



# Rail Safety Discussion

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# What (I hope) You'll Hear from Me Today



East Palestine  
Incident Information



Regulatory  
Responses



Next Steps



# East Palestine OH Derailment

# First Things First: Our Knowledge is Limited

- We will know much more about the full derailment at the conclusion of NTSB's investigation
- Current facts < Hot takes and assertions
- Hard to overstate community impacts
- Will share what we do know and why it matters

## What We Do Know

- About 9:00 pm, Feb. 3<sup>rd</sup>, eastbound NS train derailed just outside East Palestine OH, temp 10° F
- General merchandise train with 2 head-end locomotives, 149 cars and DP between cars 109 and 110, 20 total hazmat cars
- 38 cars derailed including 11 hazmat tank cars
- 23<sup>rd</sup> car was first to derail



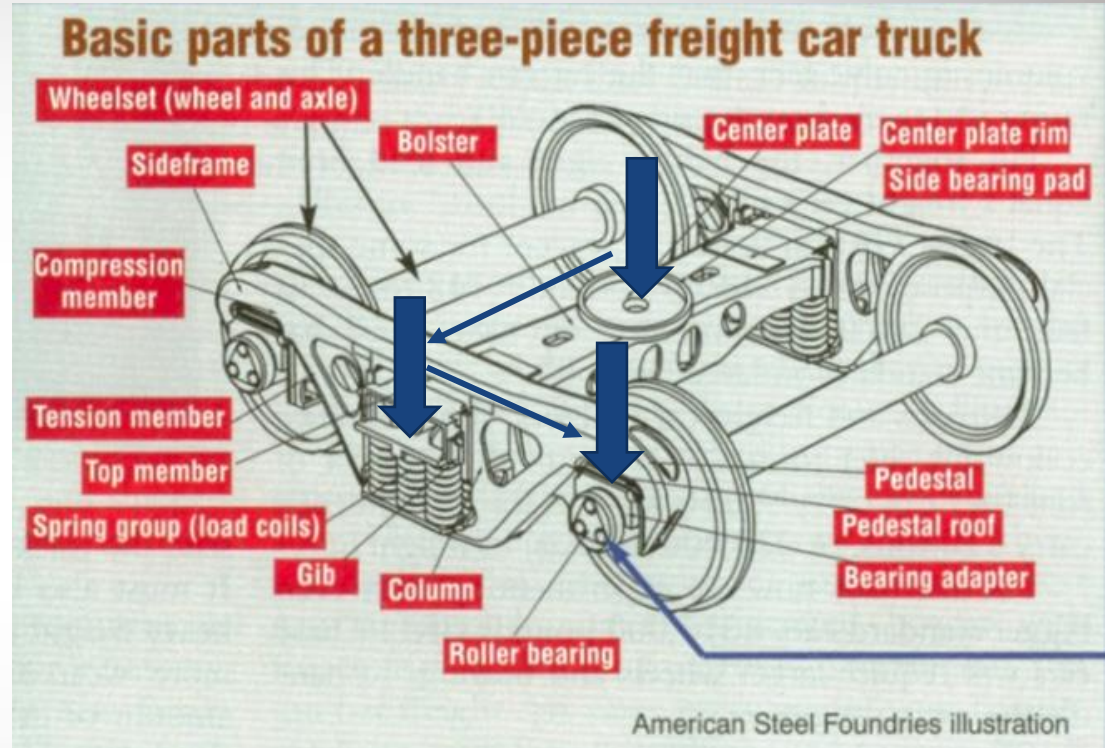
# More Derailment Details

- Train was slowing down at time of derailment
- Passed a wayside defect detector or hot box detector (HBD) that issued alarm to stop
  - MP 79.9 bearing measured 38°F above ambient
  - MP 69.01: 103°F above ambient
  - MP 49.81: 253°F above ambient
- Overheat failure caused GATX-owned hopper car to derail



# Why the Bearing Failure Matters

- Railcars, no matter the kind, are supported by a pair of these general kinds of “trucks”
- Most freight railcars are between 286k and 315k lbs
- All weight is transferred from center plate to the bolster to the springs on the sideframe, which sits on the bearing adapter
- Overheated bearings lead to mechanical failure



# Hazmat Issues

- 11 hazmat tank cars ignited with fires that damaged another 12 non-derailed cars, 1 mile evacuation zone initiated
- NTSB photo shows “energetic release” of a vinyl chloride tank car on Feb. 4
- By Feb. 5, fire mostly contained but 5 DOT-105 tank cars of vinyl chloride were problems—one car temps were rising leading to fear of polymerization reaction
- On Feb. 6, responders vented and controlled burn remaining vinyl chloride of five tank cars—2 mile evac zone initiated







# Regulatory Responses

# Railroad Responses

- Class I Railroads expressed interest in joining FRA Confidential Close Call Reporting System (C3RS) for rail safety issues (under certain conditions)
- Railroads added safety steps:
  - Adding more HBDs,
  - Adjusting HBD thresholds down to 170°F,
  - Training more first responders,
  - Expanding AskRail app access (offers more hazmat info for first responders)

# USDOT Rail Safety Ambitions (2/23)



## Railroads

- Join C3RS
- Deploy Tech w/o less labor
- New tank cars faster
- More hazmat info to locals
- Paid sick leave



## USDOT

- Two man crew rule
- Inspect HHFT routes
- Inspect older tank cars
- More rail infrastructure
- ECP brakes on HHFT trains

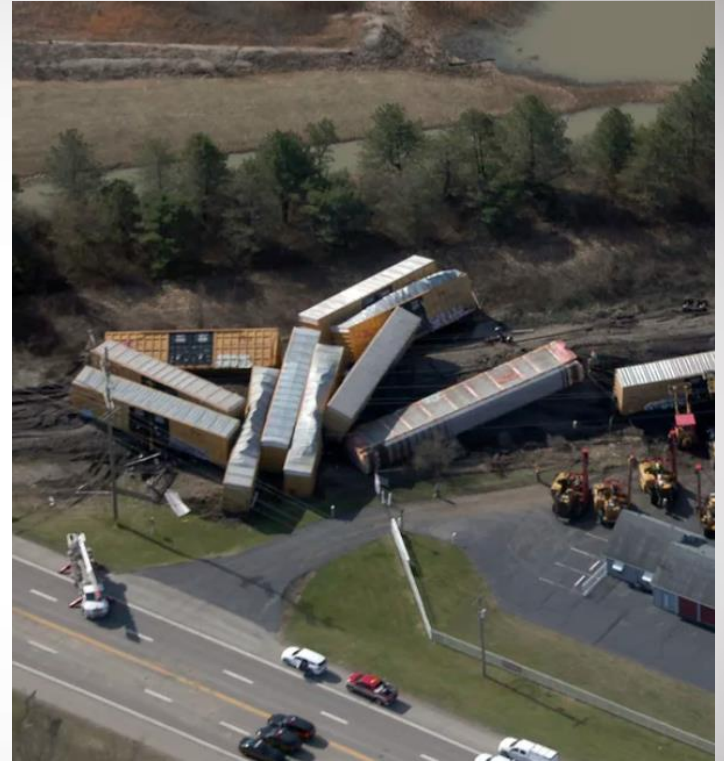


## Congress

- Increase fines for violations
- HHFT laws
- ECP brake mandate
- Faster tank car replacement
- Fund first responder hazmat training

# Other Rail Incidents

- Other prominent rail incidents since East Palestine:
  - NS 135 car train derailment in Michigan Feb 16
  - NS 210 car train derailment in Springfield OH March 4 (pictured right)
  - NS conductor killed in grade crossing incident in industrial facility in Cleveland March 7



# FRA Safety Advisories

- Multiple Safety Advisories issued:
  - March 2<sup>nd</sup>/2023-01: tank car covers, hot bearing detectors, and emergency response plans
  - April 6<sup>th</sup>/2023-02: train makeup practices
  - April 27<sup>th</sup>/2023-03: long train practices—air brake and train handling, train crew communication, train crew training and operational testing, impacts on blocked crossings, post-accident investigations





# Next Steps

# Congressional Responses

- S. 576 Rail Safety Act of 2023
  - OH and PA Senators sponsors
  - Reported from Commerce Committee May 10th
  - Features:
    - Expands high hazard trains, notifications
    - Blocked crossings, long trains
    - More inspections, hot box detector rules
    - Two person crews mandated
  - Limited Prospects:
    - Senate Floor
    - House T&I Committee



# NTSB East Palestine Investigation

- Investigation ID: DCA23HR001
- Investigations typically take 12-18 months to complete
- Field hearing held in East Palestine on June 22-23
- Subjects included:
  - Hazard Communications and Emergency Responder Preparedness
  - Decision to Vent and Burn Five Vinyl Chloride Tank Cars
  - Freight Car Bearing Failure and Wayside Detection Systems
  - Tank Car Damage, Crashworthiness, and Hazmat Pkg. Information
- Hearing Docket Link: <https://tinyurl.com/4fd3huna>



# Norfolk Southern Response/Impact

- East Palestine derailment and aftermath:
  - Likely caused by a mechanical failure on a car NS didn't own
  - Hazmat incident involves chemicals NS has no choice about carrying
- Two successive quarterly reports indicate at least \$800M in NS expenses or charges
- Plenty of litigation in the future:
  - EPA and DOJ suing NS
  - NS suing owners of hopper car that caused the derailment

# Want to Hear or Read More?

- Big AI appears on TTI's Thinking Transportation Podcast:
  - Episode 54. Off the Rails, On the QT: Train derailments happen daily, though few grab our attention.
  - Episode 47. All Aboard? When unions, management, and Congress dodged a nationwide rail strike.
- Follow me on LinkedIn:  
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# Questions/Discussion



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