log # R1416D

NATIONAL TRANSPORTATION SAFETY BOARD

Washington, D.C. 20594

Safety Recommendation

Date: JAN 7 1994

In Reply Refer To: R-93-29

Mr. William E. Loftus
President
The American Short Line Railroad Association
1120 G Street, NW Suite 520
Washington, DC 20005

At 9:34 a.m on January 18, 1993, Northern Indiana Commuter Transportation District (NICTD) eastbound commuter train 7, traveling from Chicago, Illinois, to South Bend, Indiana, and NICTD westbound commuter train 12, traveling from South Bend to Chicago, collided at mile post (MP) 61.1 in Gary, Indiana. Train 7 and train 12 consisted of two and of three passenger cars, respectively. Train 7 passed a stop signal at MP 61.2, and its lead car blocked westbound traffic where the tracks intersect. After train 12 crossed the Gary Gauntlet Bridge, it then struck train 7. As a result of the collision, 7 passengers died and 95 people sustained injuries. The estimated damage for both trains was $854,000.[1]

During its investigation, the Safety Board examined the possibility that on the day of the accident, the engineer of train 7 was inattentive to his duties. He said that train 7 was traveling at a speed of 40 mph from the Clark crossover to signal 601. That distance of 1,746 feet can be traveled in about 30 seconds at that speed. Because signal 601 is visible in advance of the Clark crossover, the engineer should have had sufficient time to determine the status of the signal.

[1]For more detailed information, read Railroad Accident Report--*Collision between Northern Indiana Commuter Transportation District Eastbound Train 7 and Westbound Train 12 near Gary, Indiana, on January 18, 1993* (NTSB/RAR-93/03).

The engineer said that he continued to proceed toward the bridge even after he viewed a "dark" signal. Because the signal system was working properly, the engineer could not have received a "dark" signal. In addition, the NICTD rules state that a signal imperfectly displayed, or the absence of a signal at a place where a signal is usually displayed, should be regarded as the most restrictive indication afforded by that signal. Under these circumstances, he should have taken immediate action to stop his train.

The investigation disclosed that after the engineer applied the emergency brakes, train 7 fouled the westbound track about a foot. The Safety Board concludes that the engineer of train 7 was inattentive to his duties when he passed the approach indication displayed at signal 621 and the stop indication displayed at signal 601. Because of his inattentiveness, he failed to stop at signal 601, which caused his train to foul the westbound track. The Safety Board also concludes that had the engineer acted immediately when he perceived a dark signal and applied the emergency brakes, as he should have, train 7 would have proceeded past signal 601 but would have stopped short of where it fouled the westbound track.

The engineer of train 12 stated that he received a proceed indication at both signals 592 and 602. The deadheading collector/brakeman, who rode with him in the control compartment, verified this statement. The engineer recalled that he and the deadheading collector/brakeman had discussed the location of train 7; the engineer did not expect the two trains to meet at the Gary Gauntlet Bridge but to pass each other either before or after train 12 had crossed the bridge.

Both men said they initially saw the headlight of train 7 as train 12 entered the east end of the bridge. Because the engineer of train 12 was looking directly at the lead car of train 7 and its headlight, he was unable to ascertain the exact location or to judge the speed of train 7 while his train was on the bridge. In addition, the investigation disclosed that the bridge structure obscured the area peripheral to train 7, making it difficult for the engineer of train 12 to see any reference points west of the bridge by which to judge the movement of train 7. However, the engineer of train 12 stated that as his train exited the bridge, he observed that train 7 had proceeded past signal 601.

The engineer of train 12 stated that he expected train 7 to stop. As train 12 entered the gauntlet bridge, the deadheading collector/brakeman made several statements, according to the engineer, that train 7 did not appear to be stopping. The engineer heard the collector/brakeman's first statement, "he's still coming," when train 12 entered the east end of the bridge, and the second statement, "they're still moving" and "we're going to hit," just before or as train 12 exited the west end of the bridge (265 feet from the point of impact). The engineer said that the deadheading collector/brakeman then ran out of the control compartment and into the interior of the car as train 12 exited the west end of the bridge.

At the time the engineer of train 12 exited the bridge and realized that train 7 had passed its home signal, the two trains may have been too close for the engineer of train 12 to stop his train and avert the collision. Although he could not have stopped his train in time to avoid the

accident, he could have activated emergency braking and reduced the speed of the train at impact, and the severity of the accident would have been mitigated. Between 5 and 6 seconds elapsed from the time the collector/brakeman exited the control compartment and the time of impact. The engineer should have had an equal amount of time to perceive the impending collision and place train 12 in emergency braking. Furthermore, if the engineer had responded to the deadheading collector/brakeman's warnings by reducing the speed of train 12 before it exited the west portal of the bridge, the accident might have been avoided. Although the Safety Board is unable to conclusively determine whether the engineer of train 12 could have taken action to prevent the accident, the evidence shows that the actions he did take were neither timely nor appropriate.

The train 7 engineer's inattentiveness to his signal indications and the train 12 engineer's lack of initiative to slow his train raise questions about the fitness for duty of both engineers. The Safety Board is increasingly concerned about the degree to which railroad employees can safely and effectively perform their duties. Tests for the abuse of alcohol and drugs in the railroad workplace have long been legally required; however, test requirements to measure fitness-for-duty degradation caused by the effects of fatigue, stress, or other psychological and physiological conditions have not been established.

The performance of both engineers in this accident raises questions about the adequacy of procedures used by the railroad industry in determining fitness for duty. Had this railroad had a mechanism to detect abnormalities in the fitness-for-duty parameters of its safety-sensitive personnel, subnormal performance indices might have been detected for both train engineers. By their removal from service, the accident would have been preventable. Therefore, the Safety Board believes that the railroad industry should develop improved procedures for determining fitness for duty for railroad personnel in safety-sensitive positions.

Therefore, the National Transportation Safety Board recommends that The American Short Line Railroad Association:

> Develop improved procedures for determining fitness for duty for railroad personnel in safety-sensitive positions. (Class II, Priority Action) (R-93-29)

Also, the Safety Board issued Safety Recommendations R-93-24 to the Federal Railroad Administration, R-93-25 to the Federal Transit Administration, R-93-26 and -27 to the American Public Transit Association, and R-93-28 to the Association of American Railroads.

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 recommendation in this letter. Please refer to Safety

Recommendation R-93-29 in your reply. If you need additional information, you may call (202) 382-6840.

Chairman VOGT, Vice Chairman COUGHLIN, and Members LAUBER, HAMMERSCHMIDT, and HALL concurred in this recommendation.

By: Carl W. Vogt
Chairman

Both men said they initially saw the headlight of train 7 as train 12 entered the east end of the bridge. Because the engineer of train 12 was looking directly at the lead car of train 7 and its headlight, he was unable to ascertain the exact location or to judge the speed of train 7 while his train was on the bridge. In addition, the investigation disclosed that the bridge structure obscured the area peripheral to train 7, making it difficult for the engineer of train 12 to see any reference points west of the bridge by which to judge the movement of train 7. However, the engineer of train 12 stated that as his train exited the bridge, he observed that train 7 had proceeded past signal 601.

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At the time the engineer of train 12 exited the bridge and realized that train 7 had passed its home signal, the two trains may have been too close for the engineer of train 12 to stop his train and avert the collision. Although he could not have stopped his train in time to avoid the accident, he could have activated emergency braking and reduced the speed of the train at impact, and the severity of the accident would have been mitigated. Between 5 and 6 seconds elapsed from the time the collector/brakeman exited the control compartment and the time of impact. The engineer should have had an equal amount of time to perceive the impending collision and place train 12 in emergency braking. Furthermore, if the engineer had responded to the deadheading collector/brakeman's warnings by reducing the speed of train 12 before it exited the west portal of the bridge, the accident might have been avoided. Although the Safety Board is unable to conclusively determine whether the engineer of train 12 could have taken action to prevent the accident, the evidence shows that the actions he did take were neither timely nor appropriate.

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The performance of both engineers in this accident raises questions about the adequacy of procedures used by the railroad industry in determining fitness for duty. Had this railroad had a mechanism to detect abnormalities in the fitness-for-duty parameters of its safety-sensitive personnel, subnormal performance indices might have been detected for both train engineers.

By their removal from service, the accident would have been preventable. Therefore, the Safety Board believes that the railroad industry should develop improved procedures for determining fitness for duty for railroad personnel in safety-sensitive positions.

Therefore, the National Transportation Safety Board recommends that the American Public Transit Association:

> Cooperate with the Federal Railroad Administration to study the feasibility of providing car body corner post structures on all self-propelled passenger cars and control cab locomotives to afford occupant protection during corner collisions. (Class II, Priority Action) (R-93-26)
>
> Develop improved procedures for determining fitness for duty for railroad personnel in safety-sensitive positions. (Class II, Priority Action) (R-93-27)

Also, the Safety Board issued Safety Recommendations R-93-24 to the Federal Railroad Administration, R-93-25 to the Federal Transit Administration, R-93-28 to the Association of American Railroads, and R-93-29 to The American Short Line Railroad Association.

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-93-26 and -27 in your reply. If you need additional information, you may call (202) 382-6840.

Chairman VOGT, Vice Chairman COUGHLIN, and Members LAUBER, HAMMERSCHMIDT, and HALL concurred in these recommendations.

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