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V. RECOMMENDATIONS

1. The Safety Board recommends that the Penn Central Transportation Company and the American Railway Engineering Association revise their track inspection and maintenance standards or recommended practices for track construction and maintenance so that they provide objective measures of conditions and definite criteria for correction. Decisions as to adequacy of track conditions should not be solely dependent upon variable judgment or interpretation of individuals, but should be made according to objective measurements required by written enforceable rules.

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2. The Board recommends that the American Railway Engineering Association and the Association of American Railroads initiate a research program to improve the present rail-joint design. The improved joint should be as strong and dependable as the rails to which applied and also prevent the development of rail defects and failures which now commonly occur in the joint area.<sup>1/</sup>

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3. The Board recommends that the Penn Central Transportation Company and the railroad industry in general employ to a greater degree the available rail-flaw detector equipment. It is further recommended that complete use be made of the available technical knowledge to insure the development of more dependable means of detecting rail defects within the joint areas with a greater degree of accuracy.

<sup>1/</sup> The Sperry Railer, Statistical Issue 1967, Sperry Rail Service, Automation Industries, Inc.

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4. The Board recommends that the Federal Railroad Administration include in its current study of an improved coupler design, the problem of keeping cars coupled and in line with the track and with each other after a derailment occurs. In order to attain an integrated organization of track and rolling stock features that would limit the after effects which can now follow a simple derailment, the Federal Railroad Administration should also study other related technical approaches to control interference with traffic on adjacent tracks and

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wayside structures during derailments, such as means of limiting the lateral excursion of wheels, and the separation of trucks from the cars.

5. The Board recommends that the Department of Transportation, through its Assistant Secretary for Research and Technology, and the Federal Railroad Administration, in cooperation with the Association of American Railroads, study the problem of proper management of hazardous materials in train accidents and take appropriate action. This study should include the matter of whether it is feasible to provide vehicles that will resist mechanical puncturing, the problem of controlling the flow of flammable and poisonous liquids out of punctures in tank cars, and whether it is feasible and preferable to separate cars of hazardous materials with cars of inert materials. The problem of adequate capacity of safety valves should also be reviewed.

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The Board recommends that the Federal Railroad Administration review and correct the applicable regulations to provide markings at multiple locations which can survive a fire and which can be identified from a distance during fire and smoke (such as a large silhouette or see-through). Such markings should be legible to inform constructive actions by persons looking for them in cases of leakage, threat of fire, or during a fire. The problem of insufficient data relative to hazardous materials on the manifests and notices to the crew should be reviewed and appropriate action taken to establish a system that will provide those requiring it with the necessary information to initiate corrective action in emergency situations.

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The Board recommends that the Federal Railroad Administration review 49 CFR 174.506, which intended to protect the public against fire or explosion resulting from railroad accidents by the assignment of the handling of the emergency to the Bureau of Explosives of the Association of American Railroads. This regulation appears to place responsibility for public safety in the hands of a private organization representing only one of the interests involved, and which may not be able to handle expeditiously emergencies which may develop. The Board is aware that the practice of delegating responsibility for hazardous materials regulations to private agencies is under study by the Department of Transportation.

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8. The Board recommends that the Department of Transportation study means of improving the training methods available to local fire departments so that they can upgrade their skills in their handling of emergencies created by the increasing transportation of hazardous materials. The problems of controlling such accidents are especially troublesome because of the daily introduction into commerce of numerous new kinds of hazardous materials. The Board believes that local emergency organizations cannot be expected to be conversant with necessary procedures to handle situations involving the many possible emergencies involving the transportation of hazardous materials unless some form of assistance in training is provided such as a model type training course.

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9. The Board recommends that the Federal Railroad Administration amend its requirements for the reporting by railroads of accidents to include the immediate reporting of any accident involving cars containing hazardous materials which constitutes a current or potential hazard to the carrier, the passengers, its personnel, or the local environment.

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10. The Board recommends that the Secretary of Transportation undertake a study of the feasibility of establishing a National Hazardous Materials Advisory Data Center. It is envisioned that such a national data center, through the use of computer-stored data would be able to furnish emergency information on flammable, explosive, highly reactive, and poisonous substances,

and locally available sources of expertise and specialized emergency equipment on a 24-hour-a-day basis. The Board is of the opinion that such data center is now necessary to aid Federal, State, and local authorities faced with the varied and complex problems involved in combating actual or potential disasters involving hazardous materials.

There are working programs throughout the country which could be used as pilot models for such a center. Some of these are the Coast Guard's programs in their Hazardous Materials Division in Washington, D. C., and in the various districts and the "poison control centers" in the various States.

BY THE NATIONAL TRANSPORTATION SAFETY BOARD:

/s/ JOSEPH J. O'CONNELL, Jr.  
Chairman

/s/ OSCAR M. LAUREL  
Member

/s/ JOHN H. REED  
Member

/s/ LOUIS M. THAYER  
Member

/s/ FRANCIS H. McADAMS  
Member

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