

Team Meeting Minutes
27 October 2017
2:30 - 3:00

Executive Summary

MWI Labs team met with our sponsor Jeff Peebles to give an update on the team's progress and discuss steps moving forward. Each member presented their Individual analysis to Mr. Peebles and he gave pointers on what was good and what needed work. To end the meeting a discussion of upcoming deliverables was had.

2:30PM Discussed the concept our team had been leaning towards and quickly determined the design was flawed and would not do because its geometry limited the size of the material that could be tested. A note is that the design must stay cantilevered.

2:33PM Danny presented his individual analysis topic. His results confirmed what Mr. Peebles initially thought, which is that the pin supporting the cantilevered beams is the member under the most stress.

2:36PM Jacob Presented his individual Analysis findings. Though the analysis showed progress, Mr. Peebles directed his attention towards important areas to consider. The things to consider are: look at axial stiffness, change the shape of the beam, and keep track of the deformation you get to make sure it models the real response.

2:50PM Zack discussed his individual analysis topic. Both Mr. Peebles and him agreed to look into a three dimensional analysis of the increased stiffness via adding trusses. Mr. Peebles made it clear to take into account the arms in the 5, 45, and 85 degree positions in order to both check your results and how the whole system behaves..

2:53PM Mitchell presented his individual analysis topic. Key takeaways were that the Arduino code would have to be adjusted for the inclusion of a gearbox. The new system should be cantilevered without the present guidewires and should be lightweight.

3:10PM Team took another look at the current system and took more accurate measurements along with pictures. Mitchell was given the current motor used to drive the arms in order to understand what we have available to drive the arms.

3:53PM Went over questions Mr. Peebles had for the team. We told him when our next due date was for capstone and he gave us insight into what the rest of the project will look like once a design is selected.

Table 1.

Type of Measurement	Right Arm
Cantilevered Arm Total Length	52"
Length From End of Arm to Antenna	19"
Length of Arm Connected to Pin	60"
From Pin to End of Arm	2"
From Pin to Beam	2 ¼"
	Left Arm
End of Arm to Antenna	18"
At Pin, Center of Beam From Boom	4"
From Pin	5"
Cantilevered Arm	50"
	Boom
Boom Length	70"
Boom Height	95"
	Test Specifications
Height	58"
Node Length	22"
Antenna Mount Diameter	4"

Other Specifications:

Arm Material - 1" x 2" 10 Series

Boom Material - 3" x 3" 15 Series

Motor - Aneima 24 motor w/ electric brake

- 20:1 Planetary gearbox
- Serial number → wiring diagram