# Unit 3: Urban Environment II: Transportation

## UNIT INSTRUCTOR INFORMATION

| NAME | AGENCY | CONTACT INFORMATION |
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## UNIT INTRODUCTION

The New York City Transit System is one of the most extensive and complex public transportation systems in the world. With 24-hour-a-day bus and subway service throughout the five boroughs, the MTA system moves more than six million people a day and over 2.4 billion people a year. This is the equivalent of roughly one-third the nation's mass transit users. New York City is also home to more than 2,000 bridges and tunnels which, on a daily basis, permit hundreds of thousands of vehicles to travel in and out of the five boroughs and New Jersey. Recently water travel has once again become a very attractive option to combat the congestion on the subways, bridges, and tunnels. At any given time there can be more than 60,000 passengers traveling on the New York City waterways.

The complexity of the New York City transportation system reinforces the fact that the NYC CERT member's urban environment is unlike any other. NYC CERT members need to be aware of the hazards associated with each manner of travel described above. A trained NYC CERT member with a basic understanding of the types of emergencies which can take place in the transit system may be able to provide leadership and assistance until first responders arrive.

This unit will discuss the various hazards and emergencies which may be encountered throughout the different transportation systems and how many of these hazards may be minimized or mitigated. Some points to be considered during all emergencies are evacuation procedures, reducing panic and confusion, and communicating with first responders. During all emergencies, it is important that NYC CERT members be aware of the limitations of their training and to understand that no NYC CERT member may act outside the scope of his or her training. The most critical point to keep in mind is that personal and team safety should always be a NYC CERT member's first priority.

## UNIT OBJECTIVES

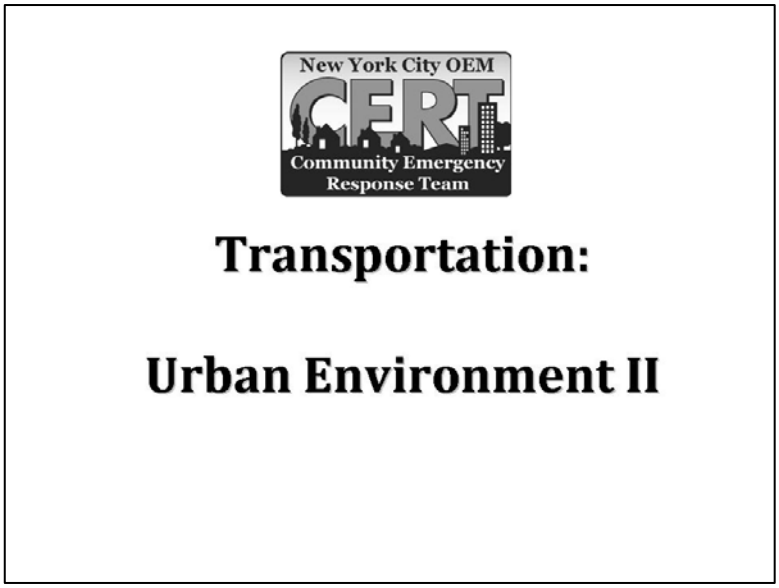
- Develop an understanding of the NYC transportation system.
- Understand personal and team safety at a transportation incident.
- Develop possible actions for NYC CERT at a transportation incident.

## UNIT REVIEW

ICS will continue to play a part in every unit you learn. Transportation emergencies will require a similar ICS response as high-rise building evacuations and utility emergencies. CERT roles are also similar, as your heightened awareness as a resident of New York City makes you an asset to your neighbors, co-workers, and people riding the same subway car.

## LOOKING FORWARD

Next week you will learn the human services side to disaster preparedness, response, and recovery. You will learn the basics of starting your team's Community Disaster Network and building the relationships within your community that will help hold it together in the event of an emergency or disaster.




**Key Points**

- The intent of this unit is to familiarize participants with the various transportation systems in the New York City metropolitan area.
- Participants will also be instructed on transportation safety and possible NYC CERT roles during a transportation emergency.

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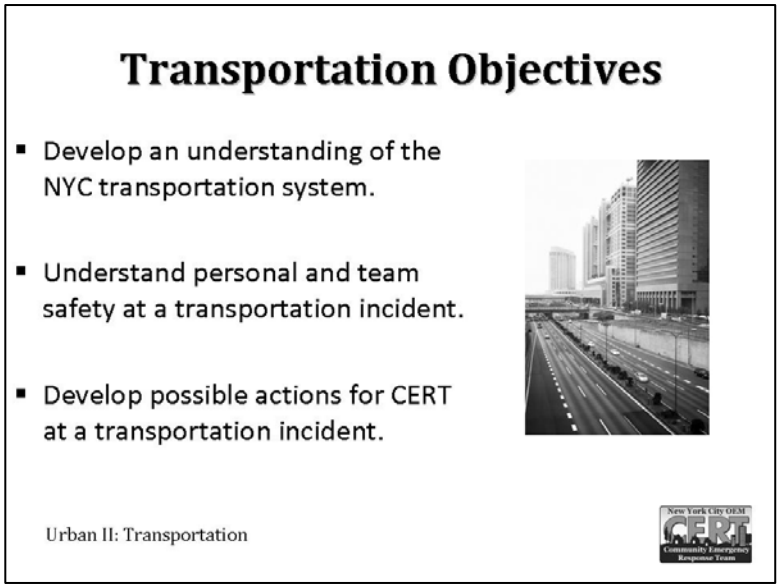


**Key Points**

- By the end of this unit you should be able to:
  - Consider possible actions during a transportation emergency;
  - Understand the role of a NYC CERT during a transportation emergency; and
  - Be able to participate in a scenario-based discussion and make decisions based on your training.

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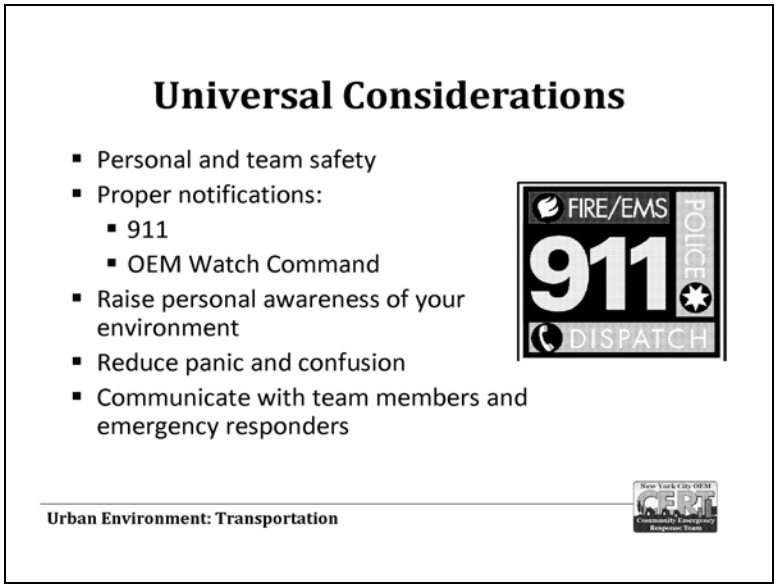


**Key Points**

- Personal and team safety is the primary concern of all NYC CERT members.
- Raising personal awareness of their environment allows CERT members to better understand the specific hazards within their community.
- Panic and confusion are dramatically reduced by:
  - Providing an organized uniformed presence;
  - Establishing and executing a plan; and
  - Giving clear instructions to those impacted by the emergency.
- Always maintain good communication between NYC CERT members and responders.
- Poor communication leads to:
  - Duplication of effort;
  - Inefficient use of resources; and
  - Conflict and confusion.

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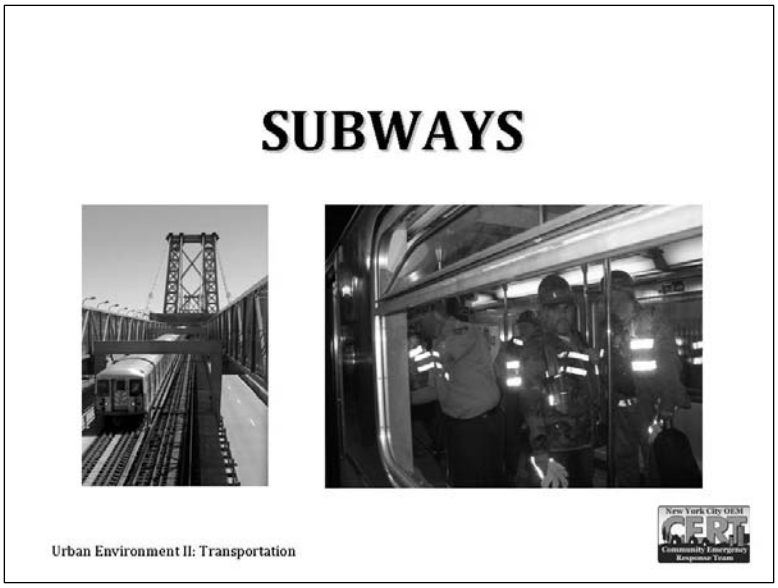


**Key Points**

- This section will discuss the specific characteristics of the NYC subway system and possible non-NYC CERT actions during a subway emergency.
- We will also discuss possible NYC CERT roles during a subway emergency.
- The information received in this unit will better prepare NYC CERT members in the event that an incident occurs while traveling on the subway.

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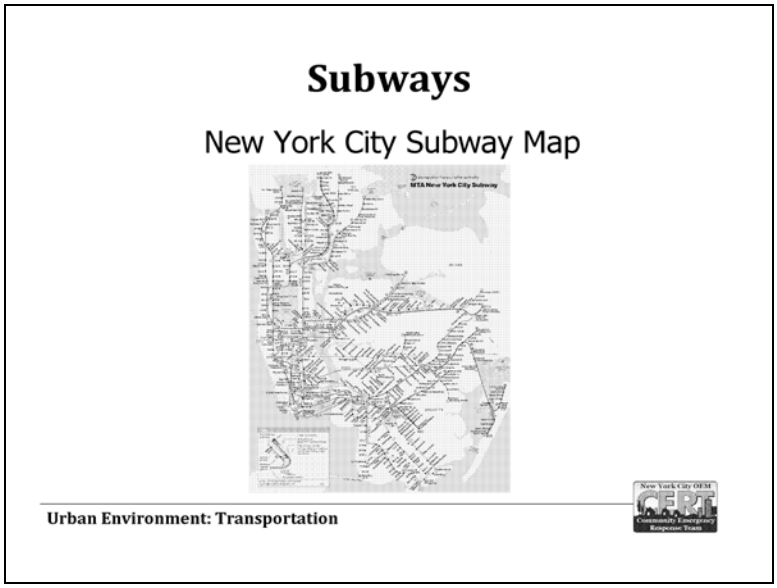


**Key Points**

- This illustration depicts the size and complexity of the NYC subway system.
- All NYC CERT members should be familiar with the characteristics of the subway in your area, including:
  - Entrances and exits;
  - Token booth stations and hours of operation;
  - Emergency exits; and
  - Train designations and the direction of travel.

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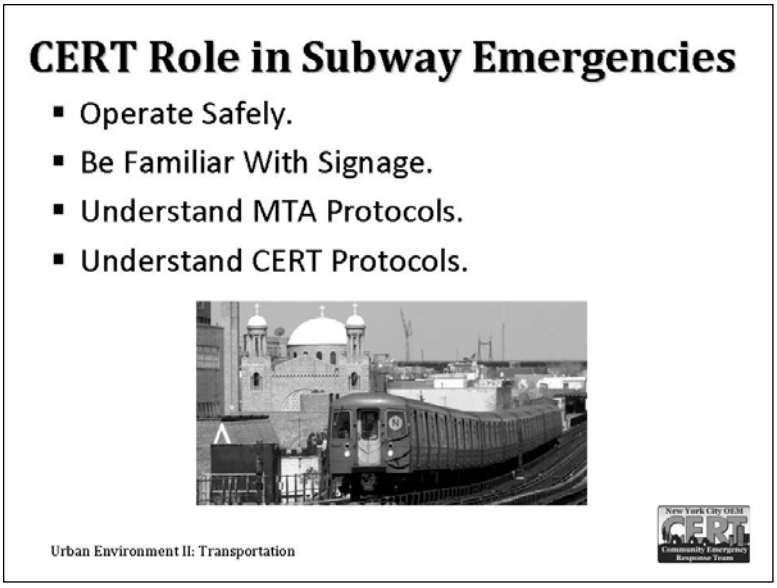


**Key Points**

- Personal and team safety is the primary concern of all NYC CERT members.
- Prior to any operation within the subway system, NYC CERT members must be familiar with:
  - All subway signage;
  - MTA protocols; and
  - NYC CERT protocols for a subway emergency.

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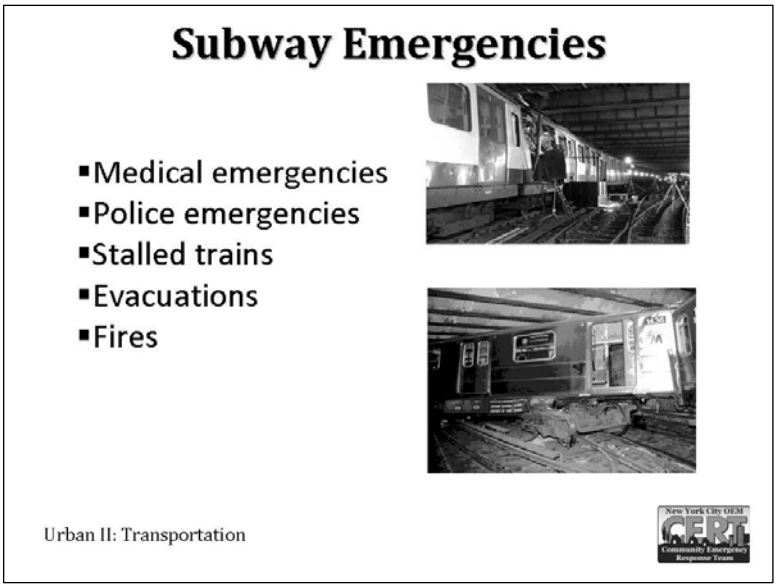


**Key Points**

- Most subway emergencies are minor in nature and corrected by MTA personnel.
- At large scale subway emergencies, NYC CERT members can support responding agencies by assisting with:
  - Traffic Management
  - Triage
  - Information dissemination
  - Evacuation of passengers
- Unless the nature of the incident is minor and the cause is known, NYC CERT members should not enter the subway system or operate below grade without approval from on-scene personnel.

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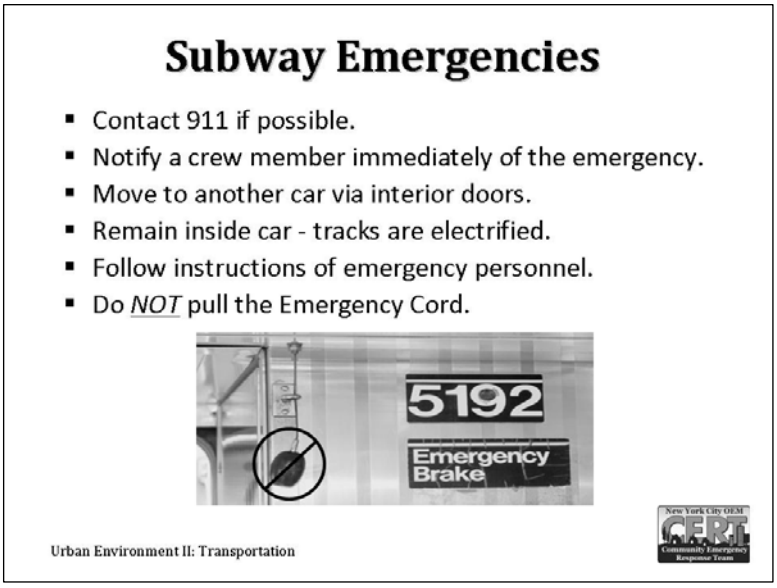


**Key Points**

- Notifying 911 is the first step in any emergency.
- On-scene information from a trained NYC CERT member provides incoming first responders accurate information to better prepare for the response.
- The conductor is located in the middle of the train.
- The train operator is located at the front of the train.
- If doors between cars are unlocked, instruct passengers to move to another car.
- Unless personal safety is immediately threatened, passengers should remain inside the car.
- Pulling the emergency cord will immediately stop the train. The train can only be restarted by on-scene MTA personnel.

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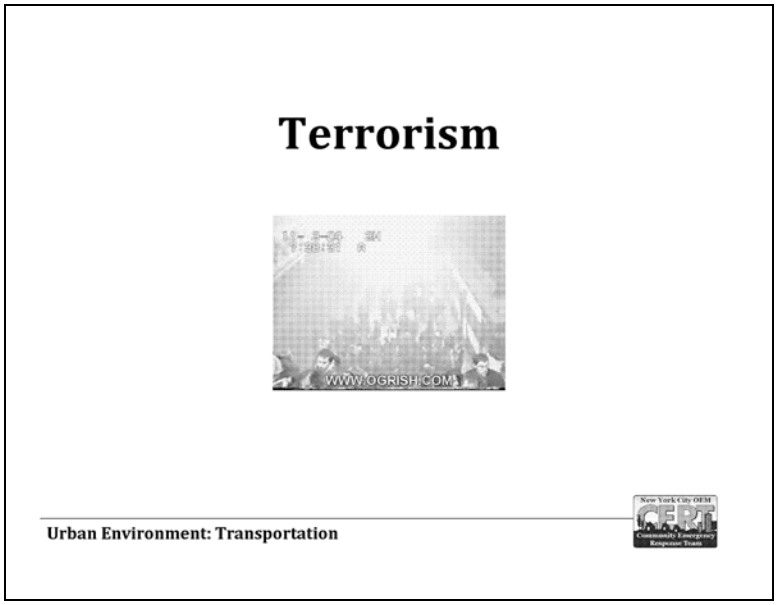


**Key Points**

- The transportation system of any major metropolitan city is a terrorist target.
- Any large scale subway emergency involving fire, explosions and/or derailments may be an indicator of a terrorist incident.
- At the Madrid Bombing, as well as the bombing in London, multiple devices were used at multiple locations and at different times to cause harm to both passengers and first responders.
- NYC CERTs are **NOT** trained to operate at a terrorist incident until the scene is declared safe by on-scene personnel.

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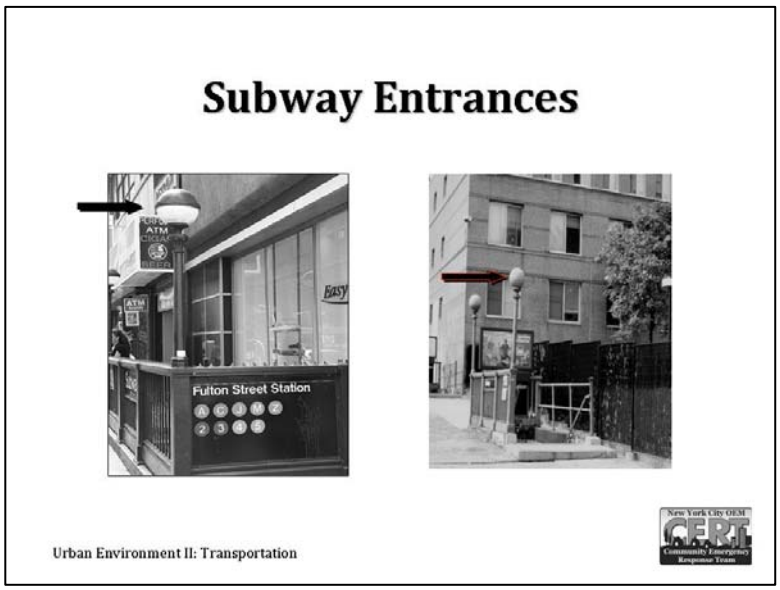


**Key Points**

- Subway entrances use a split-globe lighting system.
- The bottom half of the globe provides lighting to the staircase and is generally white.
- The top half of the globe will be red or green.
- Red globes indicate that there may or may not be a token booth clerk at this location, and the stairway will be closed at some point during a 24-hour day.
- Green globes indicate that the entrance is open 24-hours a day. There may or may not be a token booth clerk at this location. In areas that are not served by a token booth clerk, access will be via a high entrance/exit turnstile or gate which requires a MetroCard.
- For a NYC CERT response, the first point of access should always be at the entrance with the green globe staffed with the token booth clerk.
- NYC CERT members should be familiar with the hours of operation of the subway entrances in their community.

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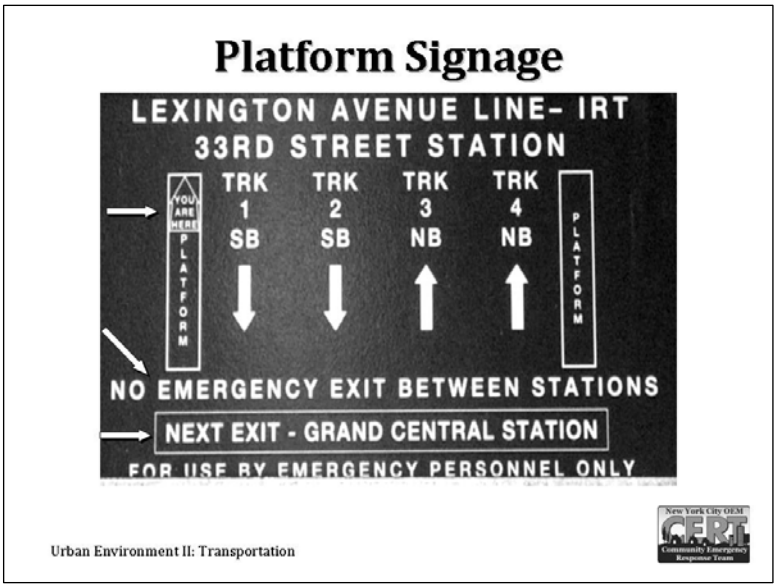


**Key Points**

- All subway platforms display a track identification sign which indicates:
  - The name of the station;
  - The track designation and location;
  - A "You Are Here" indicator;
  - The normal train movement at that location, northbound or southbound; and
  - The direction and distance to the nearest emergency exit and its identification number.
  - If there is not an emergency exit before the next station, then the identification of the next station is listed.
- NYC CERT members should be familiar with the station names and emergency exits in their community.

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**Key Points**

- Blue lights are located throughout underground subway tunnels.
- Blue lights are placed approximately 600 feet apart.
- The blue light indicates the approximate location of: a power removal box, telephone and fire extinguisher.

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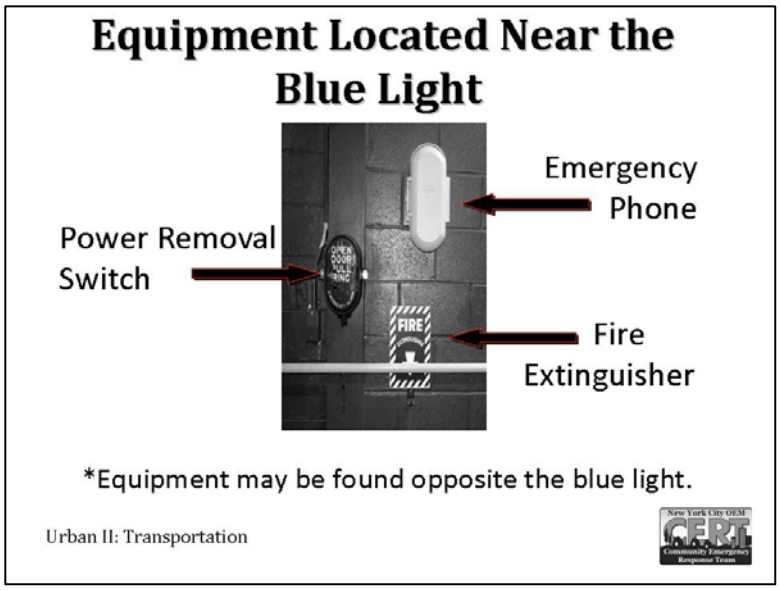


**Key Points**

- This equipment may be found close to the blue light or directly opposite the blue light.
- This equipment is used by emergency personnel.
- During an emergency, this system can be used to remove power to the third rail and directly contact the MTA Rail Control Center.
- There is also a dry-chemical fire extinguisher available for use by trained personnel at this location.

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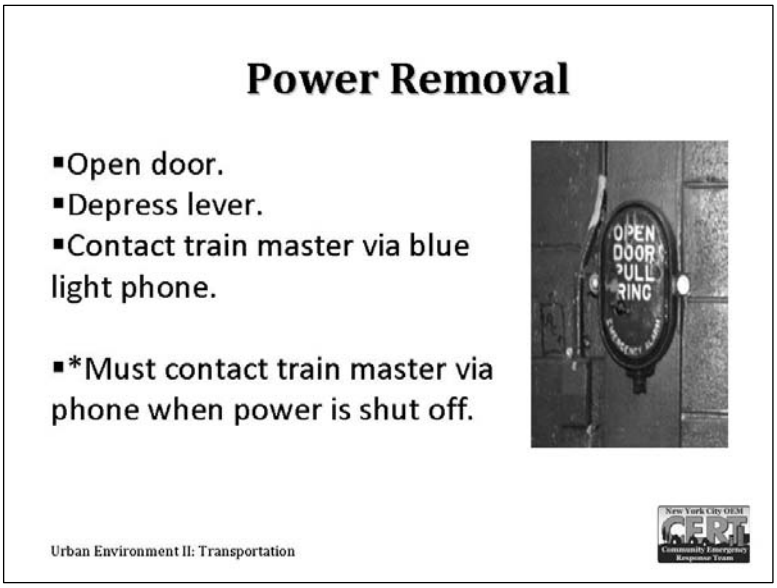


**Key Points**

- Power can be immediately removed from the third rail by depressing the power removal switch.
- Power will be restored within 20 – 30 seconds by MTA personnel unless the power removal is followed by a call to the MTA Rail Control Center via the emergency phone.
- If contact cannot be made with the MTA Rail Control Center, assume power will be restored as per MTA protocols.
- When power removal switches are out of service, power removal must be requested via the emergency telephone.

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**Key Points**

- Phones will be located close to the power removal switch.
- Blue light phones are part of a Centrex system which requires a four digit entry found inside the phone case.
- To remove power, the caller:
  - Must identify himself/herself;
  - State the reason for the power removal;
  - Remain on the phone until confirmation of power removal is received.

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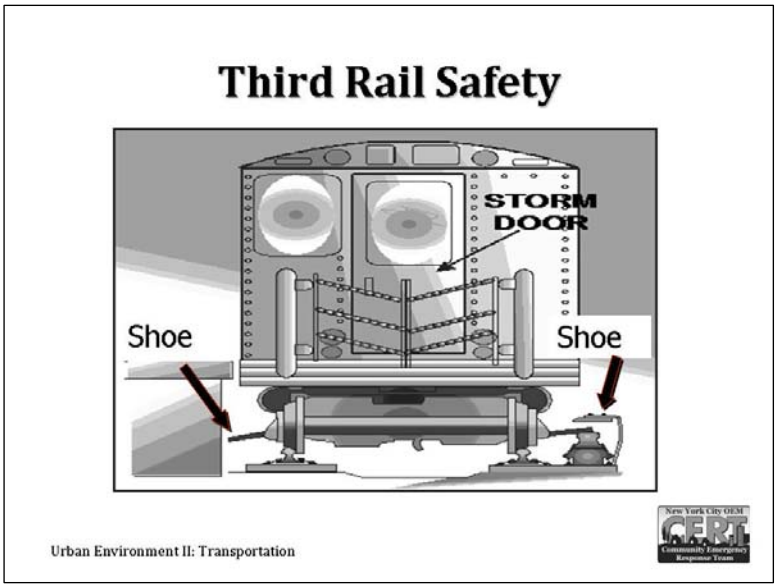


**Key Points**

- The third rail is located on both sides of the track and changes positions throughout the line.
- The third rail cover is made of wood or plastic. **Never** step on this cover when crossing the third rail.
- Always operate as if power is on and avoid contact or proximity to the third rail and the third rail contact shoes.
- Even with power off, there are elements within the undercarriage electrical system that possess enough voltage to cause a shock.
- Due to the many potential dangers located throughout the system, leaving the subway car and entering the track bed should be a last resort.

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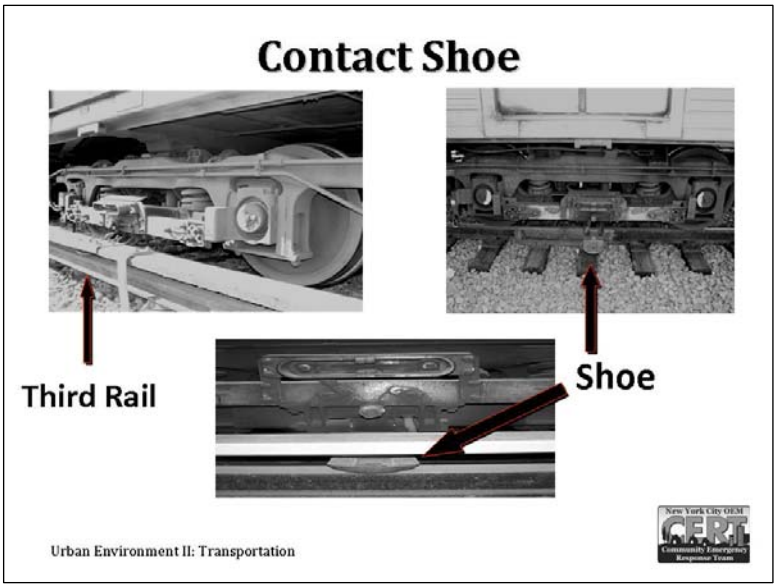


**Key Points**

- Metal contact shoes conduct electricity from the third rail to car motors.
- Contact shoes are located on both sides of the car, front and the rear, in the vicinity of the wheels.
- If **<u>any</u>** shoe makes contact with the third rail, all contact shoes on the car will be energized.

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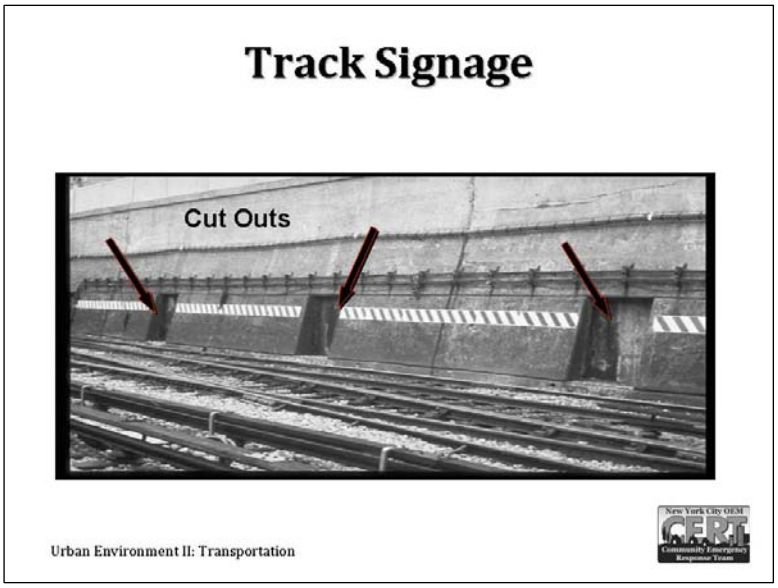


**Key Points**

- Some bench walls provide cuts outs (safety niches) which are indented spaces in the wall of the tunnel.
- The cut outs may provide room for a person to stand while a train passes by.
- The main problem with these areas of refuge is that track workers sometimes use these spaces to store tools and equipment.
- When passing cutouts on a catwalk, observe to see if it is clear. If a train is approaching unexpectedly, always return to the cutout you just passed if it is clear.

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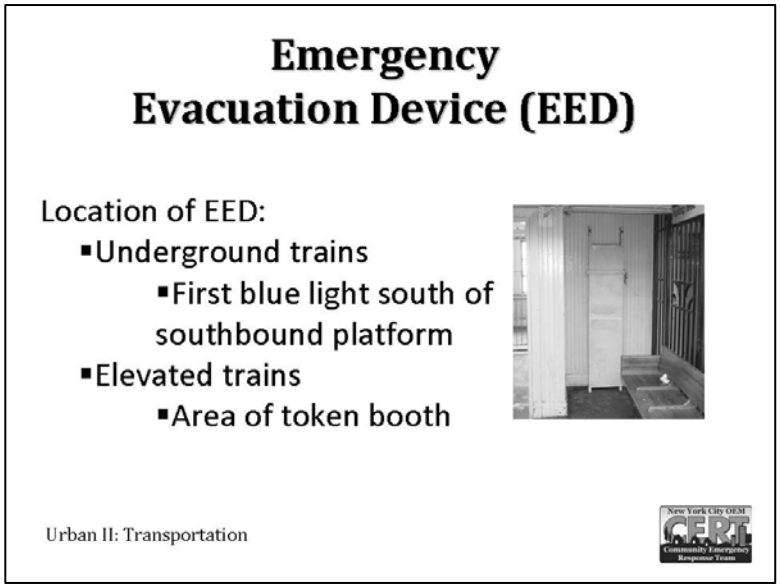


**Key Points**

- The Emergency Evacuation Device (EED) is a yellow, seven-foot long device with steps on the front and a flat surface on the backside.
- Each unit is constructed of non-conductive fiberglass and weighs 42 pounds.
- This device can be used for removing passengers from the track bed to the platform.
- Keys to remove EEDs from their mounting brackets are available at every token booth.

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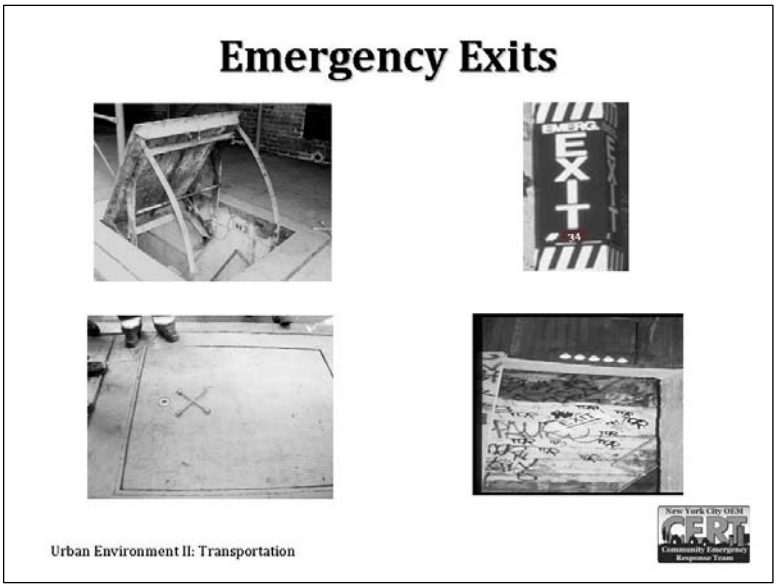


**Key Points**

- Emergency exits are stairways that lead up to street level from the track area.
- A prism-shaped sign or a cluster of five white lights identifies emergency exits within the subway tunnels.
- The emergency exit door can be found on sidewalks throughout New York City and are painted yellow.
- The door is opened by pushing a panic bar, and counter balance weights will assist in the opening of the door.
- NYC CERT members should identify emergency exits in their community.
- Emergency exits may be used as possible points of egress during a subway emergency.
- NYC CERT members should consider positioning team members at emergency exits during an incident.

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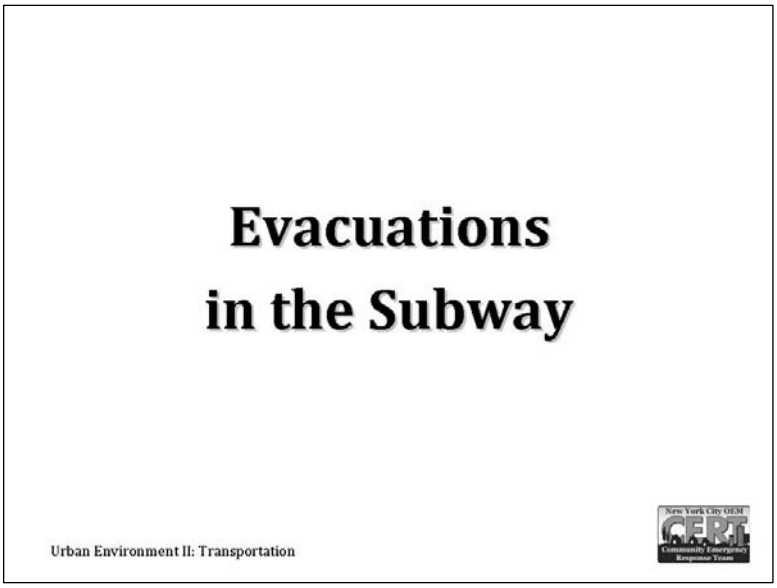


**Key Points**

- This section will cover MTA protocols for evacuations.
- We will discuss various types of evacuations used at different locations throughout the NYC subway system.
- At the end of this section, the NYC CERT members will have a level of awareness that will enable them to assist other passengers in an emergency evacuation.

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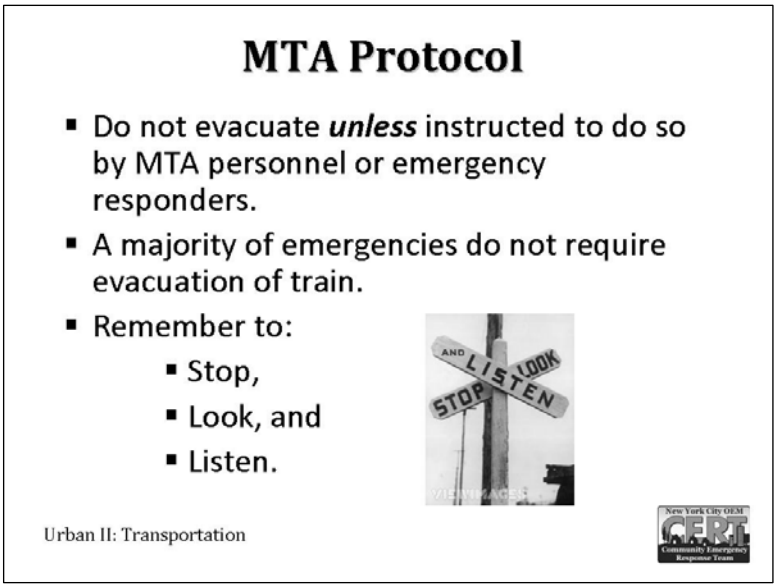


**Key Points**

- NYC CERT members should instruct passengers to remain within the subway car unless instructed otherwise by emergency personnel.
- Before evacuating a subway car, you must:
  - Stop and gather information;
  - Assess the type of incident;
  - Listen for emergency instructions.

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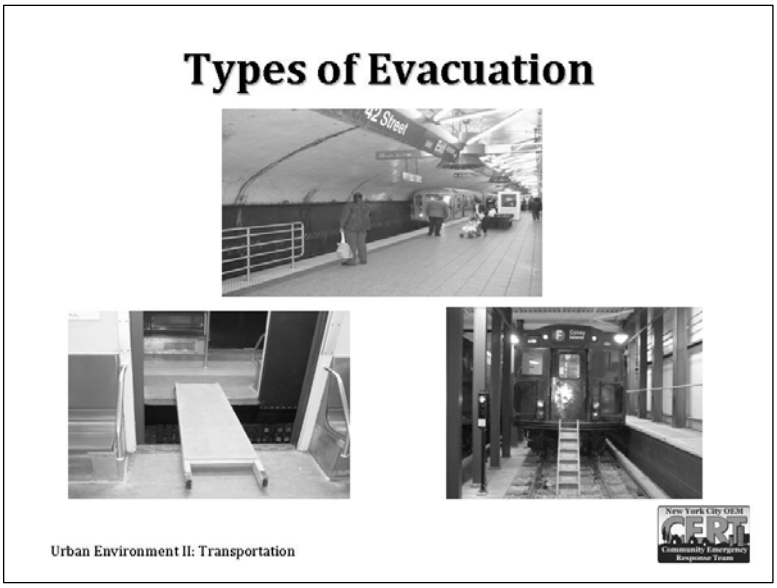


**Key Points**

- Depending on the location of the incident, passengers may be evacuated using various methods.
- Passengers may be asked to travel from car to car until they reach a car that is in the station.
- The EED can be used to evacuate passengers from:
  - Train to train;
  - Train to track bed;
  - Track bed to platform.
- Passengers may be instructed to exit via the bench wall to maintain distance from the third rail.

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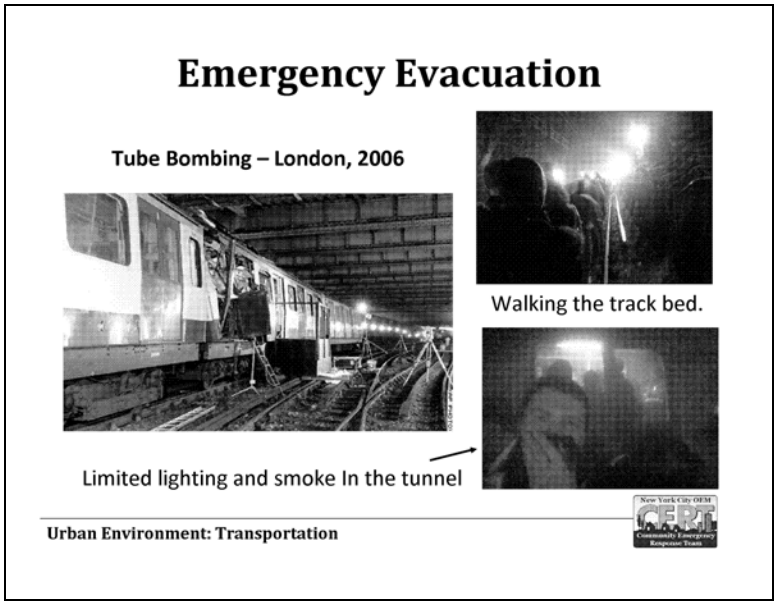


**Key Points**

- During an emergency, passengers may begin to self-evacuate prior to power removal.
- During a derailment or explosion, the outside of the car may become energized if it comes in contact with the third rail.
- The first choice is to exit the car directly into another car at the front or the rear of the subway car.
- If you must exit the car, passengers should use the front and rear exits.
- During an emergency evacuation, there will be limited lighting and uneven terrain.
- Passengers should be instructed to exit single-file using flashlights or lights from cell phones from every fifth passengers to provide illumination. This will also help in reserving battery power on flashlights and cell phones.

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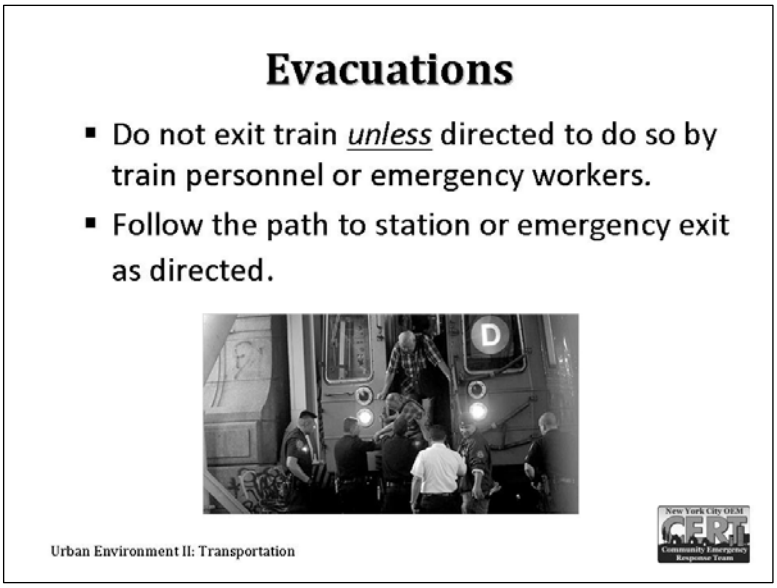


**Key Points**

- Exit the train orderly upon orders of emergency personnel.
- Passengers will be instructed to exit via the emergency exit or the next station.
- Due to the limited number of emergency exits and the space between stations, passengers may be expected to walk long distances to evacuate.
- Evacuation via the track bed or bench wall should always be considered the last resort.

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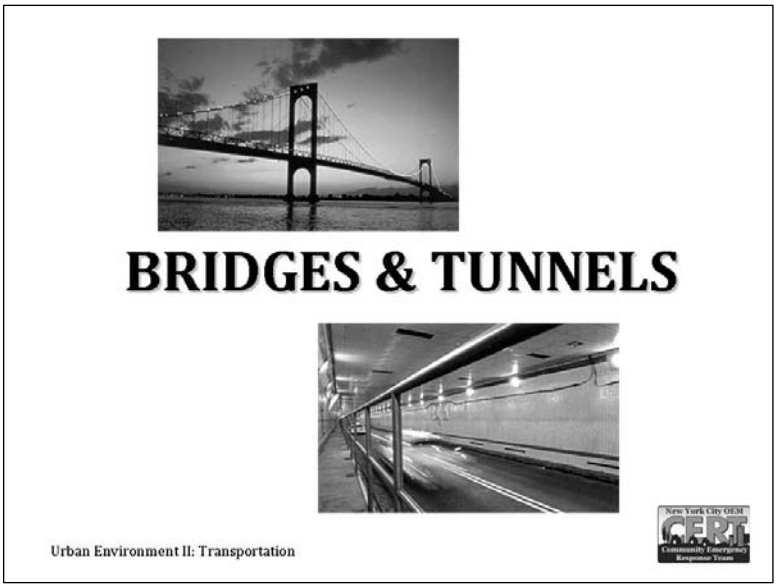


**Key Points**

- This section will discuss the specific characteristics of the bridges and tunnels.
- We will discuss possible NYC CERT roles during an emergency at a bridge or tunnel.

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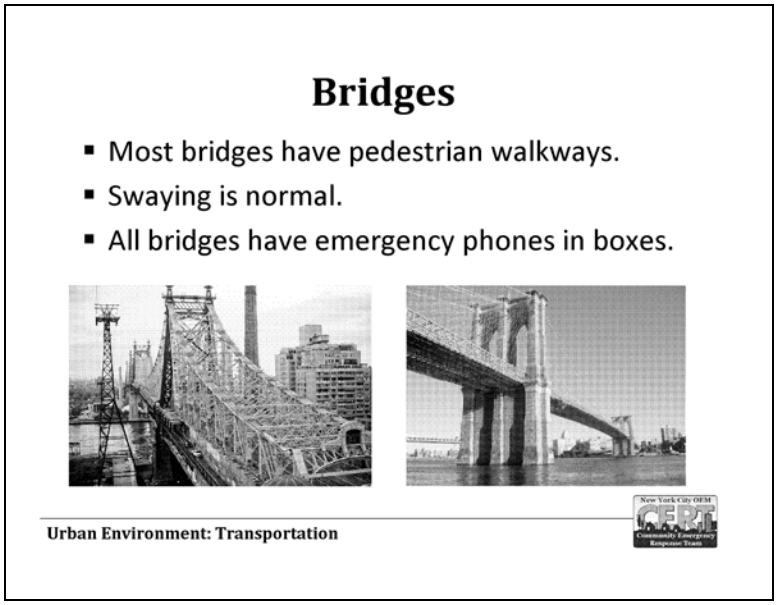


**Key Points**

- New York City is served by 16 major bridges and more than 2,000 smaller bridges.
- Pedestrian walkways may be found in the center or sides of the bridges and may not provide access to the roadway.
- Bridges are designed to sway to allow them to sustain the stress of wind and the fluctuating weight of vehicular traffic.
- Emergency phones can be found along side roadways.
- NYC CERTs should be familiar with emergency phones as well as pedestrian access and egress points of all bridges within their community.

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# Brooklyn Bridge

- From the NY Daily News, Sunday August 12, 2007

Urban Environment II: Transportation

**Key Points**

- The age of the bridges found in New York City vary greatly.
  - The oldest bridge in New York City used for vehicular traffic is the Brooklyn Bridge which was completed in 1883.
  - The most recently built bridge in New York City is the Verrazano-Narrows Bridge which was completed in 1964.
- Age, exposure to weather and the deterioration of the structural elements due to the corrosiveness of salt water has greatly weakened the strength of these bridges.
- As a result of the 2007 Minneapolis bridge collapse, New York City has implemented an inspection and repair schedule for all bridges.

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**Key Points**

- The Interstate 35W Bridge was 40 years old.
- As a result of the collapse, 13 people were killed: eight men and five women. More than 121 people were injured, including 22 children.
- The bridge fell 60 feet into the river.
- Security cameras showed the center section collapsing into the river in less than four seconds.
- The recovery effort took more than three weeks.

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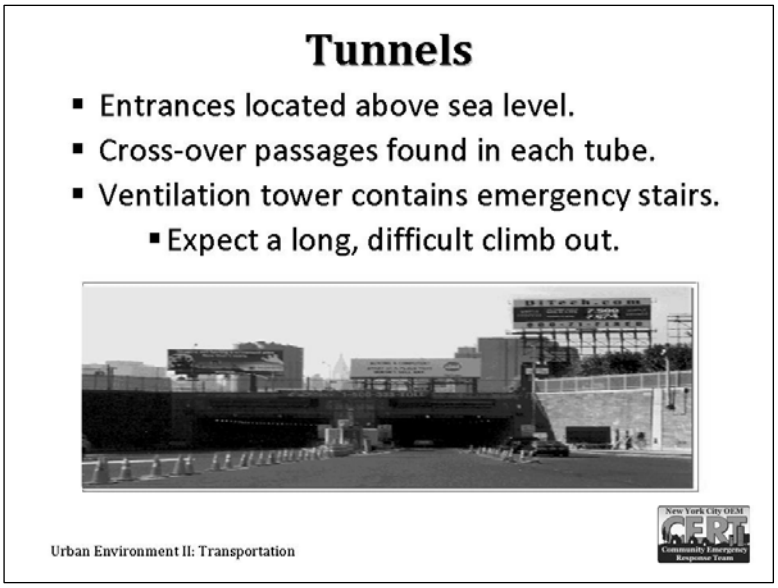


**Key Points**

- Tunnel entrances are located above sea level to prevent flooding of surrounding neighborhoods in the event of a tube failure.
- Tunnel roadways travel beneath the sea bed to limit the potential for flooding.
- Emergency numbers for specific tunnels and bridges can usually be found on signs located along the structure or roadway.
- Due to the required elevation of the entrance and exit, evacuating by foot will be a long uphill climb in either direction.
- Ventilation towers may contain emergency stairwells.
- Tunnels contain mile markers which will indicate your location.

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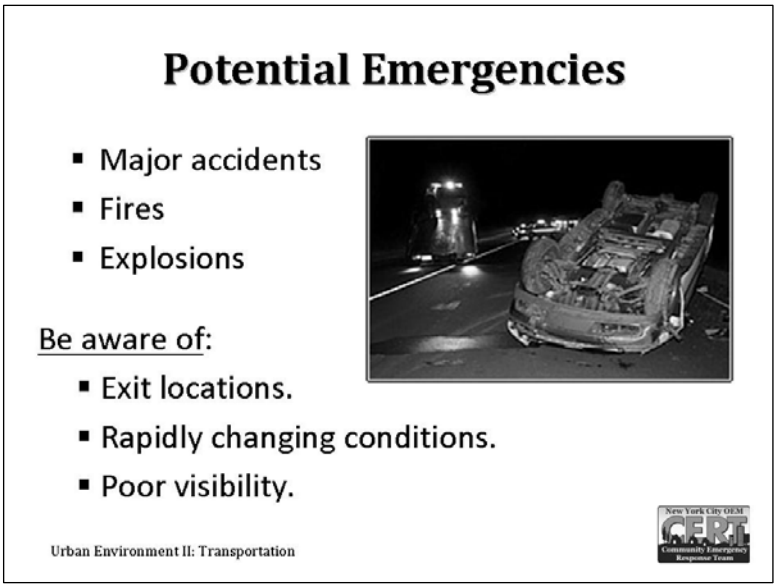


**Key Points**

- All tunnels are staffed with emergency personnel and response vehicles.
- Larger tunnels may be staffed with personnel in station booths within the tunnels.
- Due to limited lighting and poor ventilation, passengers should be aware of rapidly changing conditions and poor visibility.
- While traveling in the New York City tunnel system, NYC CERT members should take note of the location of the emergency phones and exits.

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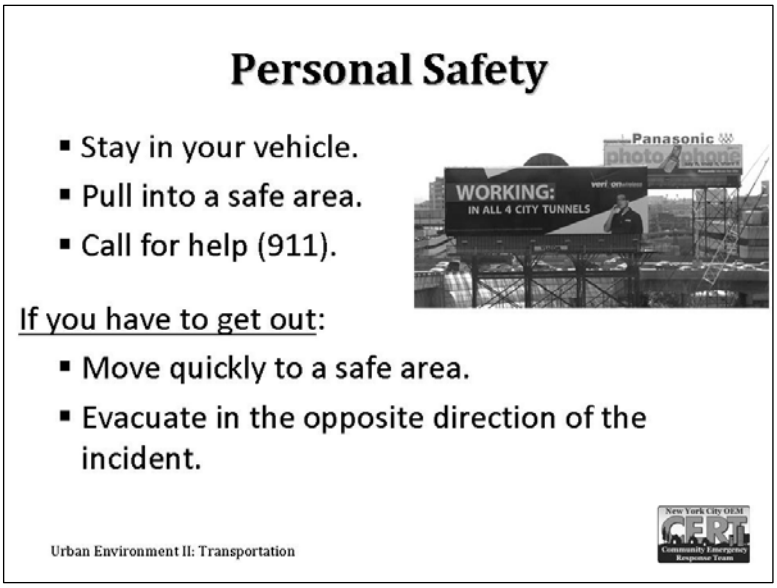


**Key Points**

- For most emergencies, it is safest to remain in your vehicle.
- If your vehicle is not impacted by the incident, you should position it in a way that does not impede access for emergency vehicles.
- Contact 911 and inform them:
  - Type of incident;
  - Exact location (mile marker);
  - Number of injured; and
  - Current status of the situation.
- If you must evacuate on foot, the safest direction to travel is the opposite direction of the incident.

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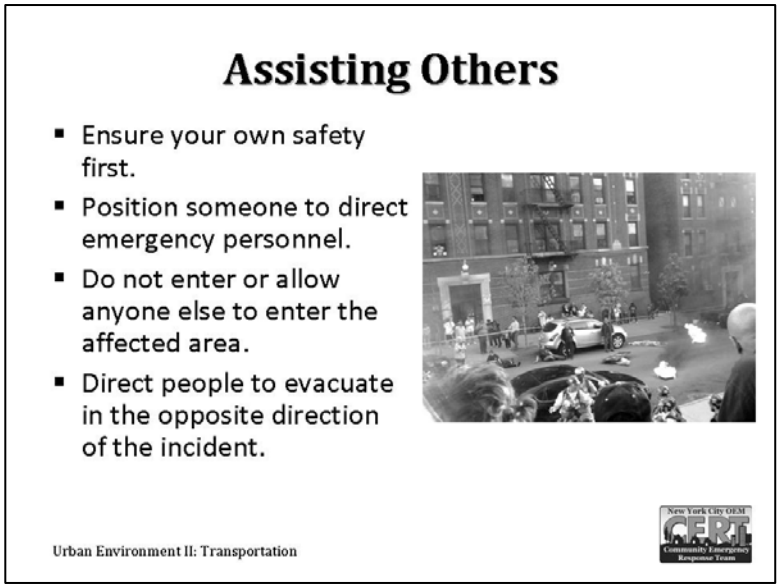


**Key Points**

- All NYC CERT members are trained to ensure their personal and team safety at any incident.
- NYC CERT members can support the role of first responders by:
  - Positioning teams of two to direct emergency personnel to the incident.
  - Cordoning off the area to restrict non-emergency personnel from entering the scene.
  - Directing all ambulatory passengers to evacuate in the opposite direction of the incident.
  - Notify incoming responders of actions taken prior to their arrival.

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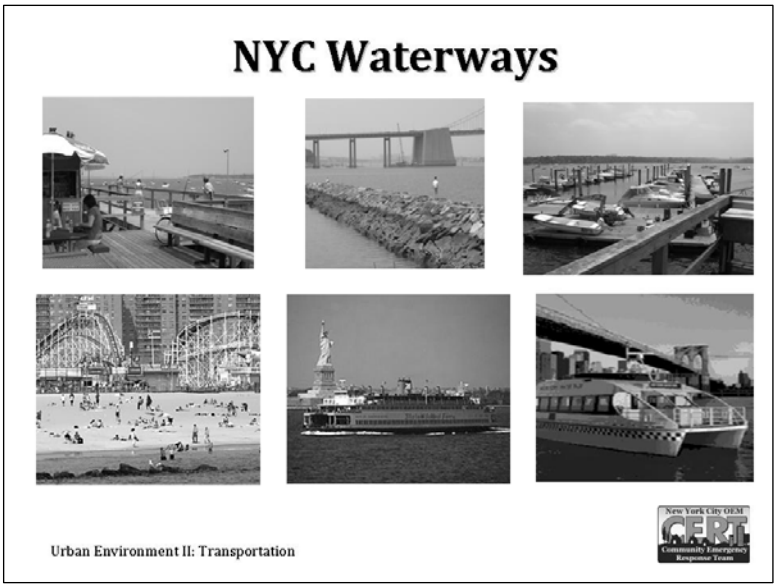


**Key Points**

- This section will discuss the specific characteristics of the NYC waterways.
- We will also discuss possible NYC CERT roles during a NYC waterway emergency.

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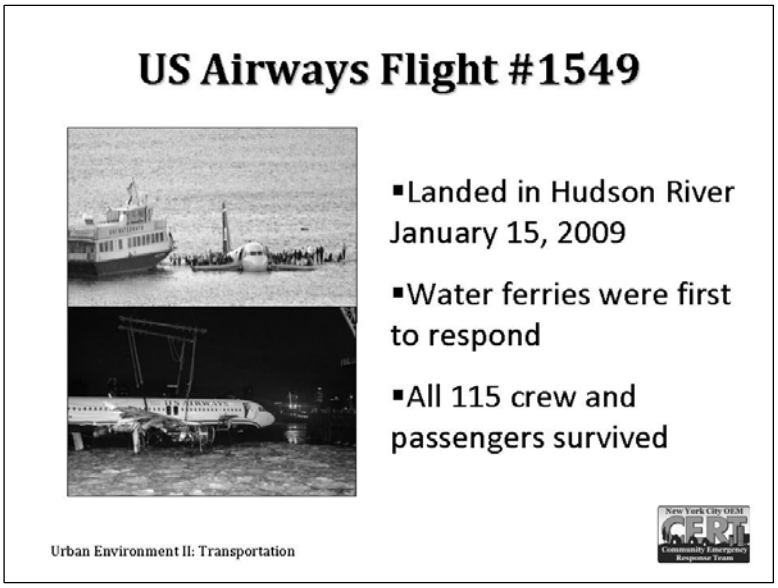


**Key Points**

- On January, 15, 2009, minutes after US Airway Flight #1549 take-off at 3:26 PM, it crash landed into the Hudson River after a flock of geese over LaGuardia Airport hit the engines.
- Pilot Captain Sullenberger chose to land the aircraft in the Hudson River, as the waterway gave him the only option after realizing Teteboro Airport was too far for the plane to travel.
- All 115 crew and passengers were rescued by nearby water ferries and other emergency services personnel.
- CERT teams in Queens were put on stand-by to assist at the Family Assistance Center (FAC) at a nearby hotel, in coordination with US Airways.
- As there were no fatalities, most family members were able to receive information and reunite with the survivors and the FAC was closed down before CERT was deployed.

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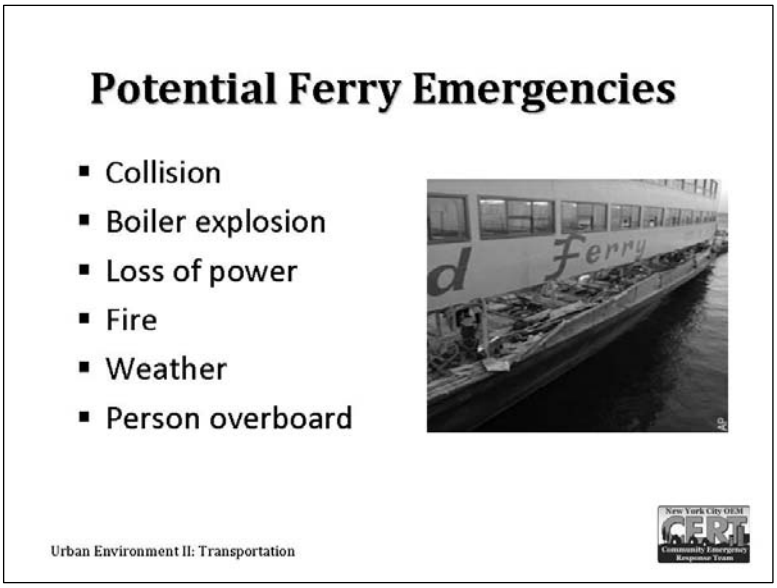


**Key Points**

- Approximately 1,000 registered commercial ships cross New York Harbor each day.
- Incidents that occur on the water can be more dangerous due to the limited means of egress and resources available for assistance.
- Passengers should always follow the instructions of the captain and crew since routine emergencies found on land are handled differently than on a traveling vessel.
- Fires can originate in trashcans, galleys, engine rooms and in vehicles that are being transported.
- If a passenger falls overboard, hypothermia is a year-round concern.

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## Staten Island Ferry Crash

- October 15th 2003
- 3:21 PM
- 1500 passengers
- 11 killed
- 71 injured – many treated for shock
- Many injuries due to ensuing panic

Urban II: Transportation

**Key Points**

- Approximately 1,500 passengers were on board, which was well below the maximum capacity of 6,000.
- Water in the New York Harbor was described as "very choppy" with wind gusts over 40 mph.
- All fatalities and most injuries occurred on the main deck.
- Upper deck passengers waiting to exit turned and ran in panic as the ferry struck the pier.
- Some passengers jumped into the 62°F water.
- No announcements were made, and the upper-deck crowd waited with a lack of information for twenty minutes, until the vessel was turned around and finally docked at the other end.

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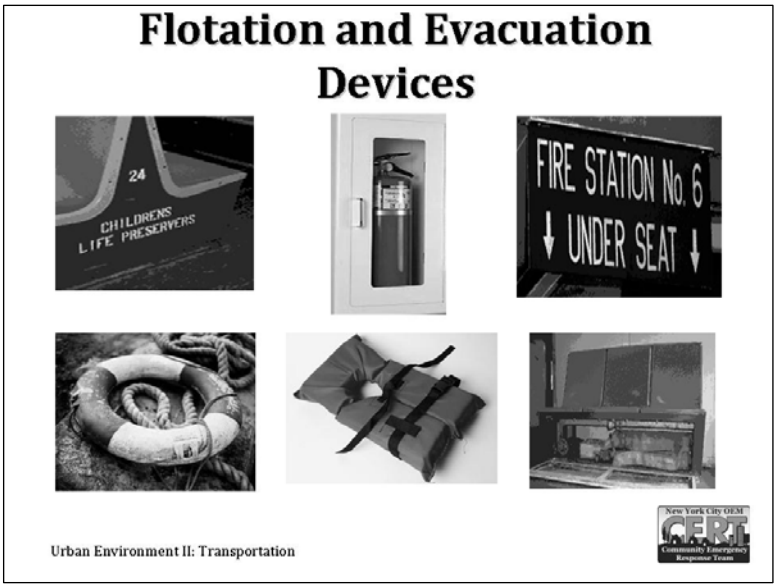


**Key Points**

- Various types of safety equipment, such as life preservers, fire extinguishers and emergency telephones may be found throughout the vessel.
- Life preservers can be found in storage compartments in the seats or in overhead racks.
- As a NYC CERT member, you should:
  - Know the location of safety features and equipment.
  - Always listen for directions from the crew.
  - Alert the crew immediately if you notice a dangerous situation
- When throwing a line to a victim in the water, throw it beyond and to the side of him/her.
- Prior to assisting passengers, NYC CERT members should:
  - Call 911 and ensure that the crew is notified.
  - Obtain his or her personal safety equipment.
  - Listen to and follow emergency instructions.

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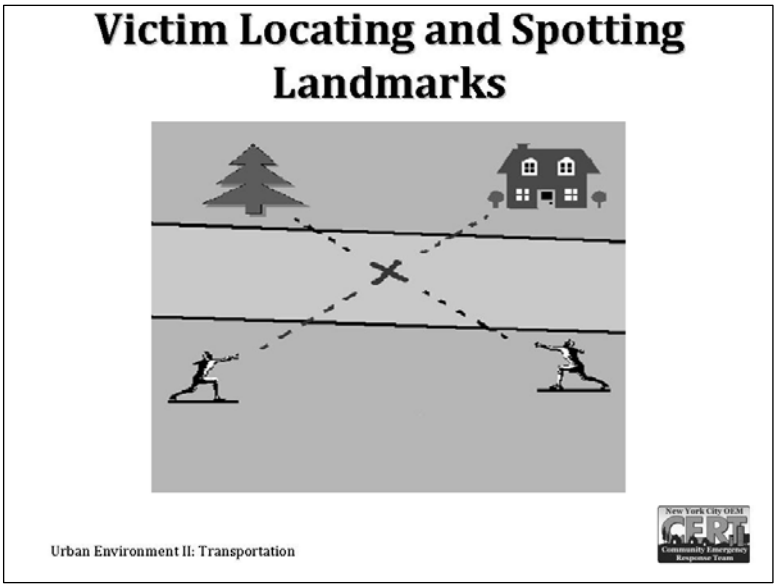


**Key Points**

- Triangulation is a technique used to track the exact location where a person has fallen into the water until a rescue can be performed.
- If a person goes underwater, NYC CERT members should:
  - Line up the exact spot where the person went under with a landmark.
  - Stay in the same spot where step one is performed.
  - Request someone else to mark the spot from a different location.

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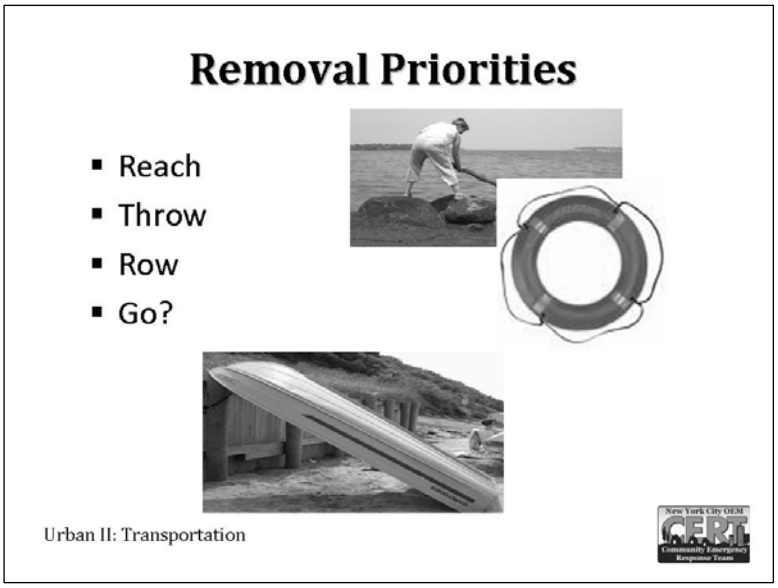


**Key Points**

- If the water emergency occurs within reach of a NYC CERT member on land or a dock, they should consider the following rescue techniques in priority order:
    - Reach: be sure your footing is stable. Consider using a board, branch, ladder, etc., to extend your reach out to the victim.
    - Throw: throw the victim a "line" or utility rope. The line should be thrown past and to the side of the victim.
    - Row: Consider using a small boat to rescue the victim.
    - Go: Go is a **last resort** and should only be considered by trained water rescue experts.
- If the victim goes under prior to the rescue, mark the spot by lining it up with a landmark and having someone else follow the same procedure from a different location.

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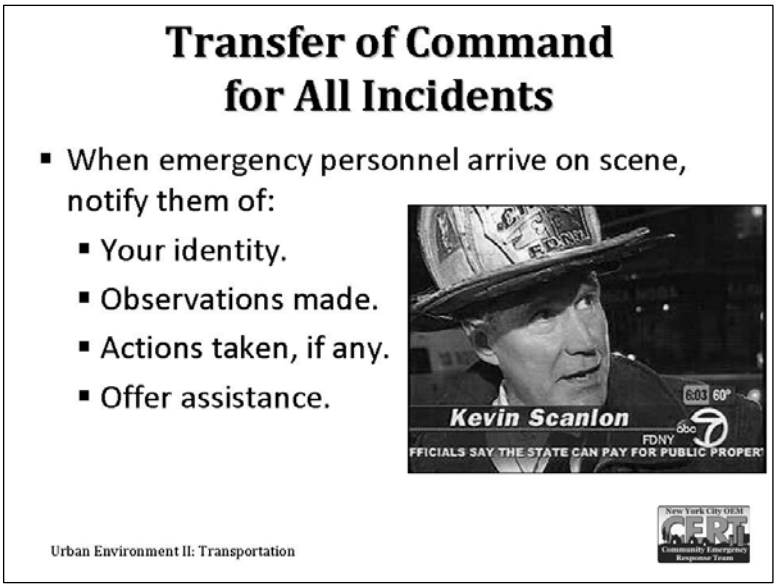


**Key Points**

- NYC CERT transfer of command should be as follows:
  - Given by the NYC CERT lead to the NYC OEM CIC or first responder.
  - The report should be succinct and include:
    - Your identity;
    - Type of incident;
    - Number of victims;
    - Any actions taken; and
    - Number of operating personnel and their location.
  - The NYC CERT lead should be prepared to transition command at all times throughout the incident and should use the CERT recorder to maintain written documentation of all activities.

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## LESSONS LEARNED

- Understanding of the NYC transportation system.
- Understand personal and team safety at a transportation emergency.
- Know CERT roles for a transportation emergency and what actions might take place.

## NYC CERT IN ACTION

- NYC CERT members have assisted other passengers to remain calm in stalled subway cars.
- One of the local Manhattan NYC CERTs participated in a Roosevelt Island tram exercise.

## COMMUNITY AWARENESS

- What lessons were learned in this unit that you might bring to your community?

- What is a message learned this week that you might you stress during a Ready NY presentation?

## PREPARING FOR YOUR FINAL WEEK

Review and understand the NYC CERT Deployment Protocol and how it may relate to a transportation emergency.

## EVALUATION

Please fill out the evaluation for Unit 3 in the back of the binder. When completed, please hand in to your OEM Liaison.

## UNIT RESOURCES

NYC OEM website (www.nyc.gov/oem)
MTA website (www.mta.info)
DOT website (www.nyc.gov/dot)