

**PORT AUTHORITY OF NEW YORK AND NEW JERSEY  
HUMAN RESOURCES DEPARTMENT  
ASSESSMENT SERVICES UNIT**

**TUNNEL AND BRIDGE AGENT**

**WRITTEN TEST**

**STUDY MATERIAL**

*It is recommended that you familiarize yourself with the information in the Study Booklet in preparation for the Tunnel and Bridge Agent written test. **DO NOT bring your copy of this booklet to the test.** The information contained in this booklet will be included in the TBA Written Test for your reference.*

## **ROADWAY REGULATIONS FOR PORT AUTHORITY TUNNELS AND BRIDGES**

**Roadway Markings:** Unless otherwise directed, vehicles shall at all times stay to the right of the center of all roadways except in the case of one-way roadways. Where a roadway is marked with traffic lanes, vehicles shall remain within the designated lanes and shall not change lanes except across a broken line.

**Slow Moving Vehicles:** Slow moving vehicles on the bridges and approach roads to the tunnels shall, unless otherwise directed, use the right lane of the roadway and shall not attempt to pass other slow moving vehicles.

**High Beam Headlights Prohibited:** The use of high beam headlights is prohibited in all roadway areas having typical roadway illumination.

### **Specific Tunnel Regulations**

- (a) **CHANGING OF LANES:** Vehicles shall not change lanes in the tunnels unless so directed by a properly designated Port Authority employee or Traffic Control Device.
- (b) **SOUNDING HORN, FLASHING LIGHTS:** Drivers of vehicles shall not sound their horns or flash their lights in the tunnels except in emergencies.
- (c) **DISTANCE BETWEEN VEHICLES:** In tunnels, a vehicle operating at a maximum speed of 35 miles per hour shall maintain a distance of at least 75 feet behind the vehicle immediately preceding it in the same lane; provided, however, that a bus or truck with passengers standing or occupying seats which are not permanent or fixed, operating at a maximum speed of 35 miles per hour shall maintain a distance of at least 150 feet behind the vehicle immediately preceding it in the same lane. A vehicle operating at a speed less than the prescribed maximum speed shall maintain a safe and prudent distance behind the vehicle immediately preceding it in the same lane.
- (d) **TUNNEL POSTING:** Vehicles shall maintain a distance of at least one hundred and fifty feet (150') behind a marked Port Authority vehicle identified by flashing rooftop lights. The Port Authority vehicle will operate on the centerline of both tunnel lanes during the "posting" of tunnel personnel. It is essential that vehicles do not attempt to drive by or otherwise pass the Port Authority vehicle.

**VEHICULAR SIZE AND WEIGHT LIMITATIONS FOR PORT AUTHORITY'S  
TUNNELS AND BRIDGES**

Length (including load or contents or any part thereof)	Holland Tunnel	Lincoln Tunnel	Bridges
1. Single Unit Vehicles	45 feet	45 feet	45 feet
2. Combination vehicles Truck tractor- trailer trailer length Overall length	N/A N/A	45 feet 85 feet	70 feet N/A
3. Combination Vehicles Truck tractor-semitrailer semitrailer length Overall length	N/A N/A	45 feet 85 feet	70 feet N/A
4. Combination Vehicles Truck tractor & tandem trailers semitrailer or trailer length Overall length	N/A	85 feet	N/A
5. Articulated buses	62 feet	62 feet	62 feet
6. Traditional automobile transporters, low boys when used to transport assembled highway vehicles, drive-way saddlemount with fullmount vehicle transporter combinations and triple saddlemount combinations Overall length	N/A	N/A	75 feet
7. Stinger-steered automobile transporters Overall length	N/A	N/A	75 feet
8. Traditional boat transporters and low boys when used to transport assembled boats and boat hulls Overall length	N/A	N/A	75 feet
9. Stinger-steered boat transporters Overall length	N/A	N/A	75 feet
10. Maxi-cube vehicles Overall length Cargo-carrying unit	N/A N/A	N/A N/A	65 feet 34 feet

## **TYPES OF EMERGENCY VEHICLES AND EQUIPMENT**

There are two types of emergency vehicles available at Port Authority tunnels – a wheel lift and a wrecker. Both vehicles will respond against the flow of traffic during normal stoppage procedures. The wheel lift, because of its smaller size and easier maneuverability, is the fastest for removing vehicles, but does not have the enormous towing capacity of the Mack wrecker. Pushing a vehicle out of the tunnel is much faster than towing.

It is up to the Tunnel and Bridge Agent (TBA) at the scene of the stoppage to determine which type of vehicle should be summoned to remove the disabled vehicle. In order to make a decision as to what equipment to summon, it is important to remember the following:

- The wheel lift is the fastest emergency response equipment for removing lightweight vehicles that can roll. In most cases, the wheel lift will also be utilized for the front end hoisting in the tunnel, (front and rear hoisting on outside roadways) of cars, vans and light duty trucks.
- A wrecker is designed to handle any type of breakdown at our tunnels, and as such, can tow, push, hoist and tow, and hoist and push.

The chart below lists the most common types of stoppages/breakdowns that occur at PA Tunnel facilities. This chart serves as a guide to assist Tunnel and Bridge Agents in determining which type of emergency equipment to request. If a Tunnel and Bridge Agent is unsure as to which equipment is needed, he/she should call for a wrecker, as it can handle any type of stoppage that occurs at our facilities.

## TUNNEL FACILITIES – TYPE OF STOPPAGES

<b><u>Nature of Stoppage</u></b>	<b><u>Equipment to be Summoned</u></b>
Vehicles 10,000 lbs., or less that can roll  <i>Examples: Car, small van, pick-up truck that have overheated, are out of gas, have dead batteries, or are out of transmission fluid</i>	Wheel Lift (push, tow)
Vehicles over 10,000 lbs.  <i>Example: Bus, tractor-trailer, truck</i>	Wrecker
Vehicles with a flat tire: FWD with front flat (Front Wheel Drive) FWD with rear flat RWD with front flat (Rear Wheel Drive) RWD with rear flat	Wheel Lift Wrecker Wheel Lift Wrecker
Vehicles with Brake Problems: Over 10,000 lbs. Under 10,000 lbs.	Wrecker Wheel Lift
RWD vehicles with transmission problems (Hoist & Push)	Wrecker
FWD vehicles with transmission problems (Hoist & Tow)	Wheel Lift
Accidents	Wrecker
Unusual Incidents  <i>Example: Overheights</i>	Wrecker
Fire	Wrecker
Motorcycle	Wheel Lift

**Note:** All tunnel wrecker responses will contain two emergency crew personnel. Wheel lift responses will contain only one crew person.

## **DUTIES OF POST 53 TUNNEL AND BRIDGE AGENT**

At the Holland Tunnel, the Tunnel and Bridge Agents are responsible for staffing two outside posts in addition to the tunnel. One of these posts is designated as Post 53.

The Post 53 booth is located directly across from the New Jersey Emergency Garage. It is the duty of the Post 53 TBA to handle any stoppages from the exit portal of the North Tunnel to insure that traffic flows out and onto 14<sup>th</sup> Street in Jersey City without any interruption. The TBA is equipped with a portable radio and is also responsible for reporting any unusual incidents within view. The main objective of Post 53 is to make sure that the emergency equipment has clear access into the North Tunnel during a stoppage. The Post 53 TBA must follow the procedure below in the order given:

- I. Upon learning of a stoppage in the North Tunnel, you will hear a bell ringing. This bell, located on the outside wall on the NJ Emergency Garage, signals Post 53 and the NJ Emergency Garage that the amber lights have been set for a disabled vehicle in the North Tunnel.
- II. After hearing on the radio that amber lights have been set, cross over to the NJ Emergency Garage and open the cone line to allow emergency equipment to gain access to the tunnel.
- III. Once you have opened the cone line, position yourself under the footbridge on the center line facing traffic. Expedite exiting traffic in both lanes until Near Lane traffic is clear.
- IV. Once the Near Lane is clear, keep it clear by moving any traffic exiting the Near Lane over to the Far Lane, so the equipment can safely pass your location.
- V. Once the equipment has passed your location, return to re-establish the cone line that was initially opened to allow the emergency equipment access to the tunnel. Once this task has been completed, return to the other side of Post 53 stand by at the end of the stripped safety zone until the equipment starts to exit the North Tunnel.
- VI. Unless otherwise directed, the emergency equipment will exit the tunnel in the Far Lane with the disabled vehicle and drop it off on Henderson Street, which is to the right of the tunnel upon exit. It is imperative that you position yourself at the end of the striped safety zone to hold any oncoming traffic that should approach from the Post 53 side of the Provost Street and 14<sup>th</sup> Street.
- VII. Once the wrecker or wheel lift is clear of the disabled vehicle, the driver of the emergency equipment will signal by hand that he/she is ready to return. At this time, hold all traffic at your location. As soon as the emergency equipment is back in the garage area, close the cone line and return to the Post 53 booth. It is imperative that you monitor radio communications at all times.

**DUTIES OF A TUNNEL AND BRIDGE AGENT**  
**RESPONDING TO A STOPPAGE**

A TBA responding to a stoppage must follow the procedure below in the order given:

- I. Radio Communication Desk of possible stoppage and approximate location.
- II. Proceed to stoppage scene.
- III. Upon arrival at stoppage scene:
  - Lincoln Tunnel: Set amber lights using Control Panel Board
  - Holland Tunnel: Radio for amber light
- IV. Slow down, halt both lanes of traffic, and climb down onto the roadway.
- V. Investigate stoppage and determine what type of equipment is required by speaking to the driver and visually inspecting the vehicle.
- VI. Summon the appropriate equipment:
  - Lincoln Tunnel: Use Control Panel Board, being sure to push equipment button for effected lane.
  - Holland Tunnel: Use radio to summon appropriate equipment, being sure to state the type of vehicle, problem, tunnel and lane in which the vehicle is located
- VII. Once all lights are set, proceed to direct Near Lane traffic around the disabled vehicle into the Far Lane until emergency equipment arrives at the scene.
- VIII. Once emergency equipment arrives, stop all traffic and ensure that enough room is clear behind the stoppage (both lanes) to enable the emergency equipment to turn around (about five car lengths behind the stoppage).
- IX. Once emergency equipment has turned around to push or tow the vehicle, ask the Crew Chief if traffic can be moved past the stoppage, and follow the crew chiefs orders.
- X. When the disabled vehicle is ready to be removed from the tunnel, ask the Crew Chief which lane will be used to remove the disabled vehicle. If the equipment has to change lanes, it will do so at the stoppage scene, once you hold all traffic.
- XI. After the equipment starts moving towards the exit portal, climb back to the catwalk and, after ensuring that tunnel lights have been return back to normal, allow traffic to proceed behind the emergency vehicle.
- XII. Return to your assigned position and notify the Communications desk that you are back on post.

## **UNUSUAL STOPPAGES: ACCIDENTS**

Each time an accident occurs at one of our facilities, a Police Officer completes a PA 821 form. Engineering marks are used to pinpoint the exact location of any accidents that occur in our tunnels. Should it become necessary for a Tunnel and Bridge Agent to handle such an accident, it is his/her responsibility to provide the engineering mark.

Whenever an accident occurs at your location, the first priority, as with any accident, is to make notification to the Communications Desk. When reporting the accident, give the tunnel, zone, lane, number, and type of vehicle(s) involved. After the initial report, set amber lights, stop all traffic and check the vehicles involved for injured customers.

### **WITH INJURIES**

When checking for injuries, ask each vehicle's occupants if anyone is hurt. If someone answers "yes", get the extent and type of injuries and ask if they require an ambulance. If it is immediately apparent to you that an ambulance is needed (e.g., profuse bleeding, unconsciousness, broken limbs, etc.), contact the Communications Desk immediately. When requesting an ambulance, make the Desk aware of the number of injured and types of injuries. Administer First Aid/CPR as necessary. If the vehicles involved are disabled, call for needed equipment (i.e., wheel lift, wrecker).

In serious situations, although it may become a trying period, do the best you can. Remember, you will be receiving help momentarily. With any serious incident, the other Tunnel and Bridge Agents, the Emergency Garage Crew, the Police, and ambulances will be responding within minutes. All traffic must be held at the scene of a serious accident (unless instructed to do otherwise).

### **NO INJURIES**

Many of the vehicular accidents at our facilities are minor in nature with no injuries. If the vehicle can be driven out of the tunnel under the driver's own power, proceed as follows:

- ❑ Instruct the drivers to proceed to the tunnel exit and pull over into a safe area where they can exchange pertinent information.
- ❑ If the drivers request an accident report or Police involvement, inform them that a Police Officer will meet them at the exit of the tunnel.
- ❑ Once the vehicles are driving out, return to the catwalk and clear the lights (i.e., restore to greens)
- ❑ Note the type of vehicles involved, along with license plate numbers.
- ❑ Contact the Communications Desk and inform them what just transpired (i.e., color, type, and number of vehicles involved, instructions given to driver, whether police involvement required, etc.)

### **PORT AUTHORITY DAMAGE**

Whenever an accident occurs causing damage to Port Authority property (i.e., walls, ceiling, roadway, etc.), it must be reported immediately. If a vehicle hits a wall, even if no other vehicles are involved, it still constitutes an accident and must be handled accordingly.

## CLASSIFICATION OF FIRES

Safety and fire agencies classify fires into four types. The basic types of fires are Classes A, B, C, and D. This classification system determines the method used for extinguishment. The Classes are defined below:

### CLASS A

This Class includes fires involving ordinary combustible materials such as wood, paper, cloth, rubber and many plastics. Extinguishment of Class A fires requires the use of a heat-absorbing (cooling) agent. The ideal cooling agent is water. Other extinguishing agents include foam or A, B, C type extinguishers.

### CLASS B

This Class includes fires involving flammable or combustible liquids and flammable gases and grease.

**Flammable Liquids** are liquids that give off vapors that will ignite in the presence of air and an ignition source at or below 100 degrees Fahrenheit. Examples include gasoline, lacquer thinner, and acetone.

**Combustible Liquids** are liquids that give off vapors that will ignite in the presence of air and an ignition source in the temperature range of 100 – 200 degrees Fahrenheit. Examples include oil, grease, paint and diesel fuel. A smothering or combustion inhibiting agent is necessary to extinguish this type of fire. Foam, dry chemical, carbon dioxide (CO<sub>2</sub>), or water fog can be used to extinguish these types of fires. Care should be used if several agents are utilized at the same time, such as dry chemical and foam; if dry chemical is not foam compatible, it will quickly destroy the foam blanket; water fog with foam can dilute the foam causing it to run off.

### CLASS C

This Class includes fires involving energized (*live*) electrical equipment. The agent to be used on this type of fire must be a non-conductor of electricity, such as carbon dioxide or a dry chemical. Water can only be used after electrical power has been secured. Depending on the circumstances involved, dry chemical may cause more damage than the fire (such as to computers, switching equipment, or delicate machinery). When a Class C fire is de-energized, it can then result in a Class A fire.

### CLASS D

This Class includes fires involving combustible metals such as sodium, potassium, zirconium, titanium, and magnesium. METL-X should be used to extinguish Class D fires. METL-X is a special dry powder agent that when heated by the burning metal, will form a seal over the burning metal's surface, depriving the fire of oxygen and thereby smothering it. The fire can be intensified if improperly handled. It must be covered completely, to exclude oxygen; however, the weight of too much METL-X can cause the crust to fall off and the fire to re-ignite. If METL-X is not available, large coarse streams of water can be used to cool metal.

## FIRE EXTINGUISHERS CHART (FIRE CLASSIFICATIONS)

<b>Class</b>	<b>Definition</b>	<b>Example</b>	<b>Best Extinguishment Agent</b>	<b>Extinguishment Agent available at Facility</b>	<b>Alternate Extinguishment Agent available</b>	<b>Type/Size</b>	<b>Duration</b>
<b>A</b>	Ordinary Combustible	Wood, Rags, Paper	Water; H2O	Loaded Stream charged with air	Dry Chemical; Purple "K"	2.5 gals. of water anti-freeze solution	60 seconds
<b>B</b>	Combustible Liquid	Gasoline, paint, oil, diesel, LGP	Foam	Purple "K"	Purple "K", Dry Chemical, low velocity water fog	20 lbs.	17 seconds
<b>C</b>	"Live" Electrical	Computer, Switch, Motor	CO2; Carbon Dioxide	CO2	Purple "K"	20 lbs.	17 seconds
<b>D</b>	Combustible Metal	Titanium, Magnesium, Potassium	METL-X	METL-X	Large coarse streams of water	30 lbs.	25 seconds

Potential hazards of Purple "K" include limited visibility and breathing due to powder filling the air immediately upon discharge and its tendency to "cake up".

## **SELF-CONTAINED BREATHING APPARATUS**

There is one type of self-contained breathing apparatus (SCBA) used on PA emergency equipment. All Mack wreckers are equipped with three 4.5 Scott Air Paks.

In the event of a fire alarm call at a tunnel or bridge, responding personnel will don full protective clothing that includes the wearing of a Scott Air Pak. This holds true whether in the tunnel confines or in an open environment. This apparatus provides the user with respiratory protection while performing work in environments immediately dangerous to life or health.

The Scott Pressure-Pak 4.5 is a self-contained breathing apparatus, designed to provide maximum mobility and approximately 30 – 45 minutes of pure breathing air to the user. The apparatus consists of:

- ❑ A cylinder and valve assembly for storing compressed breathing air;
- ❑ A harness and backframe assembly to support the equipment on the body of the wearer;
- ❑ A facepiece and netting assembly to support the equipment on the head of the wearer;
- ❑ A positive pressure mask-mounted breathing regulator; and
- ❑ A redundant dual path pressure reducing regulator mounted on the backframe.

The breathing regulator is equipped with an automatic shut-off device which closes to prevent rapid loss of air supply if the system is turned on prior to donning the face piece, or if the face piece is removed while in service. The breathing regulator is also equipped with a Vibralert alarm. This alarm vibrates to warn the user of diminishing air supply by both sound and feel. The pressure-reducing regulator has no manual bypass control. Instead, it uses a redundant dual path reducing system.

During normal operation, air passes from the tank cylinder through a high pressure hose at a pressure of 4500 psi into the pressure reducer located on the backframe. With the pressure reducer in the primary mode, the working pressure is reduced to 100 psi before continuing to the mask-mounted regulator. The back-up or secondary system is automatically activated if the primary system fails or tank cylinder pressure drops below 1200 psi or approximately 10 minutes of air remaining). On secondary mode air, pressure to the mask-mounted regulator is increased to 150 psi. When the secondary system is activated, the Vibralert alarm is also activated to warn the user. Whenever the Vibralert alarm activates you must egress immediately to the nearest safe, breathable area.

# **HAZARDOUS MATERIALS**

## **CLASSIFICATIONS REQUIRING PLACARDS**

### **Table I**

When transporting any quantity of the following classifications of hazardous materials, the vehicle must be placarded with the specific placard. The “Dangerous” placard can never be used for one of these classes. Note that if a vehicle contains both 1.1 and 1.2 Explosives, it need only be placarded for the higher class, which is 1.1.

- ❑ Explosives (1.1, 1.2, and 1.3)
- ❑ Poison Gas (2.3)
- ❑ Flammable Solid (Dangerous When Wet) (4.3)
- ❑ Radioactive III (7)
- ❑ Organic Peroxide (5.2)
- ❑ Poison Inhalation Hazard (6.1)

### **Multiple Placarding**

When any of the six commodities found in Table I requiring a placard for any quantity are placed on a vehicle, the specific placard must be displayed. When a vehicle with a mixed load of hazardous materials has any quantity of Explosives (1.1., 1.2, or 1.3), Poison (6.1) (PIH), Radioactive III (7), Flammable Solid (4.3), Organic Peroxide (5.2), or Poison (2.3) (PIH), that vehicle must display the specific placard for those classes of materials. The vehicle, therefore, could require multiple placarding.

### **Table II**

The following classifications of hazardous materials require placarding when transported in quantities of 1000 lbs. or more, or when transported in combinations of 1000 lbs. or more.

- ❑ Explosives (1.4)
- ❑ Explosives (1.5)
- ❑ Explosives (1.6)
- ❑ Flammable Gas (2.1)
- ❑ Non-Flammable Gas (2.2)
- ❑ Flammable (3)
- ❑ Combustible (Combustible Liquid)
- ❑ Flammable Solid (4.1)
- ❑ Spontaneously Combustible (4.2)
- ❑ Oxidizer (5.1)
- ❑ Organic Peroxide (5.2 – other than organic peroxide, Type B, liquid, or solid, temperature controlled)
- ❑ Poison (6.1 – PG I or II, other than PG 1 inhalation hazard)
- ❑ Keep Away From Food (6.1 – PG – III)

- ❑ No Placard Name (6.2)
- ❑ Corrosive (8)
- ❑ Class 9 (9)
- ❑ No Placard name (ORM –D)

### **Dangerous Placard**

A motor vehicle containing two or more classes of hazardous materials found in Table II, which require different placards, may be placarded “Dangerous” in place of the separate placarding specified for each of those classes of materials. However, when 2,205 pounds or more aggregate gross weight of one material is loaded at one loading facility, the specific placard for that material must be used.

### **Other**

The following classifications of hazardous materials that are labeled or marked do not require placarding:

- ❑ Etiological Material
- ❑ Combustible Liquids in containers of 110 gallons or less
- ❑ ORM A, B, C, E