



**MONTGOMERY COUNTY  
FIRE AND RESCUE SERVICE**

24-01

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**Incident Response Policy Appendix L  
Initial Actions for Heavy Rail Incidents**

04/01/20

Issued by: Fire Chief Scott E. Goldstein

Policy Number: 24-01

Authority: Montgomery County Code Section 21-3 (b)

Supersedes: This is a new policy

Effective Date: April 1, 2020

**SECTION 1. Purpose:**

To provide a framework for the initial operational thought processes, actions and safety procedures for fire/rescue personnel operating at incidents occurring on or adjacent to the CSX heavy rail roadway.

**SECTION 2. Applicability:**

All MCFRS personnel and personnel from other organizations while operating at incidents located on or adjacent to the CSX heavy rail roadway within Montgomery County.

**SECTION 3. Background:**

This Standard Operating Procedure (SOP) outlines and describes the MCFRS initial operational approach to heavy rail incidents. It is drawn from the experience of our personnel, rail industry safety protocols, national best practices and lessons learned from events both within and outside of Montgomery County.

**Position Statement**

Railroad incidents present unusual situations that are not found during typical or routine fire and rescue incidents. Moving trains, high voltage electricity, and the possibility of hazardous materials in large quantities creates an extremely hazardous work environment within the railroad roadway. A train collision, derailment or fire may immediately create a mass casualty event when involving a passenger train or a significant hazardous materials event when involving a freight train.

Either incident may quickly overwhelm resources, command and control. Additionally, passenger rail services in the United States are used by millions of people every day and has been repeatedly identified as targets for terrorist attacks. Large concentrations of people within confined areas, on a time-regulated schedule, have the potential to create a complex and dangerous operating environment in the event of a terrorist incident.



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**Railroad Infrastructure**

The heavy rail line roadway located within Montgomery County is owned and operated by the CSX Corporation, who has designated the line as the “Metropolitan Subdivision.” In addition to CSX freight service, both MARC and Amtrak utilize the CSX rail line to provide commuter rail service. Within their system, MARC refers to this rail line as the “Brunswick Line”, while Amtrak utilizes the rail line to operate their “Capital Limited” train service. It is important to understand that while both of these commuter train services utilize the tracks, all train movement located within Montgomery County is controlled by CSX.

The CSX roadway uses “mileposts” as a system to determine any given location along the rail line. Mileposts are spaced at one-mile intervals and indicate the distance from the beginning of the line, which is Union Station for the Metropolitan Subdivision. Mileposts are critical when identifying the location of the incident and requesting a stoppage of train movement through CSX. All mileposts within Montgomery County are preceded by the letters “BA,” which is the CSX milepost designation for the Metropolitan Subdivision. Physical mileposts in the field may be missing or difficult to read due to a lack of maintenance or vandalism. Furthermore, physical mileposts will not be easily identified by fire/rescue personnel not familiar with them. Therefore, personnel should use MDC resources, responding Rail Officers or the ECC to determine the milepost location of the incident.

Some sections of the heavy rail line in Montgomery County are very remote and difficult to access. Many freight trains are over a mile long, thus the dispatched location may not always be the best access point. Familiarity with response areas and access points is critical to quickly accessing the scene.

Additionally, large sections of the heavy rail line share a “common corridor” with the METRORAIL roadway from Silver Spring through the Rockville area. Personnel responding to or operating at an incident within or adjacent to this corridor must also consider the movement of METRORAIL trains and electrified 3<sup>rd</sup> rail. **CSX does not coordinate train movement with METRORAIL.**

All heavy rail trains operating within Montgomery County utilize diesel-electric locomotives in which a diesel engine powers a large generator that produces high-voltage to supply electric traction motors. The average diesel-electric locomotive has a fuel tank capacity of 5,000 gallons and weighs over 100 tons. In addition to producing traction power, locomotives used in passenger service provide the electrical power to the remainder of the passenger train. This subsidiary power is described as “head-end power” (HEP). HEP delivers 480-volts throughout the train to run electrical components of passenger cars. This includes heating, air conditioning, lighting and other power needs of passenger cars. These high voltage cables run in between each passenger rail car, near the couplers. Freight train locomotives do not have a separate HEP auxiliary motor and power plant.



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All rail cars, both passenger and freight, do not have a “front” or “rear” end. Instead, they have an “A” or “B” end based on where the hand brake is located. The end of the car with the hand brake is the “B” end; the other end of the car is the “A” end. The left and right sides of the car are determined by standing at the “B” end of the car, facing the “A” end. The left side of the car is on the left and the right side of the car is on the right. If a car is required to have hazardous materials placards, the placards will be on both sides and both ends of the car.

All trains, regardless of type, are staffed with both an engineer and a conductor. The engineer is responsible for operating the locomotive(s), while the conductor is responsible for the train itself, the freight and/or the passengers. Commuter trains will also be staffed with additional personnel to support their passengers. During any incident involving a train, it is critical that personnel locate the train conductor. Generally, the conductor will initially be located inside the locomotive on freight trains, and inside one of the passenger cars of passenger trains. It is important to note that, unless it is unsafe to do so, **federal law requires the train engineer to remain inside the locomotive at all times**, even during an emergency incident.

The Department of Transportation (DOT) prescribes that every freight train has a document that delineates the prearranged order of each car in the train starting at the locomotive and continuing to the end of the train. This document is identified as the train “consist” or sometimes called “shipping papers.” These are usually kept in the locomotive with the conductor. It is critical that personnel obtain this information to properly size-up and to control a rail incident. In addition to giving the position of the rail cars in the train, the consist also indicates the car numbers, whether they are loaded or empty, and the car contents, which may include hazardous materials. If the original consist papers have been destroyed or unable to be located, they can also be faxed or emailed to the scene by CSX or accessed by utilizing other mobile resources.

Amtrak is the only commuter rail service that accounts for the number of passengers and crew through an electronic ticketing system. This system provides a real-time manifest that is available from the conductor or Amtrak control center. MARC, much like METRORAIL, does not track the number of passengers on their trains at any given time.

### **General Approach**

Although every incident will be unique, there are four standard objectives for all heavy rail incidents. Personnel must consider the following objectives as a starting point and adjust as necessary to the situation and overall incident strategy. The four standard objectives are based on the **ACRE** mnemonic:

- **Assess:** Develop situation awareness while enroute to locate the incident and determine the best access points for other responding units.



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- **Control:** Begin to control the emergency by establishing scene safety and continuing to develop situational awareness by determining the presence of any hazardous materials involvement and the status of the crew and any passengers.
- **Rescue:** Begin the process of disentanglement and/or extrication.
- **Evacuate:** Remove the victims to a predetermined area of safety and begin a process of triage, treatment and transport

Due to the sheer size of a significant heavy rail incident, all operations must be directed towards clearly defined and attainable objectives. Developing situational awareness is critical to determining risk and establishing the incident objectives. Ensuring effective and ongoing situational awareness begins with locating, accessing and observing the scene, locating the conductor and determining the status of any passengers or the presence of hazardous materials. To properly establish early situational awareness, the following critical information is needed for all heavy rail incidents:

a. Location of the incident

1. Utilize available resources to identify the closest milepost location of the incident.
  - A. This general incident location will aid in determining the best access point and location from which to begin operations.
2. Due to the length of trains, especially freight trains, several different access points may be required or utilized, and a multi-direction approach should be considered.

b. Nature of emergency

1. Incidents occurring adjacent to the roadway (brush fires, medical emergencies, PICs, etc.) require all applicable train control and safety measures be established.
2. Pedestrians struck by trains will likely involve a small area, require only one access point and require a limited amount of resources.
3. Train collisions and/or derailments will likely require multiple access points and involve a large area.

c. Type of train(s) involved

1. An incident involving a freight train will likely involve hazardous materials.
2. An incident involving a passenger train will likely be a mass casualty event.

d. Presence of hazardous materials

1. In addition to locomotive fuel tanks, freight trains traveling through Montgomery County carry large quantities of hazardous materials in several different forms (solids, liquids and gases).



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e. Status and number of passengers

1. Amtrak trains track the number of passengers in real-time.
2. MARC trains do not track the number of passengers on a train at any given time.

**Risk Reduction**

Risk reduction begins with preplanning and recognizing the hazards associated with the railroad environment. Moving trains pose the greatest threat to personnel operating on or near the railroad roadway. It is critical to understand that any type of train may operate on any track, in any direction, at any time. When situations allow, and in the absence of an immediate life hazard, **personnel should not operate on or adjacent to the roadway until CSX confirms that all train traffic has been stopped and lookouts are in place.**

All requests for train stoppage, regardless of the train type or operator, **MUST be made through CSX.** It is important to understand that the CSX Operations Center is located in Jacksonville, Florida. The system operators will not be familiar with Montgomery County geography. Therefore, the proper use of milepost identification is critical. Generally, only the ECC Supervisor, the Incident Commander or the responding Rail Officer, at the request of the incident commander, should contact CSX to request a stoppage of train traffic.

Due to the internal railroad notification process, the length, weight and required stopping distance of freight trains, and desire of the passenger train operators to stop at train stations, personnel should continue to anticipate train movement for **at least 10 minutes** after the request to stop trains is made. For these reasons, the MCFRS will utilize a system of train lookouts to warn personnel operating on or adjacent to the railroad roadway of an approaching train.

**SECTION 4. Definitions:**

See Appendix Q.

**SECTION 5. Policy:**

- a. The heavy rail roadway must be considered a high hazard area at all times. Uncontrolled train movement poses the greatest threat to personnel operating on or adjacent to the roadway.
- b. For the purposes of this policy, the area in between the railroad fences or any area within 20 feet of the trackbed will be considered to be the railroad roadway.



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- c. The PPE for heavy rail incidents must be matched to the hazards. However, the minimum PPE for personnel operating on or adjacent to the roadway is safety toe footwear, long pants, traffic safety vest, work gloves, eye protection, and a helmet.
- d. No apparatus should be positioned closer than 30 feet from the roadway at any time.
- e. Unless there is a known life hazard, personnel must remain at least 30 feet away from the roadway until train traffic has been controlled and train lookouts are in place 2 miles from the incident in both directions.
- f. A coordinated effort must be made between the ECC, the first arriving primary unit officer and/or the incident commander to ensure that proper notifications and train stoppage requests have been made to CSX when personnel will be operating in or adjacent to the roadway.
- g. When contacting CSX, the following information must be provided:
  - 1. Nature and scope of the incident,
  - 2. Approximate milepost location or crossing ID number,
  - 3. Type of train involved (if applicable),
  - 4. A train stoppage request for one or both tracks,
  - 5. Request for a railroad representative to respond to the scene, and
  - 6. Point of contact/callback information.
- h. When operations require personnel to operate on or adjacent to the railroad roadway:
  - 1. Personnel must stop and look both directions prior to approaching the roadway,
  - 2. Personnel should be assigned as lookouts at both ends of the incident scene itself until the units dispatched as remote lookouts are in place,
  - 3. Personnel should avoid operating in between the rails when possible,
  - 4. Personnel should avoid stepping on top of rails,
  - 5. Personnel must always remain clear of tracks switches,
  - 6. Personnel must operate with great caution around twisted rails, which may be under great pressure and return to their original shape with great force if released or cut, and
  - 7. Personnel should avoid deploying hoselines across rails when possible.
    - A. For extended operations, hoselines may be run under the rails by removing ballast.
- i. Incident commanders should consider the use of aerial observation platforms, such as helicopters or UASs, to assist with scene assessment for incidents involving a large geographic area.
- j. METRORAIL ETEC carts will operate on heavy rail tracks and should be considered as a means of patient moving when feasible.



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**k. Initial Actions**

1. While enroute, the first due Primary Unit Officer must:
  - A. Determine and announce the primary access point, and
  - B. Ensure CSX is notified with the proper/correct information.
2. Upon arrival, the first arriving Primary Unit Officer will provide the Initial On-Scene Report (IOSR).
3. The first arriving Primary Unit Officer will then:
  - A. Assess the entire scene:
    - i. Determine the nature and scope of the Incident,
    - ii. Determine the presence of immediate life hazards,
    - iii. Determine the number and status of any passengers,
    - iv. Determine the presence of hazardous materials, and
    - v. Determine the need for additional units and access points based on size and location of incident.
  - B. Provide a Situation Update Report (SUR), in the LKAN format, containing the information gathered during the scene assessment:
    - i. **Location.** Update and or confirm the location of the incident and the primary and secondary entry points.
    - ii. **Conditions.** Nature of incident, types of train(s) involved, status of and passengers and presence of any known hazardous materials.
    - iii. **Actions.** What actions have already been taken, and those actions intended to be taken.
    - iv. **Needs.** Announcement and/or request for resources that will be required to begin mitigation efforts.
  - C. Establish command, either Tactical or Stationary, based on the scope of the event.
- l. If the incident involves hazardous materials:
  1. Isolation zones must be established based on the material(s), amount(s) involved and weather.
  2. Personnel should utilize appropriate resources to determine isolation and evacuation zones.
  3. Only personnel from the HazMat Team may operate tank car valves or relief devices.



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- m. When operations require personnel to operate around trains:
1. Personnel should remain at least 20 feet away from either end of the train.
  2. Personnel must exercise extreme caution when crossing between train cars or operating on or near car couplers, air hoses, or electrical cables.
  3. Personnel should avoid operating on top of cars, whether overturned or upright. Personnel should avoid walking on the lexan windows of many passenger train cars as they are not rated to support the weight of firefighters.
  4. Hand brakes must be engaged before personnel operate on or around any rail cars that are not derailed.
    - A. Hand brakes are to be released by railroad personnel only.
- n. In the absence of a fire or uncontrolled electrical hazard, personnel should avoid activating the fuel cut-off switches on locomotives. Strong consideration must be given to allowing passenger train locomotives to continue running, providing the necessary HEP to supply lighting and HVAC in the passenger rail cars.
- o. Due to the high electrical hazards present, firefighting operations involving locomotives must be coordinated with railroad personnel. When a fire involves a locomotive:
1. Personnel should determine the status of the fuel supply and integrity of the fuel tanks.
  2. Personnel must not enter the engine room of a locomotive at any time without the permission of the incident commander after consultation with railroad personnel.
  3. Personnel must not direct hose streams down the exhaust stack of a locomotive.
  4. Personnel should activate the fuel cut-off switch if safe to do so.
- p. Units dispatched as train lookouts must:
1. Respond to the dispatched location, at least 2 miles from the incident scene.
  2. Ensure apparatus are positioned no closer than 30 feet from the trackbed.
  3. Ensure personnel are equipped with three, 30-minute flares and the proper minimum PPE.
  4. Ensure personnel position in a location easily visible to an oncoming train, but no closer than 30 feet from the trackbed.
  5. Ensure personnel can quickly and safely clear the area in the event of an oncoming, uncontrolled train.
  6. Be vigilant in maintaining a watch for oncoming trains. If an oncoming train is spotted, personnel should:
    - A. Continue maintaining a safe distance from the roadway.



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- B. Begin flagging by lighting a flare and waving it horizontally across the body in a slow, steady motion.
  - C. Continue flagging until the train engineer acknowledges the stop request with two short blast of the train horn and begins to stop.
  - D. If the train passes without acknowledgement or slowing down, immediately alert command via activation of the Emergency Button (EB) and declare priority message of incoming train not stopping.
7. Remain at the lookout position until released by command.
- q. For any incident occurring in a common corridor with METRORAIL, the ROCC Fire Liaison must be notified and all applicable METRORAIL safety procedures must be implemented.
  - r. Major heavy rail incidents will likely utilize a Unified Command structure to include fire/rescue, various law enforcement agencies, NTSB, local and state hazardous materials teams, etc.
  - s. The railroad must not be released to CSX to resume operations until all personnel clear the roadway, a PAR is completed, and lookouts released.

**SECTION 6. Responsibility:**

All personnel.

**SECTION 7. Procedure:**

- a. The first arriving Primary Unit Officer must:
  - 1. Identify and announce primary access point while enroute
  - 2. Coordinate train traffic control measures with the ECC
  - 3. **[Provide an IOSR]**
  - 4. Assess the scene.
  - 5. **[Provide a SUR]**
  - 6. Establish command
  - 7. Request additional resources as appropriate
  - 8. Announce best access point(s) for other responding units
  - 9. Create an incident perimeter and establish safety zones, if appropriate
- b. First Due Engine
  - 1. While enroute, announce the water supply source and initiate a water supply for incidents requiring fire suppression



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2. Tasks

- A. Access and assess the scene
- B. Support self-evacuation by directing passengers to a designated area
- C. For incidents involving locomotive fires:
  - i. Activate the fuel cut-off switch if safe to do so
  - ii. Begin firefighting operations from a safe distance and location
  - iii. Avoid directing hose streams down locomotive exhaust stack
- D. For incidents involving hazardous materials:
  - i. Determine the amount and type of materials involved
  - ii. Establish isolation and evacuation zones
  - iii. Begin the process of evacuating area if indicated and appropriate
  - iv. Begin initial metering to support identification of isolation zones
- E. Initiate triage and treatment as appropriate

3. Equipment

- A. Trauma Care Kit
- B. Handlights
- C. Tool Bag
- D. Thermal Imaging Camera
- E. Patient Movers

c. Second Due Engine

- 1. Complete water supply for first due engine, if needed
- 2. Tasks
  - A. Locate the train conductor and escort to incident commander
  - B. Assist with initial triage and treatment
  - C. Assist with evacuation as necessary
  - D. For incidents involving locomotive fires:
    - i. Assist First Due Engine with fire suppression
  - E. For incidents involving hazardous materials:
    - i. Assist in the establishment of isolation and evacuation zones
    - ii. Begin initial hazardous materials confinement



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- 3. Equipment
  - A. Trauma Care Kit
  - B. Handlights
  - C. Tool Bag
  - D. Thermal Imaging Camera
  - E. Patient Movers
- d. First Due Aerial
  - 1. Tasks
    - A. Respond to primary access point and act as initial on-scene **train lookouts** until remote lookouts are in place
    - B. If incident involves a derailment, secure any upright cars by applying hand brakes
    - C. Chock (rail) switches if they are in the work area
    - D. Monitor personnel for unsafe acts and signs of fatigue
    - E. Initiate evacuation procedures as needed
  - 2. Equipment
    - A. Trauma Care Kit
    - B. Handlights
    - C. Tool Bag
    - D. Flares
    - E. Patient Movers
- e. Rescue Squad
  - 1. Tasks
    - A. For incidents involving entrapment or entanglement, begin the process of rescue as appropriate
    - B. If incident involves mass casualty, assist with movement of patients
- f. Other units: Remote stage and await directions from the Incident Commander

**SECTION 8. Cancellation:**

Not applicable.



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**SECTION 9. Attachments:**

None

**Approved:**

A handwritten signature in black ink that reads "Scott Gold".

Fire Chief

March 17, 2020

Date