Motor thrust Measurement

This Lab was intended for us to obtain basic thrust measurements for further use in the creation of our drone that could be used in the calibration and specifications for what is possible in creation of the drone.

Our test fixture used a basic system to hold the motor from above and use the downwards pressure created from the motors thrust to give us a reading on approximately how much thrust is created and this fixture was made as simply as possible by essentially just having 2 stands spaced apart with a top brace to hold the motor in the center for as little parts as possible as shown in the attached image.

A picture containing indoor

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For the motor results we have the 3 stages measured in grams and 100% power 1St 746, 3rd 746, 4th 630,2nd 600 50% power 1st 373, 3rd 373, 4th 315, 2nd 300 0% power 0, 0, 0, 0 these values leave us with a mean of 340.25 which is the mid area of our motors thrust values and we have a standard deviation of 281.0952167grams. With the given data we can now extrapolate that motors 4 and 2 are weaker than others.

Timeline

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The results if this show us we have a lot to take in about how we can do better as more measurements will be needed for things like this in the future as we have the thrust and from there we don’t have anything else recorded but this has been a interesting challenge as many things have come up like problems in the code that had to be overcome, design problems that were fix which all server to get us where we are now which has us coming out of this will a lot more knowledge than we came in with.

Member Task Credits

**Curran:**

Code used in the drone for the motors.

General work all around on the drone helping Ian if need be.

**Ian:**

Concepting of the parts

All the solid works parts creation

Anything 3D print related.

Did one of the pages on the PowerPoint

**Trevyn:**

General concepting and planning

Word dock work.

Main PowerPoint work.

Coordination on design and viability

**Ryan:**

I feel bad saying this is it doesn’t feel right but at the moment no credits here we partially blame our self’s for not reaching out to him, but he also has been dark under the pretense he has had work to do.