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NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

ISSUED: August 23, 1977

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Forwarded to:

Honorable Carl Philo  
Mayor  
City of Stratton  
Stratton, Nebraska 69043

SAFETY RECOMMENDATION(S)

H-77-10

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On August 8, 1976, Burlington Northern freight train No. 100 struck a church-owned bus at the Beaver Avenue railroad/highway grade crossing in Stratton, Nebraska. The train was traveling at 57 mph and the bus was moving through the crossing when impact occurred. Nine of the bus occupants, including the busdriver, were killed and the other eight passengers were injured. <sup>1/</sup>

The busdriver was familiar with the crossing which was protected by a crossbuck, a wigwag signal, and a bell. The warning devices were activated as the train approached the crossing. A witness stated that the wigwag signal was working and that the bell was ringing. He also heard the train horn and saw the two fixed headlights illuminated on the approaching locomotive. The bus proceeded onto the main track crossing without appearing to either slow down or accelerate to avoid the train.

The Federal Railroad Administration study "The Visibility and Audibility of Trains Approaching Rail-Highway Grade Crossings" (1971) concludes that "...the present railroad horns cannot warn motorists reliably when either the train or the motor vehicle is going very fast." In this accident when the train was within 300 feet of the crossing and well within the audibility range, the bus was still 84 feet from the crossing. At a calculated speed of 18 mph the bus had the braking capability of stopping short of the crossing and avoiding the collision. The Safety Board's investigation did not determine why the busdriver did not hear the horn and did not take evasive action. A number of conditions were considered:

<sup>1/</sup> For more detailed information on this accident, read: NTSB Accident Report, "Collision of a Burlington Northern Freight Train With a Bus, Stratton, Nebraska, August 8, 1976." (RHR-77-1)

1. The driver upshifted at least once and was probably running in second gear.
2. Noise from the singing occupants of the bus might have combined with the engine and drive line noise to interfere with the sound of the warning bell and train horn.
3. Once the bus was closer than 75 feet to the crossing, the sunvisor in the down position would have obstructed the driver's view of the 12-foot 2-inch high wigwag signal, if he did not lower his vision.
4. The train was 1 hour late and may not have been expected.
5. Observations and measurements made from within a similar bus determined that it was possible that the right A-pillar, the outside-mounted rearview mirror, and a tree in a field may have combined to obstruct the driver's opportunity to see the approaching train.
6. The contrast between the green locomotive and dark-colored freight cars and the background was low.

Since Beaver Avenue is the only paved southbound thoroughfare out of Stratton, it is an important segment of the local transportation system. Some 400 motor vehicles and 8 to 9 trains use this crossing daily. Under the circumstances, the Beaver Avenue railroad/highway grade crossing is considered to be a major crossing and could not be eliminated.

This accident demonstrates that the crossing poses a serious hazard to the inattentive driver. Accident data show that: (1) a majority of those involved in grade crossing accidents are familiar with the crossing; (2) in spite of the driver's perception of a potential hazard at the crossing, a habit of inattention is formed after repeated crossings without the presence of a train; and (3) while crossings with active protection devices constitute 22 percent of all grade crossings, 41 percent of the fatalities and injuries occur at these crossings. Since these percentages do not reflect exposure levels, they should not be interpreted to mean that active protection devices are not superior to the obsolete type involved in this accident. Current approved active protection devices have considerably more alerting value. The Board favors the installation of protection systems in accordance with the Standard Procedures of the Association of American Railroads.

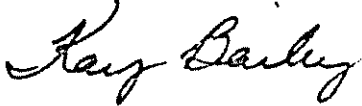
Because of the important role of this crossing in the local transportation system, the volume of traffic using the crossing, and the obsolescence of the current wigwag system, the crossing should be protected by an

improved, attention-getting warning system. One such system that might be considered is the traffic-activated highway traffic light signal. Motorists are familiar with the signal, observed compliance by motorists is excellent, violations are enforceable, and they would be no more expensive to install, operate, and maintain than flashing lights. The device would display a red signal only when a train was approaching. It could be activated in the same manner as current electrically operated control devices.

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

In cooperation with the Burlington Northern Railroad, Inc., install an improved railroad/highway grade crossing protection system on Beaver Avenue in accordance with the Recommended Practices of the Association of American Railroads (1974). (Class II, Priority Followup) (H-77-10)

BAILEY, Vice Chairman, McADAMS and HOGUE, Members, concurred in the above recommendation. TODD, Chairman, and HALEY, Member, did not participate.

  
for By: Webster B. Todd, Jr.  
Chairman