

# History Lesson

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Fifteenth Annual National Student Steel Bridge Contest  
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This is a historic event, so Fromy asked me to give a six-minute lecture on ancient history.

Since long ago in the middle years of the last century, the peoples of the nation have practiced an unusual coming-of-age ritual: boys and girls are compelled to build miniature bridges from sticks of balsa wood and compete to see whose bridge is best. Later in that century, the prophet Bob Shaw had a vision of a more challenging contest for bigger bridges and older builders. He therefore decreed that Michigan collegiate tribes of warrior-builders armed with steel would compete in the spring of 1987. Mr. Shaw's choice of combatants and material is not surprising since he managed college relations for the American Institute of Steel Construction.

Written documents of that first local steel bridge contest are fragmentary but we know it was hosted by the Lawrence tribe and attracted warrior-builders from the tribes of MichiganTech and Wayne. Each of the three bridges was extraordinary in its own unique way. One bridge, a deck truss, took over three hours to build. Another was simply a chain of heavy wide-flange girders bolted at the webs that failed under little more than its own weight. The MichiganTech tribe's victorious bridge was a replica nineteenth century railroad through truss that weighed about half a ton.

Other tribes entered the following year, and for the next half-decade, the Michigan State Spartan tribe won that local bridge battle. But during those same years, bridge-building tribes in other parts of the country started their own local battles, with each victorious tribe claiming national supremacy.

Wearied by the bragging of these distant tribes, in 1992 the Spartans challenged all to a national contest. Mr. Fromy Rosenberg, the newly-appointed Director of AISC College Relations, graciously provided coin. Thirteen tribes hauled heavy steel to the remote lower peninsula of Michigan, some traveling great distances, even from the land of Alaska. The contest convened on the shore of a lake that has great symbolic significance, having years earlier been the site of the first national race for canoes molded from a gray, mud-like substance.

The first national bridge battle was brutal: construction roads from staging yards to the river were actually obstacle courses; the playing surface was wet grass; builders, naked of hard hats and safety glasses, balanced on half-finished bridges, and meat was cooked on open fires.

Scoring, too, was primitive. The capacity of a bridge was calculated as load divided by the ratio of measured deflection to the deflection of the stiffest bridge. That capacity value was then added to ratings in other categories to compute overall score. The challenging Spartan's bridge had zero deflection at midspan, where the single measurement was made. Therefore, the Spartan's capacity was proportional to zero divided by zero, and the capacities of all other bridges were proportional to the ratios of zero to their measured displacements.

Dark clouds of confusion descended on the elders who sat in judgment. Facing the challenge of transforming those zero capacities into meaningful positive values, the elders awarded victory to the Michigan State Spartans and declared a five-way tie for second place, and another multiple tie for seventh place, bringing peace among the tribes.

At the post-battle feast, the cigar-smoking faculty elder of a southern tribe declared the bridge battle to be more fun than bass fishing. With a single crack of his whip, he volunteered his warriors to host the battle the following year, and AISC offered generous coin, thus sustaining the tradition we are celebrating for the fifteenth time tonight with three and a half times as many tribes as competed in the first national contest, coming from three provinces of Canada, twenty-six states of the U.S. mainland, and from the distant island of Hawaii.

It was a long journey for the Hawaiians, and they had to fly over a lot of water because that bridge hasn't been built yet.

Congratulations to everyone for being here to celebrate the fifteenth national student steel bridge contest!