Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2006-51

Norfolk Southern/Union Pacific
Chicago, IL
June 16, 2006

Note that 49 U.S.C. §20903 provides that no part of an accident or incident report made by the Secretary of Transportation/Federal Railroad Administration under 49 U.S.C. §20902 may be used in a civil action for damages resulting from a matter mentioned in the report.

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File # HQ-2006-51

1.Name of Railroad Operating Train #1 Norfolk Southern Corp. [NS]	1a. Alphabetic Code NS	1b. Railroad Accident/Incident No. 025559
2.Name of Railroad Operating Train #2 Union Pacific RR Co. [UP]	2a. Alphabetic Code UP	2b. Railroad Accident/Incident 0606PR007
3.Name of Railroad Responsible for Track Maintenance: Norfolk Southern Corp. [NS]	3a. Alphabetic Code NS	3b. Railroad Accident/Incident No. N/A
4. U.S. DOT_AAR Grade Crossing Identification Number	5. Date of Accident/Incident Month 06 | Day 17 | Year 2006	6. Time of Accident/Incident 11:01:00 ☑ AM ☐ PM

7. Type of Accident/Indicent (single entry in code box): 1. Derailment; 2. Head on collision; 3. Rear end collision; 4. Side collision; 5. Raking collision; 6. Broken Train collision; 7. Hwy-rail crossing; 8. RR grade crossing; 9. Obstruction; 10. Explosion-detonation; 11. Fire/violent rupture; 12. Other impacts; 13. Other (describe in narrative) — Code: 04

8. Cars Carrying HAZMAT	9. HAZMAT Cars Damaged/Derailed	10. Cars Releasing HAZMAT	11. People Evacuated	12. Division
16	00	00	0	DEARBORN

13. Nearest City/Town	14. Milepost (to nearest tenth)	15. State Abbr	15. State Code	16. County
CHICAGO	2.8	N/A	IL	COOK

17. Temperature (F) (specify if minus)	18. Visibility (single entry) 1. Dawn 2. Day 3.Dusk 4.Dark — Code	19. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5.Sleet 6.Snow — Code	20. Type of Track 1. Main 2. Yard 3. Siding 4. Industry — Code
90 F	2	1	2

21. Track Name/Number	22. FRA Track Class (1-9, X) — Code	23. Annual Track Density (gross tons in millions)	24. Time Table Direction 1. North 3. East — Code
CJ3/Western Ave Ind	2	0	4

OPERATING TRAIN #1

25. Type of Equipment Consist (single entry): 1. Freight train; 2. Passenger train; 3. Commuter train; 4. Work train; 5. Single car; 6. Cut of cars; 7. Yard/switching; 8. Light loco(s).; 9. Maint./inspect.car; A. Spec. MoW Equip. — Code: 1

26. Was Equipment Attended? 1. Yes 2. No — Code: 1

27. Train Number/Symbol: 33EB317

28. Speed (recorded speed, if available) — Code
R - Recorded
E - Estimated 8 MPH — Code: R

29. Trailing Tons (gross tonnage, excluding power units): 4744

30. Method(s) of Operation (enter code(s) that apply)
a. ATCS; b. Auto train control; c. Auto train stop; d. Cab; e. Traffic; f. Interlocking; g. Automatic block; h. Current of traffic; i. Time table/train orders; j.Track warrant control; k. Direct traffic control; l.Yard limits; m.Special instructions; n. Other than main track; o. Positive train control; p. Other (Specify in narrative) — Code(s): n N/A N/A N/A N/A

30a. Remotely Controlled Locomotive?
0 = Not a remotely controlled; 1 = Remote control portable; 2 = Remote control tower; 3 = Remote control transmitter - more than one remote control transmitter: 0

31. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded (yes/no)
(1) First involved (derailed, struck, etc)	N/A	1	N/A
(2) Causing (if mechanical cause reported)	N/A	N/A	N/A

32. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs
00	00

33. Was this consist transporting passengers? (Y/N): N

34. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote
(1) Total in Train	2	0	0	0	0
(2) Total Derailed	1	0	0	0	0

35. Cars	Loade a. Freight	Loade b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	32	00	27	00	00
(2) Total Derailed	00	00	00	00	00

36. Equipment Damage This Consist: 5000

37. Track, Signal, Way, & Structure Damage: 00

38. Primary Cause Code: H702

39. Contributing Cause Code: H605

Number of Crew Members

40. Engineer/ Operators	41. Firemen	42. Conductors	43. Brakemen
N/A	N/A	1	N/A

Length of Time on Duty

44. Engineer/Operator: Hrs 9 Mi 30

45. Conductor: Hrs 9 Mi 30

Casualties to:	46. Railroad Employees	47. Train Passengers	48. Other
Fatal	00	0	0
Nonfatal	N/A	0	0

49. EOT Device? 1. Yes 2. No — 1

50. Was EOT Device Properly Armed? 1. Yes 2. No — 1

51. Caboose Occupied by Crew? 1. Yes 2. No — 2

OPERATING TRAIN #2

52. Type of Equipment Consist (single entry): 1. Freight train; 2. Passenger train; 3. Commuter train; 4. Work train; 5. Single car; 6. Cut of cars; 7. Yard/switching; 8. Light loco(s).; 9. Maint./inspect.car; A. Spec. MoW Equip. — Code: 1

53. Was Equipment Attended? 1. Yes 2. No — Code: 1

54. Train Number/Symbol: IG3CH 16EAS

55. Speed (recorded speed, if available) — Code
R - Recorded
E - Estimated 11 MPH — Code: R

57. Method(s) of Operation (enter code(s) that apply)
a. ATCS; b. Auto train control; g. Automatic block; h. Current of traffic; m.Special instructions; n. Other than main track

57a. Remotely Controlled Locomotive?
0 = Not a remotely controlled; 1 = Remote control portable

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56. Trailing Tons (gross tonnage, excluding power units)	c. Auto train stop d. Cab e. Traffic f. Interlocking	i. Time table/train orders j.Track warrant control k. Direct traffic control l.Yard limits	o. Positive train control p. Other (Specify in narrative) Code(s)	2 = Remote control tower 3 = Remote control transmitter - more than one remote control transmitter
6501			g h N/A N/A N/A	0

58. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded (yes/no)	59. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.	Alcohol	Drugs
(1) First involved (derailed, struck, etc)	KCSC9 045	51	yes		N/A	N/A
(2) Causing (if mechanical cause reported)	N/A	N/A	N/A	60. Was this consist transporting passengers? (Y/N)		N

61. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote
(1) Total in Train	2	0	0	0	0
(2) Total Derailed	0	0	0	0	0

62. Cars	Loade a. Freight	Loade b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	108	00	00	00	00
(2) Total Derailed	4	00	00	00	00

63. Equipment Damage This Consist	64. Track, Signal, Way, & Structure Damage	65. Primary Cause Code	66. Contributing Cause Code
25810	0	H702	H605

Number of Crew Members: 67. Engineer/ Operators	68. Firemen	69. Conductors	70. Brakemen
1	N/A	1	N/A

Length of Time on Duty: 71. Engineer/Operator	72. Conductor
Hrs 3 Mi 22	Hrs 3 Mi 22

Casualties to:	73. Railroad Employees	74. Train Passengers	75. Other
Fatal	00	0	0
Nonfatal	00	0	0

76. EOT Device? (1. Yes 2. No)	77. Was EOT Device Properly Armed? (1. Yes 2. No)	78. Caboose Occupied by Crew? (1. Yes 2. No)
1	1	2

Highway User Involved

79. Type	Code
A. Auto B. Truck C. Truck-Trailer. D. Pick-Up Truck E. Van F. Bus G. School Bus H. Motorcycle J. Other Motor Vehicle K. Pedestrian M. Other (spec. in narrative)	N/A

80. Vehicle Speed (est. MPH at impact)	81. Direction geographical) 1.North 2.South 3.East 4.West	Code
N/A		N/A

82. Position	Code
1.Stalled on Crossing 2.Stopped on Crossing 3.Moving Over Crossing 4. Trapped	N/A

86a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? (1. Highway User 2. Rail Equipment 3. Both 4. Neither)	Code
	N/A

Rail Equipment Involved

83. Equipment	Code
1.Train(units pulling) 2.Train(units pushing) 3.Train (standing) 4.Car(s) (moving) 5.Car(s) (standing) 6.Light Loco(s) (moving) 7.Light(s) (standing) 8.Other (specify in narrative)	N/A

84. Position of Car Unit in Train
N/A

85. Circumstance	Code
1. Rail Equipment Struck Highway User 2. Rail Equipment Struck by Highway User	N/A

86b. Was there a hazardous materials release by (1. Highway User 2. Rail Equipment 3. Both 4. Neither)	Code
	N/A

86c. State here the name and quantity of the hazardous materials released, if any.
N/A

87. Type of Crossing Warning (1.Gates 2.Cantilever FLS 3.Standard FLS 4.Wig Wags 5.Hwy. traffic signals 6.Audible 7.Crossbucks 8.Stop signs 9.Watchman 10.Flagged by crew 11.Other (spec. in narr.) 12.None)	88. Signaled Crossing Warning (See instructions for codes) Code	89. Whistle Ban (1. Yes 2. No 3. Unknown) Code
Code(s): N/A N/A N/A N/A N/A N/A N/A	N/A	N/A

90. Location of Warning (1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach)	Code	91. Crossing Warning Interconnected with Highway Signals (1. Yes 2. No 3. Unknown)	Code	92. Crossing Illuminated by Street Lights or Special Lights (1. Yes 2. No 3. Unknown)	Code
	N/A		N/A		N/A

93. Driver's Age	94. Driver's Gender (1. Male 2. Female)	Code	95. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train (1. Yes 2. No 3. Unknown)	Code	96. Driver (1. Drove around or thru the Gate 2. Stopped and then Proceeded 3. Did not Stop 4. Stopped on Crossing 5. Other (specify in narrative))	Code
0		N/A		N/A		N/A

97. Driver Passed Standing Highway Vehicle (1. Yes 2. No 3. Unknown)	Code	98. View of Track Obscured by (primary obstruction) (1. Permanent Structure 2. Standing Railroad Equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicle 7. Other (specify in narrative) 8. Not obstructed)	Code
	N/A		N/A

101. Casulties to Highway-Rail Crossing Users	Killed	Injured
	0	0

99. Driver Was (1. Killed 2.Injured 3. Uninjured)	Code	100. Was Driver in the Vehicle? (1. Yes 2. No)	Code
	N/A		N/A

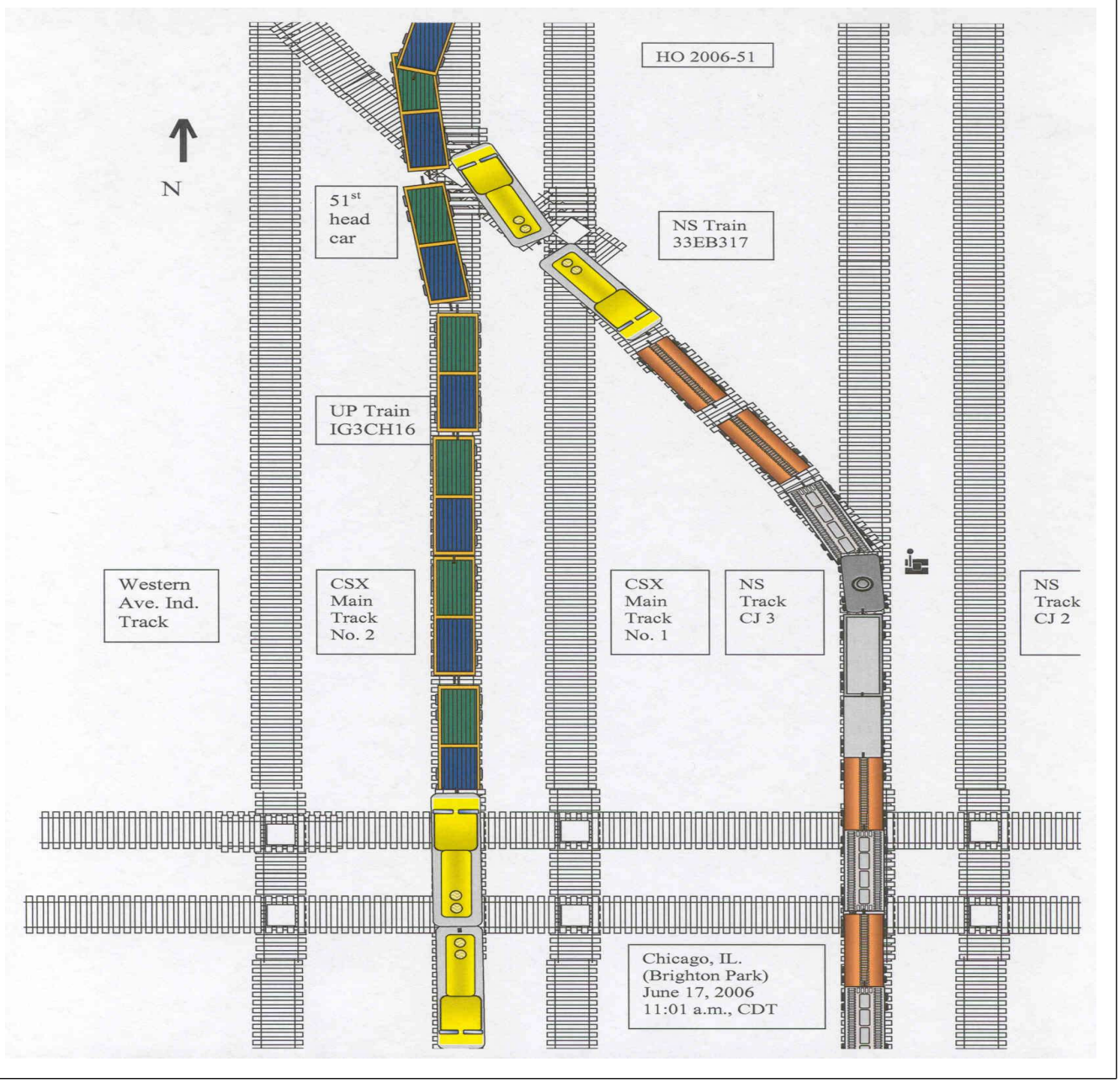
102. Highway Vehicle Property Damage (est. dollar damage)	103. Total Number of Highway-Rail Crossing Users (include driver)
0	0

104. Locomotive Auxiliary Lights? (1. Yes 2. No)	Code	105. Locomotive Auxiliary Lights Operational? (1. Yes 2. No)	Code
	N/A		N/A

106. Locomotive Headlight Illuminated? (1. Yes 2. No)	Code	107. Locomotive Audible Warning Sounded? (1. Yes 2. No)	Code
	N/A		N/A

108. DRAW A SKETCH OF ACCIDENT AREA INCLUDING ALL TRACKS, SIGNALS, SWITCHES, STRUCTURES, OBJECTS, ETC., INVOLVED.

HQ-51-
2006
Accident
Sketch.jpg



109. SYNOPSIS OF THE ACCIDENT

Synopsis of the Accident

On June 17, 2006, at 12:01 p.m., e.d.t., a westbound Norfolk Southern (NS) freight train collided into the side of an eastbound Union Pacific (UP) freight train on CSX track. The collision occurred in Chicago, Illinois, at NS Milepost UW 2.8 on the NS Dearborn Division. There were no injuries and no hazardous materials were involved.

The collision derailed the lead locomotive of the NS train, and four articulated intermodal cars on the UP train. The lead locomotive of the NS train sustained about $5,000 damage, and six articulated intermodal cars sustained about $25,810 damage. Damage to track was about $7,000.

At the time of the accident, it was clear and calm. The temperature was 90 F.

The collision was caused by an improperly lined switch and the failure of the NS crew to comply with restricted speed.

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110. NARRATIVE

Circumstances Prior to the Accident

The Norfolk Southern (NS) and CSX Transportation (CSX) railroads operate on Eastern Daylight Time (e.d.t.). The Union Pacific Railroad (UP) operates on Central Daylight Time (c.d.t.). However, for uniformity, all times indicated in this narrative are e.d.t.

Brighton Park is a non-interlocked manually-controlled railroad crossing at grade, controlled by an NS switchtender. The crossing consists of five tracks running in a geographic north-south direction, bisected by two main tracks which run in a geographic east-west direction. The two east-west tracks are owned and operated by the Canadian National Railway - North America (CN) and are also used by Amtrak passenger and Metra commuter trains. The five north-south tracks approach the crossing from the geographic southeast on a slight right-hand curve, then run almost due north after crossing the CN tracks. In this area of the railroad the tracks are virtually level.

From west to east, the five north-south tracks are: NS Western Avenue Industrial Track, CSX Main Track Number 2, CSX Main Track Number 1, NS Track CJ3, and NS Track CJ2. Tracks CJ3, CJ2 and the Western Avenue Industrial Track are listed in the NS timetable as, “Other than Main Tracks,” and are controlled by the Ashland Avenue Yardmaster. The speed limit is Restricted Speed, with a maximum of 15 mph. CSX operations are governed by the Northeast Operating Rules Advisory Committee (NORAC), 8th Edition, issued January 1, 2003. The method of operation on both CSX tracks at Brighton Park is NORAC Rule 251, which authorizes trains to operate with the current of traffic on signal indication. Trains moving geographically north at Brighton Park are considered to be westward trains in both the NS and the CSX timetables. All movements must stop at STOP signs, located in advance of the crossing. Permission to proceed over the crossing is given by semaphore signal indication as well as hand signal or verbal permission from the switchtender, who controls the non-interlocked signals governing movement over the crossing.

There is a hand throw crossover switch located 198 feet north of the northbound STOP board on Track CJ3, which connects Track CJ3 with the Western Avenue Industrial Track. This is a facing-point switch for northbound trains on Track CJ3 and is controlled by the switchtender. The low switch stand, located on the west side of Track CJ3, is equipped with a reflectorized target. The target is green when lined for NS track CJ3 and red when lined for the diverging route. The target can be previewed from the northbound STOP board.

NS Train 33EB317 West
The crew of westbound Norfolk Southern (NS) train 33EB317 included a locomotive engineer, a locomotive engineer trainee, and a conductor. They went on duty at 2:30 a.m., June 17, 2006, in Elkhart, Indiana. This was the home terminal for all crew members, and all received more than the statutory off-duty period prior to reporting for duty. Their assigned freight train consisted of two locomotives (UP4063 and UP2853), 32 loaded, and 27 empty cars of several varieties. It was 3,530 feet long and weighed 4,744 tons. The train was scheduled to travel to Chicago, Illinois, with no work en route. The train was inspected and received an initial terminal train air brake test, and departed Elkhart at 5:35 a.m. The trip was without incident up to the time of the collision.

At approximately 11:30 a.m., they stopped briefly in Chicago at NS Ashland Avenue Yard, NS Milepost UW 2.0, to pick up the UP track warrants and bulletins they would need to get to UP’s Proviso Yard, located about 15 miles northwest of downtown Chicago. They then proceeded a short distance west to Brighton Park, NS Milepost UW 2.7., arriving at 11:50 a.m.

While they waited for permission to proceed over the crossing, the locomotive engineer trainee read the UP track warrant and bulletins they had just received, and all three crew members conducted a job briefing about a UP flagman located ahead of them, a highway-rail grade crossing that might have to be flagged, and the work to be done upon their arrival at Proviso Yard. They were given permission to proceed by semaphore indication and verbal confirmation from the switchtender, and they began to move at 11:59 a.m.

UP Train IG3CH16 East
Eastbound UP Intermodal Train IG3CH16 consisted of two locomotives (UP3095 and UP3039), 108 articulated double stack wells, seven spine cars, and one conventional car. This train, which was on CSX Main Track Number 2, had also stopped briefly at the crossing, located at CSX Milepost DC 27.4. They received permission to proceed at 11:56 a.m., and were operating at a recorded speed of 11 mph.

The Accident
NS Train 33EB317 West
As the westbound NS train approached the accident area on Track CJ3, the locomotive engineer trainee was seated at the controls on the right side of the lead locomotive, operating the train as she had done for the entire trip. The engineer was seated in the left front seat and the conductor occupied the left rear seat. Both men continued to discuss the bulletins they had just received and the work to be done at their destination.

Meanwhile, the locomotive engineer trainee was intently concentrating on the gages to monitor her speed as they approached the next signal. None of the crew members noticed that the crossover switch was lined across the CSX main tracks toward the Western Avenue Industrial Track.

As the locomotive engineer trainee accelerated the train to a recorded speed of eight mph, she suddenly realized that the engine was heading through the crossover toward the side of the eastbound UP train. She immediately made an emergency brake application and shouted a warning to the engineer and conductor. They both leapt to their feet and moved to the right side of the cab, where they braced for the impact. From the point where the locomotive engineer trainee initiated the emergency brake application, the NS train continued 36 feet before the lead locomotive struck the 47th head car of the UP train at 12:01 p.m.

The collision occurred 740 feet from the point where the NS train stopped to wait for permission to proceed. The impact derailed the lead locomotive on the NS train and four intermodal tubs on the UP train. There were no fatalities or injuries, and no hazardous materials were involved. The CN tracks were not damaged. However, they were blocked by both standing trains for a short time.

Analysis and Conclusions
The switchtender stated in an interview that he had lined the crossover for two trains earlier in the day, but failed to restore the crossover switches to their normal position before giving permission to the NS train to proceed.

According to interviews conducted with the crew, the locomotive engineer trainee stated she was looking at the gages instead of at the track ahead, while the engineer and conductor both said they were discussing the UP track bulletins and the work to be done upon their arrival at Proviso Yard. Toxicological testing was conducted on the NS train crew and the switchtender under the Reasonable Cause provisions of NS Drug and Alcohol Control program.

NS operating rules are governed by the Northeast Operating Rules Advisory Committee (NORAC). The 8th Edition, issued January 1, 2003, and NS Dearborn Division Timetable Number 3, issued 12:01 a.m. August 5, 2001 were in effect.

NS Dearborn Division Timetable Number 3, page 18, “Chicago Line - Restricted Speed Application - Restricted Speed not exceeding 15 MPH is permitted as follows: . . . Ashland Ave. No. 2 and 3 Tracks between CP518 and 15th Street . . . ”

NORAC Rule 80, Movement at Restricted Speed, states in part, “Movements made at Restricted Speed must apply the following . . . requirements as the method of operation:

1. Control the movement to permit stopping within one half the range of vision short of:
   a. Other trains or railroad equipment occupying or fouling the track, . . .
   c. Switches not properly lined for movement . . . “

NORAC Rule 104, Hand-operated switches and derails, states in part, . . . “b. Hand-operated switches connected with a main track, controlled siding or running track are in normal position when lined and locked for movement in such tracks unless otherwise specified in the Timetable. Hand-operated switches must be secured in normal position when not in use.”

The primary cause of the accident was the switchtender’s failure to ensure that all switches involved with a move were properly lined. (H702). The contributing cause was the failure of all three train crew members to comply with restricted speed (H605) because they failed to stop short of the misaligned switch.

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