

Egg Drop Project 2008-09

Who can help the US Air Force?

Objective:

The United States Air Force is looking for a device that allows them to drop precious cargo from their aircraft to units stationed in Iraq. These planes are already filled with high demand materials, so the aircraft have very little extra weight to spare before they are overweight. It is your job to help the Air Force and design a device, with as little mass as possible, that is able to safely get the precious cargo (a jumbo egg) from the aircraft (the balcony-4.7 m) to the units in Iraq (the floor) without cracking.

Device building materials

You can use any materials that you want. Feel free to ask if you want to borrow something.

Rules

- There are no restrictions on what materials you use to construct the device.
- Your team will be allowed 2 practice eggs (you may bring your own eggs).
- The egg will be dropped by you and cannot be altered in any manner.
- You are responsible for dropping the egg so it hits the landing zone. (towel on the floor)
- Find the mass of your egg and device and measure the height of the drops.
- Egg must be able to be removed from device and returned in same condition as received.

Scoring (50 points for drop)

- A – Egg survives the fall from the balcony intact 1st try
 - B+/A- – Egg survives the fall from the balcony intact 2nd try
 - B – Egg survives fall, but is cracked
 - C – Egg does not survive fall, but design was well thought out
 - F – Project not completed or done
- *Extra points for additional height from base of balcony
Best Height to Mass Ratio → WINS!

Project Report (20 points)

The teams will design a website in Google. The website needs to have a minimum of 3 pages, including the main page, all pages must be linked together, all pages need to have a title, and the web pages need to be organized and easy to read. Be sure to answer the following questions: discuss the success/failure of your tests; what worked in your design and what didn't; would you make any changes in your design if you had to do this again; and explain why you choose the materials/design that you used. Also include the following data for the engineers. Explain how you arrived at your answers. The website will need to include at least one photo of your design. Make sure to be CREATIVE!

	Mass	Height	Ht/Mass	Time	PEg	Vf	Fnet	a - acc	p – mom.
Balcony									

Timeline

- Dec 16th – Project introduction and group choices (2-3)
- Dec 17th and 18th – design and testing
- Dec 18th and 19th – Drop days
- Jan 5th – Google website design due. (Send Mr. Duhrkopf the web address via email)