



# National Transportation Safety Board

Washington, D.C. 20594

## Safety Recommendation

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**Date:** December 20, 2001

**In reply refer to:** H-01-35

Honorable Gus Gomez  
Mayor of Glendale  
613 East Broadway, Suite 200  
Glendale, California 91206

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The National Transportation Safety Board is an independent Federal agency charged by Congress with investigating transportation accidents, determining their probable cause, and making recommendations to prevent similar accidents from occurring. We are providing the following information to urge your organization to take action on the safety recommendation in this letter. The Safety Board is vitally interested in this recommendation because it is designed to prevent accidents and save lives.

This recommendation addresses the lack of low-clearance warning signs. The recommendation is derived from the Safety Board's investigation of the January 28, 2000, tractor-combination vehicle and train collision in Glendale, California,<sup>1</sup> and is consistent with the evidence we found and the analysis we performed. As a result of this investigation, the Safety Board has issued eight safety recommendations, one of which is addressed to the city of Glendale, California. Information supporting this recommendation is discussed below. The Safety Board would appreciate a response from you within 90 days addressing the actions you have taken or intend to take to implement our recommendation.

On January 28, 2000, about 5:56 a.m. in Glendale, California, a tractor-combination vehicle, operated by Mercury Transportation, Inc., was transporting an oil refinery condenser unit. The vehicle missed a turn in its planned route, traversed a highway-railroad grade crossing, turned around, and was attempting to retrace the crossing when it became lodged on the railroad tracks. About 90 seconds later, northbound Metrolink commuter train 901, operated by the Southern California Regional Rail Authority, collided with the semitrailer. The engineer, conductor, and four passengers received minor injuries. Total damages were estimated to be over \$2 million.

The transportation of this oversize/overweight load covered over 2,100 miles through 4 States; involved 5 pilot car companies, 2 permit companies, the permit issuing offices of 4 States,

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<sup>1</sup> For additional information, read National Transportation Safety Board, *Collision Between Metrolink Train 901 and Mercury Transportation, Inc., Tractor-Combination Vehicle at Highway-Railroad Grade Crossing in Glendale, California, on January 28, 2000*, Highway Accident Report NTSB/HAR-01/02 (Washington, DC:NTSB, 2001).

and in California, 12 local jurisdictions; and had been under way for 22 days when the accident occurred.

After the convoy had failed to make the correct turn onto San Fernando Road and the truck had traversed the railroad tracks at the accident site, both the California Highway Patrol officer-in-charge and the trailing pilot car driver heard the truck bottom out but did not tell the truckdriver. When the convoy drivers realized they were off route after crossing the tracks, they consulted a map to determine how to get back on route, but did not discuss the safety of going back across the tracks. When attempting to cross the tracks the second time, the convoy had to wait for an eastbound Metrolink train to pass before it could proceed, but no one thought, or apparently knew, to call the railroad to determine the train schedule or to notify the railroad that the load was crossing the tracks.

The truckdriver attempted to raise the semitrailer only after it became lodged on the tracks. Even without becoming “hung up” on the tracks, the truck posed a significant risk at any highway-rail grade crossing. Regulations at 49 *Code of Federal Regulations* 234.225 require that warning systems at active crossings provide a minimum of 20 seconds warning. However, according to Safety Board calculations, after the eastbound Metrolink train passed, the accident truck, because of its size, would have needed more than 26 seconds to completely clear the tracks.

Following the accident, the convoy participants did not indicate that they considered the potential hazards of crossing the tracks with the oversize/overweight accident vehicle, even though it was during the morning commuter train rush. Nor did they consider that the accident vehicle might become stuck on the crossing. Yet the convoy was given two cues about the potential hazard before the accident—the scraping of the truck the first time over the tracks and the passing eastbound Metrolink train. Therefore, the Safety Board concludes that had the truckdriver, pilot car drivers, or police escorts recognized the potential hazard created by the oversize/overweight vehicle crossing the tracks, they could have taken appropriate action and avoided this accident.

According to the 2001 American Association of State Highway and Transportation Officials (AASHTO) guidelines,<sup>2</sup> the roadway surface should not be more than 3 inches higher or lower than the top of the nearest rail at a point 30 feet from the rail. Three inches higher or lower at a point 30 feet from the rail translates to a positive or negative 0.83 percent grade. The approach and departure grades at the Grandview Avenue crossing in Glendale were 3.26 and -3.02 percent, respectively. Therefore, in accordance with the current AASHTO guidelines for roadway vertical profiles at highway-railroad grade crossings, the Grandview Avenue grade crossing was a high-profile or humped crossing.

The Safety Board identified the hazards created by the combination of high-profile grade crossing and low-ground clearance vehicles during its investigation of the highway-rail grade crossing collision near Sycamore, South Carolina, on May 2, 1995.<sup>3</sup> As a result of its

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<sup>2</sup> *A Policy on Geometric Design of Highway and Streets*, Fourth Edition, AASHTO, 2001.

<sup>3</sup> National Transportation Safety Board, *Highway/Rail Grade Crossing Collision Near Sycamore, South Carolina, May 2, 1995*, Highway Accident Report NTSB/HAR-96/01 (Washington, DC: NTSB, 1996).

investigation, the Safety Board recommended that the Federal Highway Administration (FHWA):

H-96-05

Adopt the proposed changes that are published in the notice of proposed amendments to the *Manual on Uniform Traffic Control Devices* regarding warning signs for substandard vertical profiles at railroad grade crossings.

On September 5, 1997, the FHWA advised the Safety Board that it had adopted the low-ground clearance warning highway-railroad grade crossing sign (W10-5). This sign, which has been incorporated into the *Manual on Uniform Traffic Control Devices*,<sup>4</sup> is specifically designed to warn drivers of highway profile conditions sufficiently abrupt to create a “hang-up” situation for long wheelbase vehicles or low-ground clearance trailers. Subsequently, on January 2, 1998, the Safety Board classified Safety Recommendation H-96-05 “Closed—Acceptable Action.”

The evidence does not indicate that before the Glendale accident, the truckdriver, pilot car drivers, or police escorts considered or were aware of the potential hazard created by the combination of the accident truck and the crossing profile. Not until after the accident truck was stuck did the truckdriver make any effort to raise the ground clearance of the vehicle, and by then it was too late. The situation that occurred in this accident is exactly what the low-ground clearance warning sign is intended to prevent. Therefore, the Safety Board concludes that had low-ground clearance warning signs been present at the Glendale crossing, the information conveyed by the signs may have alerted the truckdriver, pilot car drivers, or police escorts to the low-clearance hazard and may have prevented the accident.

Although overall traffic volume on Grandview Avenue is comparatively low (5,900 vehicles), a high proportion of that volume (15 percent) is truck traffic.<sup>5</sup> The area surrounding the crossing is light industrial, and, consequently, the potential for other low-ground clearance trucks to travel over the Grandview Avenue crossing remains.

Therefore the National Transportation Safety Board recommends that the city of Glendale, California:

Install low-clearance highway-railroad grade crossing signs (W10-5s) at the Grandview Avenue crossing and evaluate other crossings to determine whether the signs are warranted and, if so, install them. (H-01-35)

The Safety Board also issued safety recommendations to the FHWA, Federal Motor Carrier Safety Administration, AASHTO, American Association of Motor Vehicle Administrators, Commercial Vehicle Safety Alliance, Specialized Carriers and Rigging Association, California Professional Escort Car Association, Texas Pilot Car Association, United Safety Car Association, International Association of Chiefs of Police, and National Sheriffs’ Association. In your response to the recommendation in this letter, please refer to Safety Recommendation H-01-35. If you need additional information, you may call (202) 314-6440.

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<sup>4</sup> The manual is approved by the FHWA as the standard for all streets and highways in accordance with 23 U.S. Code sections 109 (b), 109 (d), and 402 (a) and 23 Code of Federal Regulations 1204.4.

<sup>5</sup> Federal Railroad Administration statistical report of February 1997.

Chairman BLAKEY, Vice Chairman CARMODY, and Members HAMMERSCHMIDT, GOGLIA, and BLACK concurred in this recommendation.

By: Marion C. Blakey  
Chairman