

H-158

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: March 1, 1979

Forwarded to:

Honorable William A. Bulley
Secretary of Transportation
Highway Administration Building
Olympia, Washington 98504

SAFETY RECOMMENDATION(S)

H-79-3 and 4

On July 31, 1978, at 8:05 p.m., an automobile with six occupants entered the rail-highway grade crossing on State Road No. 706 at highway milepost 2.5 near Elbe, Washington (USDOT inventory number 397-189-J). The westbound automobile was traveling at 55 mph when it was struck by southbound Milwaukee Road freight train No. 965, which was traveling at 10 mph. One occupant in the automobile was killed, one was injured seriously, two were injured slightly, and one was not injured. There were no injuries to the traincrew.

The crossing is protected in each direction by a railroad advance warning sign 628 feet from the crossing, pavement markings 342 feet from the crossing, a "stop" line on the pavement 14 feet from the first rail, and a 12-foot cantilevered overhead crossbuck and train-actuated red flashing light signal. The signals were inspected both before and after the accident and found to be working as intended. The signal was designed to be actuated 20 seconds before a train moving at 30 mph entered the crossing. Since this train was moving at 10 mph, the signals were flashing for 60 seconds before the train entered the crossing. The bell and whistle on the lead diesel unit were being sounded and the headlight was illuminated.

The driver of the automobile was wearing sunglasses; and both windshield visors were down to screen the sun, which was low in the west and directly in the driver's eyes. Since the radio was on in the car, the occupants did not hear the train bell or whistle until just before the collision. No one in the car saw the flashing signal. The overhead flashing light signal assembly can be sighted from an approaching vehicle just above the tree line. When the sun is setting, it is difficult for westbound approaching traffic to see; the reverse situation is true in the morning.

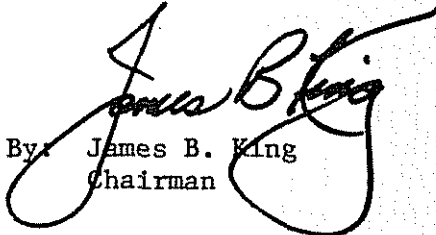
Section VIII of the "Manual on Uniform Traffic Control Devices for Streets and Highways" (MUTCD), as approved in January 1977, allows for the combined use of cantilever-supported and post-mounted flashing signals where conditions require. The MUTCD (Section 8C-7(6)) suggests the use of the 12-inch diameter lens for the flashing light because it provides better visibility. Section 4B-11 of the MUTCD allows the use of backplates on traffic signal installations to isolate signals from unusually distracting backgrounds. In a recent study on traffic signal operations, KLD Associates, Inc., recommended the use of backplates against the sky or equivalent background. The Union Pacific Railroad has used larger backplates where visibility problems were encountered. Since highway traffic averages 1,700 vehicles per day at this particular crossing, the Safety Board believes that this location warrants improvement to negate the effects of the sun and thereby afford motorists ample warning of an oncoming train.

Therefore, the National Transportation Safety Board recommends that the Washington State Department of Transportation:

Improve the flashing light signals at rail-highway grade crossing 397-189-J on the Milwaukee Road at milepost 2.5 of State Route 706 east of Elbe, Washington, to assure that motorists are afforded ample warning of oncoming trains. Alternative methods available that will solve the problem include installation of post-mounted supplemental flashing signals, installation of 12-inch-diameter roundels, or installation of a large black background plate. (Class I, Urgent Action) (H-79-3)

Survey all east-west rail-highway grade crossings within your jurisdiction to determine if glare from sunlight reduces the visibility of warning devices at the crossing and take necessary corrective action. (Class II, Priority Action) (H-79-4)

KING, Chairman, DRIVER, Vice Chairman, McADAMS and HOGUE, Members, concurred in the above recommendations.


By: James B. King
Chairman