

**EMERGENCY PREPAREDNESS PLAN**

**For The**

**Sacramento Regional Transit District**

# LIGHT RAIL EMERGENCY PLAN

## Introduction

The Emergency Plan is designed as a general guideline to assist the Light Rail (LRT) Department in responding to serious conditions. These conditions could cause or are capable of causing injury to persons or damage to property. They require immediate response and may impact the District's service.

The following procedures are not intended to predict the details of every situation. They must be supplemented with good judgment based on experience and common sense. Combining these elements will provide the best and safest solution to service problems resulting from accidents and other causes. In emergencies of any type, responsibilities and actions identified in this plan will be executed concurrently and may be interchanged among available personnel.

### **E.1.0. Responsibilities**

In case of an emergency, the following lines of responsibility are in effect:

#### Light Rail Manager

The Light Rail Manager has full responsibility and authority for the overall direction of operations in any emergency.

#### METRO Control

METRO Control shall notify the appropriate persons in the event of an emergency and dispatch personnel to the scene. METRO Control will maintain communications and take whatever actions necessary to mitigate service disruptions.

#### First LRT Supervisor at the scene

The first Supervisor at the scene shall assume command of the situation. The Supervisor will begin an investigation immediately and advise control of the status of the situation with updates as needed. The Supervisor shall coordinate the efforts of other RT personnel and work with the Public Safety Agencies (fire and police) to expedite resolution of the emergency.

Law enforcement or fire protection agencies may respond to the scene of an emergency. They have the authority to assume charge of an incident until they release control back to the District.

The safety of passengers and the public is the primary consideration. All employees are required to exercise constant care to prevent injury to persons or property. Employees must report the observance of any situation which may be potentially hazardous. Upon learning of a hazardous situation, employees must take whatever action possible to prevent an emergency.

### Prevention

An integral part of the LRT Training Program is to provide a method of identifying and preventing potential emergencies. By increasing the awareness of the employee, the possibility or seriousness of the situation may be mitigated. It is essential that this effort be evaluated continually and revised as necessary.

### Police Services

The responsibility of the RT Police Services Department is to provide the primary support in any emergency with respect to law enforcement activities. Whenever public safety or law enforcement is referenced in this plan, it is assumed that R.T. Police Services will assume command of those situations which are appropriate.

### Notification

When a hazardous or emergency situation has occurred, notification to METRO Control must take place immediately. Accurate information must be relayed in a calm orderly fashion, to insure that an appropriate response is effected. Failure to take immediate action may result in additional injuries or damage. All communications will be made to METRO Control. Notification shall include the following in order:

Identification, and statement of "emergency".

Location and direction of travel.

Assessment of damage and extent of injuries.

METRO Control may request additional information. It is essential that employees remain available by radio.

### P.A. Announcement

An internal PA announcement must be made any time a schedule delay exceeds two minutes. This announcement should give a "brief" explanation of the reason for the delay and the anticipated time that service will resume. If the delay is extensive, information must be repeated at two minute intervals updating service information if possible.

METRO Control shall be responsible for notifying the appropriate RT personnel of an emergency and update when possible.

Any employee involved in or at the scene of an emergency must refrain from making statements regarding the situation. Only information required by law must be provided and then only to the appropriate persons. If questioned, employees should refer inquiries to the appropriate personnel.

### Reporting

The reporting of accidents, incidents and unusual occurrences is the responsibility of all Administrative, Transportation, and Maintenance personnel. Employees are subject to the rules and procedures which pertain to these situation.

The following reporting guidelines and emergency procedures were developed for specific situations and will apply to all LRT employees.

Those employees involved in or responding to emergencies are required to submit a completed written report as outlined below.

Operator- All information pertinent to the accident or incident must be obtained. The operator is responsible for collecting all initial information from passengers, witnesses, and others involved. METRO Control must be notified immediately of any emergency which disrupts service. For non-serious occurrences, this notification must be made prior to leaving the end of the line. A satisfactorily completed written report shall be submitted to METRO control for all incidents prior to going home on the day on which the incident occurs.

METRO Control - Notification will be made in accordance with the guidelines set forth in this plan. Information surrounding the emergency shall be entered in the Daily Control Log and pertinent information noted in the Controller's Daily Supervisor Report.

Supervisor - A detailed investigation shall be conducted. Photographs, measurements and statements shall be included as part of the Supervisor's report. Opinions or conclusions which can be formed should be attached on a separate page. Names and badge numbers of law enforcement or fire department personnel shall be obtained and their report number noted.

If injured persons are transported by ambulance, the company, attendant and hospital to which the person or persons were taken must be included in the report.

If equipment failure is suspected to be the cause for an accident or injury, inspection must be made and such equipment tested before service can be continued. This report must be submitted to METRO Control as soon as possible.

The Risk Management Department is authorized to recommend impoundment of District property to the Chief Operating Officer if, in their judgment, it is critical to preserve the evidence. The LRT investigator should conduct a normal investigation of all factors except those that require removing parts, changing switch or control positions, or disturbing any potential evidence. Any disturbing of evidence that is required for safety reasons or to prevent interference with the operation of other vehicles should be recorded on the investigation form.

Impounded equipment, including a light rail vehicle, will be placed in a designated area and cordoned off or otherwise protected until released by the Chief Operating Officer. No one should be allowed access to the impounded equipment until properly released by the Chief Operating Officer.

NTSB and the PUC shall be notified in the event of any emergency which is within their respective reporting guidelines. It shall be the responsibility of the Light Rail Manager to advise these agencies within the specified time limits.

The NTSB reporting procedures are as follows:

What to report:

A passenger or employee fatality or serious injury to two (2) or more crew members or passengers requiring admission to a hospital; or

Damage (based on a preliminary gross estimate) of \$150,000 or more for repairs, or the current replacement cost, to railroad and non-railroad property; or

Damage of \$25,000 or more to a passenger train and non-railroad property or involving evacuation of a passenger train; or

A fatality at a grade crossing

How to report:

Call 24 hours a day, 7 days a week, 800 424-0201 within six hours of the accident and provide the following:

1. Name and title of person calling.
2. Name of Railway (Sacramento Regional Transit District).
3. Location (Sacramento County, California).
4. Time and date of the accident.
5. Description of the accident.
6. Casualties

- a. fatalities
  - b. injuries
7. Property damage estimate.
  8. Name and phone number of person to contact for further information.

The California Public Utilities Commission (CPUC) reporting procedures are as follows:

What to report:

1. Any fatality or serious injury
2. Any event resulting in the evacuation of a train or facility
3. Any fire department response which results in fire suppression activities.

How to Report:

Call the California Public Utilities Commission, Rail Transit Safety Section at (415) 557-1368 immediately and provide the following:

1. Name and title of person calling.
2. Name of Railway (Sacramento Regional Transit District).
3. Location (Sacramento County, California).
4. Time and date of the accident.
5. Description of the accident.
6. Casualties
  - a. fatalities
  - b. injuries
7. Property damage estimate.
8. Name and phone number of person to contact for further information.

In addition to telephone notification, a Light Rail Transit System Incident Report (PUC) must be submitted within 30 days after the last day of the month in which the following accidents occur:

- A. All accidents requiring immediate telephone notification.
- B. All derailments or collisions between LRVs or between LRVs and other on track equipment.
- C. All accidents involving impact between LRT system on track equipment and a motor vehicle, bicycle, or pedestrian at crossing of public highways, private roads, intersections or on public streets between crossings or intersections.
- D. Any other accident which results in monetary damage to LRT property which exceeds \$6,300.

If this report cannot be submitted in person, mail to:

John Ensich  
Transportation Supervisor  
Public Utilities Commission  
RailTransit Safety Section  
505 Van Ness Avenue  
San Francisco, CA 94102

### **E.2.0 Supervisor/Controller Duties**

It is the duty of the Supervisor/Controller (S/C) to minimize the effect of the emergency on the District's service.

The S/C shall take the following steps when an emergency occurs.

#### Controller

Documentation of Events - METRO Control shall be the central information office. All information shall be recorded as to the time, location and description of the emergency.

Dispatch Assistance - Law enforcement, fire protection, and ambulance service should be requested if necessary. Whatever RT personnel required should be dispatched to the scene with specific direction as to their duties.

Notify appropriate personnel - All prescribed personnel should be notified as soon as possible without delaying a response to the problem.

Arrange Alternative Service - Arrangement of supplemental bus service or adjustments to LRT service must be accomplished as soon as possible. This may require the coordinated effort of LRT/Bus divisions and all RT employees.

### Supervisor

Update Information - Upon arrival at the scene, the Supervisor should confirm the status of the situation with METRO Control. METRO Control must also be apprised of changes as they occur.

Protect the Scene - Supervisors should make sure that the scene is protected from other vehicles entering the area, resulting in further damage. This requires that tracks of other railways, adjacent roadways and grade crossings have an emergency appliance (flare, flag, barricades, crossing arm etc.) to warn approaching vehicles of a problem.

Assist the Operator - The Supervisor should check with the employee involved in the emergency to insure that procedures have been followed and information collected.

Conduct an Investigation - A thorough investigation should be conducted. If practical, photographs must be taken before evidence is moved and witness names must be collected while they are still at the scene.

### E.3.0 Investigation

A thorough investigation shall be made of all accidents or alleged accidents involving District property. If a Supervisor is unavailable, a Bus Transportation Supervisor or appropriate law enforcement agency will be notified. In the event of serious injury or major damage, a supplemental law enforcement and/or regulatory agency investigation will be requested.

If damage is minimal (neither vehicle towed) and there are no injuries, an operator's report as determined by METRO Control may satisfy the investigation requirement.

#### Investigator's Role

The first LRT Supervisor at the scene shall assume responsibility and the necessary authority for the investigation. If a Bus Transportation Supervisor is the first to respond, he/she should remain at the scene to assist in completing the investigation.

#### **E.4.0 Evacuation**

In any decision to evacuate, the safety of the passengers shall be the primary concern of all employees. Passengers who are evacuated for reasons of safety or convenience, should alight at a station platform if the situation allows.

#### **Evacuation Location**

If evacuation is necessary, operators should make whatever preparations possible within the available time, select the safest evacuation site, and discharge passengers where injuries are least likely to occur. Taken into consideration are:

- surface or grade conditions
- available lighting (if during hours of darkness)
- adjacent hazards such as traffic, ditches, opposing LRV movements, etc.

#### **Derailment**

In the event of a derailment, the Operator must confirm that all pantographs have been lowered or traction power has been shut down before the evacuation takes place.

#### **PA Announcement**

Prior to any evacuation, an announcement to passengers will be made. This announcement should be in a clear calm manner and as much information as possible made available.

Passengers should be instructed to:

- leave the vehicle in an orderly fashion
- take all personal belongings
- watch their step when alighting
- move to a point of safety after leaving the train (designate if possible).

#### **Door Operation**

Once the vehicle has come to a complete stop at the evacuation site, doors should be mechanically opened by the operator on the appropriate side(s). The passenger doors should remain open until it has been verified that all passengers have left the LRV by checking each car of multiple car trains.

## Disabled Passengers

If disabled individuals are on board, the operator should provide whatever assistance is necessary to get that person to a point of safety. Employees at the scene should request able-bodied passengers to aid in the removal of the disabled if necessary.

### **E.5.0 Traction Power**

The determination as to the hazard of traction power at the scene should be of primary consideration. If the catenary is still "electrified" and it jeopardizes the safety of the emergency response, immediate action must be taken to initiate shut down.

The termination of traction power may be accomplished by three methods. These are:

Automatic shut down - Individual substations will initiate shut down after sensing a direct short in the overhead contact system.

Sacramento Fire Department (SFD) shut down - There are 12 locations in the CC (Central City) where traction power disconnect switches have been installed. These switches are accessible by the SFD and permit traction power to be disrupted between 12th & Q Street (F-1) and 12th & E Street (N-1).

METRO Wayside Maintenance personnel - Qualified LRT personnel responding to two adjacent substations can shut down the power between each of those two substations.

If METRO Control determines that traction power shut down must be accomplished by LRT personnel, the Wayside Supervisor will be notified. Information provided to the Wayside Supervisor should include the location or limits of the shut down. The Wayside Supervisor shall also be responsible for reinstating traction power once the emergency has been cleared after making sure all parties are clear of traction power hazards.

In most cases, the danger of traction power can be eliminated by lowering the pantograph(s). This isolates the scene of the emergency without disrupting other LRT service. The pantographs should always be lowered when one of the following occurs:

LRV derailment

LRV fire

Rescue attempts involve cutting through LRV body panels

If pantographs cannot be lowered from the cab, it will be necessary to manually crank the pantographs to the lowered position, utilizing the tools found in the LRV tool compartment.

## PASSENGER DISTURBANCE

### E.6.0

#### Purpose

To provide a procedural method in dealing with a variety of passenger behavior problems.

#### Policy

A supervisor will normally be called upon to resolve those disturbances which involve no apparent danger. Law enforcement officers will be summoned to assist supervisors in those situations which are potentially dangerous or may result in arrest.

#### Responsibilities

Training Supervisor - An ongoing program will be developed to meet the District needs in passenger problem resolution training.

Transportation Superintendent - Supervisor actions will be reviewed to insure that the appropriate procedure has been followed.

Supervisor - The supervisor must attempt to resolve the passenger disturbance in a manner which does not detrimentally reflect upon the District's image.

#### District Rules

It is recognized that when dealing with passengers in the variety of situations that are present, there is no one method which can be applied to problem resolution. The supervisor must attempt to handle the situation in a manner which satisfies all parties, while enforcing the District's rules, policies and goals. In some cases, the Supervisor may have to make a decision which is in the best interest of the District but does not satisfy the passenger. These situations should be handled as tactfully and professionally as possible.

The supervisors' judgment, experience and existing policy will dictate the actions taken to resolve the situation. The following is a list of guidelines developed to provide the supervisor with additional information. This information is based on the California Administrative Code, District Policy and past practice.

Firearms not accompanied by a valid permit are not permitted on any District property.

Knives, other than switchblades, are permitted as long as the knife is not concealed (in a sheath is not considered concealed).

Open containers of alcohol are not permitted on District property.

Sleeping or loitering on District property is prohibited.

The only animals permitted on District vehicles are seeing eye dogs, dogs which assist the hearing impaired, "social" dogs which are identified by an RT photo I.D., or any animal securely crated in a carrier designed for that purpose.

Misuse of the LRV emergency alarm is prohibited.

Flammable, corrosives or hazardous material (e.g. gasoline, kerosene, battery acid or alkalis) are not permitted on District property.

Items which may soil or damage passenger or District property (e.g. greasy auto parts) are not permitted.

Smoking, eating, drinking or playing radios (unless headphones are used) is prohibited on vehicles.

Soliciting, begging or selling on District property is prohibited. (except as provided for in OS-SOP-88-10. Attachment I)

Baggage or other personal items shall not be permitted to block any aisle, step, or seat (if it prevents other passenger from utilizing that seat.)

Passengers who appear to be under the influence of intoxicating liquor or narcotics, acting or behaving in a boisterous or disorderly manner, or using profane or obscene language, may be ejected from or refused admittance to any District vehicle by the operator or other duly authorized employee.

If it should become necessary to eject a passenger, such ejection shall be made only at a point or place where there are proper accommodations.

If an ejected passenger is not capable of caring for themselves, the appropriate law enforcement agency should be notified and an employee or other District representative remain with the person until they are taken into custody.

## Safety Guidelines

Employees are responsible to do whatever is reasonable to stop a disturbance and prevent injury to passengers. This should be done in a manner which does not endanger the safety of the employee. The following precautions may serve to prevent injury to an employee responding to a passenger disturbance.

At least two Rail Supervisors and/or Bus Supervisors should be assigned when responding to a disturbance.

When supervisors board an LRV, in response to a disturbance, each should use a different door.

Before attempting to awaken a passenger who is sleeping or passed out, a cursory check should be done for weapons.

When speaking to a passenger causing a disturbance, stand slightly behind them if they are seated or position the backup supervisor behind them if standing.

The use of an ammonia inhalant may be necessary to awaken an intoxicated passenger.

When necessary to use a flashlight when dealing with a potentially aggressive passenger, the flashlight beam should be slightly aimed at his/her eyes to disrupt their night vision.

When responding to a situation which is potentially volatile, approach it with a tear gas container concealed in your hand.

## Procedures for Tear Gas/Pepper Spray Usage

Policy - The Sacramento Regional Transit District authorizes personnel who have received training in the use of tear gas/pepper spray (PS), and who have a valid certification card in their possession, to use tear gas while on duty for defensive purposes only if the following conditions exist:

1. You reasonably believe:
  - a) That you or another RT employee are personally threatened with an imminent physical assault from an individual or group; and
  - b) That the assailant(s) has the present ability to carry out the threat; and

- c) That bodily injury would result if the threat was carried out; and
- d) That it is necessary to use tear gas/PS in order to protect against their imminent physical assault.

Regional Transit will provide for the criminal legal defense of any suit brought against an employee that results from the use of tear gas upon a finding that the action of the employee is using tear gas/PS was in accordance with this policy and that such action arose during the course and within the scope of his/her employment, and that the employee acted in good faith without actual malice and in the apparent interest of the District. However, an employee who has been determined to have violated this policy while on duty will be subject to disciplinary action up to and including termination. Beyond that, any person convicted of criminally misusing tear gas/PS may be subject to three (3) years in jail.

Procedures - Tear gas/PS has been provided for the employees' protection while on duty. Employees will not be disciplined for any reasonable defensive action they take with it. It is, however, not an offensive weapon. This precludes its use for riot control.

Tear gas/PS should be directed at a specific individual and not sprayed indiscriminately at a group.

As a result of the training courses in the use of tear gas/PS, the following procedures are being recommended.

1. Think before you respond. Before responding to a call, you should ask yourself if the situation is potentially volatile. If the answer is yes, approach the situation with a tear gas/PS canister concealed in your hand. Tear gas/PS is valueless if it is in your car or briefcase.
2. Tear gas/PS is not recommended against an armed assailant. If an assailant is armed, attempt to maintain eye contact and keep up a conversation. Should the assailant become distracted, you might be able to use the tear gas/PS.
3. Maintain some separation between yourself and your assailant. Remember that tear gas/PS has an effective range of about 10 feet. You should also face an assailant with your body turned to one side or the other. This provides the assailant with less of a target and places you in a better position to move quickly.
4. Try to talk an assailant off of the vehicle before using tear gas/PS. This is to prevent the unintentional exposure of other passengers to tear gas/PS.

5. When using tear gas/PS, keep the wind direction and speed in mind. Wind direction and speed can reduce the effective range of tear gas/PS and could even blow the spray back into your face.
6. When using tear gas/PS, spray on assailant for about one second and step aside. If this does not stop him or her, spray again and step aside. Use only that amount of tear gas/PS necessary to subdue an assailant.
7. Avoid any direct physical contact with an assailant. Engaging in any form of physical combat would eliminate the possibility of using tear gas/PS in your defense as well as increasing your chances of being hurt.
8. Do not provide any assistance to an assailant which you have sprayed unless he/she is in a position of peril. After an assailant has been subdued, call for assistance. Do not attempt to take him/her into custody.
9. Remember that tear gas/PS may leave red marks on the face of an assailant. This may be useful for identification at a later date.

Reporting requirements - If you have occasion to use tear gas/PS, you are required to comply with the following reporting requirements.

1. You must contact METRO Control as soon as possible after the incident occurs.
2. The person which you contact will take the responsibility for contacting the Chief Operating Officer and other appropriate personnel.
3. Within twenty-four hours of the incident, submit a signed report describing the events leading up to the use of tear gas/PS as well as the resolution of the incident.
4. Submit a written report to the Police Department, if requested.

## EMERGENCY PROCEDURE CHECK LIST

### Passenger Disturbance

#### OPERATOR

- \_\_\_\_\_ Notify METRO Control stating the type of disturbance - additional information will be requested by METRO Control (i.e. persons involved, description, if weapons used, etc.)
- \_\_\_\_\_ Advise METRO Control of condition changes, if necessary.

#### CONTROL

- \_\_\_\_\_ No Apparent Danger - Assign the closest available supervisor to respond with a backup supervisor or transportation supervisor.
- \_\_\_\_\_ Potentially Dangerous or May Result in Arrest - Notify the appropriate law enforcement agency and supervisor.

#### SUPERVISOR:

- \_\_\_\_\_ No Apparent Danger - Notify the controller upon boarding the LRV.
- \_\_\_\_\_ Potentially Dangerous or May Result in Arrest - Board the LRV only with a law enforcement officer.
- \_\_\_\_\_ Advise the controller when the disturbance has been resolved or if further assistance is required.

## PASSENGER INJURY/PASSENGER ILLNESS E.6.1

### Purpose

The following procedures are intended to assist Operations personnel in responding to a Serious Passenger Illness or Passenger Injury.

### Policy

In the event a passenger becomes ill or injured, the District shall take immediate action to provide the necessary assistance.

### Responsibilities

Operator - The operator must determine to the best of his/her ability, the extent of injury or seriousness of the illness. After METRO Control is notified, the names of the passenger and any witnesses should be obtained. In cases where medical assistance is necessary, the train will be required to stand by at a station or point of access until aid arrives. Any delay should be announced using the inside PA system. If District equipment is allegedly or potentially a contributor to an injury, the suspected problem must be checked by a Supervisor/Controller or other responsible Light Rail personnel prior to being placed back in service.

METRO Control - Control will be responsible for dispatching the appropriate Public Service (fire, ambulance, etc) and LRT personnel. The incident shall be documented and the appropriate personnel notified anytime medical aid is required. If LRV movement is disrupted, all trains will be alerted and steps taken to provide alternative service.

Supervisor - The supervisors' responsibility will be to conduct an investigation of the incident, determine if the LRV will remain in service if equipment may be the potential cause of the incident and advise METRO Control of any changes in status.

### Situation Response

The passengers well being is of utmost concern. While first aid will not normally be administered, the passenger should be made comfortable while awaiting medical attention. However, if the injury or illness becomes life threatening, employees should take whatever action necessary to reduce the effects of the problem. Employees should administer CPR only if they have been properly trained and it is necessary to keep the passenger alive. Passengers should not be moved unless absolutely necessary for their safety. Each LRV is equipped with at least one pair of rubber gloves which are available should the employee feel their use is necessary.

### Passenger Injury

In the event a passenger is injured, as much information as possible should be obtained regarding the incident. It is important that witness names are taken and circumstances noted to alleviate the possibility of the District being held liable. If operation is blamed for the injury, circumstances which led to the injury should be noted in detail. If RT equipment is the cause or a contributing cause, it should be inspected and steps taken to prevent injury to others. The extent of injury(s) (symptoms, location of pain etc.) should be requested from those individuals claiming to be hurt. Any unusual or suspicious circumstances must be documented.

### Passenger Illness

When an employee learns of a passenger illness, as much information as possible should be obtained. This information will be included when reporting the incident to METRO Control. The employee will also state the condition of the passenger (conscious, unconscious, bleeding, shock etc.) to the best of their ability. This information may aid the emergency service in determining the appropriate response.

### Statement of Liability

In no case should an employee claim liability on the part of the District. It must be made clear that the act of providing assistance does not admit to any responsibility. The passenger will have to submit payment for any services (ambulance, doctor, x-rays, etc.) received. Any inquiries regarding incident liability should be referred to the Risk Management Department.

## EMERGENCY PROCEDURE CHECK LIST

### Passenger Injury

#### OPERATOR

- Notify METRO Control stating situation and extent of injury, requesting an ambulance if necessary.
- Obtain name and address of the injured person and witnesses.
- Remain at the station for further instruction from Metro Control.
- Inspect any equipment failures which may have been the cause of the injury.

#### CONTROL

- Contact the appropriate fire district to request an ambulance.
- Assign the closest available Supervisor to investigate the injury.
- Request assistance from maintenance if equipment has failed.
- Notify the appropriate personnel.

#### SUPERVISOR

- Investigate injury.
- Confirm proper operation of equipment if needed.
- Aid the passenger until medical assistance arrives.

## EMERGENCY PROCEDURE CHECKLIST

### Serious Passenger Illness (Requiring Medical Aid)

#### OPERATOR

- \_\_\_\_\_ Notify METRO Control stating situation and extent of illness, requesting an ambulance if necessary.
- \_\_\_\_\_ Obtain name and address of passenger if possible.
- \_\_\_\_\_ Remain at the station for further instruction from Metro Control.

#### CONTROL

- \_\_\_\_\_ Contact appropriate fire protection district, requesting an ambulance if necessary.
- \_\_\_\_\_ Assign closest available supervisor to assist.
- \_\_\_\_\_ Notify the appropriate personnel.

#### SUPERVISOR

- \_\_\_\_\_ Assist the ill person until aid arrives.

**BOMB THREAT**  
(Code I)  
E.6.2

**Purpose**

These procedures were developed to provide an organized and expeditious approach in responding to bomb threats.

**Policy**

All bomb threats shall be considered as legitimate. The following procedures are to be followed in every case.

**Responsibilities**

Most transportation and maintenance employees will be assigned specific duties to react to a bomb threat. These designated employees are required to follow the bomb threat procedures immediately.

Operators - Each operator will be responsible for inspecting his/her LRV(s) upon arriving at the first station.

Supervisors - The primary responsibility of the supervisor will be to check the stations, substations, storage tracks, structures, ROW and to assist the operators with LRV inspections.

Maintenance - Will be responsible for inspecting the operations/maintenance facility as outlined in the procedures developed by the Sacramento Police Department.

RT Employees - Any employee which may receive a bomb threat by telephone is responsible to handle the call in accordance with the attached telephone procedures.

METRO Control - The controller will immediately notify the appropriate law enforcement agency or Police Services as dictated by the nature of the threat.

**Inspection**

All employees responsible for the inspection of vehicles or property must not transmit any message by radio until their designated area has been checked and found to be clear of suspicious articles. If there is suspicion of a bomb being present, the employee should report to Control by telephone or radio more than 300' from the suspect location.

Under no circumstances should a strange, suspicious object be handled. If a specific vehicle or location is a target of the bomb threat, or Control has any indication that the

passengers or employees' safety is in danger, the vehicle or premises shall be evacuated immediately. It may also be necessary for the operator to evacuate his/her train in order to properly inspect the vehicles. Transportation and maintenance employees will be trained in the proper inspection procedures to conduct a thorough search. METRO Control and/or Light Rail Manager or Transportation Superintendent will assign the supervisors to specific areas, and direct the operators in their duties. The Maintenance Supervisor on duty will designate those maintenance employees responsible for inspecting the Operations/Maintenance Facility.

### Evacuation

If a particular train is the target of a bomb threat (specific information as to time, location, etc.) an evacuation will be effected at the next passenger station and a thorough search will be conducted. Should a general threat be received trains will be inspected upon their arrival at the next passenger station. When a suspicious object is found, or there is reason to believe that immediate danger is present, evacuation will be required. This should be done in such a manner as to prevent panic or injury. The evacuation announcement should be in a calm and unexcited manner and passengers should be instructed to take personal belongings with them. Door selection should provide the passengers with the safest egress from the LRV(s).

Light Rail passengers should be evacuated at a station if possible. If the situation is urgent and passengers must be evacuated immediately, a suitable surface should be selected. Passengers should be assisted to a safe location at least 300 feet from the bomb location if possible.

If the situation requires evacuation of the Operation/Maintenance Facility, this should be done in an orderly fashion with employees leaving through the nearest direct exit. Employees will then assemble at the west end of the employees parking lot at least 300 feet from the building.

### RECEIVING THE CALL:

The call must be handled properly; there may not be a second chance at it. A typical procedure for the person receiving the call could be:

Keep the caller on the line as long as possible. Ask them to repeat the message. If possible, record the entire conversation.

Ask for the location of the bomb and time of detonation.

Tell the caller that the building/vehicle is occupied and that a bomb blast could kill and injure many innocent people.

Take careful note of all background noise, such as clinking glasses, music, dogs barking, motors running - anything that may be a clue to the location of the caller.

Listen closely to the voice and its characteristics. The temperament of the caller (calm, tense, excited) and his accent may be important information.

Report this information immediately to previously designated personnel, building supervisors, and police.

Obtain a description of the bomb.

#### AFTER THE CALL HAS BEEN RECEIVED:

Notify the Police Department, METRO Control Emergency line or 911, immediately.

#### THE SEARCH:

What to look for:

If a description of the bomb or its container has been given by the caller, than all that has to be done is to locate it. If not, you are looking for anything that is foreign to the area.

Lunch boxes  
Bags  
Briefcases  
Boxes

Experience indicates that employees, because of their intimate knowledge of the building, may be better able than anyone else to search the areas where they work.

Each area should be searched by teams of two who are familiar with the areas they are to search.

Divide the area in half and search first from floor to hip height.

Stand back to back and work around the areas toward each other.

Work from bottom up; after each round, move to the next height and repeat.

After searching walls, search in narrowing circles into the center of the area.

After each area is secured, it should be checked off of the Bomb Threat Location Check List (pg 28)

### IF A SUSPICIOUS OBJECT IS FOUND:

Under no circumstances should a strange, suspicious object be handled.

The find should be immediately reported to the person in charge.

The area should be evacuated.

### EVACUATION:

Probably the most difficult decision, one of which there is no magic formula for, is that of whether or not to evacuate the building in the event of a bomb threat. This decision is up to the person in charge of the facility. The more specific the information is regarding the bomb threat, such as train/LRV numbers, location, detonation time or responsibility for the threat, the less likely that the bomb threat is a hoax.

**BOMB THREAT  
TELEPHONE PROCEDURES**

INSTRUCTIONS: Be calm. Be courteous. Listen. Do not interrupt the caller.

Call received Date \_\_\_\_\_ Time \_\_\_\_\_ Call Completed \_\_\_\_\_

Exact words of the caller

What does it look like?

What kind is it:

Where did you place the bomb?

What is your name?

What is your address?

What is your phone number?

CALLER'S IDENTITY

Sex: Male \_\_\_ Female \_\_\_ Adult \_\_\_ Juvenile \_\_\_ Approximate Age

ORIGIN OF CALL

Local \_\_\_ Long Distance \_\_\_ Booth \_\_\_ From Within Bldg.

**VOCAL CHARACTERISTICS**

<input type="checkbox"/> Loud	<input type="checkbox"/> Intoxicated	<input type="checkbox"/> Fast	<input type="checkbox"/> Slow	<input type="checkbox"/> Other
<input type="checkbox"/> High Pitch	<input type="checkbox"/> Soft	<input type="checkbox"/> Distinct	<input type="checkbox"/> Distorted	
<input type="checkbox"/> Raspy	<input type="checkbox"/> Deep	<input type="checkbox"/> Stutter	<input type="checkbox"/> Nasal	
<input type="checkbox"/> Pleasant	<input type="checkbox"/> Other	<input type="checkbox"/> Slurred	<input type="checkbox"/> Lisp	

**LANGUAGE**

<input type="checkbox"/> Excellent	<input type="checkbox"/> Good
<input type="checkbox"/> Fair	<input type="checkbox"/> Poor
<input type="checkbox"/> Foul	<input type="checkbox"/> Other

**ACCENT**

<input type="checkbox"/> Local	<input type="checkbox"/> Not Local
<input type="checkbox"/> Foreign	<input type="checkbox"/> Region
<input type="checkbox"/> Race	

**MANNER**

<input type="checkbox"/> Calm	<input type="checkbox"/> Righteous
<input type="checkbox"/> Rational	<input type="checkbox"/> Angry
<input type="checkbox"/> Coherent	<input type="checkbox"/> Irrational
<input type="checkbox"/> Deliberate	<input type="checkbox"/> Incoherent

**BACKGROUND NOISE**

<input type="checkbox"/> Factory	<input type="checkbox"/> Mixed	<input type="checkbox"/> Voices
<input type="checkbox"/> Bedlam	<input type="checkbox"/> Traffic	<input type="checkbox"/> Airplanes
<input type="checkbox"/> Music	<input type="checkbox"/> Trains	<input type="checkbox"/> Party
<input type="checkbox"/> Office	<input type="checkbox"/> Animals	<input type="checkbox"/> Quiet

## BOMB THREAT LOCATION CHECK LIST

LRV	SUB	PASSENGER STATION	STRUCTURE
101 119	N6	Watt/80 (Upper)	Butterfield Oper/Maint Facility
102 120	N5	Watt/80 (Lower)	Tiber Arcade Creek Trestle
103 121	N4	Watt/80 (West)	Starfire Bee Bridge
104 122	N3	Roseville Rd.	Watt/Manlove Brighton Bridge
105 123	N2	Marconi/Arcade	College Greens 13th Street Yard
106 124	N1	Swanston	Power Inn Grand Avenue O.C.
107 125	F1	Royal Oaks	65th Street
108 126	F2	Arden/Del Paso	59th Street
109 127	F3	Globe	48th Street
110 128	F4	Alkali Flat	39th Street
111 129	F5	12th/I	29th Street
112 130	F6	Cathedral Square	23rd Street
113 131	F7	St. Rose of Lima	16th Street
114 132	Y1	7th/Capitol	13th Street
115 133	100		11th/O
116 134			8th /O
117 135			8th/Capitol
118 136			

## LETTER AND PARCEL BOMB RECOGNITION POINTS

Foreign mail, air mail, and/or special delivery.

No return address or poorly typed address.

Hand written address or misspelled common words.

Markings such as "Confidential" or "Personal".

Incorrect titles or titles with no name following.

Excessive weight or postage.

Lopsided or uneven envelope.

Rigid envelope, not flexible.

Excessive securing materials, such as tape, string, etc.

Protruding wires, tinfoil, or other materials.

Oily stains or other discolorations.

Any visual distractions.

Parcel Emitting noises, such as ticking or buzzing.

## LRV ACCIDENT E.6.3

### Purpose

These procedures will be used in identifying and responding to the various types of LRV accidents.

### Policy

Prevention of accidents of any type is the goal of the District. Should any accident occur, steps will be taken to aid the injured, mitigate disruption of service and establish cause.

### Responsibilities

Operator - The operator will notify Control of the incident, including extent of damage, injuries (if any) and location. Actions necessary to reduce or eliminate danger at the scene will be taken (i.e. lower pantograph, set out flares, flag traffic etc.) and obtain information.

Control - Control will dispatch necessary personnel to the scene and notify the appropriate personnel if the accident is determined to be serious. Should tracks be blocked, other operators must be notified, with steps taken to adjust service. Control will also be responsible for documentation of events.

Supervisor - The Supervisor will conduct an investigation of the accident and determine if the operator and/or equipment should remain in service. Control will also be advised and updated of the situations as necessary.

Training Section - LRT training will include defensive operating techniques which could mitigate the possibility of accidents. It will also identify situations which have proven to be high risk in other LRT operations.

### Non-Serious Accident (Code 2)

A non-serious accident shall be defined as an accident in which there are no injuries and vehicles involved are operational. It is the policy of the Sacramento City Police Department (SPD) to refuse investigation of non-serious accidents. There is an agreement with SPD however, that excludes RT from this policy. Normally, this type of accident will be investigated by LRT Supervisors. If there are suspicious circumstances such as intoxication, questionable damage or chance that injury will later be claimed, the appropriate law enforcement agency should be requested.

### Serious Accident (Code 3)

A serious accident is one that results in injuries or at least one of the vehicles involved requires a tow. The appropriate law enforcement agency will be requested to respond to these accidents for the purpose of an investigation.

### Statistic Review

Accidents will be classified as to severity, type and reason. This information will be reviewed periodically in an effort to identify patterns of accidents which can be eliminated through operational changes.

## EMERGENCY PROCEDURE CHECKLIST

Non-Serious Accident  
(No Injuries, Vehicles Operational)  
Code 2

### OPERATOR

- \_\_\_ Notify METRO Control stating situation.
- \_\_\_ Collect the necessary information from the other driver, witnesses and passengers.
- \_\_\_ Remain at the scene for further instruction from METRO Control.

### CONTROL

- \_\_\_ Assign the closest available Supervisor to investigate the accident.
- \_\_\_ Notify appropriate personnel.

### SUPERVISOR

- \_\_\_ Investigate the accident.
- \_\_\_ Advise METRO Control when service can resume.



## LRV FIRE E.6.4

### Purpose

The procedures followed in the event of a LRV fire are intended to initiate immediate response by the fire protection agency, protect passengers from injury and minimize damage to property.

### Policy

LRT personnel will normally be at the scene of a fire prior to the fire protection agency arriving. It will be the responsibility of these employees to take the initiative in responding to the situation.

### Responsibilities

Operator - Upon learning of an LRV fire, the operator will immediately:

- notify METRO Control
- evacuate the train
- lower the pantograph
- take action to extinguish or isolate the fire

METRO Control - METRO Control will be responsible for dispatching fire and RT assistance to the scene and informing all train operators of the problem. The controller will also make arrangements for supplemental transit service, should LRT operation be disrupted.

Supervisor - The supervisor shall assist the operator in getting passengers to a point of safety and extinguishing the fire. METRO Control should be advised of the situation as soon as possible. A thorough and concise report will be completed and submitted to METRO Control.

### Reporting the Fire

When notifying METRO Control of a fire, either a street address or milepost marker should be used to designate the location. METRO Control notification should occur while the operator is bringing the LRV to a stop. Once this has been done, the Pantograph will be lowered while concurrently evacuating the train. If the fire occurs at a location which is not accessible to emergency vehicles, the operator should attempt to proceed to the closest point where the LRV can be approached. This should only be done if passengers are not in danger. If passengers or others are in danger, evacuation must take place immediately.

### Determination of Passenger Safety

When attempting to determine if passengers are in danger, employees should take the safest course of action. If the fire or a suspicion of a fire occurs at an inaccessible location and the operator is unsure if he/she can proceed to a better location, evacuation should be exercised.

In evaluating the hazards of continued operation versus evacuation, those things considered should be:

Will injuries incurred during evacuation because of terrain, adjacent hazards or longer response time to the injured, be greater than if the train continues?

Is injury from smoke inhalation possible or is smoke confined to outside of the LRV?

Is the operator totally aware of the dangers (e.g. is fire on first car or trailing LRV's)?

### Controlling the Fire

Only after all passengers have been moved to a point of safety should the employee attempt to combat the fire. If the on board extinguisher is ineffective, isolation of the fire should be attempted. This can be done by uncoupling the remaining cars and moving them away from the blaze.

The employee should take these and any other steps possible to mitigate the effects of the fire. However, at no time should the employee put themselves in danger of being injured.

## EMERGENCY PROCEDURE CHECKLIST

### LRV Fire Code 5

#### OPERATOR

- \_\_\_ Notify METRO Control stating situation and injuries, if known.
- \_\_\_ Evacuate the train, using the internal PA for announcement.
- \_\_\_ Lower the pantograph.
- \_\_\_ Assist the passengers to a safe location.
- \_\_\_ Extinguish the fire, if possible.

NOTE: The train should be operated to a station or accessible location if this can be done without endangering the passengers and the LRVs uncoupled to prevent the fire from spreading to other vehicles if possible.

#### CONTROL

- \_\_\_ Notify the appropriate fire protection agency, requesting an ambulance if required.
- \_\_\_ Assign all available supervisors to the scene.
- \_\_\_ Request assistance from Maintenance if there is LRV damage.
- \_\_\_ Notify the appropriate personnel.

#### SUPERVISOR

- \_\_\_ Confirm that the operator has followed all emergency steps.
- \_\_\_ Extinguish the fire if possible.
- \_\_\_ Assist injured passengers.
- \_\_\_ Investigate the fire.
- \_\_\_ Advise the controller of the situation.

## CIVIL DISTURBANCE E.6.5

### Purpose:

These procedures were developed to provide guidelines for RT employees to follow in the event of a civil disturbance.

### Policy:

Any RT employee observing a disturbance shall report it to METRO Control as soon as possible. METRO Control will then take immediate and appropriate action in an attempt to alleviate the disturbance.

### Civil Disturbance Defined:

Any use of force or violence, disturbing the public peace, or any threat to use such force or violence, if accompanied by immediate power of execution, by two or more persons acting together, on RT property, and without authority of law, is a civil disturbance.

### Responsibilities:

#### Observing employee

Upon learning of or suspecting a disturbance the employee will immediately notify METRO Control giving the following:

- Exact location
- Type and severity of disturbance plus number of persons involved
- Whether or not weapons are involved and type of weapons
- Injuries (if any)
- Emergency agencies required
- Whether or not a disruption of service has occurred
- Description of individuals involved.

#### Operators Actions

When train operators witness a disturbance, the operator must determine to the best of his/her ability the extent of injuries if any. After notifying METRO Control of the nature of this disturbance as outlined above, names of the injured and any witnesses should be obtained. The number 1 priority is the well being of the RT passengers and RT personnel. If safety is threatened, the train should be moved to a station or another readily accessible location. Notify METRO Control of new location and standby for assistance or further instructions. Any delay must be announced to passengers using the inside PA.

When the supervisor arrives, he/she will do the following:

Assist any injured passengers  
Oversee safety of employees  
Keep in constant communication with METRO Control  
Advise METRO Control of any change in status of situation  
Assist with getting service back to normal  
Complete a detailed Incident Report

### METRO Control

Upon being notified of a civil disturbance, METRO Control will immediately take the following action:

Contact appropriate Emergency Service Agencies based upon need...Police, Fire, Ambulance etc.

Dispatch supervisors to location

If there is a disruption of service the following steps will be taken:

- (a) determine impact of disruption
- (b) notify all trains of disruption
- (c) take immediate action to alleviate disruption which could include any or all of the following; adjusting all schedules, turn back of trains, arrange for supplementary bus service, switching operators on trains, etc.

### Disturbance On Board LRV

Upon learning of an on board disturbance, the operator should determine the severity of the disturbance to the best of their ability. If the passengers' safety is in danger the LRV(s) should be evacuated in accordance with the emergency plan. METRO Control must be notified immediately requesting the appropriate assistance. The operator should then take whatever steps possible to protect persons and property. If passengers are not in immediate danger the operator should proceed to the nearest station and open all platform side doors. Assistance should be requested immediately and passengers informed of the delay using the internal/external PA.

### Disturbance Outside of the LRV

Upon learning of or suspecting a civil disturbance outside of the LRV, steps must be taken to prevent damage to District property and protect passengers on board the vehicle. The operator should stop short of the disturbance if he/she believes that approaching the scene may be dangerous.

If the operator learns of a disturbance at a station and it is safe to do so, he/she should operate through the station without making a passenger stop. METRO Control must be notified immediately and a PA announcement made to provide an explanation to those passengers who wanted to alight at that station.

## Emergency Procedure Checklist

### Civil Disturbance

#### OPERATOR

- \_\_\_ Notify METRO Control stating situation and extent of injuries and damage, requesting an ambulance if necessary.
- \_\_\_ Collect any information possible from passengers and witnesses.

#### CONTROL

- \_\_\_ Notify proper emergency agency.
- \_\_\_ Notify all train operators.
- \_\_\_ Assign closest available supervisor to investigate disturbance. If further assistance is required, an additional supervisor will be assigned.
- \_\_\_ Notify designated personnel.

#### SUPERVISOR

- \_\_\_ Investigate disturbance
- \_\_\_ Assist the injured until aid arrives.
- \_\_\_ Assure safety of employees and passengers.

## DISASTER DRILLS E.6.6

### Purpose

These procedures were prepared to establish guidelines in conducting emergency simulations within the RT METRO system.

### Policy

Disaster drills will occur as needed with local emergency response agencies. The primary intent in conducting these drills is to provide training to the participants. Emergency simulations will be conducted annually to test the readiness of the Light Rail Department in responding to unannounced, mock situations.

### Responsibilities

Superintendent of Transportation -

The Superintendent is responsible for scheduling, defining the scenario and evaluating the effectiveness of the emergency drills.

RT Personnel -

Employees will be required to assist with or participate in disaster drills as necessary.

### Drill Notification

A notice establishing the date, time and location will be prepared prior to each drill. This notice shall identify the type of disaster and scenario of events. Also included will be a list of participants and facilities necessary to execute the drill. If applicable, the notice will establish a time when the drill is terminated regardless of progress to avoid any conflict with revenue service.

### Liability Release

Any person who is not a participant in the drill will be required to sign a release of liability. Once the release has been completed, that person may be allowed to observe the drill at the discretion of the Superintendent. If a request to observe the simulation is made by a person under 18 years of age, a parent or guardian must endorse the release. The release form is attached as Exhibit A.

### Drill Scope

Disaster Drills may include the participation of any public service, group or business which would normally be involved in a real disaster. It is important to involve as many of these agencies as possible to develop the coordination necessary in responding to an RT emergency. To fully benefit from the disaster simulation it may be valuable to request assistance from an agency which has not been alerted ahead of time on the drill details. Approval for surprise drills in which briefing has not taken place with the actual participants requires approval by the outside agency's proper authority.

### Drill Critique

Once a drill has been completed, a thorough evaluation should be done. By reviewing the sequence of events, a method to identify problems and solutions will be developed. To aid in this process, it is important to document all times and events which occur relevant to the drill. Situations in which problems exist should be included in subsequent drills until performance is satisfactory.

LIGHT RAIL  
ACCIDENT INVESTIGATION PLAN

**E.7.31**  
**INTRODUCTION**

Why do we investigate an accident? All accidents are a caused occurrence. Many factors may contribute to the occurrence: human error, equipment malfunction, weather conditions, vision obstructions, improper or missing warning signs, and many others.

We investigate accidents to establish the contributing factors and document them, thus determining how to prevent a reoccurrence. Regardless of how minor an accident may seem, we must always remember that criminal and civil litigation may come about and the thoroughness of our investigation will be of the utmost importance.

The objectives are to standardize the methods and procedures that will be used to investigate an accident. Subjects to be covered in this plan are as follows:

- The collection of information - A standard method of entering the information on the accident report has been established. Physical evidence must be preserved and interviewing techniques standardized.
- Using diagrams - Whenever possible, the diagram needs to be to scale. If the size of the area makes this impractical, distances and sizes should be in proportion to each other. The location of all items in the collection of information need to be included in the diagram.
- Impairment recognition - The investigator must maintain the ability to recognize possible drug or alcohol abuse on the part of any person involved in the accident. He/she must know what to do if abuse is suspected and what the legal and contractual limitations are.
- Other contributing factors - The weather conditions at the time of the accident must be recorded and defects of any equipment must be noted.

Description of any obstructions to visibility of signals, signs, traffic movements and other elements must also be noted.

- Narrative - Separate facts from hearsay and opinions by using photographs to record facts and to supplement diagrams.
- Cause analysis/opinion/conclusions - are based upon all of the facts, evidence and statements that have been compiled. Opinions and conclusions as to the cause of the accident will determine how to prevent a reoccurrence of this type of accident.

During the collection and recording of all the factors involved in the investigation of an accident, one thing must be remembered: The severity of the accident does not determine the extent of the investigation. All points must be covered. The difference between a serious and minor accident investigation should only be the length of time it takes to collect and record all factors. Litigation is always possible, regardless of severity.

**E.7.32**  
**INFORMATION COLLECTION**

Information collection is the single most important aspect of an investigation. A viable plan to gather data/evidence is absolutely necessary to lend order to a situation. The plan must provide clear, concise instructions on what to do and when to do it. Do not forget, the first priority at any mishap is to save lives and prevent injury and property loss. In the following paragraphs a recommended plan of gathering evidence is described:

- Arrive safely at the scene. Do not be in such a rush to arrive that you endanger yourself and others. Drive safely. Know exactly where you are going and what you will need when you arrive. Take time to gather your investigation tools. Arrive at the scene prepared to go to work including having a high visibility vest readily available if it is required at the incident scene. The first arriving Supervisor shall be the Reporting Supervisor (R.S.) and will assume command of the investigation.
- Observe and analyze the situation as you approach the scene. Look for dangerous obstacles, action needed to protect lives, property and evidence that must be preserved. Notify METRO Control upon arrival. It is also important to frequently update Control. Request the following as needed before the investigation begins:
  - EMS (Emergency Medical Service)
  - Law Enforcement
  - LRV Maintenance
  - Wayside and Equipment
  - Supervisors
  - Utilities and Street/Signal Repair
  - Hazardous Material
- Take a brief preliminary statement from the RT Operator. If this cannot be accomplished at the scene, a supervisor should meet the operator in route to obtain a statement as soon as possible.
- Care for the injured and protect others from harm and from interfering with

the investigation process.

- The R.S. shall take charge of gathering information and assign employees to specific tasks such as taking photos and/or interviewing witnesses. It is important to begin the investigation as quickly as possible but do not interfere with the public safety services. Do not conduct your preliminary investigation until the scene is secure. If flares are necessary to secure the scene to insure that they are ignited safely and placed properly.
- Gather short-lived or transitory evidence first by taking photos and marking locations of vehicles. The following are some good examples of transitory evidence:
  - Skid marks
  - Scuff marks
  - Some fluids
  - Scattered debris
  - Sand
  - Resting locations of involved vehicles
- Check inside all vehicles involved for position of controls, defects, food, drinks, and tobacco products that may be in the driver's area.
- Inspect the outside of vehicles for both old and fresh damage, condition of tires, defects, paint transfer, clothing and flesh transfer.
- Determine the Point of Impact (POI) and/or Point of Damage (POD).
- Take measurements from fixed reference points.
- Sketch a rough diagram of mishap site including as much of the above information as possible.
- Interview witnesses utilizing the field statement cards. Statements shall be taken from the following:
  - Driver(s) of other vehicles.
  - Passengers of all vehicles involved.
  - Eyewitnesses.

- RT Operator.
- Interviews should be done as soon as possible at the scene. The witnesses first impression will probably be more accurate than testimony given at a later time.
  - Witnesses should be interviewed out of hearing distance of other witnesses and onlookers.
  - Avoid using the word "witness". Rather than asking someone if they were a witness, it may be better to ask them if they have any information that would assist in determining what or who caused the accident.
  - It is important that the witness understands who you are, who you represent and what it is you are trying to find out.
  - Approach the witness in a positive manner.
- Conduct an effective interview.
  - Courtesy is important - If the investigator becomes rude or abusive, the witness will "turn off" or "hold back". Get the interview off on the right track by putting the witness at ease and establishing a good rapport.
- Be patient - An interviewer may have to ask the same question more than once. If a witness has problems remembering details and senses that the investigator is becoming impatient, the witness may terminate the interview or become so frustrated that recall of details can no longer be possible.
- Ask good questions.
  - Stimulate the witness's thinking process.
  - The perceived intelligence of the witness will have an effect on the type of questions asked.
  - Most questions should be asked in such a manner that a "yes" or "no" answer is required.
  - The investigator should ask questions that will answer the who, what, when and where as they relate to the accident.
  - Keep questions objective rather than subjective. For example, ask "Did you see any broken glass or lights at the scene?", instead of "Did you see the broken tail lights?"

- Do not let the interview become an interrogation.
- Do not lead the witness.
- Take Notes.
  - Explain to the witness that the purpose of taking notes is to accurately record details.
  - Try to be as unobtrusive as possible. If the witness becomes distracted, discontinue note taking.
  - Note key words to help you recall details.
- Use a recording device, if you desire.
  - If used, permission should be obtained from the witness.
  - Make a statement on the tape as to the date, time, location, name of witness, the accident and that the witness is aware of the recording.
  - Written statements, whenever possible, should be solicited to support witnesses' narrative comments.
- The following are factors that affect witness reporting.

### Intelligence

- No witness should be overlooked because of apparent lack of intelligence.
- A less intelligent witness may have a problem with recalling details.
- A less intelligent witness may be unable to organize their thoughts and present their observations in a coherent manner.
- Exercise patience and courtesy during the interview of less intelligent witnesses and be prepared to change vocabulary to fit the situation.
- Do not overlook children, but when interviewing it is recommended that a parent or guardian give permission and be present.

### Emotion

- Be prepared for emotion, excitement and exaggeration. Exaggeration is likely to creep into the testimony if the witness repeats the observation several times.

### Transposition

- Transposition is a common witness problem where the relative place or normal order of events information is changed.

### Environmental Factors

- Witness reporting can be affected by many environmental factors, both during the interview and at the accident.
- Precipitation, fog, dust or darkness may have restricted or limited the details that the witness claims he/she saw.
- It should be determined whether or not there was glare at the time of the accident, whether caused by lights, sun, wet pavement/rails, ice or snow.
- Determine if there were any distracting noises.

### Physiological Factors

- Coping with stress - An operator who can cope with stress, or at least recognize a stressful condition, is less likely to have a human error mishap than an operator who cannot cope with or recognize stress. It may be necessary to determine what sort of stress the operator or witness may have been under prior to the accident. Did the operator or witness recently experience any changes, good or bad, in his or her daily lifestyle?
- Be alert to the signs of drug and alcohol use/abuse and try to determine if drugs or alcohol were a factor to the accident.

In summary, a good interview can assist the investigator in determining if the other types of evidence support the interview results. It may turn up clues or suggest other areas to be investigated. Remember that interviewing is a communication skill and patience and courtesy in conducting interviews can gain useful information to assist in the investigation.

### Fill Out an Occurrence Report Form

#### Occurrence/Accident Form Entries

- The field check list is a pocket sized check off list to be used by the investigator as a quick reference to assure that all necessary evidence is collected at the scene.
- All entries shall be entered using black ink.

- Every space should have an entry, if it does not apply, enter N/A.
- Employee name section is for the employee involved or observing an incident. It is not for the R.S. to enter his/her name unless they were involved. The R.S. enters his/her name in the space labeled "Name of RT Investigator" and signs the report at the end of the narrative section.

**E.7.33**  
**NARRATIVE/SUMMARY**

The purpose of the narrative/summary is to present facts and information collected during the investigation in an organized concise manner. The narrative is broken down into four components; facts, physical evidence, statements and opinions/conclusions. This not only helps the R.S. to organize material, but assists the reader in finding specific information.

In the first section of the narrative, the R.S. will record FACTS that are relative to the accident scene.

- Times affecting the R.S.'s response should be noted. Document the time and location that the call is received as well as the time of arrival upon the scene. Response time is especially pertinent in cases where evidence has been moved or parties involved have left the scene.
- A description of the accident location should include the number of lanes and direction of traffic, the location and direction of tracks, and the type of traffic/train controls present. In addition, it should be noted if surfaces are in good or bad condition.
- The position of the vehicles involved should be identified upon arrival as they relate to the point of impact (POI) or as they are shown in the accident scene diagram. Refer to trains as V-1 and all other vehicles in sequential order beginning with V-2.

In the second section, the R.S. will document PHYSICAL EVIDENCE resulting from the accident.

- Briefly describe vehicle body damage, making note of any damage that may have been present before the accident.
- Briefly describe any property damage.
- Tire skid marks and sand left on the tracks should be measured and evaluated. R.S. should inspect condition of tires and the level of sand left in boxes if they are suspected of being defective.

- Any injuries or complaints of injury should be described. Also, document if drugs or alcohol use is suspected of either driver.
- List any malfunctioning traffic/train controls and describe the defect.

In the third section, the R.S. will summarize STATEMENTS of individuals at the scene of the accident.

- Obtain statements from drivers, witnesses and police. Substantiate statements if possible, i.e. check horns, turn signals, operating controls, etc.

In the fourth section, the R.S. will present his/her OPINIONS/CONCLUSIONS.

- State conclusions based on consistencies or discrepancies between the facts, physical evidence and statements. Additionally, consideration should be given to the possibilities of visual impairments, equipment failures/defects, rule/procedure violations and vehicular law infractions. Opinions/conclusions should be an attachment to the report as a separate narrative section.

## **E.7.34** **PHOTOGRAPHY**

Photography is a very important component of an accident scene investigation. With a photograph, you, the investigator, have the ability to stop time shortly after the accident has occurred for later review. Not only do you record the resulting accident damage, but also:

- Lighting Conditions
- Weather Conditions
- Signal Functions
- Witness Views
- Mitigating Factors

As an accident scene investigator, it is critical that you maintain objectivity in your photography. It would be easy to slant the course of the accident investigation with photography. Photographs can record what the investigator sees at the accident scene at the time and also records what the investigator did not see. Clear and concise photographs support a thorough accident investigation. Photographs are a simple way to record facts and describe the accident scene better than words, but they are no substitute for the written report.

### **The Camera**

As an accident scene investigator for Sacramento Regional Transit, you will use either the Fuji Discover or the Minolta Freedom 200 35 MM cameras. Both cameras are rear loading data back units which utilize quartz technology. To use the Freedom or Discovery, simply expose the lens by moving a lever located either below the lens or to the right side of the lens, aim through the viewfinder and depress the red shutter release button located on the top of the camera. Also located on top of the camera is the exposure counter. Both cameras automatically monitor light levels and supply flash strobe when needed. The Freedom will automatically rewind the film when you reach the end of the roll. To rewind the film in the Discovery, simply flip the film rewind switch located on the back of the

camera to the right of the viewfinder. Both cameras will accept 35mm rolls of film of any speed from 12 to 36 exposures.

### Measuring Tools

It is important to establish the size and scope of the accident scene. By photographing vehicle damage in relation to other vehicles, signage, pedestrians, etc., you give some idea of the extent of damage. Accidents resulting in slight damage may be illustrated by having a bystander point out the damage, or use tape, chalk or grease pencil to outline the damage. You can show the height of damage on a vehicle by having a bystander hold a tape measure vertically at grade.

### The Accident Scene

Photograph everything. Begin by establishing the scene, photograph the surrounding areas and weather conditions showing grade crossing, intersection, driveways, alleys, etc. Examination of wreckage, showing vehicle placement in relation to wayside signals, traffic signals, switches, etc. Photograph all vehicles involved showing LRV number, license plate, accident damage, prior damage, vehicle interiors and undercarriage. Photograph any individuals who may have been involved in the accident in order to verify any claim that may be made later. Photographs taken at the scene will also indicate time of day and weather conditions. Good, clear photographs are an invaluable accident investigation tool. Never be concerned about taking too many photographs. It is always better to take too many photographs than not enough.

### Planning the Photograph

As you look through the viewfinder, take a second to consider what will be in your photograph. Your photographs will record the final position of vehicles, damage to vehicles and structures in the area. In addition, debris or marks at the point of impact will also be recorded. Photographs can also show the view of the drivers and any witnesses. Check to make sure your camera is level. Is the picture free of obstructions? Is the camera recording the scene as it occurred? Are there unnecessary distractions in the photograph?

### Photographs to Prove and Record Observable Facts

Photographs can establish the tone of the accident investigation by recording observable facts at the scene. Was the signal system functioning correctly? Was there an open container of alcohol on the driver's seat of the number two vehicle? Note the number of passengers in the number three vehicle. Note prior accident damage. What was the condition of the tires on the number two vehicle? Take the time to photograph the scene completely, as the photograph not only records what you see, but also what you don't see at the accident scene.

### Record Normal Conditions

Photographs also record normal conditions. They can note that the view was not obscured, all signs and signals were in place, and some parts of the involved vehicles were not damaged.

### When to Take Photographs

Begin to take photographs as soon as the accident scene stabilizes. If more than one supervisor is present, assign one individual to take all of the photographs. Prioritize the scene and photograph the items that will change first, such as injured passengers who will be receiving first aid at the scene and then transported to the hospital, or vehicles which will be towed from the scene.

### Identification of Photographs

Use only one accident per roll of film. Place exposed roll of film in envelope, mark date, time, train number, operator and location. Staple to Supervisor's accident report and submit to Transportation Superintendent for review.

### Film Processing

Several problems exist with the current handling of exposed film. The first results when the accident investigator does not get the opportunity to review the finished product as exposed rolls of film are sent directly to Risk Management for processing. The second problem that exists is identifying photographs that are relative to a particular accident.

Whenever possible, the investigator should make arrangements to examine photographs which have been developed to assure that the pictures are properly focused and depict the necessary information. Photo identification can be accomplished by imprinting the hour and minute on the photo. This imprint will serve as a reference number to identify specific photos which have been listed on the Accident Photograph Identification Card. The identification card must be included with the undeveloped film when it is forwarded to the Risk Department for processing.

**E.7.35**  
**ACCIDENT SCENE DIAGRAM**

The purpose of the accident scene diagram is to convey a clear, concise and detailed picture of what transpired. The diagram should include:

- Vehicles Involved
- Direction of Travel
- Traffic/Railroad Controls
- Streets/Crossings
- Measurements
- Point of Impact (P.O.I.)
- Any other pertinent aspects of importance

Vehicles Involved

Vehicles showed in the diagram should be clearly identified as the RT vehicle (V-1), with all other vehicles involved or which contributed to the accident appropriately designated (V-2, V-3, etc.) The location of these vehicles at the point of impact and their path prior to impact should be indicated.

Direction of Travel

The direction of travel should be shown from the point where their movement was relevant to the accident.

Traffic/Railroad Controls

Traffic controls include signal lights, signs, islands, medians, street delineations or any other device which restricts or impacts traffic flow. Any railroad signals which may have contributed to the accident, in addition to those signals within the limits of the accident scene, must be identified.

Street/Crossings

Streets and crossings must be shown and identified. Use location address if available.

## Measurements

Measurements taken at the scene should include lane and street width, tire skid marks and evidence of sand dropped, etc. These distances are measured from a specific reference point.

## POI

Point of impact is included. Look for debris in the street. The impact may break loose vehicle parts and dirt from the undercarriage.

## Pertinent Aspects of Importance

Include any other pertinent aspects of importance.

Have a pen, pencil, clip board and paper with which to draw your diagram. You will need a tape measure or you can utilize the pace method. Drawing aids are useful, such as: template, protractor, ruler and chalk.

## E.7.36

### CONTRIBUTING FACTORS

The purpose of investigating contributing factors is to analyze causative reasons and to determine if the accident may have been preventable. This has been broken down into four sections; human aspects, weather, scene hazards and equipment failures and malfunctions.

#### Human Aspects

The first section which shall be considered is human aspects. Some of these concerns may be readily apparent upon arrival at the scene of an accident while others will require additional investigation by the R.S.

- The attention of the operator may have been diverted by an authorized or unauthorized person in the cab or by a passenger in the other vehicle.
- Excessive stimuli may have caused an operator to have his/her attention diverted. For an LRV operator, this may have been crowded conditions on one of the malls giving the operator multiple hazards to avoid. A construction zone could cause the same type of a problem, as could a previous accident scene. In the other vehicle, the radio may have been too loud or the driver may have been paying excessive attention to his/her passenger(s) resulting in a lack of concentration.
- The performance of a non-driving function may have contributed to the cause of an accident. Examples might be reading while driving, eating/drinking, interacting with passenger(s) or other R.T. employees.
- The operator of the other vehicle may have been unfamiliar with local regulations or with street design. This is especially a hazard along the 12th Street corridor where the problem is exacerbated by transient foot traffic and wrong-way drivers.
- The medical condition of either operator may have to be considered. The apparent reasons may be a stroke, heart attack, seizure or possible allergic reaction. Medication may have caused drowsiness, impairment of judgement or other unusual side effects.
- The use of controlled/uncontrolled substances may also need investigation. Empty

container(s) in the vehicle and the smell of alcohol would give the R.S. cause to conclude that this fact was a major contributor to the accident. Drug related behavior may also require investigation. (Refer to impairment recognition Section VI.)

- The number of hours an operator has been on duty may be of significance. Consecutive days on duty may also be a contributing factor in this area of concern.
- Because of a significant amount of single track, schedule adherence may be a causative factor. The R.S. may want to check for late train(s), number of LRVs in consist, 15 minute service versus 30 minute service, and peak versus non-peak service.
- Violation of rules, procedures and applicable laws play a major role in determining cause/preventiveness. Signal aspects, both light rail and/or traffic, may have been violated, speed limits and signs ignored, gate crossings run and bulletins/advisories forgotten. Pedestrians may have been jaywalking or trespassing on exclusive R.O.W.

### Weather

Weather is another factor which in some cases, depending on the time of year and time of day, could play an important part. A reliable source of information, depending on the particular concern involving the weather, is the National Weather Service which is open from 8:00 a.m. - 4:00 p.m., Monday through Friday, phone number 442-1468.

- The time of day, especially during the hours of sunrise and sunset, could impair visibility.
- Hot summer days could create heat waves/mirages causing an impairment of judgment.
- In extremely cold temperatures, ice on the railhead may effect stopping distance. This contributes to excessive sand being dropped by the operators which becomes a silicate also contributing to extended stopping distances.
- Humidity and precipitation not only reduce visibility but also directly affect optimum traction motor efficiency, as well as increasing braking distance.

### Scene Hazards

When checking the R.O.W. and the immediate area, there are scene hazards which may become evident through design faults or which may have occurred through some

unforeseen phenomenon.

- Construction sites quite frequently contribute to scene hazards by causing increased noise levels and constricting pedestrian R.O.W.
- E/H ramps can frequently hide or disguise pedestrians.
- Buildings and large vehicles hamper visibility.
- A crime scene, whether in the LRV or on or near the R.O.W., can become a contributing factor by creating a distraction or creating a multiple hazard situation.
- Prior accident scenes along with the resulting emergency equipment, police and crowds can cause the same type of problems as a crime scene.

### Equipment Failures and Malfunctions

Equipment failures and malfunctions may possibly be the single item which is the most preventable and rectifiable prior to the occurrence of an accident. This is not to infer that they can be totally prevented, but that they are the least impacted by circumstances which are not within the operators control.

- An operator reported malfunction may instead be an operator error. This type of causative factor may require an equipment check by maintenance personnel and, as a follow up, certification of operator equipment familiarization, training records and notification notices.
- Obvious problems are dirty windows, inoperable horn or gong, dirty headlights, burned out marker lights, broken microphone and/or microphone cord, unadjustable seat, broken shade, etc. In most cases these problems can be certified by the R.S. at the accident scene if suspected to be a causative factor in an accident.
- Problems may also arise through poor design which may not have been evident until actual operating conditions were encountered.
- Regularly scheduled maintenance, especially on a vehicle as sophisticated as an LRV, must be adhered to rigorously.

### **E.7.37**

## **CAUSE ANALYSIS**

In determining the cause of an accident or prevention recommendations, the following data will be the key elements which are to be considered:

- Equipment Characteristics
- Human Factors
- Visibility
- Geographic Location
- Comparisons of similar accidents

It must be recognized that these are common elements which apply to almost all accidents.

When determining the cause of an accident which is unique or unusual, additional elements may need to be considered.

### **Equipment**

When evaluating the equipment aspect of the accident, consideration must be given to the characteristics of the vehicles involved (LRV, car, truck, bus, etc.). Braking distances vary depending on the vehicle type and should be verified against the reported speeds.

Wayside/LRV Maintenance records should be reviewed to determine if previous failures/repairs occurred or recent modifications have been made to the vehicle and/or

Wayside equipment which may have contributed to the accident. Additionally, the investigator must not rule out the possibility that an equipment failure may have occurred at or leading up to the time of the accident.

## Human Factors

The human factors which may surround an accident are varied as to type and to what extent they contribute to the collision. Generally speaking, the employee record should always be reviewed to determine if a particular type of accident is reoccurring. The number of hours on duty or consecutive days worked may also be a contributory factor.

If the employee is operating late or is in a hurry, this should raise questions as to what part this condition played in the resulting accident. In assessing the human factor aspect, additional reference should be made to the "contributing factors" section of the accident investigation plan.

## Visibility

In determining what extent visibility had in an accident, the investigator should consider both the physical condition of the scene and the possibility that an unsafe practice may have contributed to reduced visibility. The physical conditions may include natural, man-made or temporary visibility obstructions.

Look for shadows or sun glare; trees, signs, parked vehicles, etc.

Consider the possibility of a procedure/rule violation. Was another person in the cab? Are articles on the dashboard hindering visibility? Was the general (basic) speed rule followed?

## Geographic Location

Several factors regarding the geographical location need to be considered. What are traffic, pedestrian and passenger conditions at this location during this time of day? (Consider again shadows, glare or seasonal blind areas). Evaluate the track condition (wet, dry, oil or leaves), any construction, or new surface. Does this location have any

unique or seasonal weather conditions? Research past LRT and non-LRT accidents at this location - are there any similarities?

### Comparisons of Similar Accidents

Compare similar accidents. Does weather play a role in this type of accident? Is there a pattern to the type of vehicle involved? Station loading and unloading accidents should be based on the uniqueness of the station. Speed and braking distances should be compared to similar accidents. Look for patterns or frequency. Does an operator have a pattern of accidents (passenger falls)? Is there a pattern of similar accidents at this location?

Cause analysis is not an exact science, but an interpretation of data. A working knowledge of the system and a comprehensive understanding of the area involved is necessary. Cause analysis is intrinsically intuitive.

### **Prevention Recommendation**

Recommendations for prevention should be included in your investigation. A temporary solution may be beneficial until a long term or permanent remedy is provided. The investigator should make recommendations of corrective actions that would prevent any further occurrences of this type. Long term recommendations should include the most obvious remedies to the most creative.

## SIEMENS U2A LIGHT RAIL VEHICLE

### STANDARD STOPPING DISTANCES

(Provided by LTK Engineering - R. Franzen)

- FULL EMERGENCY BRAKING (Dynamic, Friction, Track and Sand)

<u>SPEED</u>	<u>BRAKING DISTANCE+</u>	<u>*REACTION TIME=</u>	<u>TOTAL</u>
15 Mph	39 Feet	16 Feet	55 Feet
20 Mph	65 Feet	21 Feet	86 Feet
25 Mph	92 Feet	27 Feet	119 Feet
30 Mph	126 Feet	33 Feet	159 Feet
35 Mph	186 Feet	38 Feet	224 Feet

- FULL SERVICE BRAKING (Dynamic and Friction)

<u>SPEED</u>	<u>BRAKING DISTANCE+</u>	<u>*REACTION TIME=</u>	<u>TOTAL</u>
15 Mph	41 Feet	16 Feet	57 Feet
20 Mph	73 Feet	21 Feet	94 Feet
25 Mph	115 Feet	27 Feet	142 Feet
30 Mph	165 Feet	33 Feet	198 Feet
35 Mph	225 Feet	38 Feet	263 Feet

\* Reaction time figures are from the California Highway Patrol. They are typical for the non-professional automobile driver.

The following tables reflect braking distances that convert to rates described in General

Order No. 143A, (4.03) in accordance with the requirements of this section.

Full Braking Distances

Total Observed Stop Distances  
(in feet)

<u>Initial Speed</u> <u>(mph)</u>	<u>@ 3.0</u> <u>mphps</u>	<u>@ 3.5</u> <u>mphps</u>	<u>@ 4.0</u> <u>mphps</u>
55	740	634	555
50	611	524	459
45	495	424	372
40	391	335	293
35	299	257	225
30	220	189	165
25	153	131	115
20	98	84	74
15	55	47	41
10	25	21	19
5	7	6	5

Emergency Stopping Distance

Total Observed Stop Distance

<u>Initial Speed</u> <u>mph</u>	<u>Total Distance</u> <u>(feet)</u>
55	516
50	419
45	332
40	254
35	186
30	126
25	93
20	65
15	39
10	21
5	

**E.7.38  
CRITICAL INCIDENT DEBRIEFING**

The Critical Incident Debriefing Service is available for employees whose life has been placed in mortal jeopardy or have been traumatized. Examples of such situations include; crashes, shooting, fatality, or other trauma sustained during the course of duty.

The procedure in utilizing the OHS Critical Incident Debriefing Process is as follows:

1. An RT supervisor/manager calls OHS (1-800-227-1060) to report an incident has occurred.
2. An intake specialist will answer the telephone, take some basic information, and contact by beeper a critical response team member.
3. The response team member will discuss the incident with the RT supervisor/manager and make decisions as to who should be seen for a debriefing and where and when this should occur.
4. The response team member will locate an appropriate clinician to provide the debriefing and advise the RT supervisor of the debriefing time and location. The RT supervisor will advise the traumatized employee(s) of the time and date.
5. After the debriefing is completed, the OHS response team member will contact the RT supervisor/manager to report attendance. No other information will be disclosed.

The critical incident debriefing is designed to assist traumatized employees with the emotional impact of a critical incident. Debriefings are NOT to be mistaken for fitness for duty evaluations.

A critical incident debriefing will typically occur twenty-four to seventy-two hours after an incident. This time frame is believed by OHS to be the most beneficial to the traumatized employee(s).

If more than one employee is involved, a group session is typical. If one employee is impacted, the session is similar to a one-on-one counseling session and takes place in a counselor's office. With group debriefings it is common to schedule such at a work location rather than in a counselor's office for convenience of those involved and space considerations.

If the counselor assigned to the debriefing feels there is a need for the employees(s) involved to be seen again, the counselor will discuss this with the employee(s). Management referral or self-referral sessions can be utilized for continued counseling. The length of the debriefing session depends on the number of employees participating. Typically, one employee takes about one (1) hour. Group sessions can take up to two (2)

hours.

## CRITICAL INCIDENT STRESS RESPONSE

1. Immediate Reaction
  - a. Anxiety
  - b. Dejection
  - c. Helplessness
  - d. Frustration
  - e. Anger
  - f. Irritability
  - g. Feelings of inadequacy
  - h. Sense of being part of a bad dream
  - i. Confused/disoriented
  - j. Easily overwhelmed
  - k. Difficulty making decisions/problem solving
  - l. Difficulty differentiating between important and trivial items
  - m. Memory problems
  - n. Distortions in time perspectives
  - o. Denial
  - p. Knot in stomach
  - q. Nausea
  - r. Emotional numbing
  - s. Palpitations
  - t. Mild to moderate muscle tremors

- u. Sweating
- v. Gastrointestinal cramps
- w. Muffled hearing
- x. Headaches
- y. Gallows humor

2. Delayed Reaction

- a. Depression/crying spells
- b. Sense of loss/grief
- c. Guilt
- d. Emotional numbing
- e. Withdrawal
- f. Anger at supervisors/Department
- g. Feelings of being unappreciated
- h. Irritability
- i. Denial
- j. Difficulties concentrating
- k. Visual flashbacks
- l. Obsessive interest in the incident
- m. Sleep disturbances
- n. Fatigue
- o. Nightmares
- p. Forgetfulness

- q. Decreased sexual interest
- r. Loss of appetite
- s. Headaches/dizzy spells
- t. Palpitations
- u. Substance abuse
- w. Anticipatory anxiety/easily startled
- x. Gastrointestinal disturbances
- y. Marital/family problems
- z. Any extreme behavior change

3. Danger Signals

- a. Symptoms last more than three or four weeks
- b. Symptoms interfere with personal or professional functioning

4. Factors affecting Reaction Type and Duration

- a. Number and type of casualties
- b. Sense of personal responsibility
- c. Sense of identification with victims
- d. Feeling of helplessness
- e. Internally and externally imposed pressures