



Quality Assurance Auditors & Industry Conference
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AAR CSTCC and WABL Committee Updates

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*MxV Rail is a subsidiary of
the Association of American Railroads
(formerly TTCI)*

Coupling System and Truck Castings Committee

Update



Outline

- **Introduction to CSTCC**
- **CSTCC QA 7.1 Report Summary**
- **Mechanical Defect Reports**
- **Related CSTCC Docket**



CSTC Committee

- Establish, maintain, and enhance coupling system component and truck casting interchange rules and technical standards, specifications & recommended practices
- Approve manufacturing facilities, reconditioning facilities and components
- Monitor the interchange performance of CSTCC components and equipment

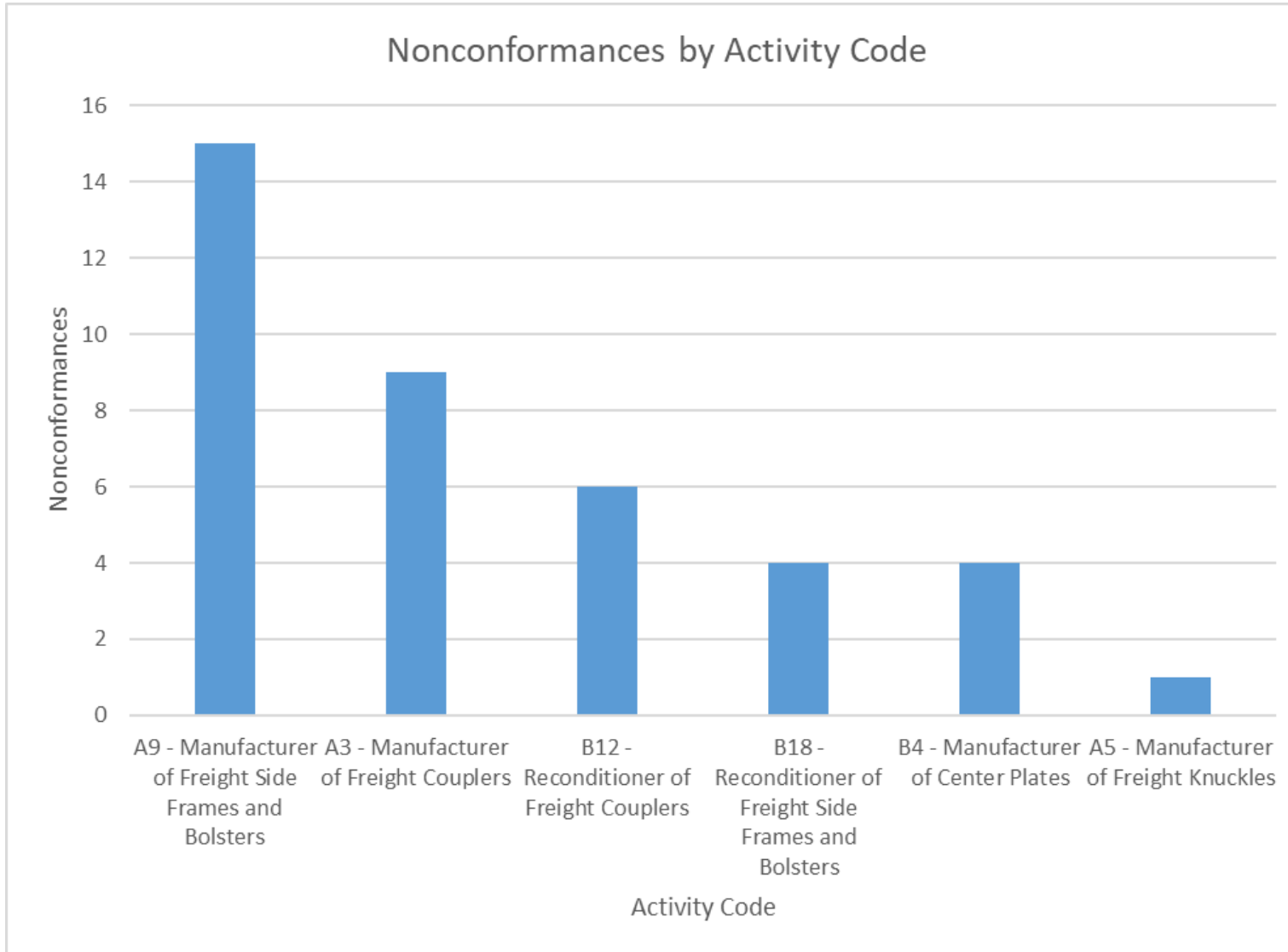
Members

NS (Chair)
TTX (Vice Chair)
Amsted Rail
BNSF
CN
CP

CSX
KCS
NYAB
Progress Rail
Strato Inc.
UP



CSTCC QA 7.1 Report Summary

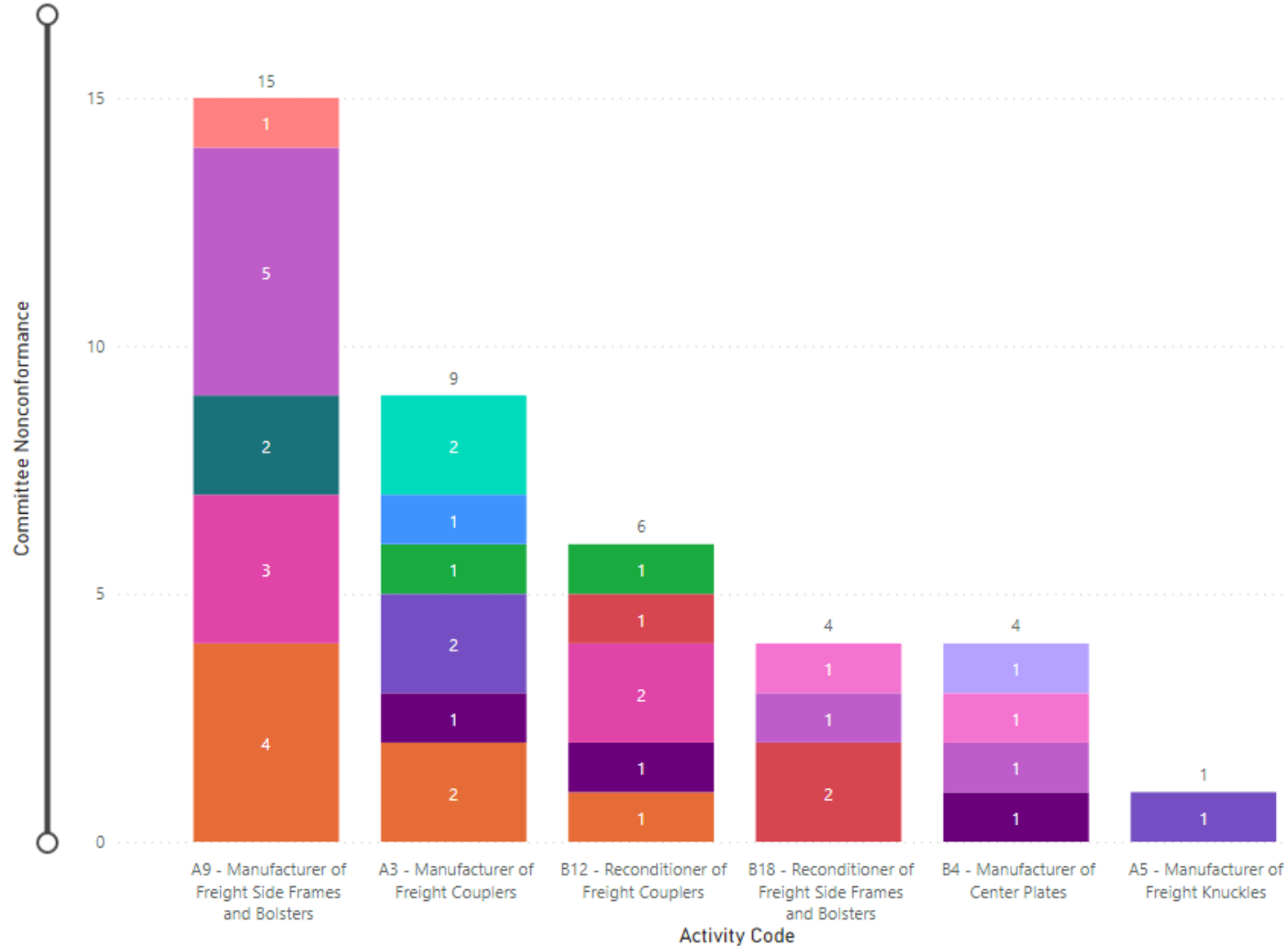


CSTCC QA 7.1 Report Summary

Committee Nonconformance by Activity Code and Committee Nonconformance

Committee Nonconformance

- Casting Defect
- Cracked
- Dimensional
- Does Not Fit Assembly
- Illegible / Improper Markings
- Improper Assembly
- Inoperative
- Manufacturing Defects
- Not to Specification
- Notches / Gouges
- Other
- Poor / Improper Welding
- Surface Defects - Cleaning / Rust / Corrosion



Mechanical Defect Reports

- **MD-500 – Reporting of side frame and bolster defects**
 - (<https://mechanicaldefects.railinc.com/#/md500/create>)
 - Required = WM 02: Broken & WM 41: Cracked
 - Not Required but permitted = WM 1J:
- **MD-502 – Reporting of broken couplers**
 - (<https://mechanicaldefects.railinc.com/#/md502/create>)
 - Required = WM 02: Broken
 - Not Required but permitted = WM 41, 79, 82, 86, 87, 88, and 1J



MD-500 Report Summary - 2022

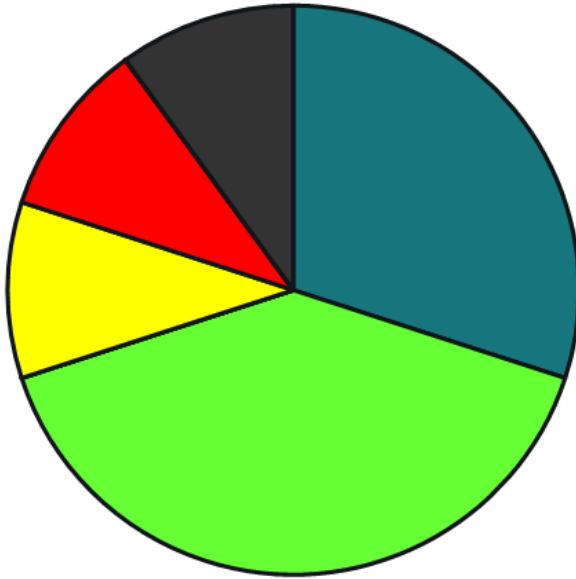
- 147 Total reports
 - WM breakdown

Why Made Code	Bolsters	Side Frames
WM 02 - broken	19	10
WM 41 – cracked	97	15
WM 1G – broken or cracked rim	6	NA



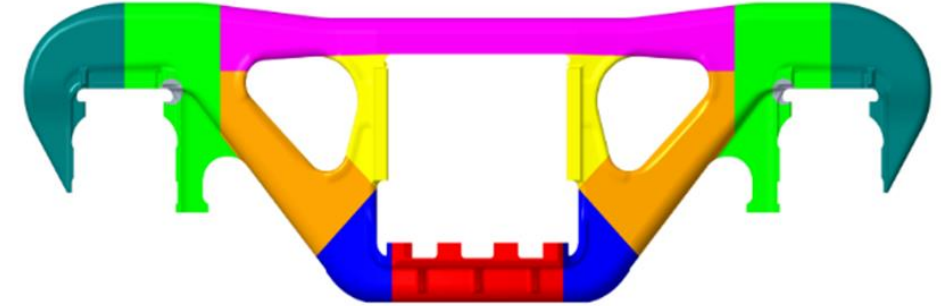
MD-500 Report Summary - 2022

Percent WM 02 (broken) by Location

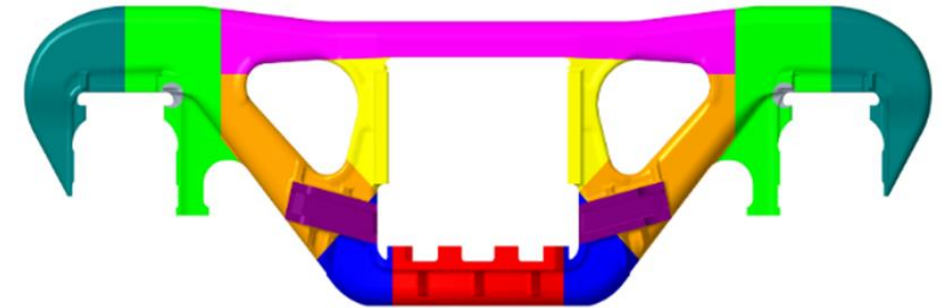


Note: Simulated data

Percent WM 41 (cracked) by Location

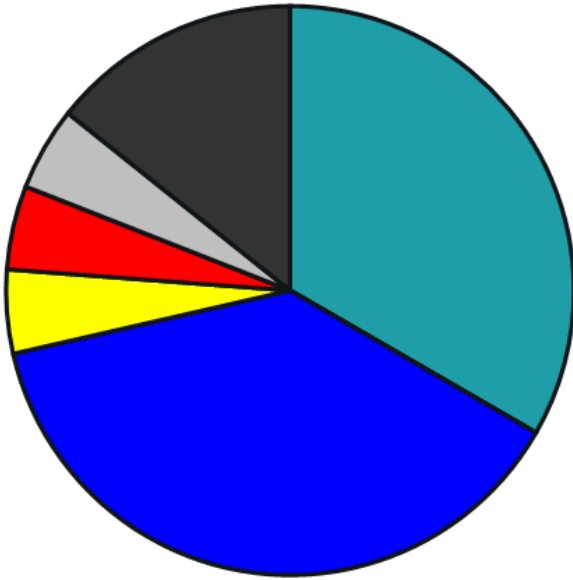


Defect Location Key



MD-500 Report Summary - 2022

Percent WM 02 (broken) by Location

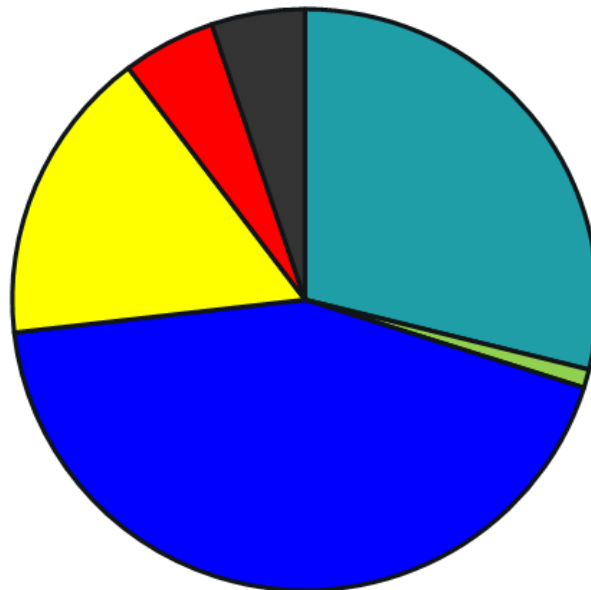


Note: Simulated data

Defect Location Key

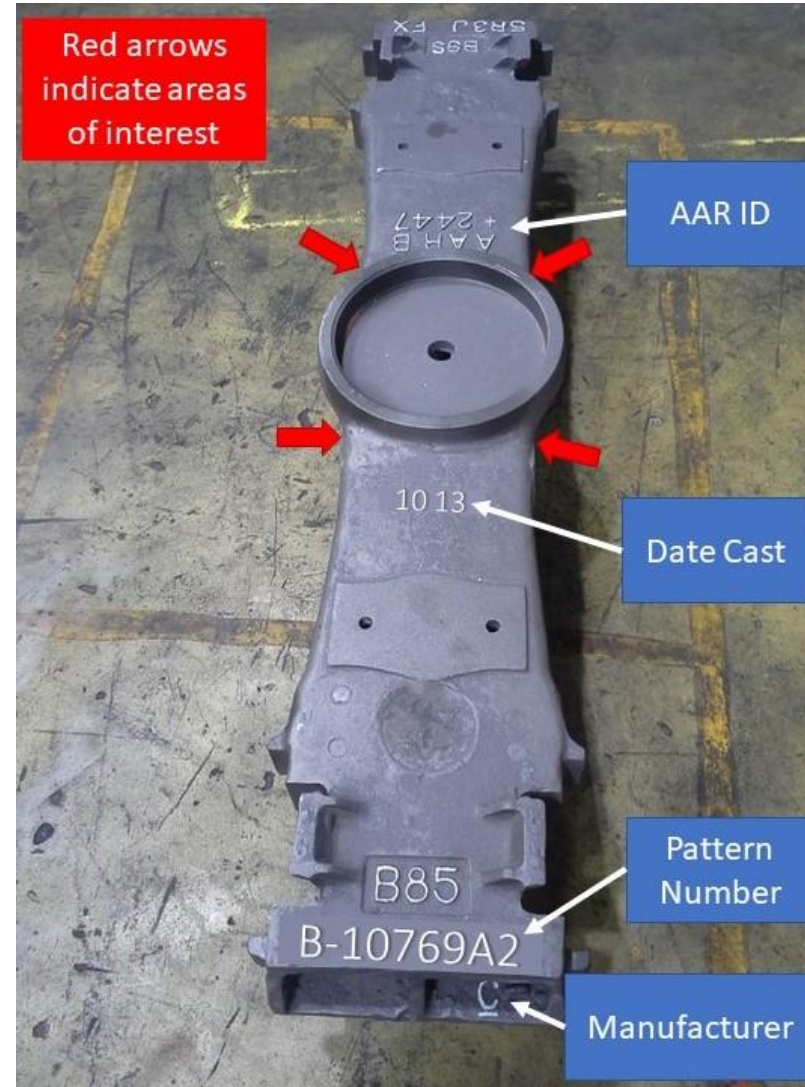


Percent WM 41 (cracked) by Location



MD-500 Report Summary - 2022

- **Equipment Advisory issued**
 - **EA-0032 CSC Truck Bolsters**
 - Bolsters
 - Cast in 2013
 - Pattern numbers B-10769...
 - AAR ID B+2447



MD-502 Report Summary - 2022

- 1541 Total reports
 - WM 02 (broken): As reported 642 – After review 475

E-type	EF-Type	F-Type (includes rotary)
358	72	45

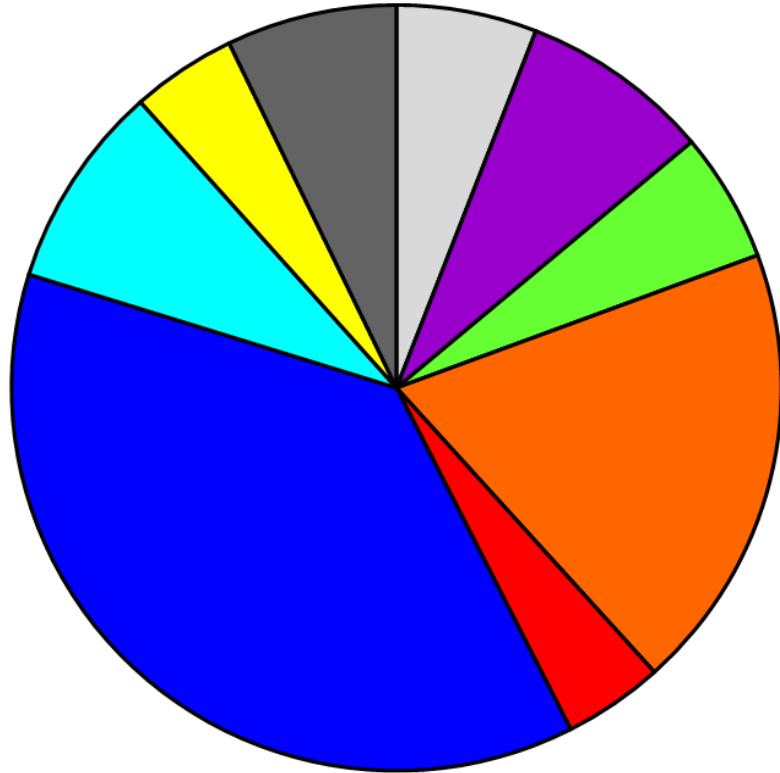
- Reclassified ~ 26% of WM 02 as:
 - WM 1J (broken pin protector)
 - WM 87 (cracked pin protector)
 - WM 41 (cracked)
- TAG reviewed 84 based on review criteria



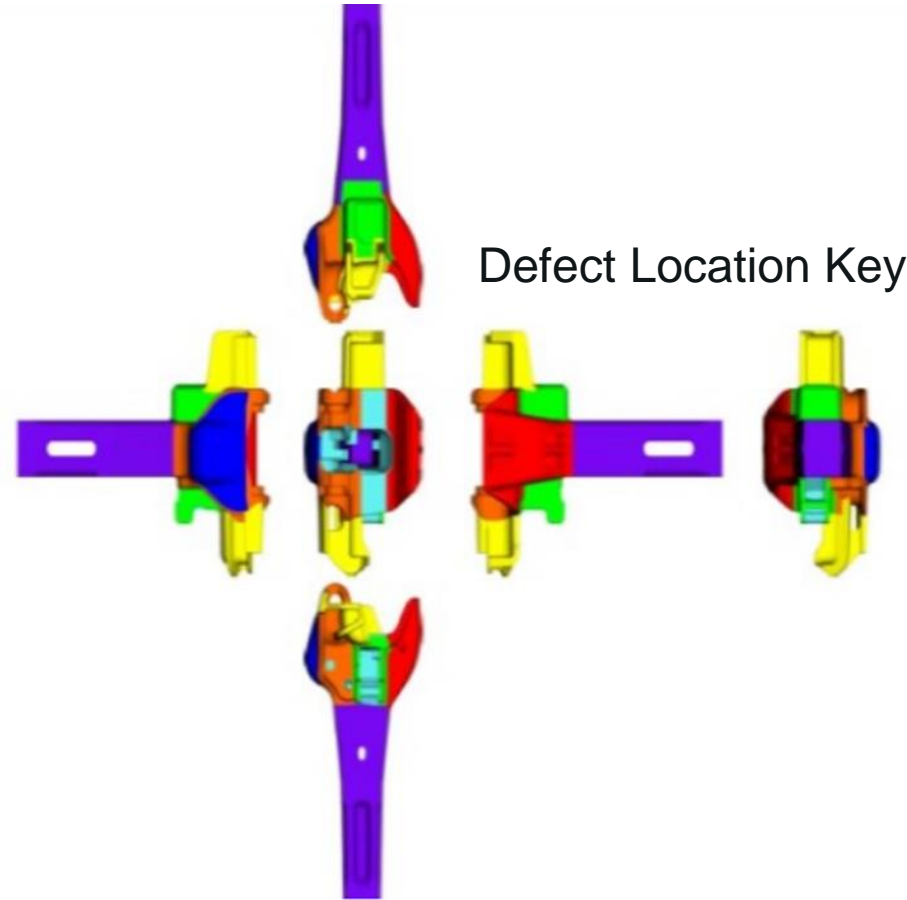


MD-502 Report Summary - 2022

Percent WM 02 (broken) by Location

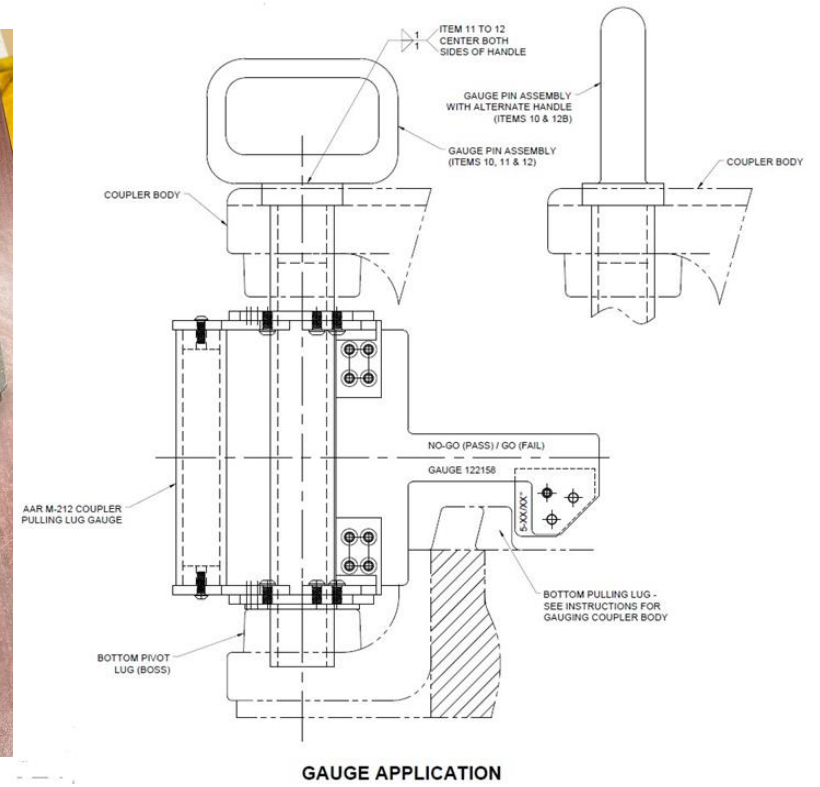


Note: Simulated data



CSTCC Dockets

- **Pulling Lug Gauge**
 - Eliminates couplers with overworn pulling lugs
 - M-212 update
 - Circular Letter C-14034
 - Gauge No. 122158
 - Insert No. 122159



Wheels, Axles, Bearings, and Lubrication Committee Update



Outline

- **Introduction to WABL**
- **QA 7.1 Report Summary**
- **Mechanical Defect Reports**
- **Related WABL Dockets**



WABL Committee

- Establish, maintain, and enhance wheel, axle, bearing and lubrication system interchange rules and technical standards, specifications & recommended practices
- Certify manufacturing facilities and components
- Monitor the interchange performance of WABL components and equipment

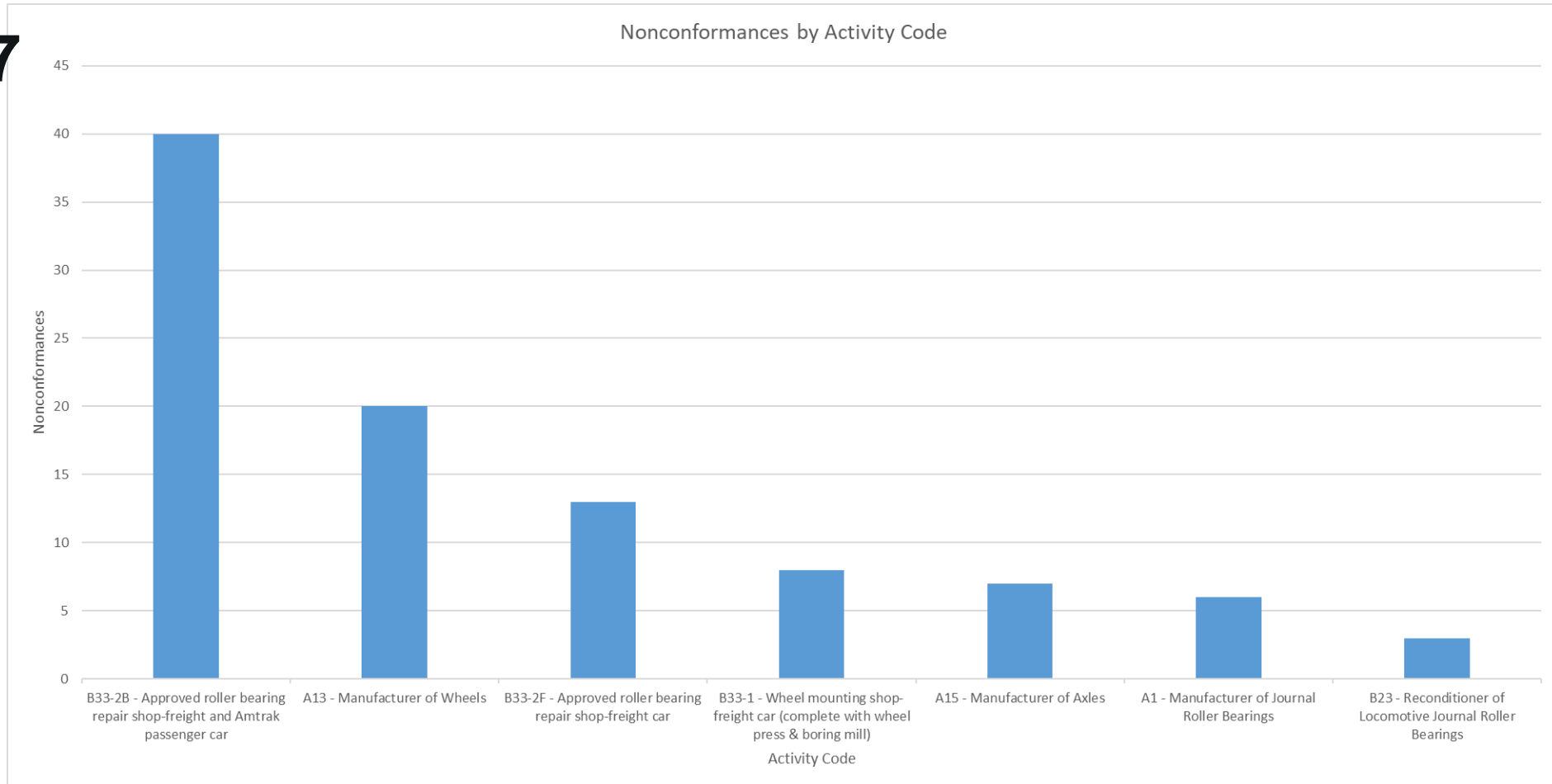
Members

UP (Chair)	CSX
Greenbrier (Vice Chair)	GATX
Amsted Rail	KCS
Amtrak	NS
BNSF	A. Stucki
CN	TTX
CP	



WABL QA 7.1 Report Summary

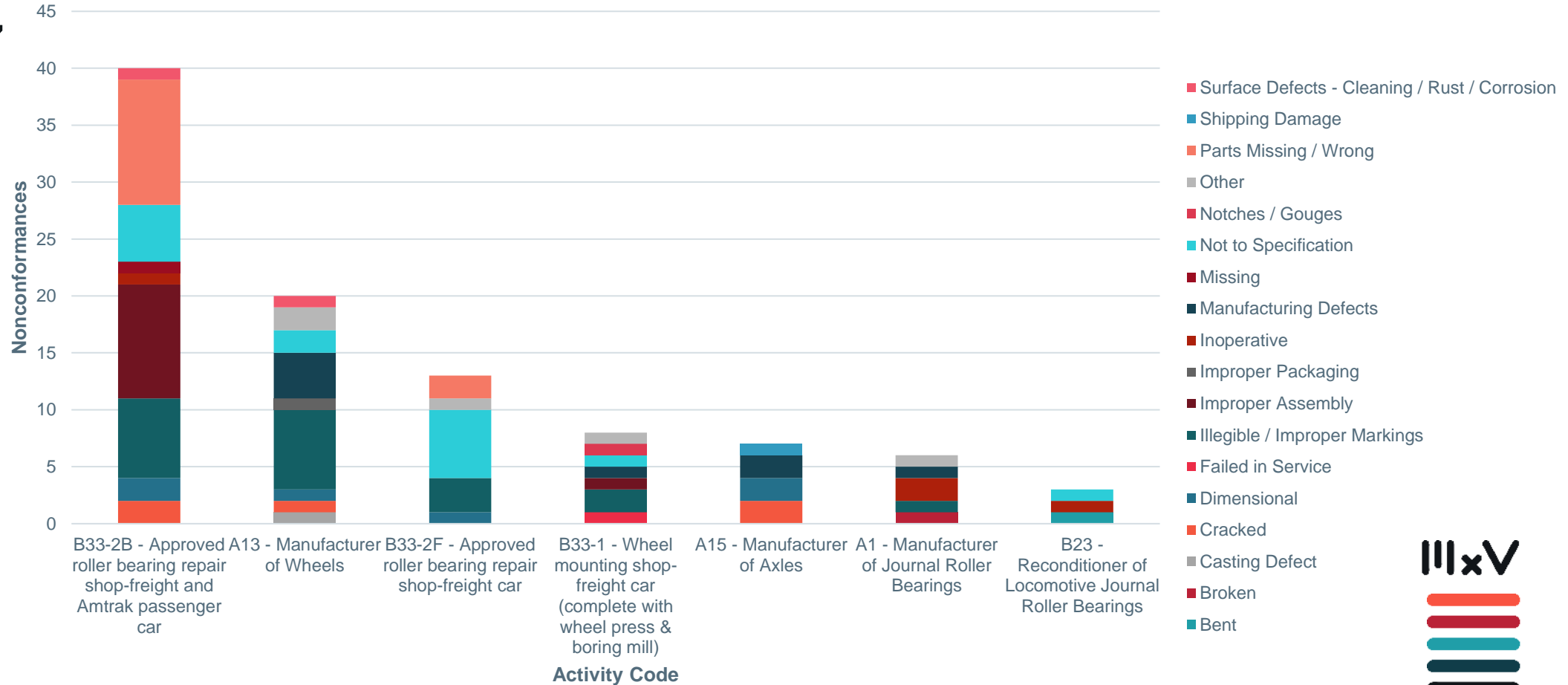
• Top 7



WABL QA 7.1 Report Summary

• Top 7

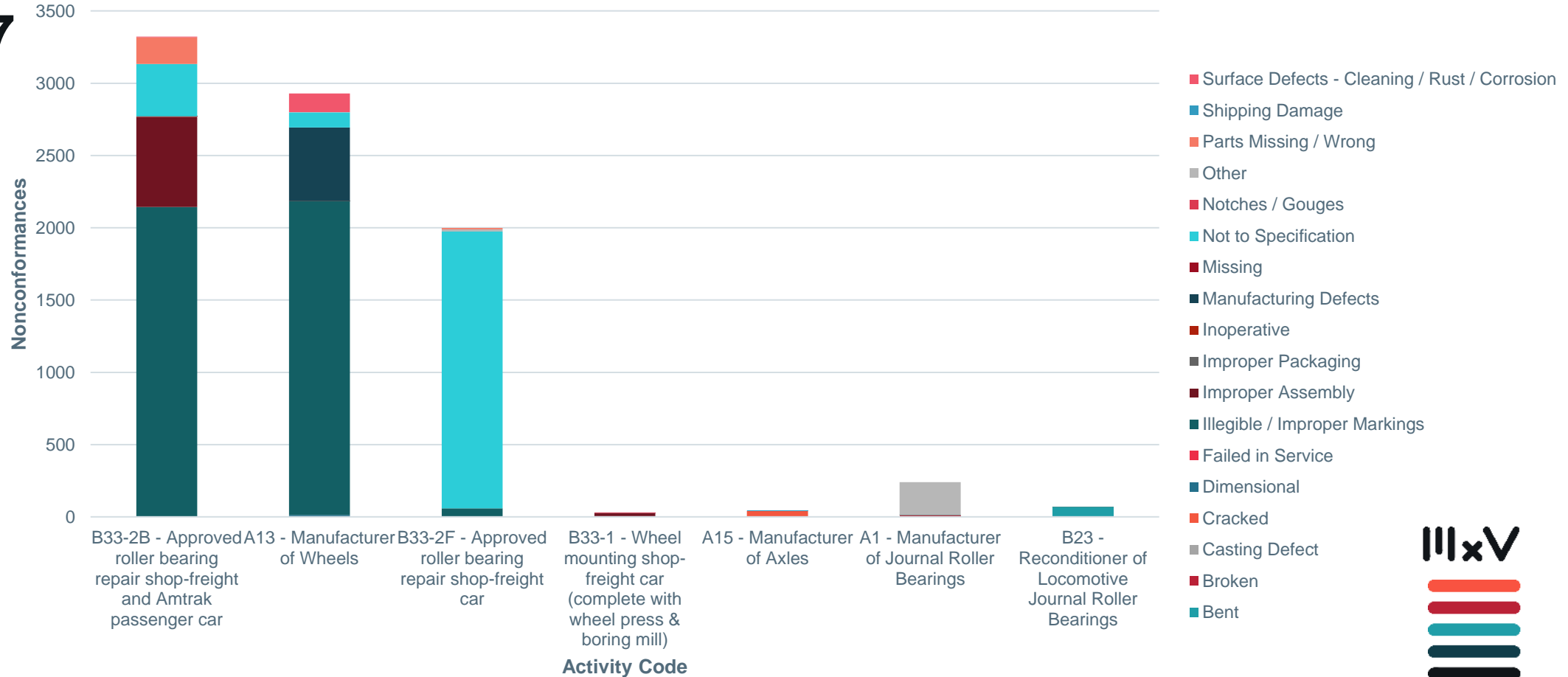
Nonconformances Reported by Activity Code



WABL QA 7.1 Report Summary

Quantity Rejected by Activity Code and Nonconformances

• Top 7



Mechanical Defect Reports

- **MD-11 Reporting for Journal Roller Bearing Removals**

- (<https://mechanicaldefects.railinc.com/#/md11/create>)

- Required = WM 50: Roller bearing overheated, WM 51: Roller bearing temperature performance—per MSRP Section F S-6001, & WM 91: Acoustic Bearing Detector Level-1, non-verified

- **MD-12 Reporting for Axle Removals**

- (<https://mechanicaldefects.railinc.com/#/md12/create>)

- Required = WM 54: Axle broken or visually cracked

- **MD-115 Reporting for Wheel Removals**

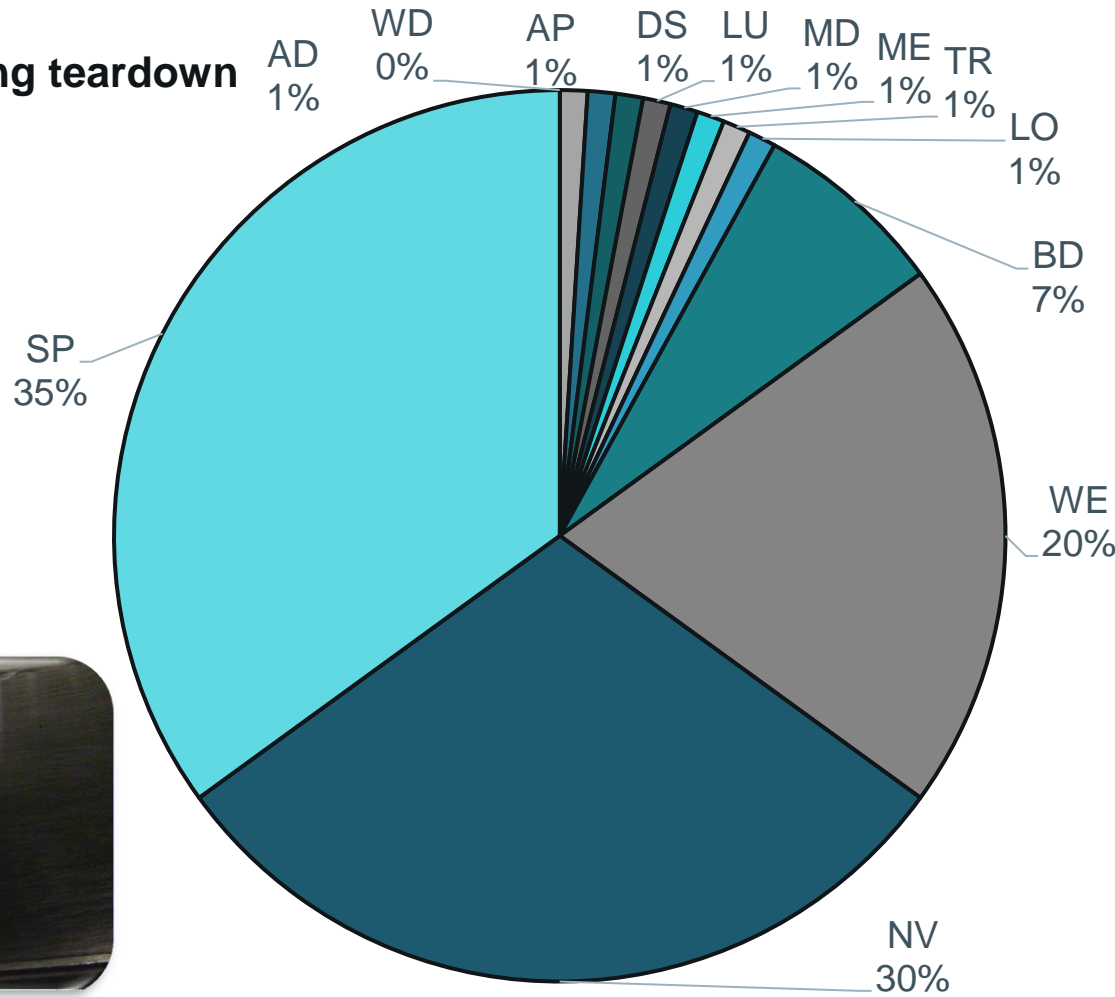
- (<https://mechanicaldefects.railinc.com/#/md115/create>)

- Required = WM 66, 68, 69, 71, 83, 85, and 1D



MD-11 – Roller Bearings

- 5 years of bearing teardown data
- ~23,000 records



Failure Progression Mode (FPM)	
AD	Adapter – Displaced, Worn, Wrong Size or Broken
AP	Application Defects
BD	Bearing Destroyed, Undetermined
DS	Displaced Seal
LO	Loose Bearing
LU	Lubrication
MD	Manufacturer/Remanufacturer/Reconditioner Defect
ME	Mechanical
NV	Non Verified Setout
SP	Fatigue Spalling
TR	Truck Related
WD	Wheel Tread Defect
WE	Water Etch

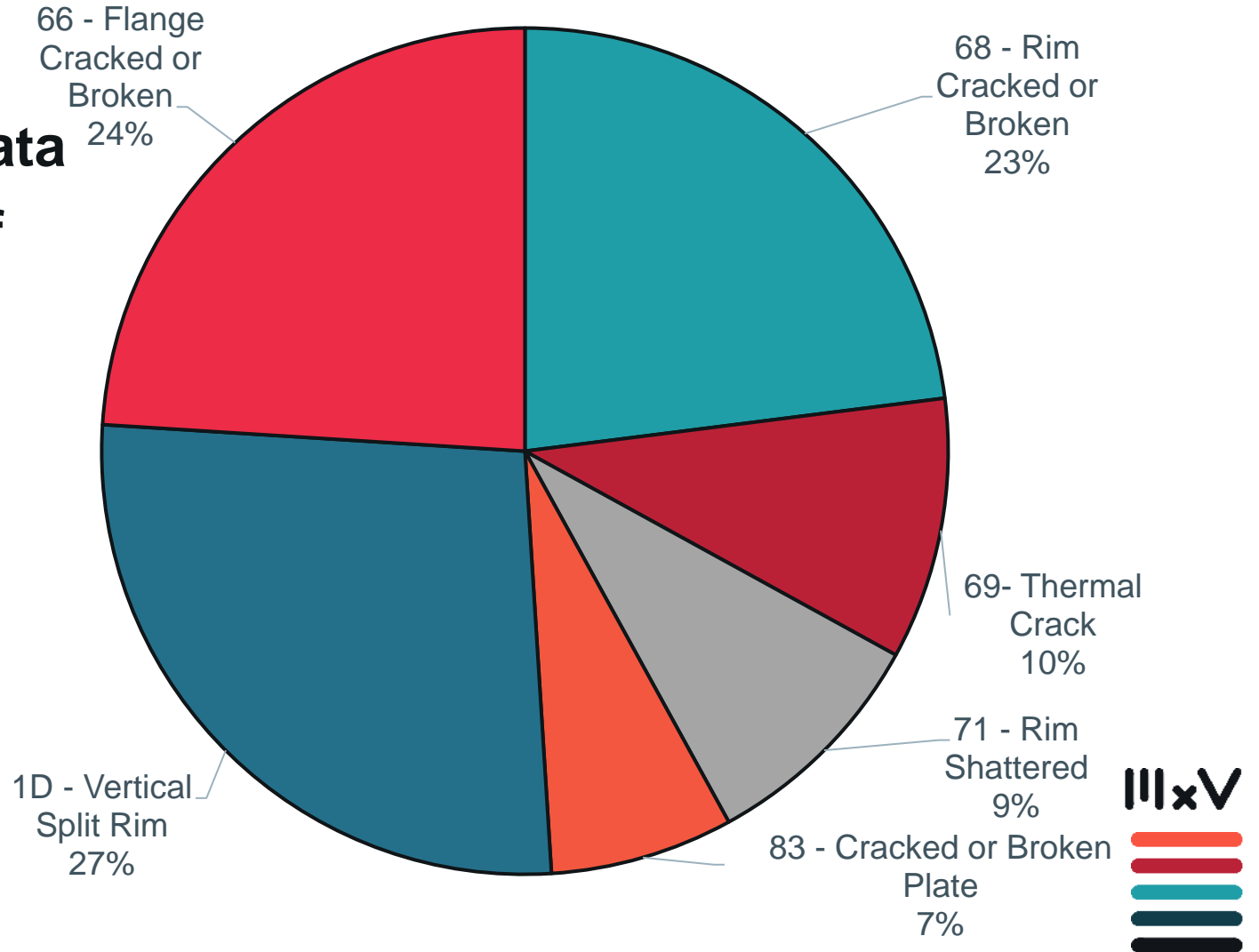
MD-12 - Axles

- 10 reported over the last 4 years
- WABL reviews all reported axles



MD-115 - Wheels

- MD-115 and CRB removal data
- Analysis includes 3 years of data
 - ~2,300 records



Note: Simulated data

WABL Dockets

- **TWBL-11.50 MD-11 Bearing Sampling**
 - Objective
 - Improve bearing performance
 - Use a statistical representative sample
 - Align with industry inspection capabilities
 - WM 50 (Overheated) and WM 91 (Acoustic Bearing Detector) inspect 100%
 - WM 51 (Bearing Temperature Performance) inspect 50%
 - Remove inspections of WM 52 (Bearing Temperature Performance Composite) and WM 95 (Fused) bearings

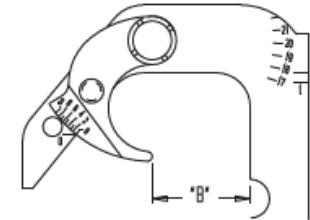
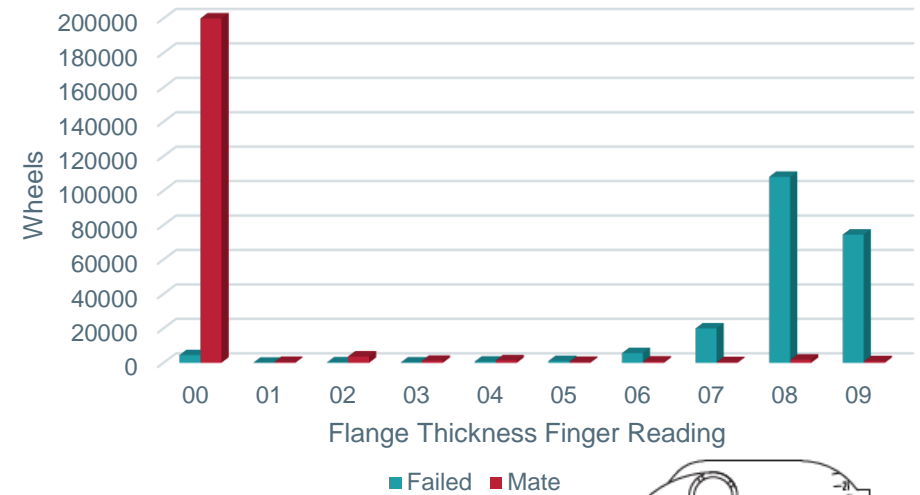


WABL Dockets

- **TWBL-23.109 Flange Chip**
 - MD-115 Review TAG observed increase of wheels reported WM 66 (cracked or broken flange)
 - Determined cause was due to other wheel defects, primarily WM 60 (thin flange)
 - Updated Rule 41.A.1.d:

d. Cracked or Broken Flange (Why Made Code 66): Any length. Chipped flange must exceed 1 ½ inch in length by ½ inch in width and not merely a flaking of the surface. Do not use WM 66 when wheel meets thin flange WM 60 criteria.

Flange Thickness - Failed vs Mate Wheels



AT	B
0	1.264
2	1.210
3	1.168
4	1.120
5	1.070
6	1.034
7	0.995
8	0.951
9	0.894





Thank you



Association of American Railroads
Quality Assurance Committee