3/10/95--Corrected copy to show correct year in:
"In Reply Refer to:" line

R. 0651D

NATIONAL TRANSPORTATION SAFETY BOARD

Washington, D.C. 20594

Safety Recommendation

Date: March 8, 1995

In Reply Refer To: R-95-6 and -7

Mr. Michael W. Fauls
Vice President Circus Operations
Ringling Bros. Barnum & Bailey Combined Shows, Inc.
1313 17th Street East
Palmetto, Florida 34221

On January 13, 1994, a northbound Ringling Bros. and Barnum & Bailey Circus (RBB&BC) train derailed about 9:08 a.m., eastern standard time, while passing through Lakeland, Florida, on CSX Transportation railroad en route to Orlando, Florida. A witness observed the train go by and saw two pieces of a wheel fly off a passenger car and land in nearby woods. The train continued 2.7 miles, across five grade crossings, with the broken wheel. When it reached the Park Spur turnout, 15 other passenger cars and 3 freight cars derailed. Of the 16 derailed passenger cars, 5 turned on their sides; the rest remained upright. Two circus employees were killed, and 15 received minor injuries.[1]

The RBB&BC gives its employees a booklet, *Train Rules & Safety Regulations*, that explains the safety precautions they should take when they are on or around the Circus train. The booklet does not, however explain what the employees should do in the event of a derailment, a collision, or a fire while the train is moving. Although the RBB&BC video, *All Aboard the RBB&BC Train*, covers some contingencies, such as emergency exits and fire, the booklet does not. The Safety Board believes the booklet should cover at least as much material

[1]For more information, read Railroad Accident Report--*Derailment of the Ringling Bros. and Barnum & Bailey Circus Blue Train Near Lakeland, Florida, on January 13, 1994* (NTSB/RAR-95/01).

as the video does and that both should be expanded to explain what employees should do after a derailment or collision.

According to a March 11, 1994, letter from the RBB&BC General Manager to the Safety Board, the derailment led the circus management to reevaluate various mechanical considerations, emergency procedures, maintenance scheduling, and interior designs. The RBB&BC said that it intended to implement changes in phases as quickly as possible. Within weeks after the accident, the RBB&BC had:

> removed all of the straight-plate rim-stamped tread-braked wheel sets. It had also converted all tread-braked passenger-car wheels to disc braked.
>
> equipped all staterooms with fire extinguishers, put two crash tool cabinets in each passageway, and reinforced passageway emergency lighting systems so that they can better withstand impact.

The RBB&BC's ultimate goals are to decrease the possibility of an accident, preserve life, and minimize loss. Some of the following changes will be implemented as cars are rebuilt in a complete overhaul similar to the overhaul the National Railroad Passenger Train Corporation does in its 40-year inspection and repair program.

The RBB&BC has retained a consultant to examine each car for any structural or mechanical problems and to develop rigidly defined procedures that will enhance existing maintenance and repair programs.

The RBB&BC has directed its maintenance contractor to increase its regular independent mechanical inspections from two to four per year.

The RBB&BC has directed its risk management consultants to increase the number of car-interior inspections from two to four a year and to include inspections of each private stateroom. Inspections will include checking for homemade construction projects, blocked egresses within staterooms, overloaded circuits, and unsecured or inadequately secured property and appliances.

The RBB&BC carpentry department is designing and installing woodwork to eliminate sharp edges. Cabinet handles will be recessed. New mechanisms will be used to ensure that doors and drawers cannot open by accident.

Every car with a passageway will have a minimum of three emergency exit windows, and every stateroom will have a minimum of two emergency exits.

A resident safety officer has been appointed for each coach car and will be given a private-line radio for emergency use. Safety officers will receive additional training in first aid and evacuation procedures.

Conductor's brake valves will be installed in strategic locations throughout occupied cars.

Each passenger car is being equipped with a "push-to-talk" radio system that can be used to make emergency radio announcements over a public address system to all cars.

An integrated fire alarm system will be installed in all new cars and in any car that is renovated or reconstructed. The system includes battery backup lighting in staterooms, panic alarms, commercial-grade hard-wired smoke detectors, remote-activated fire doors, remote-activated HVAC system shutdown, and strategically placed 1-hour interior fire walls.

A February 21, 1995, letter from the Vice President of Circus Operations to the Safety Board described the RBB&BC's progress in implementing the safety improvements outlined in the March 11, 1994, letter. According to the 1995 letter, RBB&BC has made the following changes:

It has removed all rim-stamped straight-plate tread-braked wheels from its passenger cars and converted all tread-braked passenger cars to disc-brake systems. All straight-plate freight car wheels have been changed to curved-plate wheels. The RBB&BC adds new wheels to passenger cars that it rebuilds, and all the cars that it has received since the accident have totally rebuilt trucks. In addition, a consultant will do a single-car air-brake test on each car in service.

A consultant has inspected each car for safety, structural, and mechanical problems and has given the RBB&BC a comprehensive report that includes specifics for developing a computerized maintenance and inspection program.

Another consultant has evaluated interior safety appliances and "life safety" issues. When a new car is constructed, its doors and cabinets are made to lock automatically, and the appliances are bolted to the floors and walls.

The RBB&BC has started its Amtrak 40-year inspection and repair program on all cars at its repair and recycling shop in Palmetto, Florida. The shop has been equipped with state-of-the-art technology that exceeds Amtrak shop standards. The RBB&BC has retained an Amtrak inspector to review contractor repairs and to verify proper execution of the Amtrak 40-year inspection. Amtrak employees have conducted courses for the RBB&BC shop workers in mechanical repairs, and the Academy of Industrial Training has trained them and RBB&BC mechanical personnel in truck assembly, air brakes, draft systems, and safety appliances.

All circus employees have received a re-designed orientation program that includes a personalized instruction session with a question-and-answer period. Each passenger car has a safety officer, and each safety officer has a two-way emergency radio that allows him to communicate with train managers and railroad crews directly.

Over 140 additional fire extinguishers have been installed on the trains. The framing of rooms in new passenger cars is done with non-combustible construction materials. The new cars

also have an integrated fire alarm system that automatically closes ventilation ducts into living areas and notifies managers through the train's radio system of the nature and location of an emergency. An emergency radio system that allows managers to broadcast safety announcements to individual cars or to the entire train is more than half finished.

The RBB&BC is incorporating a 480-volt electrical distribution system and integral safety devices, including an enhanced emergency lighting system. Over 250 additional emergency exit windows have been installed on the passenger cars. Every common passageway now has a minimum of three emergency exit windows. The retrofitting of staterooms with emergency exit windows is almost finished. Finally, the passenger cars have been equipped with crash tool boxes.

The Safety Board is gratified by the expeditious response of RBB&BC to the accident. The RBB&BC's letters are statements of a responsible organization and a good faith pledge to improve safety. The Safety Board looks forward to the continued implementation of RBB&BC's pledged improvements.

Therefore, the National Transportation Safety Board recommends that the Ringling Bros. and Barnum & Bailey Circus::

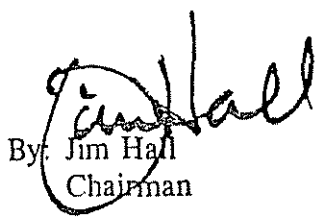
> Continue to implement the safety changes and equipment improvements outlined in your March 11, 1994, letter and report to the Safety Board on your progress in developing improved safety policies and inspection procedures and in installing additional safety equipment in your rail cars. (Class II, Priority Action) (R-95-6)
>
> Revise your booklet *Train Rules & Safety Regulations* so that it covers at least as much material as the video *All Aboard the RBB&BC Train*, and expand both so that they explain what employees should do after a derailment or collision. (Class II, Priority Action) (R-95-7)

Also, the Safety Board issued Safety Recommendations R-95-1 to the Federal Railroad Administration; R-95-2 to the Association of American Railroads; R-95-3 to the National Railroad Passenger Train Corporation; R-95-4 and -5 to the American Short Line Railroad Association, the National Railway Historical Society, the American Association of Private Railroad Car Owners, Inc., the Association of Railway Museums, the Tourist Railway Association, Inc., and the National Passenger Car Alliance; and R-95-8 to CSX Transportation.

The National Transportation Safety Board is an independent Federal agency with the statutory responsibility "to promote transportation safety by conducting independent accident investigations and by formulating safety improvement recommendations" (Public Law 93-633). The Safety Board is vitally interested in any action taken as a result of its safety recommendations. Therefore, it would appreciate a response from you regarding action taken or contemplated with respect to the recommendations in this letter. Please refer to Safety

Recommendations R-95-6 and -7 in your reply. If you need additional information, you may call (202) 382-6840.

Chairman HALL, Vice Chairman FRANCIS, and Member HAMMERSCHMIDT concurred in these recommendations.



By: Jim Hall
Chairman