

The SoPHresh Challenge

Introduction:

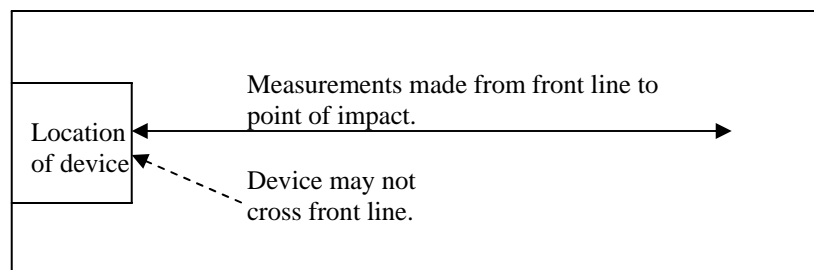
The host of the 2004 Carolinas' Conference, Clemson University, created the freshmore challenge. The freshmore challenge limited participation to freshman and sophomores of each competing university. After having participated in the event and enjoying the idea of involving the underclassman of all the participating ASCE student chapters, USC has decided to bring the Freshmore challenge to the 2005 Carolinas' Conference regional ASCE competition. USC would like to encourage each ASCE student chapter to involve the underclassman in the upcoming, challenging, but more importantly, FUN event: **The SoPHresh Challenge**.

Quick Premise:

For the 2004 regional competition the freshmore challenge involved “knocking things over.” The freshmore challenge required the participants to design a device that could topple 5 objects behind 5 obstacles (all aligned) in a given time limit. To sum up The SoPHresh Challenge each participating team will be throwing “stuff.” The device should be capable of throwing shot put balls ranging in weight from 3-8 lbs.

The Rules:

1. Each time will consist of a maximum of **4** freshman and/or sophomore members of the ASCE student chapter.
2. Each team member and faculty advisor for the student chapter of ASCE must sign the attached statement declaring that all participating members are classified as freshman or sophomores.
3. Each team will construct a device that will throw a shot put ball. Each team will have 2 throws: 1st) One throw will be judged for distance; 2nd) The last throw will be for accuracy of hitting a marked location. **X** ft from a specified throwing area.
4. The long distance throw will consist of throwing an **8 lb shot put ball** from a location designated as the throwing area. Distance will be measured from the front edge of the throwing area to point of impact. (see Diagram below)



5. The accuracy throw will consist throwing a shot put ball closest to a designated mark **X** ft. from the front edge of the throwing area. The distance will remain unknown until the time of the event and will be between the distances of .5 - .9 times the average distance of the distance throw. Each team will be given randomly a shot put ball weighing between 3-8lbs. Each team will be given 1-minute max to make adjustments before throwing.
6. The device cannot employ electrical devices, combustible chemicals, or compressed gas.
7. No part of the device may cross the front edge of the throwing area at any time during operation. If the device should cross the boundaries of the throwing are, the team will be assessed a penalty in scoring
8. The dimensions must be less than 4 ft in width, 5 ft in length, and 8 ft in height.
9. Cost is important in design. Bids are awarded to companies with the lowest bid to perform the same job to soften the blow to taxpayers. To keep the competition on a level playing field

and to simulate the restrictions placed on engineering firms in the real world, the cost of the device must not exceed **\$100**. **Note: Keep receipts as record of cost.**

10. At the start of the event the first team will place their device in the throwing area.
11. The teams will design a poster clearly displaying a summary of their design plan from concept to construction, modifications during the design process, an accurate breakdown of the cost and source (store) of the materials, and any other information that you may consider important. The teams can also display a creative name for their device. (Let's keep it Rated PG-13. This is a fun competition but still keep a high level of professionalism.)
12. Each team will also give a brief introduction of themselves and their devices at the beginning of the competition.

Scoring:

The scoring of each team will be based on many aspects of the competition. The scoring will take into consideration the following: the distance of the long throw, the accuracy throw, the total cost, the size and weight of the device, the presentation, etc. Each category will be weighted by importance to determine the total score of each team. In case of a tie a third, sudden-death throw for accuracy (with each team using the same random weight) at a different distance will be given to the tied teams, and the most accurate throw wins. The break of scoring is as follows:

- **Distance:** 1 pt per foot
- **Accuracy:** -[10 pts per whole foot from target + 1 pt. per inch of remaining distance.] (i.e. if the distance from target is 2 feet and 6 inches, then the total will be -26 points)
- **Size:** -10 points for every inch larger than the maximum dimensions set.
- **Cost:** -10 pts * (cost of device - \$100) if cost > \$100
- **Other:** -10 pts per item missing: receipts of materials, poster display;
-10 pts for device going beyond the boundaries (including 8 ft height)

Score:

$$1 * \text{distance} - (10 * \# \text{ ft from target}) - 10[(\text{width} - 4\text{ft}) + (\text{length} - 5\text{ft}) + (\text{height} - 8\text{ft}) - 10(\text{cost} - \$100) - 10 \text{ pts for missing info} - 10 \text{ points for boundary penalty}.$$

Winner:

The teams will be ranked last to first by lowest total points to highest total points

Class Certification

I acknowledge that I am declared a Freshman or Sophomore by

(name of university)

Print Name

Signature

E-mail

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

I certify, as faculty advisor, that all listed participants in this competition are classified as Freshman or Sophomore by the university.

Faculty advisor's signature