

Flippin' Flingers Trebuchet Progress Report

Omar Ebrahim 110076575

Saif Kaoud 110076323

Dr. John Magliaro
University of Windsor

June 15, 2023

1 Summary

Contents

1	Summary	1
2	Introduction	5
3	Main	6
4	Conclusions	7
5	References	8
A	Appendix Stuff	9

List of Figures

List of Tables

2 Introduction

This report's mission statement is to summarize the team's progress with:

- Preliminary design sketches.
- Detailed CAD drawings.
- Numerical modeling details and range predictions.

The problem outline is to design and analyze the trebuchet to maximize projectile distance and accuracy.

The trebuchet is designed for maximum distance through general plane motion.¹ It is also designed for maximum accuracy through string measure.²

To maximize distance, the velocity of the projectile is considered, as distance and velocity are proportional. Increasing the counterweight fall distance can boost the projectile's velocity.³ Increasing the counterweight-to-launch distance increases the velocity of the projectile.⁴

Lastly, adjusting the trebuchet firing angle to 45 degrees achieves the maximum projectile distance.⁵

¹Hibbeler, 2015

²Rhoten, 2021

³Siano, 2001

⁴Denny, 2005

⁵Connel, 2001

3 Main

4 Conclusions

The main objectives of this milestone were [complete the statement]. The key findings are summarized as follows:

1. 1

5 References

Hibbeler, R. C. (2015). 16.5. In Engineering mechanics: Dynamics (pp. 346–348). essay, Pearson.

Rhoten, R. P. (1999). The trebuchet: Accuracy analysis of a medieval siege engine. Volume 2: 19th Computers and Information in Engineering Conference.

Siano, D. B. (2001). Trebuchet Mechanics. The Algorithmic Beauty of the Trebuchet.

Denny, M. (2005). Siege engine dynamics. European journal of physics, 26(4), 561.

James O’Connell; Dynamics of a medieval missile launcher: the trebuchet. The Physics Teacher 1 November 2001; 39 (8): 471–473.

A Appendix Stuff