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WMSC Commissioner Brief: W-0134 – Improper Roadway Worker Protection – Fort Totten Station – July 30, 2021

Prepared for Washington Metrorail Safety Commission meeting on December 7, 2021

Safety event summary:

A piggybacking work crew disembarked a prime mover and began work without permission, without establishing their own work zone as required, and prior to the Roadway Worker In Charge (RWIC) establishing the larger work zone with proper safety equipment in the area near Fort Totten Station on the Green and Yellow Lines.

The RWIC identified this when the RWIC did not get a response to a request for the piggybacking crew to move their prime mover within the work area. The Safety Officer identified that, in addition to not having permission from the RWIC to be on the roadway, the piggyback crew had not placed required safety mats, flares or shunts in their work location. The crew had placed Warning Strobe and Alarm Devices (WSADs) that provide an alarm if third rail power is restored. The piggyback crew was instructed to complete their work and reassemble fasteners that they had removed for rail destressing (after properly establishing their piggyback work area at the direction of the Safety Officer) and was then removed from service.

In an investigative interview, the Piggyback Crew Leader, who is a Track and Structures supervisor, said that they entered the roadway to start work when they heard the ROCC give the RWIC permission to go to work. The Piggyback Crew Leader stated that they did not know they needed to wait for the RWIC's permission and for the work zone to be set up before starting work. They also stated they did not know the RWIC is supposed to inspect the work area before a piggyback crew starts work.

Metrorail did not conduct post-event drug and alcohol testing for the Piggyback Crew Leader as required by Metrorail policy. The Piggyback Crew Leader stated that they returned to the yard and did not see other management personnel at the division, and they did not report for testing.

The RWIC was tested as required and was not in violation of Metrorail policies.

Probable Cause:

The probable cause of this event was a lack of supervisory oversight and planning to ensure piggyback work zone procedures are consistently followed and understood.

Corrective Actions:

Track and Structures is developing guidance to aid decision-making on when to cancel work and to contact supervision for guidance (e.g., if work has not started by 2:30 a.m.)

Track and Structures is developing a departmental procedure to ensure drug and alcohol testing is completed as required by Metrorail policy.

Metrorail is required to address its inconsistent implementation of post-event testing in response to WMSC Fitness for Duty Audit Finding 7 issued on August 31, 2021.

Metrorail conducted a safety stand down that included a focus on roadway worker protection

The Piggyback Crew Leader was enrolled to reattend RWP Level 4 initial training

Metrorail is in the early stages of a process to revise its roadway worker protection rules, including those rules related to piggybacking work crews.

WMSC staff observations:

Metrorail should ensure continued training and supervisory oversight so that personnel know and implement rules and policies for piggybacking crews.

Analysis conducted as part of this investigation identified the risk of deteriorated performance of the RWIC due to fatigue. This did not contribute to this event, and the RWIC's actions in this case were proper. However, the RWIC worked a schedule consisting of day and evening/overnight shifts in the days leading up to the incident, including 16-hour shifts that included night work (e.g. from 22:00 – 14:00). Notably, the RWIC had completed an overnight 16-hour shift on the day before the incident. Metrorail is required to address fatigue-related issues under open corrective action plans, including corrective action plans required to address findings identified in the WMSC's Fitness for Duty Audit issued in August 2021.

Staff recommendation: Adopt final report.

Washington Metro Area Transit Authority
Department of Safety and Environmental Management (SAFE)

FINAL REPORT OF INVESTIGATION A&I

Date of Event:	7/30/2021
Type of Event:	Improper Roadway Worker Protection
Incident Time:	02:23 hours
Location:	Fort Totten Station, Track 2 (E-Line)
Time and How received by SAFE:	02:33 hours SAFE On-Call Phone
WMSC Notification Time:	03:37 hours via Email
Responding Safety Officers:	WMATA SAFE: Yes (discovered the violation) WMSC: No Other: N/A
Rail Vehicle:	None
Injuries:	None
Damage:	None
SMS I/A Incident Number:	20210806#94858

Fort Totten Station – Improper RWP

July 30, 2021

Table of Contents

Abbreviations and Acronyms

CAP	Corrective Action Plan
CM	Chain Marker
MSRPH	Metrorail Safety Rules and Procedures Handbook
NOAA	National Oceanic and Atmospheric Administration
PLNT	Office of Plant Maintenance
RJSB	Roadway Job Safety Briefing
RTC	Rail Traffic Controller
ROCC	Rail Operations Control Center
RTC	Rail Traffic Controller
RWIC	Roadway Worker In Charge
RWP	Roadway Worker Protection
SAFE	Department of Safety and Environmental Management
SAFTE-FAST	Sleep Activity Fatigue Task Effectiveness-Fatigue Avoidance Scheduling Tool
SMS	Safety Measurement System
SOP	Standard Operating Procedure
TRST	Office of Track and Structures
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission
WSAD	Wayside Strobe and Alarm Device

Executive Summary

On Friday, July 30, 2021, at approximately 02:23 hours, a Safety Officer was performing a Roadway Worker Protection (RWP) Compliance Check near Fort Totten Station. The Safety Officer was onboard Prime Mover (PM) 578 with the Roadway Worker In Charge (RWIC) as they were setting up their work zone. After setting up one end of the work zone, the RWIC traveled to the opposite end of the work zone to confirm the setup of the remaining safety equipment. While en route, the RWIC observed PM 65 stopped in an area that the RWIC's crew needed access to perform their work. PM 65 was in the correct location, but the RWIC needed PM 65 to move forward a few hundred feet so they could finish setting up the work zone. The RWIC attempted to contact PM 65, which was part of a piggyback work crew, to move the unit forward. The RWIC did not receive a response so they responded to the unit to investigate. At that time, the RWIC and Safety Officer observed that the piggyback crew had already entered the roadway from the PM and began working. As the RWIC was still setting up the overall work zone, the Piggyback Crew did not have permission to set up their own work zone.

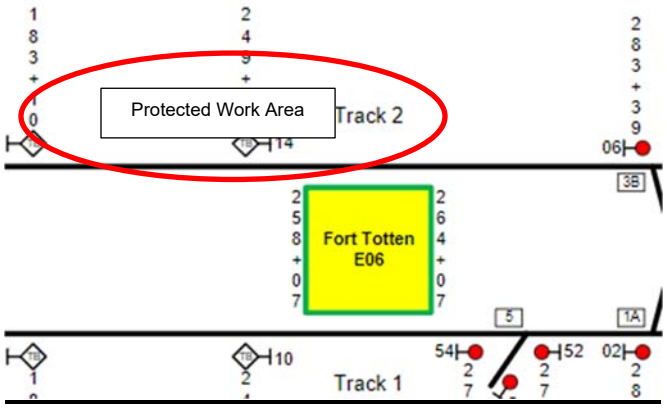
At approximately, 02:35 hours, the Safety Officer contacted a Rail Operations Control Center (ROCC) Supervisor to report the Improper RWP incident. The Safety Officer informed the ROCC Supervisor that the Piggyback Crew Leader did not have required safety mats, e-flares, or shunts set up in their piggyback work location. The ROCC Assistant Superintendent instructed RWIC to have the Piggyback Crew Leader re-assemble the hardware that was disassembled and that they would be removed from service. The work was cancelled for the night and the entire crew was removed from the roadway because of the Improper RWP incident.

The probable cause of this Improper RWP incident is a failure to follow established procedure for establishing up a piggyback work zone. A contributing factor to the incident is Improper Decision-Making due to concern about having enough time to complete their work assignment, which led to the piggyback work zone not being established correctly.

Incident Site

Fort Totten Station, Track 2 (Lower)

Field Sketch/Schematics



**Note: PM 65 and the piggyback crew were located within the piggyback work zone at E2 249+00 – 241+00.*

Purpose and Scope

The purpose of this accident investigation and candid self-evaluation is to collect and analyze available facts, determine the probable cause(s) of the incident, identify contributing factors, and make recommendations to prevent a recurrence.

Investigative Methods

The investigative methodologies included the following:

- Site Assessment through document review.

- Formal Interviews – SAFE interviewed two (2) individuals as part of this investigation. Interviews included persons present at, during, and after the incident, those directly involved in the response process, and representatives from the Washington Metrorail Safety Commission (WMSC). SAFE interviewed the following individuals:
    - RWIC [PLNT]
    - Piggyback Crew Leader [TRST]

- Documentation Review – Collection of relevant work history information and process documentation contained in WMATA systems of record. These records include:
    - RWIC & Piggyback Crew Leader Training Records
    - RWIC & Piggyback Crew Leader Certifications
    - RWIC & Piggyback Crew Leader 30-Day Work History review
    - Metrorail Safety Rules and Procedures Handbook (MSRPH)
    - National Oceanic and Atmospheric Administration (NOAA)

- System Data Recording Review – Collection of information contained in Metro Data Recording Systems. This data includes:
    - Audio Recording System (ARS) playback including phone (12063, 12062) and radio communications (Ops.3)
    - General Orders & Track Rights System

Investigation

On Friday, July 30, 2021, prior to entering the roadway, the RWIC held a Roadway Job Safety Briefing (RJSB) with the entire work crew, which included Plant Maintenance (PLNT) personnel, a piggyback crew from Track and Structures (TRST) and contractors assigned to the RWIC, on the lower level platform at Fort Totten Station. After the RJSB, the Piggyback Crew Leader held a separate RJSB with their work crew onboard PM 65 which was located within their working limits of E2 249+00 -241+00. At approximately 01:38 hours, a ROCC Radio Rail Traffic Controller (RTC) gave the RWIC permission to enter the roadway to place their shunts ROCC would verify the shunts once in place. At approximately 01:59 hours, the ROCC RTC verified two good shunts at the work location of Fort Totten Station Track 2. The ROCC RTC gave the RWIC permission to place their remaining safety equipment (e.g., work mats, lights) and go to work.

At approximately 02:23 hours, a Safety Officer arrived at Fort Totten Station to conduct a safety compliance check. After receiving their RJSB, the Safety Officer was onboard a unit with the RWIC as they were traveling to the opposite end of the work zone so they could verify the remainder of their safety equipment in the authorized work zone. The RWIC attempted to contact PM 65, which was located in between the two PLNT PMs, to move forward so the RWIC's work

crew could access an area needed to conduct their work. The RWIC did not receive a response so they responded to the unit to investigate. At that time, the RWIC and Safety Officer observed that the piggyback crew had already entered the roadway from the Prime Mover and had disassembled several fasteners in order to perform their task of destressing rail. As the work zone was still in the process of being established, the RWIC never gave Piggyback Crew Leader permission to enter the roadway and begin work. In addition, the piggyback work zone did not have safety mats, e-flares, or shunts set up in their work location.

The Piggyback Crew Leader stated during their interview that they entered the roadway to start their work when they heard the ROCC give the RWIC permission to go to work. The Piggyback Crew Leader stated they did not know they needed to wait for the RWIC to confirm their work zone was set up before starting their work. The Piggyback Crew Leader reported having their required safety equipment but did not set up the equipment prior to beginning work. They also reported concerns over being able to complete their task with the amount of time remaining before needing to clear the roadway.

At approximately 02:35 hours, the Safety Officer contacted a RTC to report the RWP violation. The Safety Officer informed the RTC that the Piggyback Crew Leader did not have safety mats, e-flares, or shunts set up in their work location. The ROCC Assistant Superintendent instructed the RWIC to inform Piggyback Crew Leader to re-assemble the track and they would be removed from service. Both the RWIC and the piggyback crew were ordered to clear the roadway due to the Improper RWP incident.

During the investigation, it was discovered that the TRST Piggyback Crew Leader was not taken for post-incident drug and alcohol screening. The Piggyback Crew Leader, who is a supervisor, reported that they believed they did not need to submit to testing since they were permitted to oversee the reassembly of the track. The PLNT RWIC was escorted for post-incident drug and alcohol screening by their supervisor.

Chronological Event Timeline

A review of ARS playback, i.e., phone (12063, 12062) and radio communications (Ops.3), revealed the following timeline:

Time	Description
22:42:37 hours	RWIC: Contacted the ROCC to request track rights under ETO authority, supervisory power outage, for E line CMs E2 203+00 – E2 266+55, they were using 3 units (PM 568 & 578 from B99 and PM 65 from F99) and relinquish rights to Track 1. [Radio]
22:43:23 hours	ROCC RTC: Acknowledged request and gave a 100% repeat back. [Radio]
00:54:23 hours	PM 568 arrives at Fort Totten Station E2 203+00 – 266+55. [Radio]
01:00 hours	PM 65 arrives at Fort Totten Station E2 203+00 – 266+55. [Radio]
01:13 hours	PM 578 arrives at Fort Totten Station E2 203+00 – 266+55. [Radio]
01:14:20 hours	ROCC RTC: Requested radio checks from PM 65, 568, and 578. [Radio]
01:15:40 hours	ROCC RTC: Informed RWIC that E06-08 and E06-04 signals were red. [Radio]
01:15:55 hours	RWIC: Acknowledged and gave the ROCC RTC a 100% repeat back. [Radio]

Time	Description
01:16:05 hours	ROCC RTC: Informed RWIC their 3 units were holding at Fort Totten Station, gave permission to enter the roadway under foul time (FT) and hot stick and confirm and send the CMs. [Radio]
01:16:16 hours	RWIC: Acknowledged and gave the ROCC RTC a 100% repeat back. [Radio]
01:39:13 hours	RWIC: Informed ROCC RTC that power was de-energized at E2 257+00. [Radio]
01:39:25 hours	ROCC RTC: Acknowledged RWIC's radio transmissions and instructed them to place their shunts according to SOP and Central will verify. [Radio]
01:39:34 hours	RWIC: Gave a 100% repeat back and relinquished FT and requested permission to utilize unit to set up remainder of work zone. [Radio]
01:39:49 hours	ROCC RTC: Affirmed the radio transmission. [Radio]
01:59:48 hours	ROCC RTC: Confirmed that RWIC placed two good shunts at work location Fort Totten Station Track 2 and gave permission to place safety equipment and go to work. Clearing time was 04:00 hours. [Radio]
02:00 hours	RWIC: Gave a 100% repeat back and stated they were placing the remaining safety equipment. [Radio]
02:35:30– 02:39:52 hours	Safety Officer: Contacted a RTC to report an improper RWP violation at Fort Totten Station. They stated RWIC had senior track rights and Piggyback Crew Leader had a piggyback crew. The work area of the piggyback area was not set up properly. There were no mats, no e-flares, or no shunts in the area. PM 65 was in the area with a flat. Piggyback Crew Leader set up the work area once they talked to the Safety Officer. [Phone]
02:42:29– 02:50 hours	Safety Officer: Contacted the ROCC Assistant Superintendent to inform them of the Improper RWP incident. Safety Officer stated that they arrived on location at approximately 02:23 hours and got on the unit as RWIC was coming down to finish setting up their work area but TRST Personnel were already in the roadway working. Safety Officer stated TRST Personnel did not have their piggyback work zone set up. ROCC Assistant Superintendent asked if Piggyback Crew Leader was in the RJSB with RWIC. Safety Officer stated Piggyback Crew Leader was present at the RJSB and had a separate RJSB sheet as well. [Phone 12063]
02:51:34 hours	ROCC RTC: Contacted RWIC and requested them to landline 1652. [Radio]
02:51:43 hours	RWIC: Acknowledged ROCC RTC request. [Radio]
02:58:05– 03:00 hours	Piggyback Crew Leader: Contacted the ROCC Assistant Superintendent to ask what they should do now because they stopped their work. The ROCC Assistant Superintendent asked Piggyback Crew Leader did they take anything apart. Piggyback Crew Leader stated TRST crew took the joint apart. ROCC Assistant Superintendent instructed Piggyback Crew Leader to standby. [Phone 12063]
03:03:07 hours	ROCC Assistant Superintendent: Instructed RWIC to inform Piggyback Crew Leader to put together what they took apart and make sure it was revenue ready and they were being removed from service due to the RWP violation. [Phone 12063]
03:06:33– 03:09:40 hours	ROCC Assistant Superintendent talked to IMO about the improper RWP violation. IMO informed ROCC Assistant Superintendent that RWIC should be removed from service as well because RWIC was responsible for the entire work zone. [Phone 12063]

Time	Description
03:10– 03:11:40 hours	ROCC Assistant Superintendent: Contacted RWIC's Supervisor to inform them that the piggyback work area was not set up properly and Piggyback Crew Leader was being removed from service. Since RWIC was responsible for the entire work zone, RWIC would need to be removed from service but wanted to know what they wanted to do. RWIC's Supervisor stated they did not have another RWIC at that location so RWIC would need to be removed from service. [Phone 12063]
03:14:50- 03:17 hours	RWIC: Contacted ROCC Assistant Superintendent and informed them that the piggyback crew was clearing up. RWIC stated they were informed by their supervisor that they were being removed from service. ROCC Assistant Superintendent informed RWIC since they were responsible for the work zone and the piggyback work crew was not set up properly, they had to be removed from service as well. RWIC informed the ROCC Assistant Superintendent that they had not given them permission to go to work yet and they were already in the roadway working when they returned to set up the other end of the work zone. [Phone]
03:21:19- 03:22:29 hours	RWIC's Supervisor: Contacted ROCC Assistant Superintendent to reiterate that RWIC stated they did not authorize Piggyback Crew Leader to go to work. ROCC Assistant Superintendent informed RWIC's Supervisor that RWIC was not being removed from service because they were in trouble but an investigation was now open and since they had authority of the work zone they had to be removed from service pending the investigation. [Phone]
04:09:03 hours	RWIC: Contacted Radio RTC to inform them that all personnel were clear from the roadway and third rail power could be restored at ROCC's discretion and track was revenue ready. PM 65 needed to go back to F99 and PMs 568 and 578 needed to go back to B99. [Radio]
04:09:30 hours	ROCC RTC: Asked RWIC if they had ATC verify circuits and track were revenue ready. [Radio]
04:09:37 hours	RWIC: Stated they could verify circuits under FT but they were instructed to clear out. [Radio]
04:10:25 hours	ROCC RTC: Told RWIC that their clearing time was 04:10 hours. [Radio]

***Note: Times above may vary from other system's timelines based on clock settings.*

Interview Findings

RWIC conducted a RJSB with Piggyback Crew Leader and the piggyback crew. RWIC was not able to complete verification of their authorized work zone prior to discovering the improper piggyback work zone. RWIC did not authorize Piggyback Crew Leader to enter the roadway to begin their work. RWIC did not know the Piggyback Crew Leader was in the roadway working until they attempted to ask PM 65 to move forward but was unresponsive. Piggyback Crew Leader entered the roadway and started working once they heard the ROCC grant RWIC permission to place remaining safety equipment and start work. Piggyback Crew Leader placed the Wayside Strobe and Alarm Devices (WSADs) in the roadway and started working. Piggyback Crew Leader had all required work zone safety equipment but did not set up the work zone. Piggyback Crew Leader stated there were time restraints and was trying to get the work done. Piggyback Crew Leader stated they were not aware that the RWIC was supposed to inspect their work area before starting their work. Piggyback Crew was allowed to complete work to restore the track to service before being removed from service. Piggyback Crew Leader was not taken to complete a post – incident testing. The RWIC was taken to complete a post incident testing. Piggyback Crew Leader

reported that there were no other management personnel at the division when Piggyback Crew Leader returned to the yard so they believed they did not need to report for post-incident testing.

Findings

- The RWIC did not authorize the Piggyback Crew Leader to enter the roadway to begin their work.
- Piggyback Crew Leader began work prior to the Protected Working Limits being verified.
- Piggyback Crew Leader entered the roadway and started working once they heard the ROCC grant the RWIC permission to place remaining safety equipment and start work.
- Piggyback Crew Leader failed to notify the RWIC that their work zone was set up properly prior to beginning work.
- Piggyback Work Zone did not have required equipment work zone safety equipment set up prior to beginning work (e.g., mats, shunts, lanterns). Equipment was available onboard the Prime Mover.
- Piggyback Crew Leader deployed WSADs in their work zone.
- Piggyback Work Crew Leader was not taken for post-incident testing.
- While the RWIC's fatigue analysis indicated a risk for fatigue, the actions of the Piggyback Crew Leader were not the result of potential fatigue of the RWIC. The RWIC's actions were proper upon discovery of the improper piggyback work zone setup.

Weather

On July 30, 2021, at the time of the incident, NOAA recorded the temperature as 72 ° F, with clear skies throughout the night. SAFE concluded that weather was not a contributing factor in this incident (Weather source: NOAA) – Location: Washington, DC.)

Human Factors

Fatigue

RWIC

Evidence of fatigue:

Conditions at the time of the incident were evaluated to distinguish whether evidence of fatigue was present. No evidence of fatigue was indicated by the available data. The RWIC reported feeling Fully Alert at the time of the incident. The RWIC reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk:

Incident data was evaluated for fatigue risk factors. Risk factors for fatigue were identified. The incident time of day (02:25 hours) suggests an increased risk of fatigue-related impairment. The RWIC worked a schedule consisting of day and evening/overnight shifts in the days leading up to the incident, including 16-hour shifts that included night work (e.g. from 22:00 – 14:00). Notably, the RWIC had completed an overnight 16-hour shift on the day before the incident.

From reported bed and wake times, the RWIC slept a total of 5.5 hours in the period leading up to the incident and was awake for 5.8 hours at the time of the incident. The off-duty period immediately preceding the incident was 8 hours long which, given the RWIC's reported 30-minute

commute, limited the opportunity for 7-9 hours of sleep. The RWIC reported typical workday sleep durations of 6 hours and experiencing no other issues with sleep.

A biomathematical fatigue modelling application (SAFTE-FAST WebSFC) was used to further evaluate fatigue risk factors that may have been present in the RWIC's schedule. The analysis was based on the RWIC's work schedule, bed and wake times from the day before the incident and reported habitual sleep durations. Estimated performance effectiveness at the time of the incident was 63.5% and was significantly affected by the long, overnight shifts. Specifically, the analysis identified short sleep duration in the last 24 hours, the circadian effects of night work, and sleep debt (inferring accumulated sleep loss of more than 8 hours) as factors contributing to an increased risk of fatigue at the time of the incident.

Modeling analysis output shows estimated performance effectiveness during the incident work shift (top), and for the week leading up to the work shift (bottom) based on the employee work and reported sleep schedule. Estimates were based on the Technician's work schedule, bed and wake times from the day before the incident and reported habitual sleep durations (6 hours a day). Bold portions of the modeled curve show work (in black) and sleep times (in blue). Effectiveness is shown on the vertical axis, with colored fields in the chart background signifying ranges of effectiveness scores including high effectiveness (>90%) in green, and low effectiveness (<65%) in red. Time is shown on the horizontal axis. Markers for work and sleep times are shown in the lanes above the time of day on the horizontal axis.

Piggyback Crew Leader

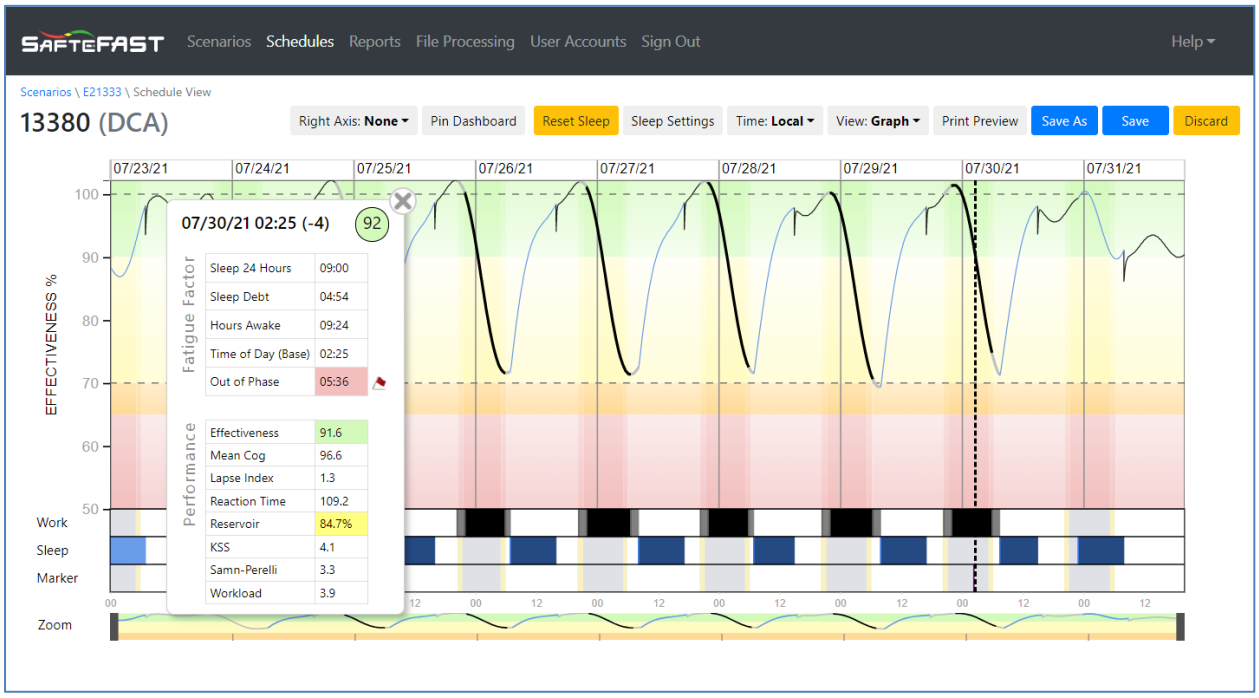
Evidence of fatigue:

Conditions at the time of the incident were evaluated to distinguish whether evidence of fatigue was present. No evidence of fatigue was indicated by the available data. The Piggyback Crew Leader reported feeling Fully Alert at the time of the incident. The Piggyback Crew Leader reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk:

Incident data was evaluated for fatigue risk factors. Risk factors for fatigue were identified. The incident time of day (02:25 hours) suggests an increased risk of fatigue-related impairment. The Piggyback Crew Leader worked evening/overnight shifts in the days leading up to the incident and was awake for 10.4 hours at the time of the incident. Based on the employee's reported bed and wake times the day before the incident, the Piggyback Crew Leader slept a total of 9 hours in the sleep period preceding the incident. The off-duty period preceding the incident was 15.5 hours long, which provided opportunity for 7-9 hours of sleep. The Piggyback Crew Leader reported usual workday sleep durations of 9 hours and no issues with sleep.

A SAFTE-FAST WebSFC was used to further evaluate fatigue risk factors that may have been present in the Piggyback Crew Leader's schedule. The analysis was based on the Piggyback Crew Leader's work schedule, bed and wake times from the day before the incident and reported habitual sleep durations. The estimated performance effectiveness at the time of the incident was 91.6%. The analysis identified the circadian effects of night work as a factor contributing to an increased risk of fatigue at the time of the incident.



Modeling analysis output shows estimated performance effectiveness during the incident work shift (top), and for the week leading up to the work shift (bottom) based on the employee work and reported sleep schedule. Estimates were based on the Supervisor's work schedule, bed and wake times from the day before the incident and reported habitual sleep durations (9 hours a day). Bold portions of the modeled curve show work (in black) and sleep times (in blue). Effectiveness is shown on the vertical axis, with colored fields in the chart background signifying ranges of effectiveness scores including high effectiveness (>90%) in green, and low effectiveness (<65%) in red. Time is shown on the horizontal axis. Markers for work and sleep times are shown in the lanes above the time of day on the horizontal axis.

Post-Incident Toxicology Testing

- WMATA's Drug and Alcohol Program determined that RWIC was not in violation of the Drug and Alcohol Policy and Testing Program 7.7.3/6.
- Piggyback Crew Leader was not taken for post incident testing.

Immediate Mitigation to Prevent Recurrence

- RWIC and Piggyback Crew Leader work crews were removed from service.
- RWIC was taken for post – incident testing.

Probable Cause Statement

The probable cause of this improper roadway worker protection incident is that the Piggyback Crew Leader failed to follow established procedure for setting up a piggyback work zone. MSRPH 5.15 states the piggybacking responsibilities and the Piggyback Crew Leader failed to follow 5.15.2 and 5.15.3. A contributing factor is that the Crew Leader reported concerns about having enough time to complete their work.

SAFE Recommendations/Corrective Actions

Corrective Action Code	Description	Due Date
94858_SAFECAPS_TRST_001	Piggyback Crew Leader will have to reattend initial RWP Level 4 training.	Completed 10/8/21
94858_SAFECAPS_TRST_002	Develop guidance for personnel to aid decision-making on when to cancel work and to contact supervision for guidance/support. (e.g., if work has not started by 0230 hours)	01/30/2022
94858_SAFECAPS_TRST_003	Develop a Standard Operating Procedure consistent with Policy/Instruction 7.7.3 that details specific incidents and circumstances that require TRST personnel to be removed from service for drug/alcohol screening, including a method to ensure the screening is completed.	01/30/2022
94858_SAFECAPS_TRST_004	RWP-qualified personnel will attend and complete RWP Safety Stand Down, facilitated by Office of Personnel and Management Services (OPMS)	11/30/2021
94858_SAFECAPS_TRST_005	Develop a Standard Operating Procedure consistent with Policy/Instruction 7.7.3 that details specific incidents and circumstances that require TRST personnel to be removed from service for drug/alcohol screening, including a method to ensure the screening is completed.	1/30/2022

Appendices
Appendix A – Interview Summary

The below narratives are a summary of the interview with SAFE and represents the statements made by the involved individual. As such, times and details may present a conflict with the data contained in systems of record.

RWIC

RWIC has been a WMATA employee for 8 years, all as a PLNT Technician. The RWIC last certified in February of 2021 and is currently RWP-4 certified. RWIC's RWP certification expires in March of 2022. RWIC had no history of sleep issues to report and stated feeling fully alert at the time of the incident.

RWIC was the RWIC for a contractor crew from M & M Electric and had a large crew that night. RWIC stated they held a RJSB with the Piggyback Crew Leader and their crew. RWIC stated they had 3 roadway maintenance machines (units), PM 578 located on the downtown end, PM 65 in the middle, and PM 568 on the Greenbelt end. RWIC went to set up one end of the work zone and when they returned to finish setting up the work zone, they noticed PM 65 was in the way. RWIC asked PM 65 to move forward about 100 feet but did not get a response. RWIC noticed that the piggyback crew was already in the roadway working. RWIC stated the Safety Officer was on his unit conducting a compliance check and asked if they gave the piggyback crew permission to work. RWIC responded, No, and that was when the Safety Officer approached the piggyback crew. RWIC resumed work but then received a call from the ROCC requesting them to landline Central. The ROCC instructed RWIC to inform the piggyback crew to re-assemble any work they had started and that they were being removed from service. RWIC stated they received another call from the ROCC stating they were being removed from service as well. RWIC stated they never gave the piggyback crew permission to enter the roadway. RWIC stated the Piggyback Crew Leader never contacted RWIC to request permission to enter the roadway.

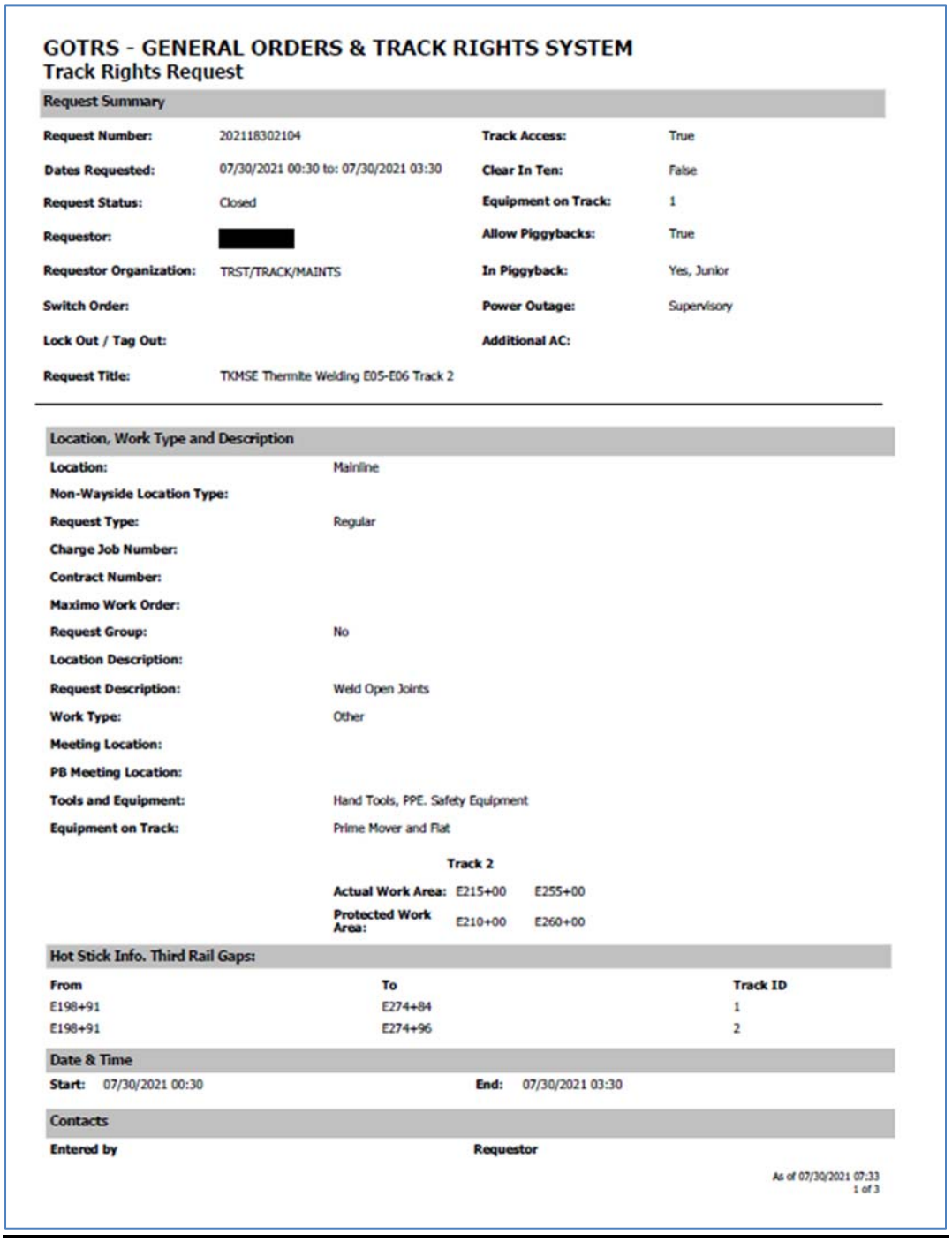
Piggyback Crew Leader

Piggyback Crew Leader has been a WMATA employee for 9.5 years including 2 years in their current position as a Track Maintenance Supervisor and prior years as a Laborer and Track Repairer. Piggyback Crew Leader last certified as RWP Level 4 in May of 2021 and is currently RWP-4 certified. Piggyback Crew Leader's RWP certification expires in February of 2022. Piggyback Crew Leader had no history of sleep issues to report and stated feeling fully alert at the time of the incident. Piggyback Crew Leader had been working the night shift leading up to this incident.

Piggyback Crew Leader stated they were piggybacking under the RWIC on the night of the incident. Piggyback Crew Leader stated they have worked with RWIC before. Piggyback Crew Leader stated RWIC conducted a RJSB with them and their crew. Piggyback Crew Leader stated they then held a separate RJSB with their crew to let them know their specific job assignments. Piggyback Crew Leader stated they and RWIC discussed each other's work for the night so when the ROCC granted RWIC permission to work, they set up their WSADs and began to work. Piggyback Crew Leader stated this was not their first time as a piggyback crew leader but typically is the RWIC of a work zone. Piggyback Crew Leader stated there was a lot going on at the time and there were time restraints to get the work completed. Piggyback Crew Leader stated because of this incident they learned that the RWIC was supposed to inspect their area before starting work and wait for the RWIC to grant them permission to work. They had all the necessary safety equipment but missed that step in the setup process. Piggyback Crew Leader stated they were

not taken for a post-incident testing because they were allowed to continue working to restore the roadway, so they didn't think that they were removed from service. They also reported that supervision was not available at their division when they arrived back at the yard.

Appendix B – General Orders & Track Rights System



GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM
Track Rights Request

Request Summary

Request Number:	202118302104	**Track Access:**	True
Dates Requested:	07/30/2021 00:30 to: 07/30/2021 03:30	**Clear In Ten:**	False
Request Status:	Closed	**Equipment on Track:**	1
Requestor:	[redacted]	**Allow Piggybacks:**	True
Requestor Organization:	TRST/TRACK/MAINTS	**In Piggyback:**	Yes, Junior
Switch Order:		**Power Outage:**	Supervisory
Lock Out / Tag Out:		**Additional AC:**	
Request Title:	TKMSE Thermite Welding E05-E06 Track 2		

Location, Work Type and Description

Location:	Mainline
Non-Wayside Location Type:	
Request Type:	Regular
Charge Job Number:	
Contract Number:	
Maximo Work Order:	
Request Group:	No
Location Description:	
Request Description:	Weld Open Joints
Work Type:	Other
Meeting Location:	
PB Meeting Location:	
Tools and Equipment:	Hand Tools, PPE. Safety Equipment
Equipment on Track:	Prime Mover and Flat

Track 2

Actual Work Area:	E215+00	E255+00
Protected Work Area:	E210+00	E260+00

Hot Stick Info. Third Rail Gaps:

From	To	Track ID
E198+91	E274+84	1
E198+91	E274+96	2

Date & Time

Start: 07/30/2021 00:30 **End:** 07/30/2021 03:30

Contacts

Entered by **Requestor**

As of 07/30/2021 07:33
1 of 3

GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM
Track Rights Request

Request Summary

Request Number:	202118302104	**Track Access:**	True
Dates Requested:	07/30/2021 00:30 to: 07/30/2021 03:30	**Clear In Ten:**	False
Request Status:	Closed	**Equipment on Track:**	1
Requestor:	[redacted]	**Allow Piggybacks:**	True
Requestor Organization:	TRST/TRACK/MAINTS	**In Piggyback:**	Yes, Junior
Switch Order:		**Power Outage:**	Supervisory
Lock Out / Tag Out:		**Additional AC:**	
Request Title:	TKMSE Thermite Welding E05-E06 Track 2		

[redacted]

Work: [redacted]
Cell: [redacted] **Home:** [redacted]

[redacted]

Work: [redacted]
Cell: [redacted] **Home:** [redacted]

WMATA Manager

[redacted]

Work: [redacted]
Cell: [redacted] **Home:** [redacted]

Emergency Contact

[redacted]

Work: [redacted]
Cell: [redacted] **Home:** [redacted]

Support

SUPPORT GROUP	Crew Size
TRST/TRACK	5
ESCORT GROUP	**Crew Size**
ATCM	2

Request Change History

Date	Event
07/02/2021 16:38	Request was replicated from Request 202118302100.
07/09/2021 12:58	Request was edited. Field(s) changed: End Date/Time. End Date/Time: 7/30/2021 8:00:00 AM to 7/30/2021 7:30:00 AM.
07/12/2021 15:24	Request status was changed to Approved
07/30/2021 01:41	Work Prep was completed.
07/30/2021 02:43	Request status was changed to Opened
07/30/2021 08:43	Request status was changed to Closed

Request Group

Request Number	Description

As of 07/30/2021 07:33
2 of 3

GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM
Track Rights Request

Request Summary

Request Number:	202118302104	**Track Access:**	True
Dates Requested:	07/30/2021 00:30 to: 07/30/2021 03:30	**Clear In Ten:**	False
Request Status:	Closed	**Equipment on Track:**	1
Requestor:	[redacted]	**Allow Piggybacks:**	True
Requestor Organization:	TRST/TRACK/MAINTS	**In Piggyback:**	Yes, Junior
Switch Order:		**Power Outage:**	Supervisory
Lock Out / Tag Out:		**Additional AC:**	
Request Title:	TKMSE Thermite Welding E05-E06 Track 2		

Piggyback

Request Number	Order	Inherits Rights	Request Status	Piggyback Status	Track	Protected Area Start	Protected Area End
202118201404 VE13 & FE 8 Tunnel Standpipe	SR	N/A	Closed	Agreed	1	E203+00	E266+55
202118201404 VE13 & FE 8 Tunnel Standpipe	SR	N/A	Closed	Agreed	2	E203+00	E266+55
202118302104 TKMSE Thermite Welding E05-E06 Track 2	JR-0	Yes	Closed	Agreed	2	E210+00	E260+00

Piggyback History

Date	User	Event
07/09/2021 12:58	[redacted]	Piggyback with Senior Request 202118201404 was formed. Cause: Piggyback invitation was sent.

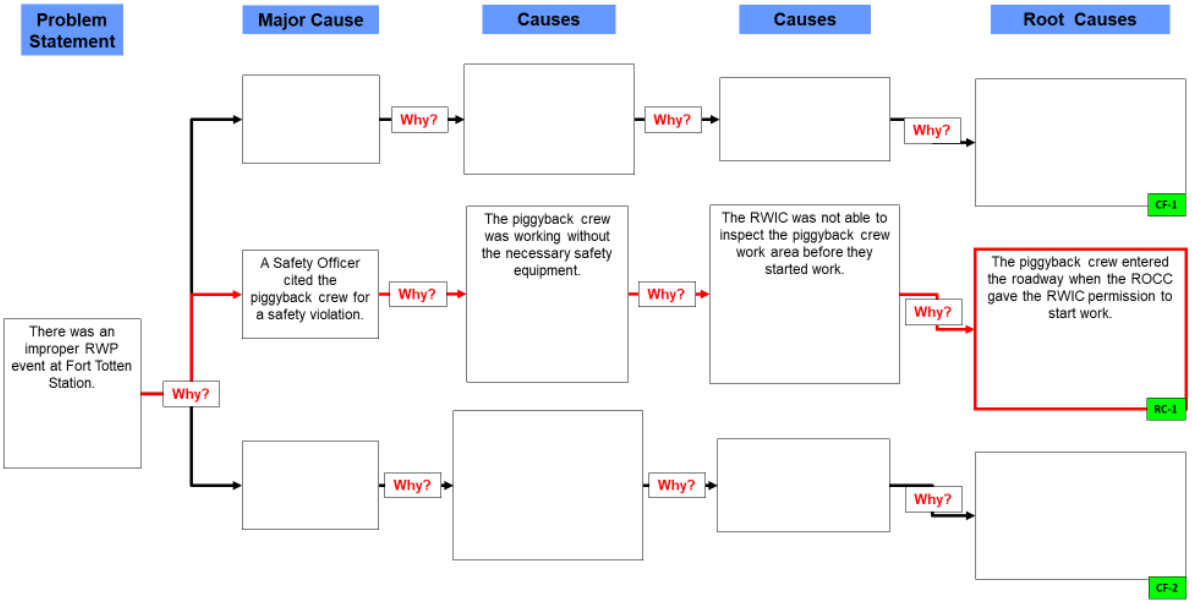
Red Tag information

Red Tag #: Request is not Red Tag.

Close-Out Summary

As of 07/30/2021 07:33
3 of 3

Appendix C - Root Cause Analysis



Root Cause Analysis