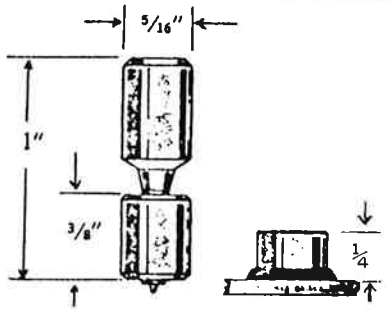
RESEARCH NOTES HIGHWAY DIVISION RESEARCH SECTION
1174 CHEMEKETA STREET NE. SALEM, OREGON 97310 503-378-2318

RSN 86-2

ANTI-SKID STUDS -- AREN'T

An old steel deck grid was suspected of causing several skidding accidents on Catching Slough Bridge near Coos Bay. As a corrective measure Nelson(TM) anti-skid studs were installed to provide traction, without adding greatly to the weight of the bridge.

Nelson anti-skid studs are one-inch pieces of low carbon steel that are welded onto a steel grid bridge deck with a specialized direct current arc welder. After the top portion is knocked off, the stud protrudes about 1/4-inch above the deck, providing a rougher stopping surface for vehicles.



Nelson(TM) anti-skid studs are welded to a steel grid bridge deck using a specialized D.C. arc welder. The top 5/8-inch of the stud conducts electric current to the lower part. The bottom of the stud forms its own flux, welding itself to the steel grid. The top of the stud is knocked off, leaving approximately 1/4-inch protruding for traction.

After the studs were in place stopping distance was greatly reduced. However, as the studs were subjected to traffic they quickly wore down. Within three years of installation stopping distance was nearly what it was before the studs were installed.

Considering the short time the Nelson anti-skid studs were effective, compared to installation costs (approximately $7.96 per square foot), it was determined they are not a practical alternative. Their rough texture still presents a hazard to motorcyclists and bicyclists.

If you would like a copy of the final report on this product contact the Oregon State Highway Division, Research Section. 1174 Chemeketa N.E., Salem, OR 97310; and ask for:

"ANTI-SKID STUDS ON OPEN GRID DECK, Experimental Features Final Report" by Allison Petrak, Research Specialist, and Keith Martin, Research Coordinator, Oregon State Highway Division, Research Section. February 1986; #OR 82-01.