



The Event Process

1 Registration/Admission

Each team or participant will fill out a registration form. There will be a single registration form for each bridge. A volunteer will inspect the registration form, then provide admission to the museum.



2 Exhibits/Practicing Engineers

You will have an opportunity to talk with practicing engineers and students and faculty from local universities and to see several exhibits brought in with this event. In the past, we have had a Formula SAE race car and bridge built for a college competition, both from Southern Polytechnic State University.



3 Event Explanation

There will be a brief presentation prior to the first bridge test. It will include a description of the event, the crushing machine and load cell, and the destructive test.



4 Technical Inspection

Participants will present their bridge for technical inspection. The first inspector will check the overall dimensions by placing the bridge in a wooden box (a go/no go gage). The second inspector will weigh the bridge and record the weight. The third inspector will determine the span at which the bridge will be tested.



5 Queue

Numbers will be assigned as participants arrive to establish the order of the queue. Participants may sit down and watch the event until their number is called. Participants will keep their bridge and registration form until the bridge is tested. The registration form will be collected when the queue number is called.



6 Bridge Test

Once called, the participant(s) will take their bridge to a volunteer who will then load the bridge into the test machine. A gradually increasing force (weight) will be applied to the top of the bridge by the machine until the bridge breaks or fails. The force (weight) at the time that the bridge breaks will be recorded. The bridge will be tested at the span determined by the third inspector. Although the bridge often breaks, it may also only sag or stretch. Failure is defined as the point at which the bridge is no longer able to hold additional force (weight).



7 Performance Certificates

After the test, a performance certificate will be prepared for each participant. It will include the participant's name, bridge weight, breaking force, and strength-to-weight ratio. The force (weight) that the bridge held will be divided by the weight of the bridge to determine the bridge-strength-to-bridge-weight ratio. This ratio is sometimes used as a measure of performance for some kinds of structures. The certificates will be distributed as they are completed. The participant will also receive a T-shirt.



photos by Rae Adams