Ltr R-515 SP-20

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: June 3, 1985

Forwarded to:

Mr. William H. Dempsey
President and Chief Executive Officer
Association of American Railroads
1920 L Street, N. W.
Washington, D. C. 20036

SAFETY RECOMMENDATION(S)

R-85-48

About 1:00 a.m., on Thursday, June 14, 1984, Burlington Northern Railroad Company freight trains Extra 6760 West and Extra 7907 East collided head-on on the single track main line near Motley, Minnesota. The trains were being operated on dispatcher-issued train orders, in nonsignallized territory. The westbound train had been traveling about 35 to 40 mph and the eastbound train about 45 to 49 mph just before the emergency applications of the automatic air brakes of both trains. The accident resulted in three fatalities, one serious injury, and three minor injuries; damages were estimated at $3,931,146. The dispatcher controlling the movement of the trains had been promoted to dispatcher recently before the accident and was working in his second tour of duty in that position. The dispatcher had been promoted from a stenographic/clerical position after having been nominated to and completing a company training program; he had no prior operating experience. 1/

The operating crews of trains Extra 7907 East and Extra 6760 West were qualified for their respective positions in accordance with BN requirements. There were no mechanical defects found that would have contributed to the accident. Further, there were no defects noted in the track structure that would have contributed to the accident.

The dispatcher's issuance of Train Order No. 85 to train Extra 7907 East from Staples to Carlton when trains Extra 2560 West and Extra 6760 West still were occupying the single track main line gave all three trains authority to occupy the same track. None of the crewmembers of any of the three trains with this overlapping authority was notified by the dispatcher of their status. Trains Extra 7907 East and local freight train Extra 2560 West had overlapping authority for 24 minutes; trains Extra 7907 East and Extra 6760 West had overlapping authority for 1 hour 14 minutes.

Further, in the accident case, had there been an operator at Staples, which position is required to copy and read the content of train orders, including Train Order No. 85, rather than the position of TOCB clerk who was not required to do so, the overlap or

1/ For more detailed information, read Railroad Accident Report--"Head-On Collision of Burlington Northern Railroad Freight Trains Extra 6760 West and Extra 7907 East, Near Motley, Minnesota, June 14, 1984" (NTSB-RAR-85/06).

conflict of train authorities is likely to become apparent, and the accident may have been prevented. While the TOCB clerk learned of train Extra 6760 West from conversation with the dispatcher about 12:13 a.m.--42 minutes before the accident--she had not read Train Order No. 85, and therefore, was not aware that a train meeting point had not been established for the opposing trains.

The dispatcher was required by BN Rules and Instructions for Train Dispatchers to examine the train sheets carefully with regard to opposing trains before issuing train orders. The dispatcher should have been aware of all trains in his territory, having performed the transfer from the dispatcher he relieved. Since the dispatcher issued Train Order No. 85 to train Extra 7907 East while trains Extra 2560 West and Extra 6760 West were still occupying the single track main line, he obviously failed to examine the train sheets carefully. The reference to train No. Extra 6730 West on Train Order No. 85, along with the omission of the other two westbound trains, indicates confusion on the part of the dispatcher in the performance of his assigned duties.

The dispatcher involved in this accident, although he had been employed by BN 12 years, had no experience in railroad operations. As such, he also lacked experience with the territory for which he was responsible with dispatching functions. He had held only clerical positions before his nomination as a dispatcher trainee. The regional personnel director who nominated the involved dispatcher for the dispatcher training program, only having worked once as a stenographer in a dispatcher's office, had severely limited experience insofar as having firsthand knowledge of the requisites of the safety critical position of dispatcher. Further, despite having a pressing need for more dispatchers, the BN had not established nor documented any aptitude or other selection/screening criteria for the dispatching position to determine that any given individual would be capable of safely fulfilling the requirements of that position. A determination of such capability should have been of paramount importance in evaluating a dispatcher trainee applicant with no previous operations experience. Although the regional chief dispatcher and the manager of train operations reviewed the candidate's qualifications during the selection of the first 10 candidates, the Safety Board believes that the BN was deficient in the manner in which it selected the involved dispatcher for dispatcher training. Further, the statements of the BN officials involved in the nomination to training and final selection appear to be inconsistent with each other.

The 2-week-long dispatcher training course was preceded by a week-long period in which the trainees observed qualified dispatchers performing their duties. Since, at that point, the involved dispatcher had no operations experience to which to relate his observations, it is doubtful that he was able to fully comprehend the safety-related aspects of train dispatching. The classroom training itself consisted largely of instruction in the operating rules, those rules specifically pertaining to dispatchers, some instruction on and practice in issuing train orders, and dispatching simulation on the last day of classroom training. While this training may have been adequate for those trainees who were operationally oriented through their prior experience, the Safety Board believes it was not adequate to train an individual lacking prior operational experience. Further, the Safety Board believes that the manner employed by the BN to examine the trainees upon completion of their training did not adequately measure ability to understand and perform the functions of a dispatcher. Test questions were written without regard to measuring performance and test scores were evaluated without regard to the dispatcher trainee's relative performance on train orders as they relate to the operating rules. The test used by the BN to evaluate the proficiency of the dispatcher trainees consisted of a 500-question examination; a 55-question section on train orders with an assigned value of 254 points, and a 445 question section on operating rules with an assigned value of

639 points. An overall score of less than 90 percent was failing. The involved dispatcher failed the first examination with a score of 84 percent (minus 40 points on trains orders and minus 99 points on operating rules). After additional training, he passed the very same examination with an overall score of 92 percent (minus 34 points on train orders and minus 35 points for operating rules). While registering a minor improvement in understanding train orders, most improvement was registered in his knowledge of the operating rules. The minor improvement in train orders performance may have been due to the 12 days of on-the-job training he received between examinations. However, the improvement in operating rules performance which led to his passing the examination was probably due to the manner in which the test was structured; it followed the format of the book of operating rules, providing an opportunity for improvement through rote memorization of those rules. Moreover, his improvement regarding the train order portion of the test was minimal, and the understanding of train orders is a most important aspect of a dispatcher's job. Careful evaluation of the test results by the regional superintendent of rules who administered the training and testing should have raised questions by that official with regard to the involved dispatcher and his abilities to function safely as a dispatcher.

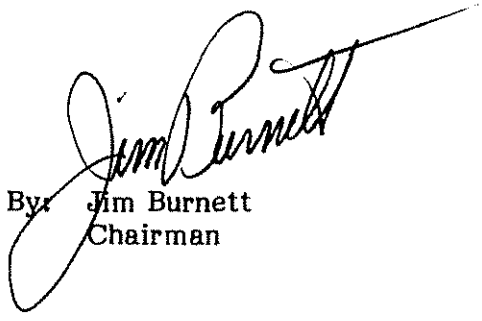
The time period during which overlapping authorities existed between trains Extra 7907 East and Extra 6760 West was 1 hour 14 minutes. Because the involved dispatcher had been recently qualified by the BN for his position, his minimal level of practical experience should have indicated a need for close supervision of his performance. Had the chief dispatcher on duty periodically checked the actions of the involved dispatcher during the shift being worked, the dispatcher's error in establishing overlapping authorities between trains could have been discovered, thereby preventing the accident. The Safety Board concludes that the BN did not provide the close level of supervision necessitated by the lack of experience of the involved dispatcher.

Therefore, the National Transportation Safety Board recommends that Association of American Railroads:

> In conjunction with the Federal Railroad Administration, initiate a program designed to determine and document aptitude and other performance oriented selection/screening criteria, training, and testing procedures for individuals to be employed in safety critical positions such as train dispatchers. (Class II, Priority Action) (R-85-48)

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 actions taken as a result of its safety recommendations and would appreciate a response from you regarding action taken or contemplated with respect to the recommendation in this letter.

BURNETT, Chairman, GOLDMAN, Vice Chairman, and BURSLEY, Member, concurred in this recommendation.



By: Jim Burnett
Chairman