

5.7 driver was familiar with the existing crossing from the direction of travel usually followed in the completion of the schoolbus route. It is not known what, if any, his familiarity with the crossing was from the direction of approach on the day of the accident.

times had been abrogated by the absence of any history of local enforcement.

V. CAUSE

- 16. The crash forces produced on the bus by the front surface of the train at about 25 m.p.h. were sufficient to produce direct injury only to passengers in the area directly impacted.
- 17. Some of the fatal injuries to passengers were the result of abnormal dynamics and contacts which occurred when the bus structure disintegrated.
- 18. At least two of the five fatalities were ejected as a result of a floor separation and the lack of availability and use of an occupant-restraint system in the bus.
- 19. The controversy over the feasibility of installing active occupant-restraint systems in schoolbuses suggests the need for a demonstration project to obtain data which be used to resolve the question.
- 20. The structural disintegration of the bus displayed many examples of failures at joints assembled with relatively few fasteners; such construction is typical of current schoolbus construction practices.
- 21. Several of the passengers experienced severe crash injuries from sharp metal edges which were exposed by the separation of structural parts of the bus body.
- 22. The capacity ratings for schoolbuses used to transport high school students do not always accurately reflect the actual seating capacity of the bus.
- 23. The special status of innocent passengers transported by schoolbus drivers necessitates that driver qualifications be more than those presently required in many instances. Whenever applicable, the qualifications should be at least equal to those for drivers of interstate motor carriers as found in the Motor Carrier Safety Regulations of the Federal Highway Administration (49 CFR 391).
- 24. The intended effect of the stop sign was not clear, since a requirement to stop at all

The National Transportation Safety Board determines that the cause of this accident was the failure of the schoolbus driver to stop at the stop sign until the crossing was clear of railroad traffic. The reason for this failure could not be determined.

Contributing to the accident was the unnecessary routing of the schoolbus over a not specially protected railroad/highway grade crossing. Contributing to the number of fatalities and the severity of injuries were: (1) the lack of structural integrity of the body of the schoolbus, (2) the absence of highback padded seats and an occupant-restraint system in the schoolbus, (3) the presence of standing students in the bus, and (4) the action of the coupler of the lead locomotive, which caused the crash forces to be concentrated on the bus.

VI. RECOMMENDATIONS

On September 22, 1972, the National Transportation Safety Board directed a recommendation relating to this accident to the National Highway Traffic Safety Administration. (See Appendix D.)

The Safety Board further recommends that:

- 1. The Department of Transportation seek legislation which would extend the use of Federal funds now available for grade-crossing safety and improvement on the Federal Highway System to include those railroad/highway grade crossings on non-Federal aid highways. (Recommendation No. H-73-9)
- 2. The National Highway Traffic Safety Administration, in its revision of the Federal Highway Safety Program Standards, continue the requirement which states that schoolbus drivers are to "be qualified as a driver under the Motor Carrier Safety Regulations of the Federal Highway Ad-

- ministration 49CFR 391, if he or his employer is subject to the regulations" and to extend that provision (except regarding driver's age) to include all drivers of schoolbuses regardless of whether they or their employer is subject to those regulations. (Recommendation No. H-73-10)
3. The National Highway Traffic Safety Administration, in its revision of the Federal Highway Safety Program Standards, include a provision under the title, Pupil Transportation Safety, which would require those persons responsible for the hiring and supervision of schoolbus drivers to conduct preemployment inquiries and continued surveillance to assure that other employment requirements of schoolbus drivers do not adversely influence their schoolbus driving. (Recommendation No. H-73-11)
 4. The State of New York and all other States adopt and implement all the provisions of the present Highway Safety Program Standard No. 17, Pupil Transportation Safety, with special emphasis on the provisions relating to the selection and training of personnel (Personnel, Section IV, C.1), the safe routing of schoolbuses, and the elimination of standees in schoolbuses (Vehicle Operation, IV, C.5.). (Recommendation No. H-73-12)
 5. The State of New York Department of Education expand its pupil-transportation safety activities in order to provide liaison, management consultation, and supervision at the local level to assure compliance with its policies and procedures. The State's participation on the local level should also include more active assistance in training pupil-transportation personnel. (Recommendation No. H-73-13)
 6. The National Highway Traffic Safety Administration assess the human factors involved in seatbelt usage in schoolbuses through a demonstration project. The project should include a number of buses equipped with seatbelts and highback, padded seats, which are engaged in pupil transportation. (Findings from this project will be useful for evaluation of the provisions found in the proposed Motor Vehicle Safety Standard (Docket No. 73-3), Bus Passenger Seating and Crash Protection). (Recommendation No. H-73-14)
 7. The International Association of Chiefs of Police use its influence and resources to redirect the attention of law enforcement agencies to the need for uniform enforcement of traffic laws pertaining to railroad/highway grade crossings (1963 IACP Resolution F-18, Highway Safety Policies for Police Executives). Such enforcement should provide special emphasis on those crossings protected solely with stop signs. (Recommendation No. H-73-15)