Brotherhood of Maintenance of Way Employes Division
of the International Brotherhood of Teamsters

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September 15, 2017

Robert Joe Gordon, Group Chairman/Railroad Accident Investigator
National Transportation Safety Board
490 L'Enfant Plaza East, S.W.
Washington, DC 20594

RE: Proposed Findings, Proposed Probable Cause, and Proposed Safety Recommendations in the matter of the Derailment of Union Pacific Railroad Corporation Train UEGKOT-09 with Release of Hazardous Materials and Fire at Graettinger, IA on March 10, 2017, Docket No.: DCA17MR007

Dear Mr. Gordon:

The Brotherhood of Maintenance of Way Employes Division (BMWED) of the International Brotherhood of Teamsters has been granted party status by the Board in the above-referenced investigation. BMWED hereby respectfully submits these Proposed Findings, Proposed Probable Cause, and Proposed Safety Recommendations to the Board for consideration.

Synopsis

On March 10, 2017 at 12:50 a.m. Central Standard Time, Union Pacific Railroad Corporation (UPRR) train UEGKOT-9 traveling eastbound, derailed at the bridge spanning Jack Creek. This was a ''high hazard flammable train'' (HHFT). The discontinuity happened at MP 56.80 located on the Estherville Subdivision and near the city of Graettinger, Iowa, Palo Alto County. The train consisted of 3 locomotive units, 98 tank carloads of ethanol, and two empty freight cars on the head-end of the train. The two empty freight cars were placed at the head end of the loaded tank cars as a buffer between the locomotive units and the hazardous materials for a total of 100 freight cars.

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There were no injuries and no evacuations.

A total of 20 cars derailed. Fifteen of the derailed cars ruptured, released product and caught fire. Four of the derailed cars entered Jack Creek with an estimated release of 322,000 gallons of ethanol. Numerous emergency responders arrived at the site, and established incident command.

Approximately 400' of the single main track was damaged. In addition, the Jack Creek open deck bridge was destroyed as a result of the derailment and ensuing fire. Estimated track and structure damage $2,410,940.

Weather reported at the time of the accident was wind from the NW at 15 knots gusting to 26 knots, visibility 10 miles, clear sky below 12,000 feet, temperature -12 degrees C.

Bridge Description

The bridge spans over the Jack Creek. It is 152-feet long and built in 1937. The bridge was an 11 span, timber, open deck bridge that supported a single main track. The derailment occurred near the west approach of the bridge. Bridge damage from the derailment and fire was estimated to be approximately $1.3 Million.

Track Description

The derailment occurred at about milepost (MP) 56.8 on signal main track on the UPRR's Estherville Subdivision. This was located near the west approach of the bridge. The track in the area of the derailment is slightly descending grade of -0.2 with track alignment being tangent. The track mile post numbering increases in the westward direction.

The single main track is maintained to Class 3 track standards, with a maximum authorized timetable speed of 40 miles per hour (mph) for freight trains and 60 mph for passenger trains, with an annual tonnage of approximately 2.49 million gross tons. This track does not meet the definition of a "Key Train" route.

For an eastbound movement, the main track grade ranges from +1.5 to -1.14 beginning at milepost 79.3 to milepost 56.45. From milepost 56.85 to the POD at 56.80, the train was on a slightly descending grade of -0.2.

In the accident location, the track was constructed with 90 pound continuous welded rail (CWR), manufactured by various companies. The CWR was seated in ten-inch single shoulder tie plates that lay between the bottom surface (base) of the rail and the top surface of timber crossties. The rail was fastened through the tie plates to standard wooden crossties with conventional six inch cut track spikes. The spiking pattern used by UP prior to the derailment consisted of one rail-holding spike on the gage side and one rail holding spike on the field side.

The crossties measured 9-inches by 7-inches by 8-feet 6-inch long, spaced 19.5 inches on center (nominal). The crossties were box anchored with rail anchors every other tie to restrain longitudinal movement of the CWR. The track was supported by granite and limestone rock ballast.

A post-accident inspection by FRA and UPRR representative on March 10, 2017 was conducted from the MP 49.09 to MP 69.34, both sides of the derailment. This inspection revealed track surface was fair for intended FRA Class 3 track, no gage issues were identified, and the tie condition was reported as poor at many areas along the inspection route.

On March 11, 2017, investigators conducted a walking inspection from MP 57.10 to MP 56.35. This inspection was conducted up to the disturbed track and the derailed rail cars on both sides of the accident bridge. The FRA inspectors completed an inspection report showing seven defects. The identified deviations from FRA track safety standards included: four crosstie distribution defects, one insufficient number of crossties in a rail segment, one rail fastener defect, and one concentrated load between the base of rail and tie plate.

At the POD, the main track as well as the Jack creek bridge were a total loss. UPRR installed 15 track panels where the track damage required total renewal.

Rail Evidence Recovery

Combined total of 785 feet of rail were recovered at the derailment site. This rail was identified by manufacturer, manufacture dates, and rail fracture characteristics and was pieced back together to identify the first area of discontinuity.

In the area of the derailment the 90-pound rails were manufactured by Inland Steel Company and Illinois Steel Company. The majority of the rail was manufactured

between 1925 and 1930; one rail section was manufactured in 1937; and another section was manufactured in 1957. Investigators were unable to recover any pieces of rail that displayed definitive damage indicative of wheel departure or reception.

Maintenance and Inspection History

- Track was last surfaced in 1987.
- The last track geometry car inspection was conducted on August 15, 2016. No track geometry defects were identified.
- The last hi-rail visual track inspection was on March 9. 2017. The track inspector traversed the track and noted two track defects between MP 48.49 and MP 78.46.
    - The two defects were at rail joints that had less than two bolts per rail end on CWR. These defective conditions were not near the accident area and were repaired before traffic.
- Federal Regulations 49 Code of Federal Regulations (CFR) §213.233, requires that this track be inspected twice weekly. This requirement was met every week except between February 19-25 when only one inspection was made. All weekly siding inspections frequencies were meet.
    - A review of UP track inspection records also showed that the UP-track inspectors had documented marginal tie condition between Emmetsburg, Iowa, MP 44.5 and Superior, Iowa, MP 78.4. The inspector noted 49 locations with deteriorating tie condition between July 1, 2016 and November 4, 2016.
- In response to the June 2016 UP high hazard flammable train derailment in Mosier, Oregon, the UP entered into a compliance agreement with the FRA. The compliance agreement was signed on December 22, 2016. By this agreement UPRR was required to ultrasonically inspect the rails for defects on certain routes, including in Graettinger, IA, twice per year. UP provided the last two ultrasonic rail test reports for the Estherville subdivision. The most recent test through the accident area was conducted on May 24, 2016. One defective rail condition was identified between MP 50.25 and MP 61.12. At MP 56.54 a defective plant weld was identified. UP installed a replacement rail on May 27, 2016. The previous ultrasonic rail test conducted through the area of the derailment occurred on July 14, 2015. The report showed that no defective rails were identified between MP 48.84 and MP 61.25; this includes the footprint of the derailment.

Interviews

Post-accident, the NTSB interviewed the UPRR Manager of Track Maintenance (MTM) who brought up concerns to the fact that there had not been a tie program from Emmetsburg to Superior which includes the footprint of the derailment in 25 years. The MTM additionally highlighted the fact that 112- or 115-pound rail had been laid through some of the communities like Emmetsburg, Graettinger, Estherville, to "protect the communities a little bit better".

Proposed Probable Cause

BMWED proposes that the probable cause of the derailment of Union Pacific Railroad Corporation Train UEGKOT-09 on March 10, 2017, was a rail service failure (broken rail) at approximately MP 56.80.

BMWED proposes that the probable cause of failure of the 90-pound rail can be attributed, in large part, to the age and size of the rail, poor tie conditions, and UPRR's lack of an adequate tie maintenance program on the Estherville Subdivision.

BMWED further proposes that the lack of management oversight to assure there is adequate manpower and materials available to conduct timely inspection, maintenance and repair of track conditions. The investigation record reveals there was insufficient oversight and follow-up by management on track conditions recorded by the track inspectors.

Proposed Recommendations

BMWED proposes the following recommendations to be implemented immediately to prevent future accidents:

To UPRR

- Immediately identify all locations where HHFT operate and perform monthly walking track inspections in addition to the frequency inspections required under §213.233.

- Immediately identify all tracks with less than 115-pound rail where HHFT operate, and reduce operating speed for HHFT's on those tracks to one track class below it's FRA track class designation (i.e., For track maintained to FRA Class 3 standards, HHFTs must operate at FRA Class 2 speed). With almost all smaller rail sizes on the Estherville Subdivision (and elsewhere) having been manufactured over 80 years ago it would seem a reasonable course of action to require a lower operating speed for HHFTs over these small and aging rail sections given the volatility of the commodities being transported.

- Conduct ultrasonic rail testing on all HHFT routes monthly until the rails on these routes are replaced with 115-pound or larger rail sections.

- Assure adequate track forces are available, trained and equipped to apply remedial actions and maintain the infrastructure to a state of good repair.

- Review and amend tie condition limits as necessary to provide for maintenance planning and an increased level of safety on all HHFT routes. Develop specific remedial actions for tie conditions exceeding new limits.

- Designate an upper-level manager (i.e., Roadmaster or higher) on each subdivision carrying HHFTs to review and sign each track inspection record required under §213.241for inspections conducted under §213.233, §213.235 and §213.237.

To FRA

- Require railroads to report all tracks with less than115-pound rail where high hazard flammable trains operate.

- Require HHFTs to operate at speeds one track class below the FRA designated track class on all routes identified with less than 115-pound rail. (I.e., For track maintained to FRA Class 3 standards, HHFTs must operate at FRA Class 2 speed.)

- Require all Class 2 and 3 track carrying HHFT to conduct internal rail flaw inspections at least quarterly.

- Amend FRA regulations to require each railroad to designate an upper-level manager (i.e., Roadmaster or higher) with maintenance responsibilities over

HHFT routes to sign each track inspection record required under §213.241for inspections conducted under §213.119, §213.233, §213.235 and §213.237.

- Consider regulatory improvements to the crosstie standards (§213.109), particularly as it relates to the minimum number of non-defective crossties in track classed 2 and 3.
- Require railroads to provide a minimum of 5 non-placarded buffer cars between the locomotive and placarded cars on all HHFTs. Such requirement should apply regardless of train consist.

Respectfully,

Director of Safety

cc: Hearing Parties