



Safety and Operations Committee

Board Information Item III-A

7000-Series Update

Washington Metropolitan Area Transit Authority

Board Action/Information Summary

☐ Action ☒ Information

MEAD Number:
203438

Resolution:
☐ Yes ☒ No

TITLE:

7000-Series Update

PRESENTATION SUMMARY:

Update on the 7000 Series National Transportation Safety Board (NTSB) Investigation, root cause of the October 2021 Blue Line Derailment, and the Return to Service plan.

PURPOSE:

Inform the Board of Metro's progress related to the NTSB Investigation and returning the 7000-Series fleet to passenger service.

DESCRIPTION:

Kawasaki Railcar Corporation
Hatch-LTK
MxV Rail (formally TTCl)

Key Highlights:

- Parties to the NTSB Investigation have submitted technical reports to the NTSB that identify the proposed root cause and solution. The NTSB published a docket on February 28, 2023, that made those reports public.
- Metro, in coordination with the Washington Metrorail Safety Commission (WMSC), is developing a wheelset replacement program that is intended to address the data identified in the NTSB investigation and bring Metro's wheelsets in alignment with industry standards.
- Until all wheelsets are replaced on the 7000-Series fleet, Metro will continue its industry leading wheel measurement program.

Background and History:

In October 2021, a 7000-series, Blue Line train derailed between Rosslyn and Arlington Cemetery stations. As a result of that derailment the NTSB launched an investigation.

Parties to the NTSB investigation are Metro, Kawasaki Railcar Corporation,

Federal Transit Administration, Amalgamated Transit Union, Local 689, and ORX Inc.

The WMSC issued an order in October 2021 to ground the 7000-Series fleet until Metro could develop a plan to monitor and measure the wheelsets.

In December 2021 Metro, in coordination with the WMSC, began to develop a Return to Service Plan that allowed Metro to return up to eight 7000-Series trains to passenger service in May 2022 with a one-day inspection cycle and restricted service to the Green and Yellow Lines.

By September 2022, Metro had increased the number of 7000-Series trains in service to 20 with a four-day inspection cycle and operating on all service lines, permitting a response to increasing ridership. This increase in the number of 7000-Series trains in service was allowed under the Return to Service Plan developed by Metro and the WMSC.

By October 2022, Metro and the WMSC had developed a Return to Service plan that included steps to achieve no restriction in the number of 7000-Series trains in service and a seven-day inspection cycle. This plan allowed Metro to further respond to increasing ridership and the opening of Silver Line Phase 2, which included the opening of the Dulles Airport station before the Thanksgiving holiday.

Metro is currently working with the WMSC to develop the final Return to Service plan and wheel replacement program.

Discussion:

Metro remains subject to NTSB limitations on the dissemination of investigative information.

FUNDING IMPACT:

There is no funding impact from presenting this information to the Board.	
Project Manager:	Shushil Ramnaress
Project Department/Office:	COO, Department of Rail Services

TIMELINE:

Previous Actions	January 2023 – Metro and WMSC agreed to a seven day wheelset inspection interval for all 7000-Series railcars
Anticipated actions after presentation	March 2023 – Metro and WMSC have started developing the wheel replacement program and the final Return to Service Plan

7000-Series Update

Safety & Operations Committee
March 9, 2023

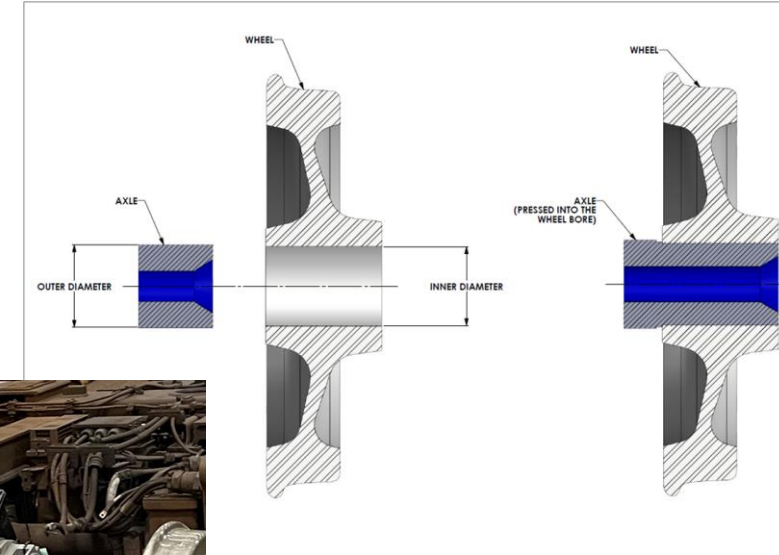


NTSB factual report and docket now published

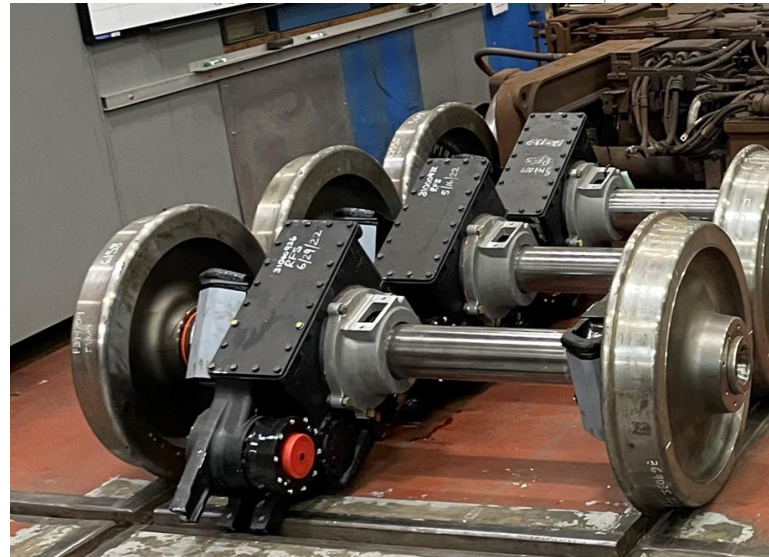
- **Note:** Metro remains subject to NTSB limitations on the dissemination of investigative information
- **Progress:**
 - Over 470 requests for information
 - Multiple analyses, 'Lab' testing and 'On-Train' testing
 - On-going studies on Switch Points and Restraining Rails
- **Milestones:**
 - February 2023: NTSB published factual report and initial docket
 - October 2023: NTSB's target date to publish final report with recommendations

Identifying the potential cause and the solution

- **Potential Cause:** NTSB investigation parties agree that a major contributing factor of wheel movement is loss of contact pressure between the axle and wheel
- **Solution:** Increasing wheel interference fit and press tonnage addresses probable cause



Axle and Wheel Fit



Assembled 7000-Series Wheelset

Implementing the solution

- **Implementing the solution:** Staff is working with WMSC to finalize a wheelset replacement program
 - **Data-driven:** Comprehensive Engineering Review assesses impact of the fix
 - **Safety-focused:** The pressing specification and process will undergo safety certification as part of Metro's holistic safety and change management processes. Every re-pressed wheelset will be subject to quality assurance oversight
 - **Cost:** Wheel replacement program budget developed as a part of the FY 2024 Proposed Budget
 - **Timeline:** Three years to replace every 7000-Series wheelset

Final Return to Service Plan is pending approval

- **Collaborative approach:** Metro and WMSC working to develop the final version of the Return to Service Plan
 - **Continue to measure:** Metro developed industry-leading wheelset measurement program; since May 2022, no confirmed wheel movement
 - **Change the interval:** Increase time between measurements to greater than 7 days
 - **Enhance using technology:** Once installed and safety certified, Metro will have the option to supplement manual measurements with automated systems installed alongside the track
 - **Timeframe:** Final Return to Service Plan will end when all wheelsets are re-pressed to the new standard