RULES: TEAMS BUILDING

Contest Objective

The objective of this competition is to build the lightest open span arch or truss bridge that will support the official Okanagan College (OC) loading mass. The bridge is to be constructed using spaghetti and hot glue, and shall have a minimum width of 50mm, a maximum height of 200mm, and a minimum length of 500mm (see figure 1). After the allotted construction time period, each bridge will be tested with the official OC loading mass. The team whose bridge supports the official loading mass for a period of 60 seconds, meets the contest rules, ***and*** has the smallest bridge mass will win the competition. Additional prizes will be awarded on the basis of increasing bridge mass.

Official OC Loading Mass

The official OC load has a mass of 1.00 kg. Each team may test their design with an *unofficial load* that has a mass of approximately 0.50 (+/-) kg prior to the actual competition. The unofficial load is provided for the teams to pre-test their bridge ***but the bridge must support the heavier official OC loading mass to be eligible for prizes.*** Pre-testing is not a requirement, and any team that pre-tests and destroys their bridge assumes all responsibility.

Contest Rules

Starting at 9:30am and ending at 11:30am, the teams have 2 hours to construct an open span arch or truss bridge that has the following dimensions:

- A minimum base width of 50mm.
- A maximum overall height of 200mm.
- A minimum length of 500mm *(ensure your bridge is built a little longer so it will sit properly on the testing support platform. See figure 1).*

Each team (maximum 4 members) must work on their own without outside assistance from either their sponsor, or other parties.

Teams may at any time seek clarification of the rules from a contest official.

Each team will be supplied with 1 bundle of spaghetti, plus 1 hot glue gun and glue sticks. The bridges must be constructed with the materials provided. ***No other materials or tools are allowed.*** If extra spaghetti or glue is required, contact a contest official for assistance in obtaining more. ***Only one glue gun is allowed per team.***

A loading platform will be supplied which must be used to accommodate the official OC loading mass during the testing period. The supplied platform must be incorporated in the design using only the materials supplied. ***The platform must be installed on the lower portion at the mid-point of the bridge span.*** See figure 1.

The bridge deck does not need to be a solid surface for the full length of the bridge but must accommodate the official loading platform (wooden plate with the metal hook) during the testing period.

No support(s) from the bridge to the testing platform will be permitted at any time before or during testing.
Figure 1 (page 2) shows the details of the open span bridge construction. The shape is representative only, and proper design is each team's responsibility.

Teams can verify their bridge lengths by placing them on a testing support platform to ensure the bridge will fit.

Each team is solely responsible for looking after their bridge during the event.

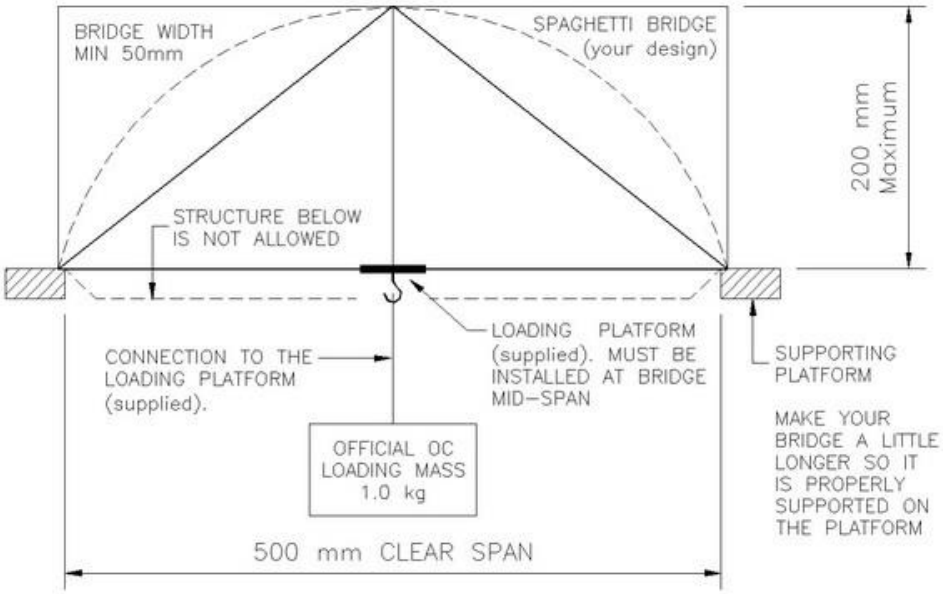

FIGURE 1. Bridge Details

Testing

At the end of the allotted construction time, teams will report to the testing site (auditorium) where testing and judging will take place. ***Only the team leader is allowed on stage during testing. Team members can sit in the seats to view the testing process and cheer on their leader.***

Once on stage, each team leader will place their bridge on one of the testing support platforms provided.

Under the instructions of the time keeper the bridge will be loaded with the official OC loading mass which the team leader will attached to the loading platform (see figure 1). The bridge must support the mass for a minimum time period of 60 seconds.

OC officials are not responsible for setting up, load testing, or handling any team's bridge.

If a bridge survives the load testing, the team leader will then move it to the judging table to have their bridge inspected to ensure compliance with the rules.

Bridges that are deemed in compliance with the rules and having survived the load testing will then be weighed to determine the bridge mass. ***The loading platform must be included in the total bridge mass.***

A bridge will be deemed to have failed if any of the following conditions occur: The loading platform separates from the bridge during loading. The bridge fails under the loads imposed (collapses). The bridge fails the rules compliance check.

The winner will be the bridge that has the smallest mass, complies with the rules, and survives the loading time of 60 seconds. Additional prizes will be awarded to surviving/conforming bridges in the order of increasing bridge mass.

Good Luck to all the teams