



**Massachusetts Bay
Transportation Authority**

Speed Restriction Investigation

MBTA Board of Directors – Safety, Health and Environmental Sub-Committee

September 14, 2023

Steven V. Culp, Chief of Safety Engineering and Construction

Speed Restriction Investigation

- Background

- Site visit by MA Dept of Public Utilities (DPU) on March 6, 2023
- After the visit, DPU requested Track Geometry Testing Data
- Prior to submission to DPU, MBTA reviewed documents and discovered quality deficiencies
- MBTA implemented global speed restrictions out in place on March 9, 2023
- MBTA validated geometry data and ensured mitigations
- MBTA Safety initiated investigation



Speed Restriction Investigation

- Initial Mitigations

- Crews dispatched to field to verify track conditions

- Validated that repairs were made
- Verified that speeds were appropriate for track
- Instituted block speed restrictions to allow lifting of global restriction

- Global restrictions lifted as follows:

- Red, Orange and Blue Lines – March 10, 2023 – 31.9% of speed restricted track
- Mattapan – March 15, 2023 – 22% of speed restricted track
- Green Line – March 20, 2023 – 17% of speed restricted track



Speed Restriction Investigation

- Findings

- Insufficient Contract Definition and Management

- Understanding the assumptions that are programmed into software.
- Consistency of utilizing a single vendor.
- MBTA needs to clean up data versus being provided clean data due to programming deficiencies.
- Contract/project management of the process is placed on the MOW Engineers versus experienced project managers.

- MBTA Track Standards

- MBTA's standards appear to utilize FRA values used as defaults and should be based on MBTA vehicles and track configurations.

- Training

- Process of geometry testing data validation
- Use of specialized equipment

- Ensure that employees are heard when they understand track issues and have ideas for resolution to propose.



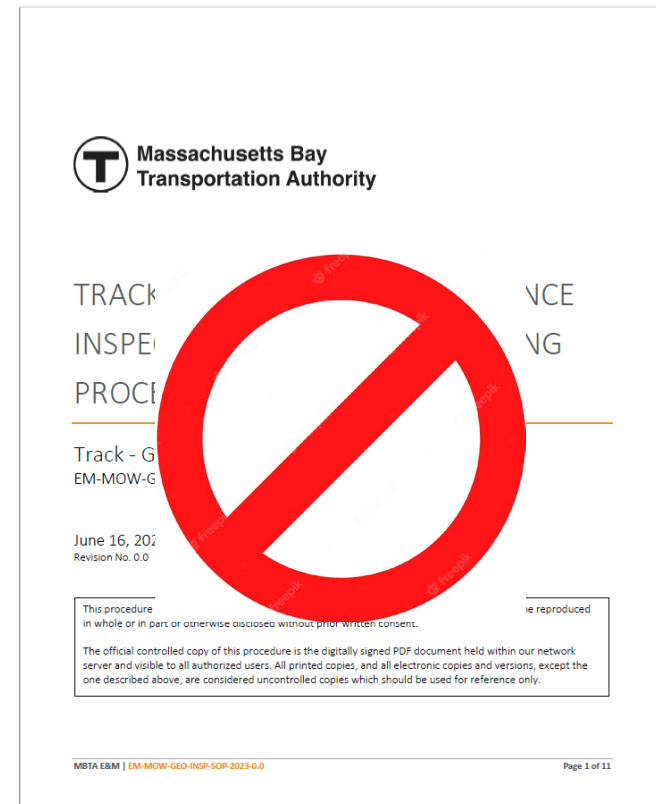
Speed Restriction Investigation

- Conclusions

- The probable cause that allowed the condition of insufficient documentation to exist has been determined to be the lack of a documented process. The absence of a documented process allows for many tasks to be overlooked.

- Actions Taken

- The Creation of a Systemwide Speed Restrictions Management Plan. This performance plan is a living document that will grow and evolve as it guides MBTA through the process of addressing defects and removing speed restrictions. This document lays out the roles and responsibilities that are expected.
- Multiple Pulse Checks, Daily, to ensure that the Systemwide Speed Restrictions Management Plan is being implemented as designed, and to provide input to adjust it as needed.
- Ensuring that prior to a geometry speed restriction being lifted, that the defects are mitigated and reviewed by line supervision, MOW Engineering, and MOW leadership.



Speed Restriction Investigation

• Recommended Safety Enhancements

- Develop and implement a process document for geometry testing, including training for affected employees.
 - Completed and published on June 16, 2023.
- Develop track standards specific to MBTA vehicles and track configurations.
- Incorporate new standards into geometry testing vendor contracts.
- Ensure adequate staffing at all levels as determined by Department head and leadership.
- Develop program for succession planning to ensure institutional knowledge is retained, as well as a method to retain resources.
- Institute a suggestion program to allow employees ideas to be shared.



TRACK – PREVENTIVE MAINTENANCE INSPECTION STANDARD OPERATING PROCEDURE

Track - Geometry Inspection Response
EM-MOW-GEO-INSP-SOP-2023-0.0

June 16, 2023
Revision No. 0.0

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Conclusion

Questions?

