



**National Transportation Safety Board**  
Washington, DC 20594

**Railroad Accident Brief**

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**Accident No.:** DCA-12-FR-002  
**Location:** Westville, Indiana  
**Date:** January 6, 2012  
**Time:** 1:18 p.m. central standard time<sup>1</sup>  
**Railroad:** CSX Transportation  
**Property Damage:** \$5 million  
**Injuries:** 2  
**Fatalities:** 0  
**Type of Accident:** Collision

## The Accident

On January 6, 2012, at 1:18 p.m., westbound CSX Transportation (CSX) freight train Q39506 struck the rear end of standing westbound CSX freight train K68303 on track 2 at milepost (MP) 224.5 near Westville, Indiana. (See figures 1 and 2.)

The crew of train Q39506 had just escaped the locomotive, which had derailed on its side onto track 1, when CSX westbound freight train Q16105, operating on track 1, struck the derailed locomotive.

The derailed equipment from both collisions included the last 7 cars of train K68303, both locomotives and 6 cars of train Q39506, and all 3 locomotives and 12 cars of train Q16105. Spilled diesel fuel from the locomotives caught fire.

The engineer and conductor of train Q39506 were injured and transported to a local hospital.

The weather was clear and 54°F at the time of the accident. The estimated damage was about \$5 million.

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<sup>1</sup> All times are central standard time.



**Figure 1.** Accident site.



Figure 2. Map of accident site.

## First Train

Train K68303 consisted of 2 locomotives and 69 empty cars previously loaded with ethanol. After a crew change, train K68303 departed Garrett, Indiana, MP 128.0, at 10:48 a.m., traveling westward toward Chicago, Illinois, with a maximum authorized speed of 50 mph.

When the train reached control point (CP)<sup>2</sup> Wellsboro, MP 213.8, the train dispatcher routed the train from track 1 to track 2. The train dispatcher planned to hold train K68303 at CP Suman, MP 226.7, and hold train Q39506 directly behind it on track 2, to allow the following higher priority intermodal<sup>3</sup> train, Q16105, to pass on track 1 and arrive at the Chicago terminal first. The train dispatcher advised the crew of train K68303 via radio that their train would be held at CP Suman to allow expedited train Q16105 to pass. The engineer followed the normal operating practice and stopped at MP 225.54 rather than at CP Suman, 1.2 miles ahead, to avoid blocking Stells Crossing, a highway-rail grade crossing. The crew explained during interviews that they could see the red (stop) signal at CP Suman and would be able to see the signal aspect<sup>4</sup> change from red to another aspect when the train dispatcher wanted them to proceed. (See figure 3 for an overview of the Garrett Subdivision.)

The train K68303 conductor said that before reaching CP Suman and when the yellow (approach) signal came into view he called the train Q39506 crew over the radio and announced train K68303's length (4,700 feet) and stated that it would be stopping. Once stopped, the conductor said that he again announced over the radio the train length, that the train was stopped behind Stells Crossing, and that it was not blocking the highway traffic. He stated that he did not receive a response from the train Q39506 crew to either radio announcement.

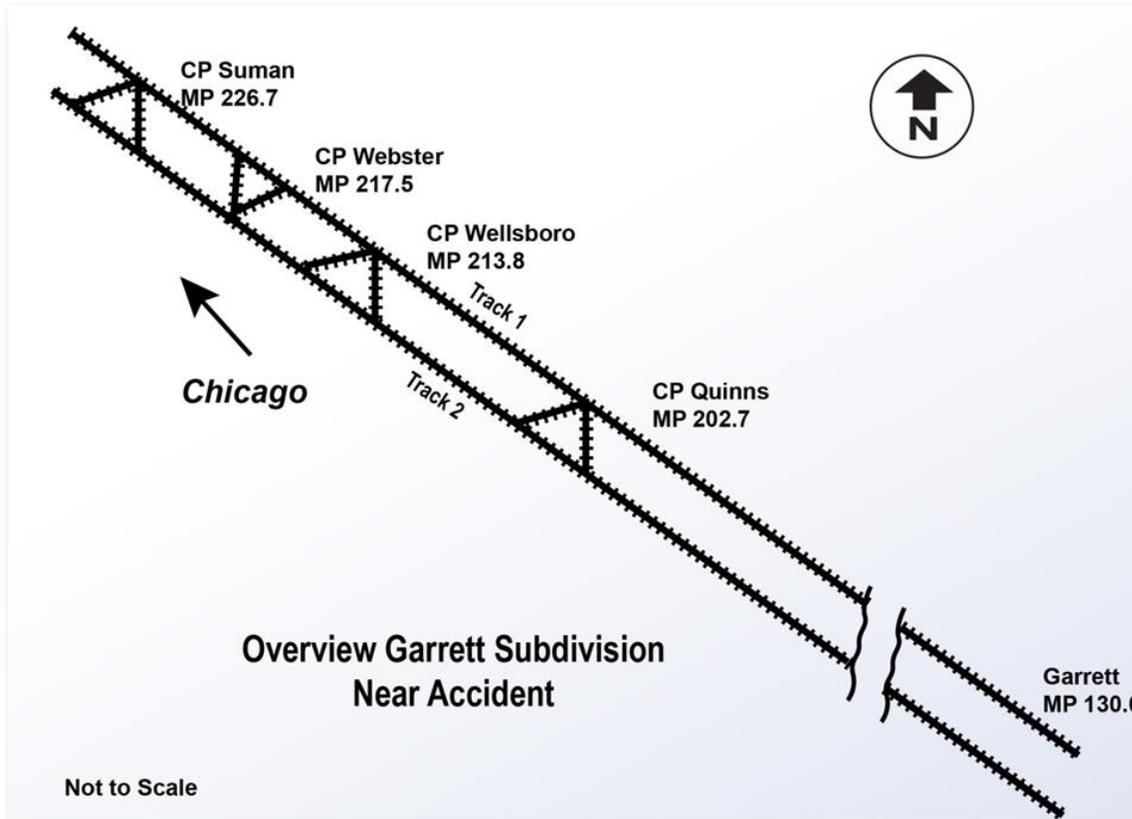
While waiting for a signal to proceed, the train K68303 crew felt a jolt from the rear of the train, and the emergency brakes applied. Neither the engineer nor the conductor made a radio announcement that the train had gone into emergency braking. The engineer said that he thought an air hose might have come uncoupled. A few minutes later, while trying to recover the air pressure in the brake pipe, the engineer said that he heard a crewmember on train Q16105 announce "emergency, emergency, emergency" over the radio.

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<sup>2</sup> A *control point* is a location on the railroad where the train dispatcher controls train movements by setting switch positions.

<sup>3</sup> *Intermodal trains* consist of railcars designed to be loaded with shipping containers or highway trailers.

<sup>4</sup> An *aspect* is defined by the Federal Railroad Administration (FRA) in Title 49 *Code of Federal Regulations* (CFR) 237.703 as "the appearance of a roadway signal conveying an indication as viewed from the direction of an approaching train; the appearance of a cab signal conveying an indication as viewed by an observer in the cab."



**Figure 3.** Overview of Garrett Subdivision near accident.

## Second Train

Train Q39506 was a mixed freight train consisting of 2 locomotives and 60 cars, including boxcars, flat cars, and tank cars. The engineer and the conductor went on duty at Garrett, Indiana, at 10:05 a.m. The train departed Garrett at 12:01 p.m. following train K68303, with a maximum authorized speed of 50 mph. According to the recorded radio transmission, the dispatcher contacted the crew at 12:42 p.m. and explained that he intended to route their train from track 1 to track 2 at an upcoming crossover at CP Quinns. A crewmember responded and repeated the information back to the dispatcher. Train Q39506 crossed from track 1 to track 2 at CP Quinns, MP 202.7. The dispatcher told National Transportation Safety Board (NTSB) investigators that he expected train Q39506 to follow behind train K68303 on track 2 while train Q16105 passed both trains in the same direction on track 1 at CP Suman.

Postaccident testing verified a yellow (approach) signal<sup>5</sup> at MP 219.7 and a red (restricted proceed) signal at MP 222.3.<sup>6</sup> The signal aspect at MP 222.3 changed to red after train K68303

<sup>5</sup> A yellow (approach) signal requires crews to reduce the speed of their trains to 30 mph and be prepared to stop at the next signal (CSX Operating Rules & Signal Aspects and Indications).

<sup>6</sup> A red (restricted proceed) signal requires crews to operate their trains at restricted speed prepared to stop short of a train ahead within one-half the range of vision but not to exceed 15 mph (CSX Operating Rules & Signal Aspects and Indications, January 1, 2010).

moved beyond that signal and would have remained red until train K68303 moved into the next signal block.<sup>7</sup>

Calculations from the highway-rail grade crossing warning systems<sup>8</sup> indicated that train Q39506 was operating about 44 mph on track 2 at the highway-rail grade crossing at County Road (CR) 1100 West at MP 221.47 in excess of the maximum authorized train speed for the signal conditions. This was about 3 miles behind the stopped train. It continued past a red (restricted proceed) signal at a calculated speed of 43 mph at the grade crossing at MP 223.38, CR 600 East. At this point, train Q39506 was about 1.1 miles from the rear of train K68303, which had stopped on track 2.

Train Q39506 collided with the last car of stopped train K68303 at 1:18 p.m. near MP 224.5. The rearmost tank cars of train K68303 were pushed off the track and across track 1 and came to rest north of track 1. The lead locomotive of train Q39506 rolled onto its right side on top of track 1. (See figure 4.) The conductor and the engineer said that they evacuated the locomotive cab and proceeded toward an open field on the north side of track 1. They had not gone far when train Q16105 collided with their overturned locomotive.



**Figure 4.** View from forward-facing video on train Q16105 as it approached the first collision.

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<sup>7</sup> A *block* is defined by the FRA in 49 CFR 236.703 as a length of track of defined limits, the use of which by trains is governed by block signals, cab signals, or both.

<sup>8</sup> The locomotive event recorders on train Q39506 were destroyed in the collision. The calculated speeds were based on the recorded entry and exit times from the grade crossing data recorders. An average speed was calculated using the length of the train. The collision speed was calculated from the last average speed shown at crossing CR 600 East and the elapsed time until the collision.

## Third Train

Train Q16105 was an intermodal train consisting of 3 locomotives and 48 cars, including articulated flat cars loaded with containers. Train Q16105 departed Willard, Ohio, MP 0.0, at 8:30 a.m. with a maximum authorized speed of 60 mph. The engineer said that he knew that train K68303 was ahead of his train because he had noted when it had left Willard earlier in the day. The engineer also stated that he was aware that train Q39506 had departed Garrett ahead of his train. While operating on track 1, train Q16105 started to catch up with train Q39506,<sup>9</sup> operating at 50 mph on track 1 near MP 165. The engineer of train Q16105 told NTSB investigators that as he followed train Q39506, he sporadically encountered yellow (approach) signals and yellow over green (approach limited) signals. This continued until train Q39506 crossed over to track 2 at CP Quinns (MP 202.7). From that point until the accident occurred, train Q16105 had green (proceed) signals on track 1.

The train Q16105 engineer said that he and the conductor saw the rear end of train Q39506 three times before the accident: (1) moving on the adjacent track (track 2) near MP 219, 5.5 miles before the point of collision (POC); (2) moving on track 2, 2 miles before the POC; and (3) stopped on track 2, less than 1 mile before the POC. As train Q16105 rounded a curve, the engineer recalled thinking “that train sure stopped quickly.” Less than 2 minutes later, while their train was operating at 57 mph, he and his conductor saw the derailed equipment from train Q39506 blocking track 1. The engineer immediately applied the emergency brake, and both crewmembers braced themselves for the impending collision. The three locomotives pushed through the wreckage and derailed, remaining upright as they came to rest in an embankment to the right of and parallel to track 1. (See figure 5.)

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<sup>9</sup> The Q16105 engineer stated that this was the first location at which he encountered a signal indicating that train Q39506 was ahead of him.



**Figure 5.** View of train Q16105 locomotives after derailing from track 1 and coming to rest on embankment.

## The Investigation

The conductor of train K68303 told investigators that he had made an announcement on the radio when they stopped before CP Suman:

... [W]e called the stop, we called signals, I even tried to get ahold of the engineer there, [the engineer of train Q39506], and let him know where we were stopped at and then about 10 minutes later, we felt a big lurch and went in emergency.

The conductor of train Q39506 described hearing a crewmember on train K68303 on the radio stating that the train had stopped:

I heard the engineer on the train we struck say that he was stopped at the bridge, or wherever he was stopped. And [the engineer of train Q39506]—I swear that [the engineer of train Q39506] responded, said something back to him, but I'm—I was looking forward so I don't exactly know if he said something back to him or if it just—I heard it over the radio and then he didn't respond ....

However, the conductor of train Q39506 also added that he had expected train K68303 to be gone by the time his train arrived at CP Suman: “[Y]es, I'd be looking for it, but [train K68303] should be gone.”

The engineer of train Q39506 told investigators that it was a common practice for following trains to be advised by the crew of the stopped train or by the train dispatcher when the following train would be held. The engineer added that he did not recall hearing such an advisory stating the location of the train in front of him from the train dispatcher or from the crew of train K68303. He also did not recall a conversation or job briefing with the conductor about a radio call from train K68303. Both the engineer and the conductor stated that they knew that stopping short of the crossing when held at CP Suman was a common and expected practice. The engineer told investigators, “If we don’t get a signal (to proceed) at Suman, that’s where we know to stop at, Stells Crossing.”

The locomotive event recorders on the two lead locomotives of train Q39506 could not be found in the wreckage.<sup>10</sup> However, information was retrieved from CP Webster and several highway-rail grade crossing data recorders that provide data about train Q39506 operations before the collision. The last highway-rail grade crossing before the accident site was CR 600 East, located at MP 223.4, about 1.1 miles before the POC.

Table 1 provides train speed for train Q39506 at several locations immediately preceding the POC.

**Table 1.** Calculated speeds and times for train Q39506 at key locations.

Location	Time <sup>a</sup>	MP	Calculated Speed <sup>b</sup>
CR 900 West	1:11:10	MP 219.4	35 mph
Yellow (approach) signal	1:12:00	MP 219.6	--
CR 1100 West	1:13:46	MP 221.5	44 mph
Red (restricted proceed) signal	1:14:08	MP 222.3	--
CR 600 East	1:16:07	MP 223.4	43 mph
POC	1:17:33	MP 224.5	44 mph

<sup>a</sup> The times were either calculated at the grade crossings or estimated using the recorded times at the crossings before and after the signals. The collision time occurred when the event recorder on train K68303 showed an emergency application of the train brakes.

<sup>b</sup> These speeds were calculated using the data recovered from the grade crossings.

Because the train Q39506 engineer could not recall the events leading up to the collision and the event recorders from his locomotives could not be recovered, investigators were unable to determine his specific activities or train handling actions when passing the yellow (approach) signal and the red (restricted proceed) signal. However, data recorded at the highway-rail grade crossings indicated that he did not reduce the train speed as required by these signal indications. (See the appendix to this brief.)

The conductor of train Q39506 also could not recall all of his actions before the collision. However, he stated during interviews that he had heard a crewmember on train K68303 announce that they were stopped at Stells Crossing. Investigators determined this event occurred

<sup>10</sup> These locomotives had significant physical and fire damage. The event recorders were “grandfathered” by the current regulation, 49 CFR 229.135, and were not required to have certified crashworthy event recorder memory modules.

after train Q39506 had already passed the yellow (approach) signal. The conductor's duties and responsibilities require him to announce the wayside signals aloud to the engineer, and if the engineer fails to respond properly, the conductor should take action to stop the train, if necessary. (See Rule 50 (1) in the appendix to this brief.)

During a follow-up interview with NTSB investigators, the conductor reported that he observed the engineer sitting with his head down before the accident. Although the engineer's head was down, when the conductor called out the signals, the engineer called the signals back and then made throttle control adjustments. The conductor told investigators that he did not know if the engineer had fallen asleep or was focused on other activities.

## **Other Crew Activities**

The NTSB investigators used the recorded radio transmissions at the train dispatcher's office, the event recorder data from train K68303, and cell phone records from the operating crew's personal electronic devices to identify the train Q39506 crew's key activities leading to the first collision. (See table 2.)

On the day of the accident, several events occurred between 1:13 p.m. and 1:17 p.m. that were critical to safe train operations. At 1:13 p.m., the conductor of train K68303 used his radio to announce that his train was stopped at Stells Crossing. The conductor of train Q39506 heard the communication but he did not inquire if the engineer had also heard or understood the message, nor did the two discuss its content or relevance. Moreover, neither crewmember responded to the train K68303 crew to confirm that they had received the message.

About this same time, 1:13 p.m., an incoming call was routed to the train Q39506 conductor's cell phone voice mail. At 1:14 p.m., the same caller again tried to reach the conductor. It could not be determined if the conductor had answered the cell phone. During this time, his train was approaching the red (restricted proceed) signal and passed the signal at 1:14:08. At 1:15 p.m., the conductor sent a text message<sup>11</sup> to the person who had made the two calls to him.<sup>12</sup>

Moments later, while operating in excess of 40 mph, substantially above the maximum of 15 mph or a speed that would facilitate stopping within one-half the range of vision, as prescribed by a red (restricted proceed) signal,<sup>13</sup> the crewmembers were surprised to see the rear of stopped train K68303 and applied the emergency brakes. The conductor later told investigators that he assumed that train K68303 had already departed.

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<sup>11</sup> The time, 1:15 p.m., indicates when the text message was sent. There is no information available indicating the length of the message or the time that the message was being composed.

<sup>12</sup> CSX train crewmembers are not permitted to text or access the Internet while on duty.

<sup>13</sup> This speed is consistent with operating on a green (clear) signal.

**Table 2.** Train Q39506 crew activities and train speeds at critical locations.

Location	Time	Calculated Speed	Activities
Approaching CP Quinns MP 202.7	12:42:00	--	Train dispatcher called on the radio and informed crew that they were crossing over at CP Quinns from track 1 to track 2. A crewmember repeated the information back to the train dispatcher. <sup>a</sup>
CR 900 West MP 219.4	1:11:10	35 mph	--
Yellow (approach) signal MP 219.6	1:12:00	--	--
	1:12:30	--	Conductor said he overheard a radio transmission from a crewmember of train K68303 stating that they were stopped at Stells Crossing and that their train was 4,700 feet long.
	1:13:00	--	An incoming call was routed to the conductor's cell phone voice mail. (He did not answer this call.)
CR 1100 West MP 221.5	1:13:46	44 mph	--
	1:14:00	--	Conductor received an incoming call on his cell phone. (It is unknown if the call was answered; there was no voice mail message.)
Red (restricted proceed) signal MP 222.3	1:14:08	--	--
	1:15:00	--	Conductor sent an outgoing text message on his cell phone. (Message length and amount of time composing message are unknown.)
CR 600 East MP 223.4	1:16:07	43 mph	--
POC MP 224.5	1:17:33	44 mph	--

<sup>a</sup> It was likely the engineer of train Q39506 who responded to the train dispatcher. During the conductor's interview, he stated that the engineer was the crewmember who conversed with the train dispatcher, and he (the conductor) called out the signal aspects on the radio.

## Sight-Distance Observations

On January 10, 2012, about the same time of day as the accident and with similar weather conditions, NTSB investigators conducted sight-distance observations to determine when the rear of train K68303 would have been visible to the crew of train Q39506 on track 2. The investigators could see the rear of an exemplar standing train when their test train was 1,304 feet away. The test train used a lead locomotive with the same configuration as that of train Q39506. (See figure 6.)



**Figure 6.** Rear of exemplar standing train (circled) is first visible at about 1,304 feet away.

Investigators also documented the sight distance for the yellow (approach) signal and the red (restricted proceed) signal that were displayed behind the rear end of train K68303. The distances at which investigators could see the various signals and the rear of the exemplar standing train are shown in table 3.

**Table 3.** Sight distances.

Observable Feature	Sight Distance <sup>a</sup>
Yellow (approach) signal at MP 219.7	7,145 feet
Red (restricted proceed) signal at MP 222.3	7,198 feet
Rear of standing exemplar train at POC	1,304 feet

<sup>a</sup>Distance as measured along tracks.

Because the train Q39506 crewmembers could not recall when they had passed the wayside signals or what they had observed while doing so, and because their locomotive cab was not equipped with either an inward-facing video recorder or an audio recorder, investigators were unable to determine the crew’s specific activities before the accident. The crew of train Q39506 were qualified, and they were familiar with the characteristics of the territory, including the location of each signal.

## Operations Information

The train operating crews were governed by the *CSX Operating Rules & Signal Aspects and Indications*, dated January 1, 2010. (See the appendix to this brief.) Crews also used other industry rulebooks, bulletins, and notices to determine the procedures to follow when operating trains.

The train movements were governed and authorized by signal indications from the traffic control system operated by a CSX train dispatcher in Calumet City, Illinois. The train dispatcher set the routes and held trains at the CPs. Intermediate automatic block signals were located at intervals between the CPs and provided indications to engineers of the status of the signal blocks ahead as well as speed requirements.

The Garrett Subdivision (between MPs 62.6 and 236.4) consists of two main tracks. Trains operate in both directions (east and west) on both tracks. The train dispatcher can route trains from one track to the other at CPs with crossover switches throughout the subdivision. About 60 freight trains a day operate on this subdivision with about an equal number traveling in each direction. There are no scheduled passenger trains.

The maximum authorized track speed at the accident location was 60 mph. Train Q16105 was authorized to operate at 60 mph. Trains K68303 and Q39506 were restricted to 50 mph because of empty cars in the train consists.

## Other Factors

No track or mechanical conditions were identified that contributed to the accident. Although evidence showed that the conductor of train Q39506 had been distracted by using his cell phone (texting) while on duty, there was no evidence that any crewmembers on the other involved trains were using portable electronic devices at inappropriate times. All of the train crews were trained to perform their duties, they were qualified on the accident territory, and they had been tested on the CSX operating rules within the required timeframes.

After the accident, toxicological tests were performed on all of the train crews. The tests for alcohol and illegal drugs were conducted in accordance with 49 CFR Part 219, Subpart C. All of the test results were negative. The engineer and the conductor of train Q39506 were not known to be suffering from any medical condition and had not been prescribed medications that would have affected their performance.

Investigators asked the crews of the three trains about visibility in the area as they approached the collision. All responded that visibility was good. When asked about glare from sunlight, the engineer of train Q39506 stated, “No, the sun was not a factor. The sun was pretty much overhead ....”

The Porter County Regional Airport in Valparaiso, Indiana, reported that the visibility was unrestricted at 10 miles about the time of the accident.

## **Sleep/Wake/Work History**

The NTSB examined the train Q39506 crew's work and sleep schedules for the days leading up to the accident. The conductor could not provide extensive details about his work and sleep history leading up to the accident. However, based on the information he did provide, there was nothing to suggest that he may have been fatigued at the time of the accident.

The engineer indicated that on the night before the accident, he went to bed about 10:00 p.m. and woke up about 7:00 a.m. the next morning. During this period, however, he made a call to the CSX at 3:34 a.m. to check when he would likely have to report to work. This call lasted about 5 minutes. The engineer was unable to recall details about this event, including how long he was awake before and after he made the call. Therefore, it cannot be determined if the engineer's interrupted sleep resulted in his getting inadequate rest or being fatigued and consequently less alert while he was operating the train.<sup>14</sup>

Because train Q39506 had no locomotive inward-facing video and audio recorders, the circumstances leading to the train crew's noncompliance with the wayside signals remain unknown. Previous NTSB accident investigations have demonstrated how inward-facing video and audio recorders can play a key role in identifying and deterring unsafe acts and can provide critical human performance and cab environment information for accident investigations that would otherwise be unavailable.

## **Federal and CSX Transportation Oversight - Operational Testing**

Title 49 CFR 217.9 contains specific requirements for the testing and observations of operating employees while they perform their duties. The CSX maintains an operational testing program to monitor the performance and rules compliance of employees operating trains based on the *CSX Guidelines for Operational Testing and Data Reporting*. Title 49 CFR 240.129 also contains additional testing requirements that railroads must adhere to for certification of locomotive engineers, including a requirement that locomotive engineers who operate on signaled track be tested once a year on a "less than clear" aspect. All of the engineers involved in this accident had been tested according to this requirement.

The purpose of the operational testing program is to observe operating crew activities when the crewmembers are unaware that a supervisor is present. The CSX had performed operational testing in the same area as the accident to determine how well the crews were complying with the signal indications when they were not supervised. According to the data, the CSX managers appeared to have monitored the employees in this area on a regular basis.

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<sup>14</sup> During postaccident interviews, the engineer told investigators that he woke up feeling adequately rested on the day of the accident.

## Postaccident Actions

### Federal Railroad Administration

As a result of this accident, in April 2012, the Federal Railroad Administration (FRA) conducted a regulatory audit of the CSX Chicago Division program of operational tests and inspections required by 49 CFR 217.9. This audit was performed on the CSX rules compliance program that was effective January 10, 2010.

The FRA did not cite the CSX for any violations identified during the audit; however, the FRA did recommend that the CSX improve several areas of its program. None of the FRA inspection reports issued to the CSX required a response for remedial actions taken.

### CSX

Following this accident, the CSX conducted a program of systemwide safety contacts with operating crews to discuss the accident and emphasize the importance of strict compliance with signal indications. The CSX also reviewed banner-testing<sup>15</sup> locations throughout the Chicago Division to make sure all locations were covered appropriately. Banner testing performance was reviewed on a weekly basis for quality. There were no banner test failures between the date of this accident and December 2012.

The CSX director of Operating Rules indicated that CSX officials reviewed the FRA April 2012 audit findings and recommendations. The director reported that the FRA's primary concern was whether the operational testing had been performed during nontraditional times, such as weekends and nights. After the CSX had reviewed its operational testing times and dates, the director felt confident that the data collected represented an adequate sample, and no further action was taken.

### Positive Train Control

Had a positive train control (PTC) system been installed, it could have prevented the accident. Train Q39506 was traveling about 40 mph when it passed the red signal at MP 222.3, and it continued operating at nearly 40 mph until it struck the rear of train K68303. A PTC system would have intervened by first activating an audible warning in the locomotive to alert the train crew about the overspeed condition. If the train crew did not reduce the train speed, the PTC system could have initiated an automatic brake application to stop the train before it struck the stopped train 2 miles ahead. If the PTC system stopped the train, the engineer would have been required to reset the locomotive controls to recharge the brake system and release the brakes. At that point, the engineer would have been unable to exceed 15 mph while approaching the rear of the standing train. If the engineer exceeded 15 mph, the PTC system

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<sup>15</sup> CSX uses *banner testing* to verify that crews are operating trains at restricted speed. The test is performed at locations where an approaching train is required to operate at restricted speed. This testing protocol involves placing a simulated obstruction on the track. To pass the test, the crew must stop their train short of the simulated obstruction without using the emergency brakes. The CSX reported that it conducted 733 banner tests (12 percent of all tests) on the Garrett Subdivision over the 12 months preceding the accident. Of the 733 banner tests, none was categorized as a failure.

again would have activated an audible warning. If there was no response to the audible alert, the PTC system would have automatically applied the train brakes.

## **Probable Cause**

The National Transportation Safety Board determines that the probable cause of the accident was the failure of the crew of train Q39506 to maintain vigilant attention to wayside signals, communicate effectively, avoid distractions from prohibited text messaging, and comply with the speed restrictions required by the railroad signal system. Contributing to the accident was the lack of a positive train control system that would have stopped the train and prevented the collision regardless of the crew's inaction.

**Adopted: August 20, 2013**

## Appendix: Excerpts from *CSX Operating Rules & Signal Aspects and Indications*, effective January 1, 2010

**Restricted Speed:** A speed that will permit stopping within one-half the range of vision. It will also permit stopping short of a train, a car, an obstruction, a stop signal, a derail, or an improperly lined switch. It must permit looking out for broken rail. It will not exceed 15 mph.

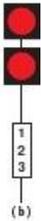
Train crews must comply with these requirements until the leading wheels reach a point where movement at restricted speed is no longer required.

**Medium Speed:** A speed not exceeding 30 mph.

### RULE C-1285: APPROACH

RULE	ASPECT	NAME	INDICATION
C-1285		APPROACH	Proceed prepared to stop at the next signal. Trains exceeding medium speed must immediately begin reduction to medium speed as soon as the engine passes the Approach Signal.

### RULE 1291: RESTRICTED PROCEED

RULE	ASPECT	NAME	INDICATION
C-1291		RESTRICTED PROCEED	Proceed at restricted speed.

**Rule 50 (1):** If the engineer fails to control the train in accordance with a signal indication or restriction imposed upon his train, other members of the crew must: (a) caution the engineer and, if necessary, (b) take action to ensure the safety of the train, (including stopping the movement).

*CSX rules on calling signals and radio announcements*

**Rule 34-A, 1-a**, requires crewmembers in the controlling locomotive to communicate the name of each signal governing their movement as soon as it becomes visible.

**Rule 34-A, 2 a**, requires a crewmember to also make a radio announcement of the name of each control and block signal.

**Rule 34-A, 2 g**, requires a crewmember to make a radio announcement when stopping and each 15 minutes after being stopped on a main track or passing siding.

**Rule 418** prohibits transmission of information to a train crew about the position or aspect of fixed signals by individuals who are not members of that crew.<sup>1</sup>

**Rule 90** requires a train that is moving to make a radio announcement ... should there be an emergency application of brakes.

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<sup>1</sup> This rule is consistent with regulatory requirements at 49 CFR 220.51.