BROTHERHOOD OF LOCOMOTIVE ENGINEERS AND TRAINMEN

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February 28, 2014

Mr. Michael Flanigon
Investigator In Charge
National Transportation Safety Board
490 L'Enfant Plaza
Washington, DC 20594

Sent via UPS Overnight Mail

Re: NTSB Accident No. DCA-13-MR-004

Dear Mr. Flanigon:

Enclosed please find the Brotherhood of Locomotive Engineers and Trainmen's Final Submission regarding the above-captioned incident.

If you have any questions regarding same, please do not hesitate to contact my office.

Very truly yours,

PII

National Secretary-Treasurer

Enclosure

cc: Ruben Payan, NTSB Investigator – Signals and Communication
Fred Pringle, FRA Chief Inspector – Region 6
Gary Lair, MO Department of Transportation
Kenny Edwards, UTU/SMART Safety Team Member
Rance Randle, BNSF – Party Spokesman
Randy Eardensohn, UP – Party Spokesman
Tim Tarrant, BRS – Party Spokesman
Michael Barrett, Director - Emergency Management Agency
D. R. Pierce, BLET National President
E. L. Pruitt, First Vice President
R. Dumey, BLET STF – Party Spokesman
C. W. Fields, BLET STF Coordinator

BROTHERHOOD OF LOCOMOTIVE ENGINEERS AND TRAINMEN

A DIVISION OF THE RAIL CONFERENCE
INTERNATIONAL BROTHERHOOD OF TEAMSTERS

SAFETY TASK FORCE

CLEVELAND, OHIO

BEFORE THE NATIONAL TRANSPORTATION SAFETY BOARD

NTSB Accident Number: **DCA-13-MR-004**
Class: **MAJOR**

Proposed findings, probable cause, and safety recommendations, in connection with the May 25, 2013 collision involving a southbound Union Pacific freight train No. 2-ASMAR-25 striking a southbound Burlington Northern Santa Fe (BNSF) freight train No. U-KCKHKM0-05T, near Chaffee, Missouri, resulting in a derailment and subsequent fire.

W.C. Walpert, BLET-Safety Task Force, National Chairman

R. Dumey, BLET-Safety Task Force, Party Spokesman

Final Submission

Accident Synopsis

On May 25, 2013 at approximately 2:30 a.m., central daylight time[1], near Chaffee, Missouri, Union Pacific (UP) southbound freight train, 2-ASMAR-25 collided with Burlington Northern Santa Fe (BNSF) southbound[2] freight train U-KCKHKM0-05T, at Rockview Interlocking. The BNSF train was occupying the interlocking when the UP train struck the twelfth (12^{th}) car behind the locomotives of the BNSF train. As a result of the collision, thirteen (13) cars of the BNSF train were derailed. Two (2) locomotives and eleven (11) cars on the UP train were derailed. The fuel tanks on both the derailed UP locomotives were ruptured, resulting in a subsequent diesel fuel fire. The engineer and conductor on the UP train were the only crew members that were injured, and they were transported to a local hospital. The Missouri State Highway M Bridge was above the Rockview Interlocking and collision forces from the debris caused the collapse of portions of the highway bridge. Subsequent to the bridge collapse, two motor vehicles struck portions of the damaged highway infrastructure. Five (5) occupants of the motor vehicles were injured and transported to a local hospital. The weather was clear and 48° F at the time of the accident. Damage was estimated to be in excess of eleven million dollars ($11,000,000)..

Struck Train BNSF 4138 (U-KCKHKMO-05T)

BNSF train U-KCKHKM0-05T originated at Kansas City, Kansas, and received a new crew at Lindenwood Yard (St. Louis, Missouri). The crew reported for duty at 7:00 p.m., on May 24, 2013, and departed the terminal at 8:32 pm destined for their home terminal of Chaffee, MO. Their train consisted of three (3) locomotives and seventy-five (75) cars. Both crew members stated that the trip was uneventful prior to the collision at the Rockview Interlocking just north of Chaffee, MO.

[1] All times reflected are Central Time Zone
[2] Timetable Direction for both trains is south, although the UP train was travelling in a geographically westward direction

Figure 1: Map Showing Chaffee, Missouri

Striking Train UP 5668 (2-ASMAR-25)

UP train 2-ASMAR-25, consisted of two (2) locomotives and sixty 60 cars. The crew was called to work at 9:45 p.m. on May 24, 2013, and departed the terminal at 10:10 p.m. en route to their away from home terminal of Dexter, Missouri. Train UP 2-ASMAR-25 was re-crewed at Salem, Illinois.

Through interviews, the crew recalled meeting a train at Mt. Vernon, Illinois, but after that the engineer's and conductor's recollections of the events that led up to the collision were unclear. The engineer stated he did not remember anything regarding their trip from Gorham, Illinois (47 miles from Rockview Interlocking) until after the collision was over.

Based upon data obtained from the signal log, the UP lead locomotive's Track Image Recorder, and the UP conductors written signal log book, the UP train encountered an Advance Approach[3] signal (flashing yellow aspect) at Mile Post (MP) 127.7. The next signal, at MP 129.0, was displaying an Approach[4] aspect (continuous yellow). At MP 131.1 the signal displayed a Restricting[5] indication (flashing red aspect). The last signal the UP crew encountered before striking the BNSF train was the home signal at the Rockview Interlocking (MP 131.4), which was displaying Stop[6] (continuous Red aspect).

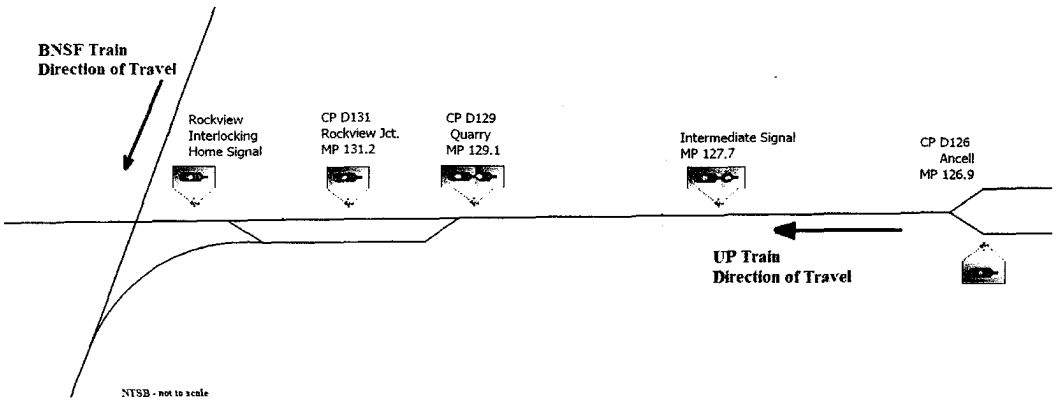

Figure 2: Signals Encountered by Union Pacific Train.

The Collision

The two trains collided in Rockview Interlocking (CP D131) at approximately 2:30 a.m. BNSF train No. U-KCKHKMO-05T entered the interlocking on a Clear signal indication (continuous Green aspect) in a southbound direction operating at twenty-three (23) miles per hour. A Clear signal authorizes the train to operate at the maximum authorized speed indicated in the timetable. BNSF timetable maximum authorized speed through Rockview Interlocking is twenty-five (25) mph.

[3] See signal aspect and definition of Advance Approach in Attachment A, at end of report
[4] See signal aspect and definition of Approach in Attachment B, at end of report
[5] See signal aspect and definition of Restricting in Attachment B, at end of report
[6] See signal aspect and definition of Stop in Attachment B, at end of report

UP train No. 2-ASMAR-25 entered the interlocking at a speed of forty-three (43) miles per hour (UP timetable maximum authorized speed of forty (40) mph). The UP train collided with the twelfth (12^{th}) car of the BNSF train, resulting in the subsequent derailment of both trains. Both locomotives of the UP train rolled onto their sides after hitting the freight cars of the BNSF train.

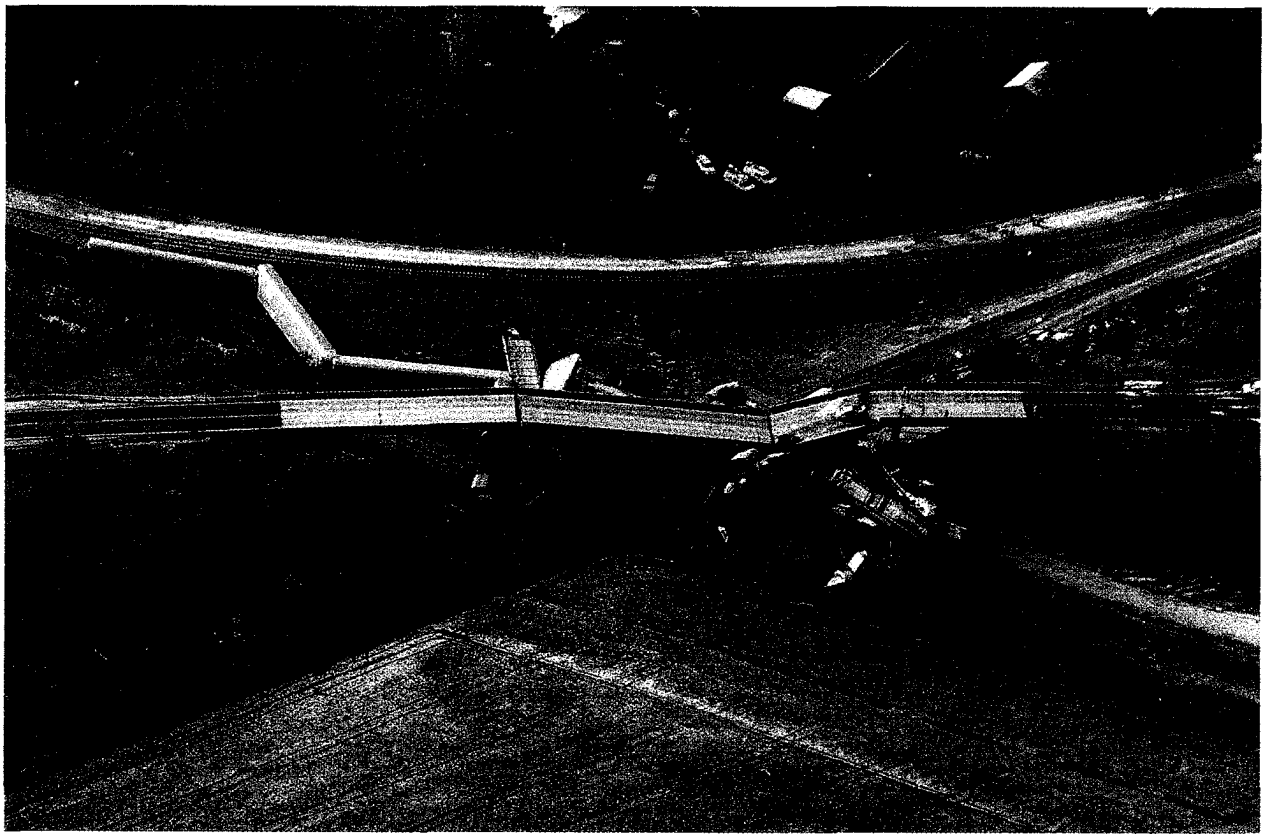

Figure 3: Aerial view of accident scene

PROBABLE CAUSE

The proximate cause for this accident was the failure of Union Pacific train NO. 2-ASMAR-25 to stop at the Stop signal located at the Rockview Interlocking

It is the opinion of our Organization that contributing factors in this accident are the FRA's failure to timely publish regulations responsive to the NTSB's 1970 recommendation for the installation of Positive Train Control (PTC), and the railroads' failure to install PTC on this territory.

PROPOSED FINDINGS

HUMAN PERFORMANCE:

The apparent failure of both operating crew members on UP train No. 2-ASMAR-25 to react appropriately to signal indications in the field in order to avert this accident is also a contributing factor. Post-accident investigation of signal functionality and event recorder data compared to the train event recorder data suggests that the two-crew members improperly reacted to three (3) signals, prior to the collision.

OPERATIONS:

After examining the operating practices in the area leading up to, and at the area of the collision, the Organization suggests that the following issues were causal factors in this incident. Had a redundant signal system such as a proven and effective Positive Train Control (PTC) system been installed and operating as designed in this area, this collision would have been prevented. Existing technology such as a train control or speed control systems installed in the infrastructure

and the controlling locomotive, would have mitigated the damage and injuries and likely prevented the collision.

MECHANICAL:

The NTSB, FRA, and UP performed a post-accident mechanical inspection and brake test on the rolling stock of the Union Pacific train. The FRA report on the mechanical condition of the UP train indicated that it was in compliance with FRA regulations. The post-accident inspection of the lead locomotive (UP 5668) on UP train NO. 2-ASMAR-25 determined the cab crash-worthiness performed as intended, and furnished a survivable environment for the crew. The evidence establishes that the mechanical and crash-worthiness of the UP train's cab compartment was not a contributing or a causal factor in this incident.

SIGNAL SYSTEM:

A post-accident examination of the downloads of the existing signal system indicates that all signal systems performed as designed. The rudimentary nature of this basic signal system however, was a causal factor in this accident. Available technology, such as train control or speed control systems installed in the infrastructure and the controlling locomotive, would have mitigated the damage and injuries and would have likely prevented this collision. A Positive Train Control (PTC) system overlaid on the existing wayside signal system would have prevented this collision.

TRACK:

A post-accident examination of the track system leading up to, and including the area of the incident, indicates that it performed as designed. We conclude that track was not a contributing or a causal factor in this incident.

PROPOSED RECOMMENDATIONS

UNION PACIFIC RAILROAD (UPRR):

1. Install an operational 49 CFR Part 236 compliant Train Control (PTC) system as an overlay in the operating territory these two trains traversed.

BURLINGTON NORTHERN SANTA FE RAILWAY (BNSF):

1. Install an operational 49 CFR Part 236 compliant Positive Train Control (PTC) system as an overlay in the operating territory these two trains traversed.

FEDERAL RAILROAD ADMINISTRATION:

1. Enforce the Rail Safety Improvement Act (2008) mandatory deadline of December 31, 2015, for the installation of operational Part 236 compliant Positive Train Control systems.

CERTIFICATE OF MAILING

I certify that I have on this date electronically forwarded to Mr. Michael Flanigon (mike.flanigon@ntsb.gov), Investigator-In-Charge (IIC), a full and complete copy of the "Proposed findings, probable cause, and safety recommendations" with regard to the Union Pacific/BNSF collision near Chaffee, Missouri on May 25th, 2013. NTSB Docket No.: DCA 13 MR 004, submitted by the Brotherhood of Locomotive Engineers and Trainmen's Safety Task Force to the National Transportation Safety Board. A hard copy was also forwarded addressed to the party of interest as required by 49 CFR § 845.27 (Proposed findings).

National Transportation Safety Board
c/o Mr. Michael Flanigon
Investigator-In-Charge, DCA12MR004
490 L' Enfant Plaza
Washington, DC 20594

Ruben Payan
Communications and Signals Specialist
National Transportation Safety Board
[redacted]

Fred Pringle
Chief Inspector-Region 6
Federal Railroad Administration
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Gary Lair
Missouri Department of Transportation
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Kenny Edwards
UTU/Smart Safety Team Member
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Rance Randle – Party Spokesman
BNSF Railway Company
[redacted]

Randy Eardensohn – Party Spokesman
Union Pacific Railroad
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Tim Tarrant – Party Spokesman
Brotherhood of Railroad Signalmen
[redacted]

Michael Barrett
Director
Emergency Management Agency – Missouri
[redacted]

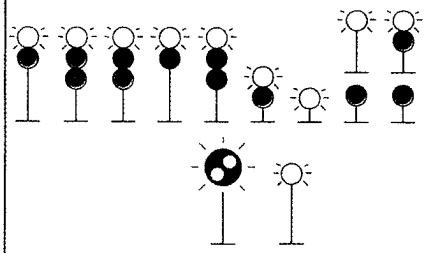
Sincerely yours,

[redacted]

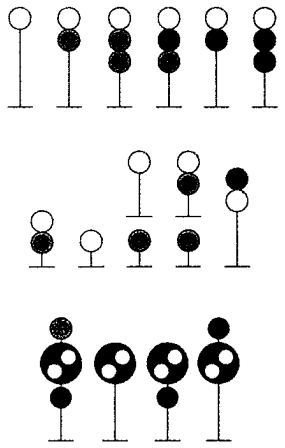
William C. Walpert
Brotherhood of Locomotive Engineers & Trainmen
National Secretary-Treasurer
National Chairman, Safety Task Force
Standard Building, Mezzanine floor
1370 Ontario Street
Cleveland, OH 44113-1702

ATTACHMENT A

Advance Approach Signal

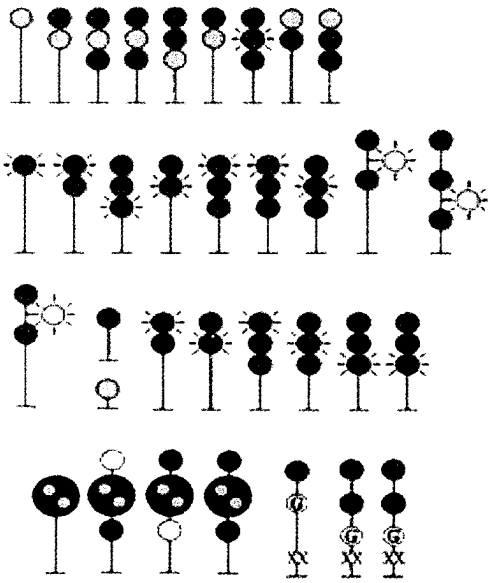
RULE	NAME	ASPECT	ACS	INDICATION
9.2.4	Advance Approach			Proceed prepared to stop at second signal. Freight trains exceeding 40 MPH must immediately reduce to 40 MPH. Passenger trains may proceed, but must be prepared to pass the next signal not exceeding 40 MPH. When signal governs the approach to a control point with a 40 MPH turnout speed be prepared to advance on normal or diverging route.

Approach Signal

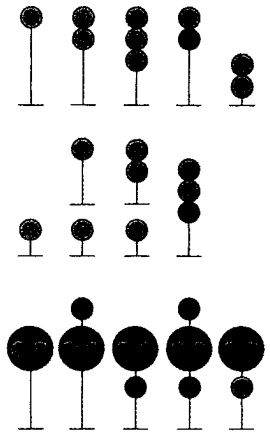
RULE	NAME	ASPECT	ACS	INDICATION
9.2.6	Approach			Proceed prepared to stop before any part of train or engine passes the next signal. Freight trains exceeding 30 MPH must immediately reduce to 30 MPH. Passenger trains exceeding 40 MPH must immediately reduce to 40 MPH.

ATTACHMENT B

Restricting Signal

9.2.13	Restricting			Proceed at restricted speed, not exceeding prescribed speed through turnout when applicable

Stop Signal

9.2.15	Stop	 Without number plates		Stop before any part of train or engine passes the signal.