

M E M O R A N D U M



SUBJECT: Data Analysis Supporting Four-Day Inspection Interval

DATE: September 2, 2022

FROM: CMOR – Shushil Ramnaress, Acting Vice President and Chief Mechanical Officer

TO: RAIL – Michael J. Hass, Senior Vice President

CMOR has analyzed the wheelset back-to-back measurements obtained in accordance with MSI 140026, Rev. 03 and requests approval to change the measurement interval from the existing daily to four days.

Dataset

Metro returned 7000-series trains into passenger service on June 16, 2022. Data up to August 3, 2022 was used, a total of 49 days in passenger service. On a per car basis, each car has operated an average of 10 days in passenger service with no observed failures.

CMOR has measured and documented over 36, 700 data points and operated a total of 541, 781 miles with no failures. 56 wheelset failures were identified during baseline measurement and those cars have not been used in passenger nor non-revenue service.

Statistical Analysis

Analysis of the wheelset back-to-back measurements was conducted utilizing the maximum measured value (worst-case) for each axle on all cars. The calculated average change for all axles is 0.006-in. – 0.007-in.

The approved measurement tolerance is 0.036-in. which includes a tooling tolerance of 0.006-in. Therefore, CMOR concludes the calculated average change above can be reasonably attributed to tooling tolerances and therefore is statistically insignificant.

Inspection Interval Conclusion

Over the 49 days in the dataset, there has been no statistically significant movement. Considering average time in service, the data demonstrate 10 days in passenger service is a safe inspection interval for back-to-back.

To continue to return 7000-series trains safely and incrementally, CMOR proposes using a 4-day inspection interval, which incorporates a 60% factor of safety.