



## PRELIMINARY REPORT

### HIGHWAY

### HWY16MH020

*The information in this report is preliminary and will be supplemented or corrected during the course of the investigation.*

About 3:19 a.m. Pacific daylight time on Tuesday, August 2, 2016, a 1998 Van Hool 47-passenger motorcoach, operated by Autobuses Coordinados USA Inc., was traveling northbound on State Route 99 (SR-99), near Livingston, Merced County, California en route from Mexico, to Washington State, and carrying 26 passengers.

While in the vicinity of mile marker 27.8, the motorcoach departed the travel lanes to the right, crossed over a 10-foot-wide paved shoulder, and struck the end of a 76-foot long metal w-beam guardrail<sup>1</sup> designed to shield an overhead sign structure (signpost) for the “Hammatt Ave Exit 201, 1 Mile” sign.

The motorcoach overrode the guardrail and subsequently collided with the signpost. The impact resulted in the passenger side being separated from the bus body for nearly the entire length of the bus (see figure 1). As a result of this crash, four passengers died, 18 passengers received serious-to-minor injuries, and four passengers were not injured. The bus driver was seriously injured.



**Figure 1.** Aerial view of motorcoach at final rest and impact damage caused by penetration of the 14-inch diameter signpost, (Source: California Highway Patrol).

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<sup>1</sup> The metal beam guardrail and terminal system had been crash tested and approved as a Test Level 3 (TL-3) barrier. A TL-3 barrier is capable of redirecting passenger cars weighing 2,420 pounds and pick-up trucks weighing 5,000 pounds for barrier heights up to 29 inches.

The signpost consisted of one vertical 14-inch-diameter steel tubular pole with the exit sign mounted at the top of the pole. The centerline of the signpost was separated by a lateral distance of 64.3-inches from the end of the guardrail. The total height from the paved shoulder surface to the top of the w-beam rail element was approximately 29 inches. The posts supporting the guardrail were embedded in the ground approximately 3.5 to 4 feet. (See figure 2.)



**Figure 2.** Northbound view of the sign, signpost, and guardrail (Source: Google Maps, July 2016).

In the area of the crash the horizontal alignment of SR-99 consisted of a 4,921-foot radius curve to the right for motorists travelling in the northbound direction. The horizontal curve was approximately 1,296 feet in length and the end of the horizontal curve was approximately 623 feet from the final rest of the motorcoach.

During the on-scene phase of the investigation, NTSB investigators conducted 3D laser scans of the damaged motorcoach, the accident site, and of an exemplar metal guardrail and sign post located about 1-mile north of the crash scene. Investigators also interviewed passengers and the motorcoach driver, and inspected records maintained by the motor carrier.

Parties to the investigation include the California Highway Patrol, Caltrans, and the Federal Motor Carrier Safety Administration.

All aspects of the crash remain under investigation as the NTSB determines the probable cause, and continues to examine safety issues related to the crash. The NTSB is working alongside the California Highway Patrol, which is conducting a separate, parallel investigation.