

R-362

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

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Forwarded to:

Mr. W. J. Taylor
President and Chief Executive Officer
Illinois Central Gulf Railroad
233 North Michigan Avenue
Chicago, Illinois 60601

SAFETY RECOMMENDATION(S)

R-81-61 through -66

About 8:37 p.m. on October 30, 1980, two locomotive units and seven of eight cars of southbound Amtrak passenger train No. 21, the Inter-American, derailed while moving at a speed of 63 mph through a 10-mph turnout on the Illinois Central Gulf Railroad at Springfield, Illinois. Six persons were injured and total damage was estimated at \$593,000. ^{1/}

The investigation developed that Amtrak No. 21 left Springfield, Illinois, about 14 minutes behind a southbound freight train, and the dispatcher decided to have the passenger train overtake the freight train in the 1.7-mile section of double track between K.C. Junction and Hazel Dell. The allowable timetable speeds for trains moving through the turnouts at K. C. Junction and Hazel Dell were 10 mph and 30 mph, respectively. The dispatcher thought that running the relatively long freight train through the 10-mph turnout would delay the passenger train. Therefore, he encoded the Centralized Traffic Control machine to route the freight train to track No. 1 on the straight line at K.C. Junction and to reverse the turnout switch after the freight train had cleared so that Amtrak No. 1 would be routed through the 10-mph turnout to track No. 2.

Amtrak No. 21 stopped about 0.6 mile south of the Springfield passenger station to discharge a passenger, who had failed to get off at the station, and then left that location about 4 minutes behind schedule. The block signal at South Grand Avenue displayed a "clear" aspect for No. 21, and this indicated that the train would not be stopped at the next signal location, the Norfolk and Western crossing at Iles Tower. Inasmuch as the engineer and fireman of No. 21 were probably aware that the freight train had passed Iles Tower about 10 minutes earlier, the "clear" aspect at South Grand Avenue also indicated to them that the freight train had already cleared the

^{1/} For more detailed information, read Railroad Accident Report--"Derailment of Amtrak Train No. 21, the Inter-American, on the Illinois Central Gulf Railroad, at Springfield, Illinois, October 30, 1980" (NTSB-RAR-81-5).

southbound home signal at K.C. Junction. The enginemen apparently assumed they would be routed over track No. 1 to overtake the freight train which they also assumed would be standing on track No. 2. Had this been the case, the timetable allowed their train a maximum speed of 79 mph through K.C. Junction. In any event, the engineer of No. 21 accelerated the train at maximum power and it reached speeds of about 45 mph at South Grand Avenue, 57 mph at Iles Tower, and 63 mph when it entered and derailed in the turnout at K.C. Junction.

The investigation developed that the signals at Iles Tower and K.C. Junction were of the color-light type as opposed to the color-position type found elsewhere on the Alton District; that different combinations of aspects were displayed by these signals to indicate which of three routes a southbound train could take at K.C. Junction; that the combinations displayed for the No. 1 track and No. 2 track routes were relatively similar; and that dispatchers habitually routed trains through the 30-mph turnout at Hazel Dell rather than the 10-mph turnout at K.C. Junction. Additionally, there were respective timetable speed restrictions of 15, 25, and 60 mph for southbound trains in the 2.1-mile section between the Springfield passenger station and Iles Tower. The limits of the two lesser speed restrictions were described by street names rather than by milepost references, and there were no signs on the right-of-way marking the limits. In this section, a passenger train was allowed a speed of 79 mph for a distance of less than 1 mile, and this was meaningless unless engineers violated the lesser speed restrictions. Before it left the 25-mph restriction at Springfield, Amtrak No. 21 was moving at 47 mph.

The engineer of No. 21 was required to wear bifocal eyeglasses at all times while on duty. However, it was determined that he never wore them after boarding the train on the night of the accident. Statements by the engineer indicated that he was not thoroughly familiar with the turnout speeds nor with the various signal aspects that could be displayed at Iles and K.C. Junction. Neither engineman could recall the last time their train had been routed through the 10-mph turnout, and they insisted the signal aspects they saw indicated they were routed on the straight line to track No. 1. However, the enginemen did not call the signal aspects as required by ICG Rule 34, and it was their practice to call only those signals they considered to be restrictive.

As No. 21 approached Iles, the enginemen were distracted by the need to observe and report to the trainmen the train order signal aspect at Iles Tower and by a vehicle standing on the busy rail-highway grade crossing immediately south of the tower. As was the case with the engineer's reduced ability to see at a distance and the lack of available time due to excessive speed, the distractions may have been factors in the failure to comprehend the signal aspect at Iles. Probably most instrumental, however, was the lack of a visibly striking difference in the aspects for the two routes displayed at Iles as well as at K.C. Junction.

Between 1975 and 1978, ICG modified the track and signal systems at Iles and at what ultimately came to be known as K.C. Junction. Included were the change from double- to single-track operation, installation of a No. 10, 10-mph, CTC turnout on a district where all other CTC turnouts were the No. 20, 30-mph type, and the installation of color-light signals while retaining color-position type signals elsewhere on the Alton District. The various changes were seemingly made piecemeal and expediently without thorough advance planning, including a systems safety analysis. Although accustomed to the color-position signals, the Alton District enginemen were given no special training on the color-light signals. Even the bulletins that were issued when the changes were made were confusing by the renaming of the interlockings involved. ICG did not depart from its practice of holding quadrennial rules and timetable classes and these have been held only once since the changes were made.

Since 1969, the Safety Board has investigated 17 collisions and derailments involving passenger trains on the Illinois Central and Illinois Central Gulf. Sixty-two persons were killed and 808 persons were injured in these accidents. Including those resulting from the investigation of this accident, the Safety Board has made 29 safety recommendations to IC and ICG, far more than have been made to any other railroad. During the past decade, the Board has repeatedly cited basic inadequacies in rules, practices, and personnel training as factors in serious accidents on ICG.

Following the collision of two ICG commuter trains at Chicago on October 30, 1972, the Safety Board recommended that ICG "review its organization systematically to ensure that safety is covered adequately in all interactions of equipment, personnel, rules and procedures." ^{2/} Nevertheless, engineering changes were subsequently made which resulted in operating situations that ultimately became factors in serious accidents. The investigation of this accident indicated that neither ICG's adverse experience of the past decade nor the Safety Board's past recommendations seem to have resulted in any demonstrable change in management's attitude toward operational safety.

Although the engineer knew he had to obtain glasses before he could return to duty, he had resumed service as a passenger engineer for 10 days before ICG's chief medical officer notified the division superintendent that the engineer had to wear the glasses at all times while on duty. No division officer ever determined that the engineer understood this or was complying with the restriction. Although the engineer's service record indicates that he had been reprimanded or disciplined for numerous violations of speed restrictions and signal rules, he received no additional training or close supervision following his transfer to passenger service, 2 months before the accident occurred.

As a result of this investigation, the National Transportation Safety Board recommends that the Illinois Central Gulf Railroad:

Take immediate action to determine that train and engine service employees of the Alton District are fully conversant with and comply with timetable speed restrictions and the various color-light signal aspects that can be displayed at Iles and K.C. Junction. (Class II, Priority Action) (R-81-61)

Increase the frequency with which train and engine service employees are instructed and examined on the rules, timetable, and bulletin instructions. (Class II, Priority Action) (R-81-62)

Erect speed limit signs as provided for in its rules, and/or provide milepost references in its timetable to indicate the limits of restricted speed sections on the Alton District at Springfield, Illinois. (Class II, Priority Action) (R-81-63)

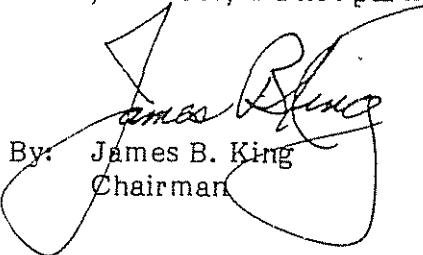
Reduce the allowable speed for passenger trains between Laurel Street and K.C. Junction to a speed that is consistent with the restrictions north of Laurel Street and at the N&W crossing as well as the possibility that a train may have to reduce speed to 10 mph at K.C. Junction. (Class II, Priority Action) (R-81-64)

^{2/} Railroad Accident Report--"Collision of Illinois Central Gulf Railroad Commuter Trains, Chicago, Illinois, October 30, 1972," (NTSB-RAR-73-5).

In cooperation with the National Railroad Passenger Corporation (Amtrak), develop and execute a program of surveillance of passenger train operations on the Alton District, including on-board determination of how engine crews comply with signal aspects, speed restrictions, and ICG Rule 34, as well as routine monitoring of locomotive speed recorder tapes. (Class II, Priority Action) (R-81-65)

Require that appropriate division officers determine that enginemen who have been restricted because of impaired vision have obtained proper corrective eyeglasses and fully understand the nature of their restriction before they are allowed to continue in service. (Class II, Priority Action) (R-81-66)

KING, Chairman, DRIVER, Vice Chairman, GOLDMAN, and BURSLEY, Members, concurred in these recommendations. McADAMS, Member, did not participate.


By: James B. King
Chairman