Earthquake test has vehicles on bridge

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RENO, Nev -- U.S. researchers say their simulation of an earthquake on a bridge using full-size vehicles could produce important data to be used for new design standards.

Six full-size pickup trucks took a wild ride on a 16-foot-high steel bridge when it was shaken violently in a series experiments at the University of Nevada, Reno's Large-Scale Structures Earthquake Engineering Laboratory.

The 145-foot-long, 162-ton steel and concrete bridge was built atop four 14-foot by 14-foot hydraulic shake tables that caused the bridge's concrete columns to deflect more than 14 inches in each direction and its steel girders to twist, a university release said Friday.

"We took the bridge to its extreme, almost double what we planned at the outset," Ian Buckle, professor of civil engineering and director of the lab, said.

"Currently, bridges are not designed for the occurrence of heavy traffic and a large earthquake at the same time," he said. "It would be scary to be driving under those conditions.

"With increasing truck traffic and frequent congestion on city freeways, the likelihood of an earthquake occurring while a bridge is fully laden is now a possibility that should be considered in design."

Researchers say the test results will help to frame changes to current codes and lead to safer bridges during strong earthquakes.