

## TAMS Tournament 2013 Engineering Challenge Instructions

### **Schedule**

**3:00-3:20** Welcome, get into teams etc. Introduce Mission 1, pipe cleaner challenge

**3:20-4:00** Build Pipecleaner cantilever

**4:00-4:10** Introduce Mission 2, Marshmallow Challenge (Ish)

**4:10-4:30** Mission 2, Marshmallow Challenge

**4:30-4:40** Grade Marshmallow Challenge

**4:40-5:00** Run results in

**5:00** Awards Ceremony

**Mission:** Build a cantilever

**Mission 2:** Build a tower with spaghetti and tape, you need to have a full marshmallow balanced on top for the tower to be complete.

<http://marshmallowchallenge.com/Welcome.html>

## TAMS Tournament 2013 Engineering Instructions

**Story:** As one of the best and brightest engineers in the field, you have been chosen as the operations coordinator of Sector XXX based in XXXXXXXXX, by the U.S government. Your projects, which are TOP SECRET, are expected to be completed quickly and efficiently. Failure to complete missions result in international crises, but success means victory and prosperity for the U.S along with honor and distinguishment for you and your team. Despite the high risks of this job, you decide that undercover work is the best way to serve your country, and accepted the job offer.

It has been 3 months since you last received word from the government when you find an unaddressed letter in the mail. Believing that it's another insurance letter from Geico, you nearly throw it away. However the stamp on the letter catches your eye. It bears the insignia of your laboratory. Shocked, you sit down to read the letter:

It has been known that we are under threat from \_\_\_\_\_. Their dark presence has loomed over the world for too long. The commander in chief, after contemplating all possibilities along with their respective outcomes, believes the best method of defense is to construct a cantilever off the north edge of the \_\_\_\_\_ cliff. However materials are limited and the construction must be done in secret. Because of this, the commander has instructed that you use specific supplies (provided by the U.S government) to create your cantilever. A member of the agency will personally deliver these materials. But you must hurry, time is essential. Complete this missions to the best of your abilities and you will be greatly rewarded.

Mission: Build a Cantilever out of 1 yard of tape and pipe cleaners

Rules:

1. You have the full period to build your cantilever
2. Cantilever CANNOT be made with any other materials other than the ones provided.
3. Your cantilever must stand freely and cannot use an other materials to hold it up (i.e your hand). The cantilever should be mobile (not taped to the group).
4. The farther the cantilever spans, the greater militaristic advantage, thus the cantilever that spans the farthest distance is the winner
5. Length of the cantilever will be measured from the edge of the cliff to the edge of the cantilever, perpendicular to the edge

of the table

6. Any cantilever that bends into limbo (touches the ground) when time is called is disqualified

You may begin building as soon as you have been debriefed.

XXXXXXXXXX XXXXXXXX

Head Commander

U.S Department of Engineering and Applied Physics

P.S Hide this letter from the enemy. Eat it if you must.

## Part 2:

Your work at building the cantilever coming along very well, and you are more than ready to finish. The conditions at \_\_\_\_\_ are tough: the food is worse than UNT's Bruce cafeteria, the weather alternates between extremely hot and bitter cold, and you have a very unreliable internet connection. Deprived from Tetris Battle, you throw yourself into your building to finish as soon as possible and return to the world of good wifi.

While brushing your teeth one night, you are surprised to see a message projected onto your mirror from your shower head. It reads:

The status of the war has changed. No longer will a cantilever be sufficient to protect the world. In addition, you must also construct a tower as a new headquarters. This tower will house many agents along with transmit TOP SECRET information from the battlefield to the main headquarters based in Xxxxxx, Xxxxx-XXX. It is to our advantage to create a state of the art tower that is not only strong and tall but also transmits large amounts of data quickly and efficiently. To do this, you will be provided with the Most Advanced Receiving and Sending, High MomentuM, ALternative, Lethal Operations Widget or MARSHMALLOW which must be placed on the top of the tower to function properly. Again, you have limited materials and limited time. Good Luck

Mission: Build a Spaghetti Tower using only tape and spaghetti. You must be able to place the marshmallow on top of your tower.

### Rules:

1. You have the remaining time to build your tower
2. The tower must be free standing
3. You may not use any materials besides the ones provided
  - a. Do not mix materials with the cantilever. These are not compatible.
4. A tower without a Marshmallow on top will be disqualified
5. The taller the tower, the better the connection, thus the tallest tower will be declared the winner
6. Tower height will be measured from the tip of the marshmallow to the floor

You may begin as soon as you have been debriefed

XXXXXXXXXX XXXXXXXX

Head Commander

U.S Department of Engineering and Applied Physics

