremiah Brands
- Jake Miller – mentor
- Dr. Swenson – instructor

### **1.2 Team Meetings**

Tuesday at 1:00PM with instructor.

Monday and Thursday at 1:00PM Team Meetings

### 1.3 Action Items

1. **DONE** Create Onedrive  
CLOSED: *[2019-06-12 Wed]*
2. **DONE** Sign SAPA Form  
CLOSED: *[2019-06-14 Fri]*
3. **DONE** Write Contact Questions  
CLOSED: *[2019-06-17 Mon]*
4. **DONE** Contact Swenson about meetings  
CLOSED: *[2019-06-17 Mon]*
5. **DONE** Start Team Contract  
CLOSED: *[2019-06-14 Fri]*
6. **DONE** Type Agenda Minute  
CLOSED: *[2019-06-12 Wed]*

## 2 6.13.19 Team Meeting

## 3 6.17.19 Team Meeting

### 3.1 Old Business

- Contact Questions: Cobi and Jeremiah completed these and they are available on the one-drive.
- Contact Swenson about meetings: We will be meeting Tuesdays at 1:00PM in the Drone Lab.

### 3.2 New Business

- Seth showed Jeremiah the lab, and past documentation.
- Began assembly of vibrating table.
- Discussed possibilities for vertical vibration: ortho-planar spring, or vertical rails, and either crank-slider or voice coil.

### 3.3 Action Items

1. **DONE** Confirm Tuesday meetings with Peter  
CLOSED: [2019-06-18 Tue 13:56] DEADLINE: <2019-06-18 Tue>
2. **DONE** Drone Lab access [2/2] **CLOSED:** [2019-07-01 Mon 14:28]
  - (a) **DONE** Contact Dr. Karl  
CLOSED: [2019-06-17 Mon 15:49] DEADLINE: <2019-06-17 Mon>
  - (b) **DONE** Confirm Access **CLOSED:** [2019-07-01 Mon 14:26]  
  
DEADLINE: <2019-06-26 Wed>
3. **DONE** Draft Agenda for 6.18 Client meeting  
CLOSED: [2019-06-18 Tue 13:56]

## 4 6.24.19 Team Meeting

<2019-06-24 Mon 08:31>

### 4.1 Agenda

- Discuss plans for the day
- Set Goals for end of day / week
- Table base assembly
- Design Linkages

### 4.2 Old Business

1. Budget Dr. Swenson said that he would be in charge of the budget, we need confirmation before we can start purchasing things.
2. IRIC Access
3. Completed tasks
  - Req's document
  - Gantt chart

### 4.3 New Business

- Start mounting the large rails to the plywood.
- Finish up the product documents, and print
- Design linkages

1. **DONE** Add changes to gantt chart **CLOSED:** *[2019-07-01 Mon 14:26]*
2. **DONE** Print product requirements document **CLOSED:** *[2019-06-25 Tue 13:56]*
3. **DONE** Buy coffee **CLOSED:** *[2019-06-25 Tue 13:56]*
4. **DONE** Mount rails to plywood **CLOSED:** *[2019-06-26 Wed 09:33]*
5. **DONE** Email IRIC access **CLOSED:** *[2019-06-28 Fri 09:35]* **DEADLINE:** *<2019-06-26 Wed>*
6. **DONE** Discuss Budget / documentation with Swenson **CLOSED:** *[2019-06-28 Fri 09:35]*

DEADLINE: *<2019-06-25 Tue>*

7. **DONE** Design Linkages **CLOSED:** *[2019-06-28 Fri 09:35]*

### 4.4 Notes

We received packages including:

- Smaller Rails
- stepper motors
- stepper controllers

## 5 Team Meeting <2019-06-28 Fri>

### 5.1 Old Business

- We discussed open action items and closed some relevant ones.
- Cobi: Worked with Jeremiah in the machine shop to make the first pass of the table. Some lessons were learned about timing, but it was eventually figured out. Cobi made a design for the platform. He worked with Peter on the stepper, and got it spinning with an arduino. For documentation he updated the list of action items, and wrote clear notes about what he had done.
- Jeremiah: He did a lot of design of the table and related brackets and motor stuff, mostly in Solidworks. He spent a lot of time in the shop this week producing brackets and linkages, and assembling the table. There were some iterations in the design whole they worked out what would and would not work.
- Seth: Put the stepper together for the first time, and discovered some of the problems with how it was going to work. From Wednesday on I was working on the control system, starting with understanding the older code and getting it to run on the Seesaw. I have begun to major overhauls to the old code before I start writing new ideas. These are: Separating independent parts into header files, and reorganizing the code with pointers and objects.

### 5.2 New Business

#### 1. Paperwork

- (a) **DONE** Move the Gantt Chart to excel **CLOSED:** [2019-07-01 Mon 14:26]
- (b) **DONE** Update the Wiki Page **CLOSED:** [2019-07-01 Mon 14:26]
- (c) **DONE** Organize Portfolio **CLOSED:** [2019-07-01 Mon 14:27]  
  
DEADLINE: <2019-07-02 Tue>
- (d) **DONE** Contact Swenson about Monday Meeting, and snapshot **CLOSED:** [2019-07-01 Mon 14:27]

## 2. Work

- (a) **TODO** Table and Linkages Final Assembly  
DEADLINE: <2019-07-02 Tue>
- (b) **TODO** Learn Stepper Motor Software/Hardware  
DEADLINE: <2019-07-02 Tue>
- (c) **DONE** Finish Code Rewrite **CLOSED:** [2019-07-01 Mon 14:28]  
  
DEADLINE: <2019-07-02 Tue>

## 6 Team Meeting

6.1 **TODO** Fill out the portfolio

6.2 **TODO** Add an Integral term to the control system

DEADLINE: <2019-07-02 Tue>

6.3 **TODO** Update Wiki page