

National Transportation Safety Board  
Office of Railroad, Pipeline and Hazardous Materials Investigations  
Washington, D.C. 20594

CP collision with UP and BNSF

St. Paul, MN

August 25, 2021

Mechanical Group Factual Report

## Accident

NTSB Accident Number: RRD21LR014  
Date of Accident: August 25, 2021  
Time of Accident: 5:08 pm CST  
Type of Train: Freight  
Railroad Owner: BNSF  
Train Operator: CP  
Fatalities: 0  
Location of Accident: St. Paul, MN

## Mechanical Group Members

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## Synopsis

On August 25, at about 5:08 pm local time, eastbound CP train 296E collided almost head-on with westbound UP train MSSDM-25. As a result of the raking collision, three locomotives derailed, and a loaded lumber railcar was struck and derailed from BNSF train HNTWBRC-25 stopped on an adjacent track. The accident occurred on the north end of Hoffman Yard on the BNSF main track in St Paul, Minnesota. The main tracks are in PTC equipped territory. There were no fatalities or injuries, and no hazmat was released.

The St Paul Airport weather site at the time of the accident reported the wind at 6 knots from 40°, temperature of 82°F and no clouds.

Parties to the investigation include the Federal Railroad Administration, the BNSF Railway, the Canadian Pacific Railway, the UP Railroad, the International Association of Sheet Metal, Air, Rail and Transportation Workers, the Brotherhood of Railroad Signalmen and the Brotherhood of Locomotive Engineers and Trainmen.

## Train Consist

### CP 296E

The CP eastbound mixed manifest train 296E consisted of 4 locomotives located at the front of the train. The 117-car train consisted of 28 loads and 89 empties, was 7,456 feet in length and weighed 13,685 tons including the locomotives.

1.	CP 8737	Forward	GE ES44AC	Built 2005
2.	UP 5525	Forward	GE C45ACCTE	Built 2005
3.	CP 8040	Forward	GE AC44CWM	Built 1995
4.	CP 8833	Backward	GE ES44AC	Built 2006

## Accident Sequence

An on-scene review of event recorder data indicates that the eastbound CP train 296E was approaching CP Division Street at 19 mph. The train was recovering (building air) from an 18-psi brake pipe reduction from a recent stop at a control point signal. At 5:04 pm, with the throttle in the idle position, the engineer released the brakes and started to descend the grade. The engineer attempted a 10-psi reduction to reapply the air brakes before the brake pipe was fully repressurized to 90-psi in an attempt to slow the train. At the time, the recorded brake pipe pressure at the rear was 81-psi and the brakes did not apply. Seconds before the emergency brake

application the engineer applied a full-service brake application, the brake pipe pressure at the rear was reduced and the brakes started to apply. Dynamic brakes were applied during this movement. At 5:08 pm an EIE emergency brake application was recorded. After the emergency brake application, the train traveled about 458 feet in 20 seconds before coming to a stop (Collision). (See the recorder specialist factual report in this docket.)



Figure 1 Photograph of the Union Pacific train (left) and the Canadian Pacific train (right) during rerailling operations. (Courtesy of FRA)

## Pre-Departure Inspections

On August 23, 2021, a Class I Air Brake test and Pre-departure inspection was conducted on the 296E by CP Qualified Mechanical Inspectors at Calgary, Alberta, Canada. Besides a full air brake test and inspection, inspectors look for defects on the wheels, axles, bearings, and other running gear components for defective conditions.

## Equipment Post Accident Inspections

On August 25, 2021, the mechanical group met at the CP Humboldt Yard and conducted a Class I Air Brake test on cars of train 296E. The air brakes applied and released without exception and the brake components showed normal wear patterns. Four FRA defects were noted but did not contribute to this incident.

The CP striking train damage consisted of the head locomotive CP 8737 with the conductor side front handrailing and steps broken/bent, brake rigging disconnected, all brake cylinders broken/missing, rear handrailing and steps broken/missing, engineer front handrailing and steps broken, rear handrailing and steps broken. Side handrails on engineer side collapsed over/broken. The second unit in the CP consist, UP 5525, had damage at the engineer side rear handrailing and steps. CP mechanical damage was approximately \$289,302.

The Stationary Union Pacific locomotives UP 8264, UP 5497, and UP 793 sustained similar damage to handrails, brake equipment, and running gear. Union Pacific mechanical damage was approximately \$300,000.

During the derailment, the CP head locomotive also side swiped a stationary BNSF lumber car TTZX 862066 on an adjacent track derailing it and knocking it on its side. BNSF damage was approximately \$85,000.



Figure 2 Photograph of the BNSF lumber car on its side after being struck and derailed. (Courtesy of FRA)

## Documentation Received

- Train list
- Weight list
- Any diagrams & photos of accident scene
- Aerial photos of accident scene
- Event Recorder data download
- Forward facing camera download
- Locomotive/Railcar maintenance records and/or repair records
- FRA form F6180-49A Locomotives
- Daily inspections Locomotives
- Air brake test inspection certificate
- Rear End Device inspection/calibration record
- Post-accident inspections/repairs
- Equipment damage estimates

## Group Member to the Investigation – Acknowledgement Signatures

The undersigned designated *Group Member to the Investigation* representatives attest that the information contained in this report is a factually accurate representation of the information collected during the on scene phase of this investigation, to the extent of their best knowledge and contribution in this investigation.

\_\_\_\_\_ Date \_\_\_\_\_

Joey Rhine, NTSB

\_\_\_\_\_ Date \_\_\_\_\_

Kyle Jenkins, FRA

\_\_\_\_\_ Date \_\_\_\_\_

Shane Thomason, CP