

April 5, 2002

HSA-10/B-95A

**Mr. Rodney A. Boyd
President, Highway Safety Products Group
Trinity Industries, Inc.
Post Office Box 568887
Dallas, Texas 75356-8887**

Dear Mr. Boyd:

In his February 1, 2002 letter to you, Mr. Michael Halladay, former Acting Program Manager for the Federal Highway Administration's Safety Core Business Unit, accepted the use of your O-Post as an alternative to a standard W150 x 13 steel post for use with w-beam guardrail, but restricted its use to its as-tested orientation with the open side of the u-shaped post facing away from approaching traffic. In a March 26 letter to Mr. Richard Powers of my staff, your Mr. Don H. Johnson requested that this restriction be removed based on the results of a second test described in a Southwest Research Institute report dated March 2002, entitled "Full-Scale Crash Evaluation of a 12-Gauge W-Beam G4-1S Guardrail System with O-Posts Used as Line Posts with the Open Side of the Post Facing the Oncoming Traffic." Copies of this report and a crash test videotape were also included with his request.

The test installation was a modified strong steel post w-beam guardrail 53.3-m long, essentially identical to your earlier O-Post test except for the orientation of the O-Posts which were substituted for the standard W150 x 12.6 support posts in the impact area (post numbers 12 through 18). Routed timber offset blocks measuring 140 mm x 195 mm x 360 mm were used on all posts, which were 1830-mm long and installed on 1900-mm centers. The height above ground to the center of the rail was 550 mm.

This installation was tested with a 2010-kg pickup truck impacting at 98.7 km/h and at an impact angle of 25.3 degrees. The truck was contained and redirected upright. Maximum occupant impact velocity was reported to be 3.5 m/s and the subsequent ridedown acceleration was 11.4 g's. The vehicle roll angle was reported to be 4.1 degrees. The dynamic deflection of the barrier system was 1110 mm, similar to the deflection noted in your first test where the open side of the posts was turned away from approaching traffic. Consequently, I agree that the O-Post remains acceptable for use on the National Highway System as a substitute for the standard W150 x 12.6 steel post used in the modified G4(1S) guardrail and that it may be installed with the open side of the post facing either upstream or downstream relative to traffic flow.

Sincerely yours,

(original signed by A. George Ostensen)

**A. George Ostensen
Program Manager, Safety**