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National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: APR - 4 1997

In Reply Refer to: R-97-8

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On February 9, 1996, about 8:40 a.m., near Secaucus, New Jersey, an eastbound New Jersey Transit (NJT) commuter train proceeded past a stop indication at an interlocking signal and collided nearly head-on with a westbound NJT commuter train. About 400 passengers were on the two trains. The engineers on both trains and one passenger suffered fatal injuries in the collision.¹

As part of its postaccident investigation, the Safety Board reviewed the errant engineer's NJT medical records and noted that he had been medically disqualified from duty in 1987 when a urine sample taken during his company physical showed the presence of sugar. Examination of the medical files of his personal physician revealed that he had been a non-insulin-dependent (type II) diabetic for 19 years at the time of the accident. As part of its physical examination protocol, the NJT requires its employees to report certain medical conditions, including diabetes, and all prescription medications on a medical history form. However, when the engineer was disqualified from duty, he sought treatment from his personal physician to obtain medicine to control his diabetic condition, which he did not report to NJT. After taking the medicine for 2 weeks, the engineer provided the NJT physician with a urine sample that did not show the presence of sugar, whereupon he was reinstated. Thus, by not reporting his diabetic condition and his medication, he was able to avoid any potential adverse effect it might have on his assignment and employment.

The engineer subsequently developed a diabetic eye disease that caused a deterioration in visual acuity and color discrimination. During a February 1995 test for color discrimination given by a NJT contract physician, the engineer was unable to identify several color-coded plates, indicating that he had a color vision deficiency. However, the practitioner erroneously

¹ For additional information, see Railroad Accident Report—*Near Head-On Collision and Derailment of Two New Jersey Transit Commuter Trains near Secaucus, New Jersey, February 9, 1996* (NTSB/RAR-97-1).

recertified him when the engineer was able to pass a vision test that determines whether the patient knows the names of colors. His personal physician's records indicate that despite surgery to correct the conditions caused by his diabetic eye disease, the engineer's vision deteriorated rapidly after his February 1995 company physical.

On the morning of the accident, the errant engineer was properly operating his train as he approached the triple-red stop indication at the interlocking near Secaucus. About 71 feet before the stop signal, however, the engineer accelerated as if he had received a more favorable signal indication. Based on its investigative findings, the Safety Board concluded that an acquired color vision deficiency resulting from his diabetic condition caused the engineer to interpret the stop indication to be a more favorable aspect that allowed him to proceed past the signal.

The Safety Board believes that the color vision requirement for railroad engineers is extremely important because color is the primary information cue in safety-critical visual signals. Moreover, the colors used in signal aspects are very likely to be confused by individuals with red-green color vision deficiency. Current Federal regulations do not specify how to test for the ability to discriminate colors, rather, they permit a railroad to select the test or method it will use to determine if its engineers comply with the regulation. As a result, tests may differ from railroad to railroad, or even from one medical examination to another. While railroad physicians may be aware of the color vision requirement for locomotive engineers, they may not recognize which color vision test is a valid measurement tool. Further, an individual with a very mild deficiency may be able to pass certain types of vision screening tests, yet not be able to distinguish different signal aspects. Cases such as this strengthen the proposal that a job specific-type test should be developed, such as having the individual identify illuminated colored lights from a distance.

In an issues paper presented to Railroad Safety Advisory Committee (RSAC) regarding engineer certification standards, the FRA has stated that it believes that the current hearing and vision acuity standards comply with the Americans With Disabilities Act and that they adequately ensure that locomotive engineers possess the requisite physical abilities to do their jobs. However, the FRA recognizes that the testing and the interpretation of test findings is not uniform and therefore has asked the RSAC to address the issue. The FRA cites as an example a case in which an engineer who upon failing a vision examination given by one railroad physician applied to work at another railroad whose physician certified him.

This accident highlights another problem that a physician has in determining the fitness for duty of railroad engineers. In this case, the engineer did not advise the NJT's contract doctor about his diabetes, his vision problems, or his prescription medications. Because the engineer died, the Safety Board cannot determine whether he failed to recognize or refused to admit to the potential risk in which he was placing himself and his passengers when he operated a train. The reasons for people not admitting to medical problems are as diverse as the individuals themselves. The Federal Aviation Administration (FAA), recognizing this, has enacted the following standard as a requirement for pilot certification:

No person may act as pilot in command ... while he has a known medical deficiency, or increase of a known medical deficiency, that would make him unable to meet the requirements of his current medical certificate.²

The Safety Board believes that for the safety of the traveling public, it is just as necessary to compel railroad employees in safety-sensitive positions, especially engineers, to disclose any change in their physical status that might affect how they perform their job. As an interim measure, industry associations, such as the American Public Transit Association (APTA), can also assist in improving railroad safety by providing its members with information about this accident, specifically explaining acquired vision deficiency and emphasizing the importance of ensuring the color vision requirement. Further, APTA should stress that railroad employees in safety-sensitive positions, especially engineers, report their use of medications or any changes in their medical condition to their employer.

The National Transportation Safety Board therefore issues the following recommendation to the American Public Transit Association:


Provide your members with information about this accident, specifically explaining acquired vision deficiency and emphasizing the importance of ensuring the color vision requirement. Stress that railroad employees in safety-sensitive positions, especially engineers, report their use of medications or any changes in their medical condition to their employer. (R-97-8)

Also, the Safety Board issued Safety Recommendations R-97-1 and -2 to the Federal Railroad Administration, R-97-3 and -4 to the New Jersey Transit, R-97-5 to the Association of American Railroads, R-97-6 to the Brotherhood of Locomotive Engineers, and R-97-7 to the United Transportation Union.

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 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-97-8 in your reply. If you have any questions, you may call (202) 314-6439.

Chairman HALL, Vice Chairman FRANCIS, and Members HAMMERSCHMIDT, GOGLIA, and BLACK concurred in this recommendation.

By:


Jim Hall
Chairman

² 14 CFR 61.53