

Commander Mon Mothma,

I write to you today regarding your request for information re: the proton torpedo design for Project Alderaan 7. Me and my team have ben hard at work, and are quite proud of the work we have performed thus far. After extensive testing I believe we finally have a winning design, which will be presented below.

Three different torpedo designs were utilized in our initial round of experimentation. These are presented in Figure 1: Airplane Designs. Airplane 1a was selected as a standard design, which is highly aerodynamic. 1b was selected to examine the effects of a wide wing span. 1c was chosen to look at a 1:1 aspect ratio in design. For this experiment, example torpedoes were aimed at a target roughly 2 meters from the launch spot. Distances in the x and y direction from the center spot were measured and analyzed for precision and accuracy. Our results are presented below.

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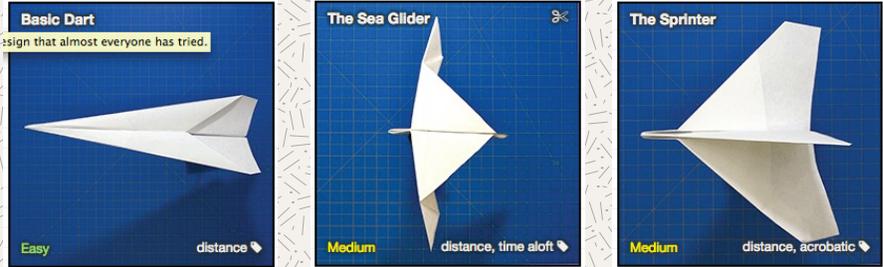


Figure 1: Airplane Designs. From left to right, designs 1a, 1b, and 1c

Results:

Model torpedoes were launched towards the target location a total of 10 times, and the displacement in the x and y directions were recorded. The result of these tosses for airplane 1a can be seen in Figure 2: Airplane Landing Position. As can be clearly seen, this airplane design tended to cluster quite closely in the upper right quadrant. This indicated a fairly reasonable degree of precision, though the accuracy of this torpedo was off. A similar analysis was performed for airplanes 1b and 1c (seen on the next page).

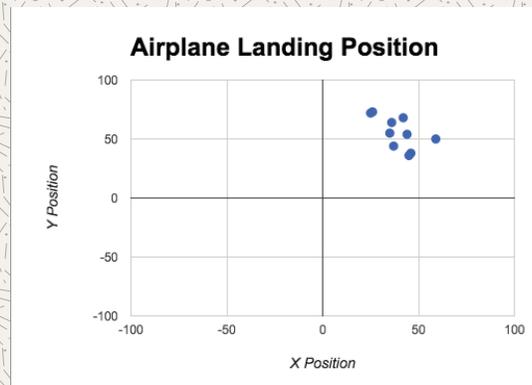


Figure 2: Airplane Landing Position

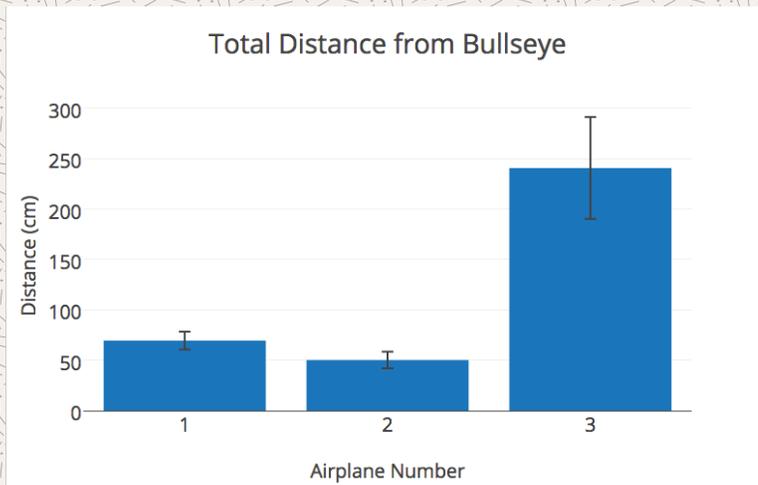


Figure 3: Total Distance from Bullseye

Next, the total distance from the center position was calculated using the pythagorean theorem, and the standard deviation of these distances was calculated. These results are plotted in Figure 3: Total Distance from Bullseye, along with error bars indicating +/- one standard deviation. This indicates that airplane 1c was by far the least accurate design, and also demonstrated the least precision. Airplanes 1 and 2 had similarly accurate and precise results, though airplane 2 was slightly better within the error of our measurements.

It is from this result that we recommend design 2 as the best design for Project Alderaan 7. My team and myself believe this will greatly increase our chances of success.