



# WMSC Inspection Report

## 20250210B

### Inspection Details

ISSUED 2/13/2025

Title: February 10, 2025, Systemwide Radio Outage

Location: Carmen Turner Facility (CTF)

Date of Inspection: 2/10/2025

Time of Inspection: 10:28am to 11:50am

Unannounced

Risk-Based (Event Verification, O-28 Radio System Outage)

Functional Area: Communication Systems

Hazard Rating: 2B

### Overview

On Monday February 10, 2025, WMSC inspectors were waiting for the ATC crew to begin their inspection at G05 Downtown Largo Station. WMSC inspectors were planning on observing the Automatic Train Control Maintenance crew's inspection of the Automatic Train Control (ATC) Switch Monthly Inspection Preventative Maintenance (PM) procedure. At 9:55am, ATC mechanics reported that the PM procedure would be delayed because there was an ongoing systemwide radio failure that meant the radio system was not presently operational.

Due to the importance of the radio system for safety and operations, and that this was the second total radio system outage in six days, the inspectors ended their inspection at G05 Downtown Largo Station and began a risk-based inspection to observe the outage as events were transpiring in real-time. The Carmen Turner Maintenance and Training Facility (CTF) houses all primary radio site equipment for WMATA's entire radio system. WMSC inspectors arrived at CTF at 10:28am.

Separately, at 10:47am, WMATA notified the WMSC of the radio system outage in accordance with the notification process for safety events provided by Program Standard Section 7 (Safety Event Notification). That notification stated the radio system outage started at 9:53am and that radio communication was restored at 10:29am. As stated, this was the second systemwide radio outage in six days; the previous occurred on February 4, 2025.

### Defects and Corrective Actions

WMSC Inspections identify safety issues that may be classified as defects, findings, or recommendations. Findings and recommendations are defined by Program Standard Section 5.E.2



and 5.E.3 respectively. Ordinarily, issues identified in a WMSC inspection report are classified as defects. Defects are specific safety issues of non-conformance/non-compliance that are identified and that require remedial action.

This inspection did not identify any findings or recommendations and therefore does not require a WMSC Corrective Action Plan in accordance with Program Standard Section 5.E.4. It also did not identify defects that require immediate remedial action. However, there are a number of related oversight activities, which are listed below, that are presently resulting in action by WMATA or may result in further efforts with WMATA to address radio system deficiencies.

## **Defect Observations and Determinations**

Upon arriving at CTF at 10:28am, WMSC inspectors contacted the superintendent of Radio Communications who then provided access to the IT equipment room where the radio frequency headend equipment is kept—also known as electronic control centers. This includes antenna, preamplifiers, frequency converters, demodulators, and other related equipment. The inspectors were introduced to two on-site Motorola contractors who serve as Systems Manager and Associate Systems Manager for the WMATA radio network. The contractors confirmed that radio communication had been restored just prior to the WMSC inspectors' arrival. This aligns with the safety event notification received at 10:47am. The inspectors confirmed that radio communication was restored by verifying their own WMATA-provided Motorola APX 8000 radio handset was operational.

To gain understanding of the radio system outage that had just occurred, inspectors inquired about the suspected cause of the outage and what steps were taken to restore service. WMATA personnel explained that the MTC 3600 Prime Site Controller had failed to assign incoming radio traffic as intended which caused a communication failure. WMATA personnel believed this to be the same failure that led to the prior, February 4, 2025, radio system outage. However, the February 4 failure occurred on the prime site controller "A" device and required manual intervention by the system managers to assign the radio communications to the backup prime site controller "B" device at the same facility, which restored radio communications on that date. During the February 10 event, the prime site controller "B" experienced a similar failure to process radio traffic and required the same manual intervention to have the radio communication traffic reassigned back to the prime site controller "A".

When asked about automating the fail-over process, WMATA personnel explained that the current hardware has been unpredictable due to incompatibility issues when determining when to roll-over radio traffic between the two controllers because of the age of the system and the software. At present, there are no additional backup units outside of these individual "A" and "B" prime site controllers in the event both units fail.

WMATA personnel provided WMSC inspectors with a brief overview and explanation of the radio system and the technology that is presently in use. The prime site controllers are over 20 years old and exceed the product lifecycle recommendations of the manufacturer. The future radio upgrade project (the 700 MHz Radio System) is being implemented by WMATA to replace the existing system and is now expected to be online in 2027.



WMSC inspectors asked the Motorola representatives if any options exist for the present system that could improve reliability that are not contingent on the completion of the radio upgrade project. They explained that there is an upgrade path that would allow for the current radio spectrum (490 MHz) to be incorporated into the upcoming WMATA 700 MHz radio system that would improve reliability of the present radio system and allow for broader capabilities and capacity. WMATA told the WMSC inspectors that it explored this option.

At the conclusion of the inspection, it was determined that a debrief should occur with Communications and Signaling leadership. On February 11, 2025, WMSC inspectors held this debrief with Communications and Signaling Senior Vice President and Vice President (VP) Engineering of the Communications and Signal Infrastructure in accordance with Program Standard Section 6.F.1.

This inspection to understand the cause of the radio outage on Monday, February 10 did not identify any defects based on information known to the inspectors at the time of the inspection, and therefore, WMATA is only required to acknowledge receipt **by Tuesday, February 18, 2025**. WMSC oversight activities are presently working to address the radio system and may result in further efforts with WMATA to address radio system deficiencies (list of those activities to-date is below).

## Next Steps

Please respond **by Tuesday, February 18, 2025**, to acknowledge receipt.

## Related Oversight Activities

There are several ongoing oversight activities that relate to the radio system as of the date of this inspection:

- Corrective Action Plan C-0100 resulted from a [finding issued by the WMSC on April 30, 2021](#). That finding states “Metrorail is not maintaining a fully functioning radio communication system in all rail yards and shops.” This CAP is expected to conclude by October 2026.
- WMATA is in the process of developing a corrective action plan for Finding 1 from the [Emergency Management and Life Safety Programs Audit](#) (issued January 29, 2025). Finding 1 states “Metrorail does not have a reliable communication system for operations or emergencies.” Unlike C-0100, this corrective action plan is a systemwide focus.
- Special Study of Safety Impacts of WMATA’s Radio Replacement Project (i.e. the 700 MHz radio system). Notification letter sent to WMATA on February 3, 2025.
- The WMSC requested preliminary investigation reports for both radio system outages (safety event notification code O-28) for the February 4 and February 10 outages.
- Communications Audit. Notification letter is scheduled to occur this month (February 2025) with that audit work taking place over the first half of 2025.