METRO RAILWAY

KOLKATA

DISASTER MANAGEMENT MANUAL

SEPTEMBER-2022

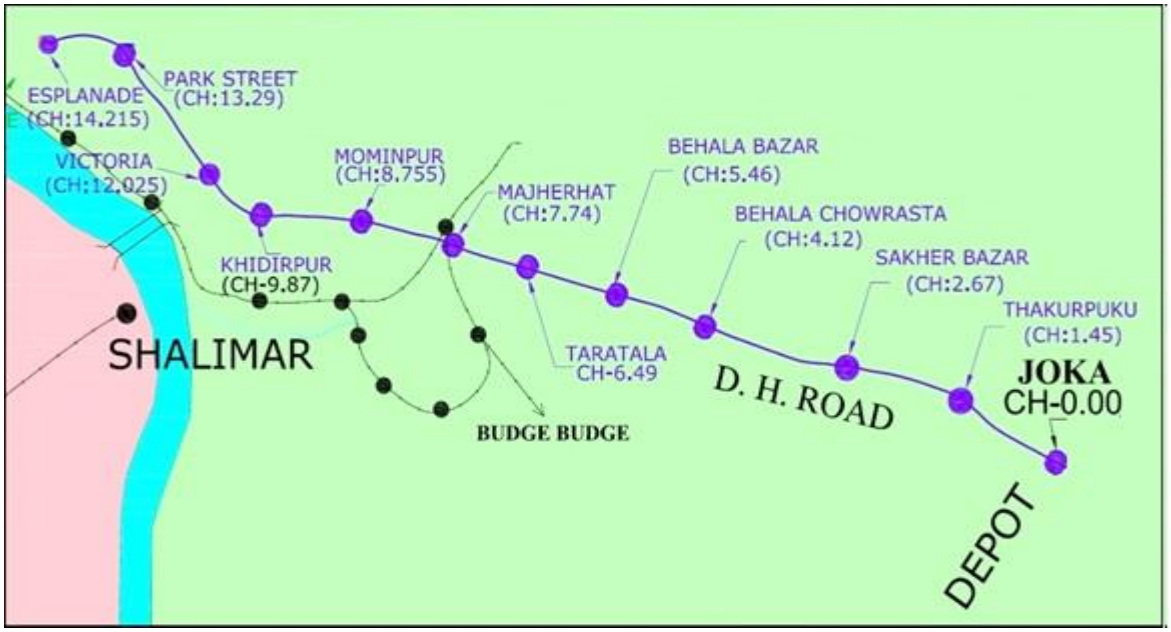
JOKA TO TARATALA

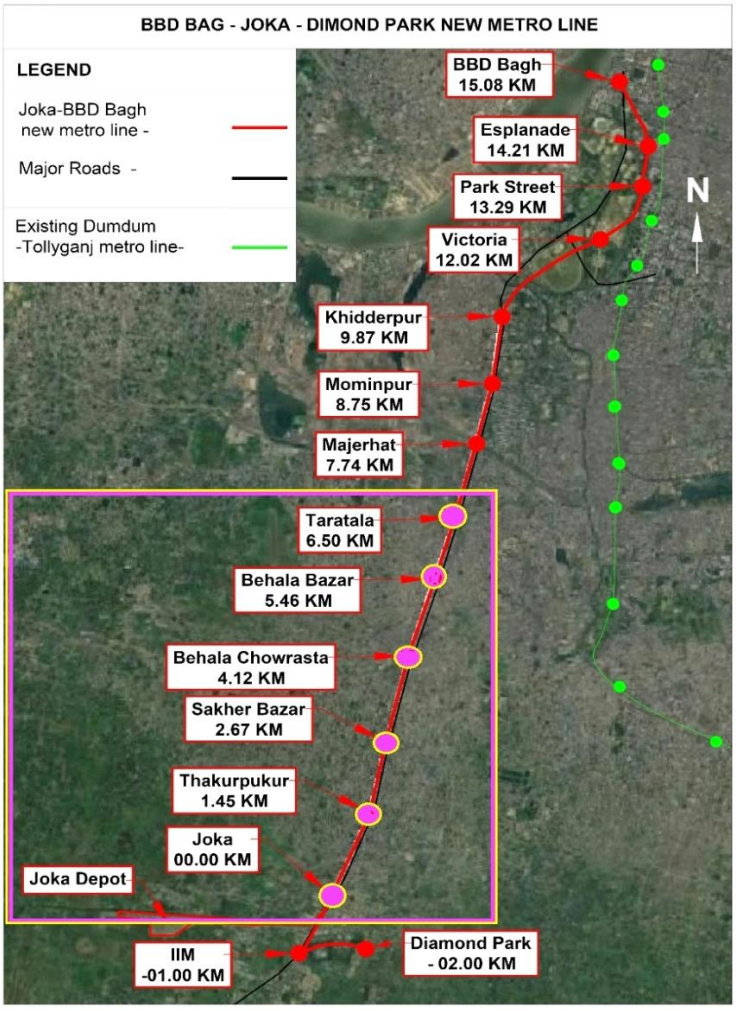
INDEX

SYSTEM MAP OF PERMANENT NEW B.G. LINE OF 6.5 KM FROM

JOKA TO TARATALA

OF **METRO RAILWAY, KOLKATA**





PREFACE

Rail Vikas Nigam Limited, Kolkata has been mandated by Indian Railways with the task of implementing the additional Corridors of Metro Rail system in Kolkata area. RVNL Project Implementation Unit-II was entrusted with the implementation of metro between BBD Bag to Joka including one depot at Joka. The construction work in between Joka to Taratala section belonging to Purple Corridor is shortly going to start commercial operation of metro trains.

The system of operation of Metro Railway in the above section is going to be slightly different than that of other metro railways working in the city at present. This system is called “One Train Only System’’ in which only one train at a time will play in the section. The traction power supply is working with 3 rail system using 750 Volt DC. Hence, special precautions are required during maintenance work and while initiating rescue and restoration operations in case of any accident/disaster.

Keeping in view of the special features of Metro Railway being introduced by RVNL, Kolkata this Disaster Management Manual has been prepared containing certain specific guidelines for tactful and efficient handling of the adverse situations which may arise due to any accident, natural calamity, stampede, fire, sabotage or any kind of terrorist activity etc., although RVNL is entrusted to conduct Trial Run only.

It is hoped that the guidelines and information given in this Disaster Management Manual will be useful for the Metro Railway officials. The Metro Railway has also issued various Codes and Manuals including an updated Disaster Management Manual operative for their system.

DISCLAIMER

The information provided in this document is for the purpose of general guidance of Metro Railway officials. While preparing the Disaster Management Manual all out efforts have been made to furnish authentic and correct information for general guidance to the Railway officials. However, in case of any conflict or doubt, the G & SR, Accident Manual, Codes and other Manuals issued time to time by Indian Railways and Metro Railway would override.

CHAPTER- 1 : DISASTER MANAGEMENT MANUAL

1.1 Definitions of Disaster:

"Railway Disaster is a serious train accident or an untoward event of grave nature either on the railway premises or arising out of railway activity in that area, due to natural or man-made causes, that may lead to loss of many lives and/or grievous injuries to a large number of people, and/or severe disruption of traffic, necessitating large scale help from other Government / Non-government and Private Organizations."

In Disaster Management Act 2005 'Disaster' means a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or manmade causes or by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of property, or damage to or degradation of environment, and is of such a nature or magnitude as to be beyond the coping capacity the community of the affected area.

1.2 Disaster has been defined in this Act as under:

"Disaster means a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or man- made causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of, property, or damage to, or degradation of, environment, and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area".

1.3 Disaster Management has been explained in this Act as under:

"Disaster Management means a continuous and integrated process of planning, organizing, coordinating and implementing measures which are-

i) Necessary or expedient for prevention of danger or threat of any disaster;
ii) Mitigation or reduction of risk of any disaster or its severity or consequences;
iii) Capacity-building;

iv) Preparedness to deal with any disaster;

v) Prompt response to any threatening disaster situation or disaster;

vi) Assessing the severity or magnitude of effects of any disaster;

vii) Evacuation, rescue and relief &

viii) Rehabilitation and reconstruction.

Disaster in the Railway context was traditionally a serious train accident, caused by human/equipment failure, which may affect normal movement of train services with loss of human life or property or both. This is now extended to include natural and other manmade disasters.

1.4 Different types of disasters are described along with a few examples below:

(a) Natural Disaster: Earthquakes, Floods, Cyclones, Land Slides, Snow Avalanches, Tsunami etc.

(b) Train Accident related Disaster: Collisions (with a huge number of casualties), Train marooned (flash floods), derailments on a bridge over a river and coaches falling down, train washed away in cyclone, derailment of a train carrying explosives or highly inflammable material, station roof collapse on a train, fire or explosion in trains, and other miscellaneous cases etc.

(c) Manmade Disasters: Acts of Terrorism and Sabotage, i.e. causing deliberate loss of life and/or damage to property, which includes, Setting a Train on fire, Railway installations etc., bomb blast at Railway Station/Train, Chemical (Terrorism) Disaster, Biological, Radiological and Nuclear Disaster.

1.5 DISASTER AND ACCIDENT:

There is a difference between a Disaster and an Accident. All Disasters are not Accidents, neither are all Accidents, Disasters. Accidents occur when safety is either affected or compromised both intentionally or unintentionally, whereas Disasters are those situations which cause acute distress to passengers as well as the system.

1.6 NECESSITY OF DISASTER MANAGEMENT:

When a Disaster occurs within Metro Railway premises, usually two or more disciplines (viz. Engineering, Electrical, Signal & Tele-

communication etc.) are involved for the management of the situation. In the Metro Railway's Accident Manual, the broad details of the action to be taken by various officials after an accident has taken place in Metro Railway premises has been specified clearly. However, it is necessary that for disasters the action to be taken be so codified that the management of the disaster is initiated without any delay and the situation is tackled in the most appropriate and efficient manner so that distress is relieved expeditiously The Disaster Management is up to the point of relief of distress of the passengers. This does not generally include the management of restoration of normalcy.

1.7 TYPES OF DISASTER IN METRO RAILWAY

Following are the identified disaster scenarios in Metro Railways:

i) Major fire (station, train, depot)

ii) Train Accidents (Collision, Derailment)

iii) Terrorist Attacks, Bomb Blasts, Indiscriminate Firing

iv) Unmanageable Crowd, Stampede

v) Natural Calamities

vi) Chemical, Biological, Radioactive or Nuclear attacks

vii) Widespread Violence and Public Disturbance

1.8 In the unlikely event of an Accident/ potential Emergency reported by any member of staff who notices it shall be dealt with utmost expediency by the Central Control and his Department Supervisor.

1.9 The Hooter shall be sounded as under:

- One long one short - Loco Yard Accident
- One long two short - Traffic Yard Accident
- One long three short - Fire in Metro
- One long four short - Main line blocked
- Two long four short - Medical Assistance required

CHAPTER- 2: ART (RRRV) and RELIEF & RESCUE PREPAREDNESS

2.1 Rail cum Road Relief Vehicle:

2.1.1 Rail cum Road Relief Vehicle (Self-powered) will be stabled in the Crashed at Joka at ART Bay (separate siding) with all Re Railing and Recue equipment's.

2.1.2 One Key of the Vehicle will be available with SSE/In charge of the Breakdown and another key will be with PPO/control.

2.1.3 The accident Relief Train shall be turned out within half an hour of the time of receipt of accident information.

2.1.4 In case of emergency and if situation demands, Rail cum Road Relief Vehicle should be moved immediately to the accident site.

2.1.5 As the self-powered Rail cum Road Relief Vehicle cannot pull a metro rake, therefore, another empty metro rake will come to pull out the disabled rake.

2.2 Immediately actions on call out:

(a) Those called are to report by the quickest possible means (by taxi, if necessary) to the Site-in-charge or incident post (if one is set up), bringing with them (if in possession) a torch, helmet, gumboot and any other protective equipment that may have been supplied.

(b) The first Supervisor or officer to arrive at site is to assume command of the incident. Subsequently, he may be relieved by any other Competent Officer.

(c) The Officer-in-charge of the site should not get involved with rescue work personally. He should concern himself mainly with the organisational and administrative aspects of the incident.

2.3 Setting up of Incident Post:

(a) The officer-in-charge of the site should set up an incident post in the event of a major accident from which to coordinate the work of rescue and clearance.

(b) If possible, a room in a nearby Metro building should be set

aside for the purpose.

(c) The requirements for furniture and stationery at the incident post should be met by the Traffic department.

(d) Any additional requirement for telephones should be met by the S&T department.

(e) The Officer-in-charge of site should nominate an inspector or a supervisor of the Traffic department to man the telephone and maintain the log. Another person should be assigned to act as a runner.

(f) Civil emergency services, voluntary organisations, public offering help etc., should be directed to the incident post.

(g) The incident Post staff should maintain a record of all telephone calls made or received, actions and decisions taken, time particulars, and arrival and departure of personnel.

(h) The Police may depute an Incident Officer in the Metro Incident Post or set up their own incident post in a nearby room. The Metro Officer-in-charge is to liaise with the Police incident officer particularly in respect of the following matters:

1. Selection of areas for parking ambulance, shuttling bus services Metro vehicles, etc.

2. Disposal of children separated from their parents, distressed elderly person, and other distressed but uninjured person.

3. Setting up of First aid centre where persons with trivial or minor injuries can be treated.

4. Accountal of unidentified property, and the manning of a store for such property.

5. The establishment of names and addresses of witness to the incident.

6. Taking charge of the dead.

7. Disposal of dead bodies.

2.4 Attention to the injured:

i. In case of an accident to a passenger train, the injured passengers, if any, shall be attended to on top priority. It is the primary duty of all Metro Railway servants to render prompt assistance to the injured and arrange medical aid at the site of the accident as required and most effective medical treatment after their admission into the Hospital.

ii. All first-aid boxes equipment's and emergency tool boxes on trains and at stations shall at once be rushed to the site of the accident for rendering relief to the injured and extricating passengers from the debris. Medical aid may be rushed even by road if it can reach quicker and more conveniently.

iii. The Motorman will make announcement through P.A system requesting doctors and qualified first-aid workers, if any, amongst the passengers travelling by the same train to assist.

iv. In case of serious injuries, the nearest Civil or Military Medical Officials and/or private Medical Practitioners and Ambulances can be summoned, if the Railway Medical Officer is not available earlier or is unable to cope up with the situation by himself.

2.5 Decision on nature of injuries:

Only a Qualified Medical Practitioner can say whether the injuries are simple or otherwise. If a person with slight injuries refuses to proceed for medical examination, this refusal should be taken in writing and kept as a record and the Chief Operations Manager advised. The result of the medical examination should be intimated to the Chief Operation Manager without any delay.

2.6 Provision of facilities to Doctors to reach site of accident:

All Metro Railway servants shall afford every facility to Doctors to enable them to reach the site of accident with the least possible delay.

2.7 Temporary Hospital at station near to the site of the accident:

In case the Medical Officer considers it necessary to open a temporary Hospital at a station near the site of the accident, the Station Master must make available whatever accommodation he is called upon to provide.

2.8 List of non-railway Hospitals, Dispensaries:

The Control Office and Senior Section Engineer/ART must keep a list of non-railway Hospitals, Dispensaries, names of the Private Medical Practitioners and qualified first- aid workers whose help may be sought, if necessary, during relief operations. Traffic Inspectors and officers must scrutinize this list frequently to ensure that it is kept upto date and is readily available when required.

2.9 Addresses of Drivers of Railway Road Vehicles:

The Control office should also maintain the addresses of the Drivers of Railway Road Vehicles, so that when necessity arises, the Drivers can be located and the Railway Road Vehicles used for relief operations.

2.10 Turning out of Relief Train or Breakdown Van:

The Relief Train must be ready and be turned out with the least possible delay within the target time of **30 minutes** from the time Hooter in the Car Shed is sounded. Regulation of traffic to ensure quickest passage of Accident Relief Train to the site of accident shall be done by the Control office.

2.11 Maintenance of Relief Train/Breakdown Van:

The Senior Section Engineer/ART will be overall-in-charge of the Relief Train/Breakdown Van and will be responsible for seeing that they are always fully equipped and in good running order. A quarterly inspection of the Accident Relief Train will be done by competent officers and a joint report shall be submitted to the Chief Safety Officer.

2.12 Staff required to attend accident:

In addition to the officers attending the accident site, SSE/RS, SSE/P.Way, SSE/S&T and TI of the concerning Section will also attend the accident site along with their staff.

2.13 Police Attendance:

In case of derailment of any train carrying passengers at or between stations where sabotage is suspected, arrangement will be made for the Police to visit the scene of accident as soon as possible so that they might observe what disturbances, if any, there have been on the line and to guard any material evidence affecting the cause of the

accident.

List of nearby Police stations is shown in Chapter-19

2.14 Precautions to be observed in handling injured passengers:

Every effort must be made to extricate injured persons from debris and then they should be carried to the nearest convenient spot for rendering first-aid. Injured persons are not to be shifted at all to long distance until such time a qualified person has rendered first- aid and taken necessary precautions.

2.15 Supply of food and drinks to the passengers and staff at the site of accident:

The Traffic Officers will look after the comfort and need of the injured passengers. Immediate arrangement will be made for supply of drinking water, milk etc. at the site of accident. Food or cash in lieu thereof will have to be supplied/paid to staff engaged in relief operation as and when necessary under the supervision of a responsible official.

The Chief Traffic Manager is empowered to sanction expenditure for supplying food to railway staff engaged in restoration work at accident site upto an amount permissible as per schedule of powers.

2.16 Speed transport to injured persons to Hospital:

After rendering first-aid, all injured passengers must be transported as quickly as possible to a Railway Hospital to be decided upon by the Metro Railway Medical Officer, preference being given to seriously injured passengers. If injured persons are sent to non-railway Hospital for treatment, a Railway Medical Officer will be deputed to accompany them to the Hospital and to see that they are properly accommodated. The progress of the patients at the Hospital will be reported to the Chief Operations Manager periodically.

Timely information must be given to Civil & Military Hospitals of the number of injured persons to be shifted there and the time they are expected to arrive at the Hospitals. All local railway road vehicles will be made available for the purpose of carrying the casualties to the Hospitals. If adequate railway transport cannot be arranged, Private transport can be hired.

2.17 Information to relatives of injured passengers:

Relatives of injured passengers will be intimated either on phones or by most expeditious means of communication at the cost of Metro

Railway and the same will be confirmed through letters.

In cases of death, the relatives of the victims of accident may be issued free passes from their places of residence to Kolkata.

2.18 Opening of Enquiry-cum-information Centre:

An Enquiry-cum-information Centre will be opened at Metro Rail Bhavan in all cases of accidents involving death of passengers. The centre will be manned by responsible officials who will collect and keep latest information on the progress of injured persons in the Hospitals. These officials will also be responsible to give correct information to such of those members of public who will be making anxious inquiries about the whereabouts of their relatives.

2.19 Arrangements for clearing the line:

The senior most Traffic officer at site will be in-charge of arrangement for conducting stranded passengers to the nearest station. The senior most Traction Engineer will look after all Electric traction matters. The senior most Traffic Officer present in the Control office will take over charge of the Control office. The senior most Signal Engineer present at the site will be in-charges of communications.

No effort should be spared in extricating the injured and the dead from under the debris. The operation for clearance of wreckage must continue till all the injured persons are taken out.

2.20 Care and identification of dead bodies:

In the case of serious accident, the senior most Railway Officer on the spot should discuss the question of disposal of dead bodies with the senior most Police Officer at the scene of accident and they should jointly determine the places for keeping the dead bodies under the control of a responsible Officer. The Police have to take charge of the dead bodies and they should be given the requisite facilities for their transport to well- protected places where they could be kept pending completion of formalities or until claimed by next of kin. It may be stressed that respect for the dead should be the primary consideration and in any case no dead body should be kept exposed to the weather.

Identification and disposal of dead bodies should normally be the responsibility of the Police authorities. Photographs of the unidentified dead bodies may be taken by the Police authorities and displayed at all stations and other conspicuous places. Photographs of the dead bodies should also be taken by the Public Relations department of Metro Railway.

List of Equipment's in Rail Cum Road Relief Vehicle

Re-Railing Equipment:

SN	Description	Quantity
1(a)	Power pack	1 No.
1(b)	Hydraulic Oil	2 Nos.
2	Hand pump	1 No.
3	Portable control table	1 No.
4	Hose paid blue/grey	6 pairs
5(a)	Telescopic Jack 600/300T closed height 400 mm ± 70 mm	2 Nos.
5(b)	Stacking set for Telescopic jack 600/300T	2 sets
5(c)	Telescopic Jack 600/300 KN closed height 225 ± 25mm	2 Nos.
5(d)	Base plate for Telescopic± jack 600/300T closed height 400 mm ± 50 mm and 600/300 KN closed height 225 ± 25 mm	4 Nos.
6(a)	Duo traversing Jack	2 Nos.
6(b)	Roller Carriage	4 Nos.
6(c)	Distance Bar (1500-2800 mm) Distance Bar (103-1830 mm)	One pair each
7(a)	Re-railing bridge 3.3m long or (2.5 m +1.0 m)	1 No.
7(b)	Re-Railing bridge 2.2 m	1 No.
7(c)	Connection element	1 Set
8(a)	Single piston step jack with claw	1 No.
8(b)	Radius plate for single piston step jack with claw	1 No.
9(a)	Lifting cable Ladder	2 Nos.
9(b)	Holding rope	2 Nos.
9(c)	D-Shackle	2 Nos.
10	Petrol Driven Generator : 3 KW, 230V, 1HP	1 No.
11	Tool Box	1 set

List of items in First Aid Box

Note:

i) First Aid Box at stations should be kept in sealed condition in a prominent place in the SM Office.

ii) First Aid Box should be checked by Doctor in charge (ADMO) once in 6 months and M.S. as and when required.

Rescue Equipment:

SN	Name of Equipment	Quantity
1	Set of six wooden extensible splints	1 Set
2	Sterile Adhesive strip dressing	20 Nos.
	(Standard size)	
3	Rubber Tourniquet	2 Nos.
4	Roller Bandages gauze	10 Nos.
	7.5cm x 4 cm	
5	Triangular bandages	4 Nos.
	130 cm x 90 cm x 90 cm)	
6	Tab. Paracetamol	20 Tabs in strips.
7	Antiseptic cream (25 gms)	1 Tube.
8	Injury Cream	1 Number
9	Safety pin set of 10	1 set
10	Tab. Diazepam	1 strip of 10
11	Cotton Wool	100 gms.
12	Scissors dressing 12 cm, Blunt / Pointed	1 Number
13	List of contents and instructions	1 Number
	Regarding treatment	
14	Card showing last date of checking replacement	1 Number

SN	Description	Quantity
1(a)	Air Bag Type-I 650x690 mm size, Capacity 300KN, 350 mm lift	2 Nos.
1(b)	Air Bag Type-II 950x950 mm size, Capacity 670KN, 500 mm lift	2 Nos.
2(a)	Petro/diesel Air Compressor : 10cfm capacity, operating pressure 9 bar	1 No.
2(b)	Air CU 8 bar deadman, lighting	1 No.
2(c)	Hose 5m long yellow	1 No.
2(d)	Hose 10m long Red	1 No.
2(e)	Hope pipe 10m yellow	1 No.
2(f)	Connection between Air Compressor and Air Cu	1 No.
2(g)	Pressure Regulator 200/300 bar working pressure 14 bar	1 No.
3	Cutter	1 No.
4	Spreader	1 No.
5	Hose Mono coupling 10m long	2 Pairs
6	Spare blade for cutter	2 Nos.
7	Chain set for spreader	2 Sets
8	Spreading cum peeling Tips for spreader	2 Nos.
9	Power pack for rescue device	1 No.

CHAPTER- 3 : DETRAINMENT OF PASSENGERS

3.1 INTRODUCTION

Detrainment of passengers is required when a train cannot move further due to unusual circumstances such as-

(a) Long power failure in 3rd rail system

(b) Breakdown of train or derailment

(c) Obstruction of track leading to suspension of train services

(d) Other disasters classified under **Chapter- 1 / Para 1.8.**

3.2 PREPARATION FOR DETRAINMENT

When a train is not in a position to continue its journey and it is at a station platform fully, or partially, the Driving Motorman will inform the Traffic Controller and seek his permission for detrainment of passengers. If the train partially on the platform and for some reason, then Motorman shall manual open the platform side door(s) to detrain the passengers.

3.3 DETRAINMENT WHEN TRAIN IS FULLY ON THE PLATFORM

After receipt of the approval of detrainment from the Traffic Controller, the Driving Motorman will inform the Conducting Motorman about the decision of detrainment. The Conducting Motorman will thereafter make an announcement through the Public Address system to the passengers to detrain and he will open the platform side doors for evacuation of passengers. On complete evacuation, he will close the doors again and inform the Driving Motorman. The Driving Motorman will then contact the Traffic Controller and convey the message of completion of detrainment action and wait until further orders. Station Superintendent/Shift-in-charge will make similar announcements over the station PA system informing passengers of traffic disruption.

Station Evacuation:

- This exercise is to establish the sufficiency of Emergency Egress facilities for Joka-Taratala Section of Joka BBD Bag Metro Corridor project.
- The stations are adequately sized to meet emergency egress and fire service access requirements.

- Provision has been made for stairs and escalators in the paid as well as entrance on both sides i.e. from ground to concourse and concourse to platforms. On each platform, two escalators have been proposed. In addition, two staircases with a combined width of 5.2 m approximately are provided.
- These stairs and escalator together provide an escape capacity adequate to evacuate passengers in emergency from platform to street in 4.5 minute in all stations. While calculating the waiting passengers on the platform in emergency, 02 missed headways are assumed and the train arriving is assumed to be carrying full section load.
- Lifts have been provided on each on both platforms to provide access for elderly and disabled. Since the rise from road to concourse is about 6.0 m. It is proposed to provide escalators and lifts in addition to stairs for vertical movement of passengers from street to concourse.

Viaduct Evacuation:

In case of emergency evacuation between two station i.e. on the viaduct portion, adequate space is available on walkway for safely evacuation on both side of the platform. Average width of walkway on viaduct provided is about 1.1m. This width of walkway is sufficient to ensure that a person can pass each other along the route. The route is kept free of any steps or sudden changes in level and is being kept free from obstacles. Orientation and directions signs are installed along the evacuation route and is continuously monitored internally. In emergency situation passengers will be first de-trained on viaduct pathway and then trolley men will guide them from viaduct to platform.

Note: Please see the cross section of Viaduct on page 104.

IN CASE A TRAIN IS HELD-UP IN BETWEEN TWO STATIONS AND CANNOT BE MOVED FURTHER WITHIN THE PERIOS AS LAID DOWN IN SR 151.

3.4 TRAIN WORKING UNDER WITHOUT CBTC SYSTEM AND DETAINED BETWEEN STATIONS:

3.4.1 Procedure for detainment of passengers in the mid-section as per SR151-

Pursuant to the condition for detrainment of passenger in mid-section stated vide **GR & SR 150** when it becomes apparent that the train cannot be moved within prescribed time limit, decision for initiating emergency evacuation will be taken by Traffic Controller on duty.

In either of the events of Motorman seeking permission for detrainment

of passengers or the Traffic Controller deciding suo-moto after expiry of prescribed time limit following actions will be taken:

1. Evacuation of passengers from cab(s) of the disabled train.

2. The Conducting Motorman will explain the circumstances to the passengers on the on board P.A. system and request them not to be panicked and to wait for further advice. He shall also play the specific announcement in the DTR/PIS concerned especially recorded for Disaster Management.

3. Evacuation of passengers is to be done normally to the nearest station by opening of both the cabs and lowering of both the emergency ladders. In all cases evacuation of passengers shall be done from both cabs of the disabled train to both the adjacent stations or to the nearest station through the pathway by the side of the disabled train or through the unaffected adjacent line after taking necessary power block and fixing earthing rods for both the lines, except for the viaduct area where there is no space by the side of disabled train, passengers evacuated from rear end of the train shall be guided to the station in rear and those detraining from the front cab shall be guided to the station in advance.

4. Traction Loco Controller (TLC) will advise both Driving and Conducting Motorman regarding detrainment of passengers from both end of the train.

5. Before granting permission for evacuation of passengers the Traffic Controller will get confirmation from the Traction Power Controller (TPC) on duty that the third rail power supply of all the running lines for the relevant section have been switched off, under exchange of private number.

6. The TPC on duty in the Central Control shall "switch off" third rail power supply of both UP & DN track of the concerned section through remote control operation and in case of failure of remote control, he will get the power "switched off" through substation, operator/SBA (switch Board Attendant) of traction substation, under exchange of private number (Appendix-G / Pt.- 5.3.3). The TPC will then inform the Traffic Controller on duty, under exchange of private number that the traction power supply to third rail of both the lines, as demanded has already been switched off. Traffic Controller will

inform the TLC on duty and station-in-charges of the adjacent stations, where passengers are to be evacuated, confirming the power block, under exchange of private number. The Train Loco Controller shall then inform the Driving Motorman of the disabled train, under exchange of private number, confirming power block of the section.

7. The Driving / Conducting Motorman shall secure the disabled train properly by applying parking brake and skids available in the cabs after receipt of confirmation of the power block.

8. The Traffic Controller shall inform the Station-in-charges of both adjacent station of the disabled train and instruct to proceed personally or to depute competent Railway personnel(s) with hand torch(es) to escort the passengers from the mid-section to the platform(s) at the station(s). A minimum of two Traffic staff (one of which should be at least of the rank of Sr.TA) should proceed from both end stations with instructions about the procedure to be followed for detrainment and escorting the passengers from the mid-section to the station(s).Before proceeding, earthing of third rail at platform end (effected side both lines) should be ensured by station-in-charge.

9. Before the passengers are allowed to get down on the track bed, the Driving Motorman shall short circuit the Third Rail to the running rail (occupied by the disabled train) by means of short circuiting device supplied in the cabs to ensure de-energisation of the traction current. The Conducting Motorman shall short circuit the Third Rail to the running rail (unaffected line in opposite direction) by means of short circuiting device supplied in the cabs to ensure de-energisation of the traction current. Under no circumstances the Driving/Conducting Motorman shall allow the passengers to get down on the track-bed unless the Third Rail has been so earthed.

10. The Station-in-charge(s) shall ask the remaining Traffic staff and Security staff of the station(s) to position themselves on the platform(s), to receive the evacuated passengers and to render all sorts of assistance.

11. The Driving and Conducting Motorman should render all assistance to the passengers & ensure continuous announcement on the P.A. System to the passengers of the train about the arrangement being

made/already made for their detrainment from both the cabs of the train and the station(s) to which they will be escorted by station staff.

12. In the meantime, the Traffic Control shall inform nearest police Station and Metro Railway Security Control about the incident and request them to attend at the concerned station(s) to maintain law and order.

13. Central Control may advise adjacent station(s) staff to proceed to the station(s) concerned to assist detrainment/evacuation.

14. Central Control may also ask Railway Doctors and nearest Hospitals for Ambulance and other medical assistance at the station(s) where evacuation of passengers have been planned.

15. Normally the Cab exit will be opened and the Driving and Conducting Motorman shall open the door(s) of the cab(s) and announcement shall be made to the passengers to start detraining and also inform them that the third rail power supply has already been switched off and there is no danger involved. However, during extreme emergency Motormen can start evacuation even before arrival of station-in-charges after confirmation of power block ensuring earthing of both lines.

16. The passengers would be guided further on the ground by the Station-in-Charges or by the deputed Traffic staff who shall also escort them to the concerned station(s). Special care should be taken particularly of ladies, senior citizens and children. The passengers should be advised to walk on the centre of the track as far as possible and follow the Station-in- Charge(s) or the deputed Traffic staff who will be escorting them to the station(s).

17. While the passengers are detraining, the Driving as well as Conducting Motorman should keep watch on them. They should continue announcement through the on board PA system.

18. On arrival of the two Traffic staff from the station in advance, one staff will lead the passengers and the other competent staff will follow the last passenger. The Driving Motorman will remain in the cab. On arrival at the station in advance or rear as the case may be, complete arrival of passengers is to be confirmed by the competent Traffic staff, in writing, to the Shift-in-Charge/Station in-charge of the

concerned station. Shift- in-Charge /Station in-charge shall intimate the same to the Traffic Controller through exchange of Private number.

19. On arrival of Traffic staff from the station in rear, the Conducting Motorman will advise the Traffic staff to lead the passengers and he will follow the last passenger to the station in rear or in advance as the case may be. On arrival at the station in rear or in advance as the case may be, complete arrival of passengers is to be confirmed by the Conducting Motorman, in writing, to the Shift-in-Charge/Station Superintendent of the concerned station. Shift-in-Charge/Station in-charge shall intimate the same to the Traffic Controller through exchange of Private number.

20. The Driving Motorman will ensure that there is no passenger left over in the disabled train and that the last passengers moving towards the station in advance and the station in rear are followed by the Traffic staff and the Conducting Motorman respectively.

21. Traffic Controller will inform the Driving Motorman regarding complete arrival of all passengers to the station in advance and rear under exchange of private number.

22. The Conducting Motorman shall walk back to the disabled train. On arrival he will talk to the Driving Motorman. They will thereafter remove shorting link between third rail and running rail, normalise the step ladder(s), close the cab exit(s) and remove the skids.

23. The Driving Motorman shall inform the Traffic Controller about the successful completion of detrainment, safe return of the Conducting Motorman, closing of cab exit(s) removing of shorting links, skids and ask the Traffic Controller to take further action to "switch on" power supply to third rail, under exchanging of private number. He will take further course of action as directed by the Traffic Controller through TLC. Traffic Controller then advice Station- -in-charge of both stations to remove earthing of third rail of their stations and confirm exchanging of private number.

24. The Traffic Controller shall inform the Traction Power Controller (TPC) about the completion of the evacuation of passengers and advise him to 'switch on' third rail power supply as per requirement, under exchange of private number. The TPC in turn shall restore

third rail power supply and will then inform the Traffic Controller about resumption of third rail power supply, under exchange of private number.

25. The Traffic Controller, under exchange of private number, shall inform the TLC on duty and Station-in-charge(s) concerned when third rail power supply is "switched on" again. TLC will inform the Motorman concerned about resumption of power supply under exchange of private number.

3.4.2 DUTIES AND ACTIONS TO BE TAKEN BY VARIOUS PERSONNEL IN DETRAINMENT OF PASSENGERS IN SECTION BETWEEN TWO STATIONS:

3.4.2.1 The Driving Motorman will do the following:

i) The Driving Motorman and Conducting Motorman of disabled train will discuss about the situation promptly. The Driving Motorman will advise the Conducting Motorman to secure the train by applying parking brake / skid available in the cabs after receipt of confirmation of power block under exchange of private number with the Traffic Controller.

ii) He will advise the Conducting Motorman to explain the circumstances to the passengers through PA System and request them to wait for further advice. He will also advise the Conducting Motorman to connect running rail and third rail through shorting links provided in both cabs.

iii) The Driving Motorman will open the emergency door as well as lower the step ladder and properly secure the same.

iv) He will then open the door between driving cab and passenger compartment.

v) He will ask the Conducting Motorman to announce thorough PA System and explain the circumstances to the passengers and request them not to be panicked and to get down through front end emergency door. In case the PA System of Conducting Motorman fails, the Driving Motorman himself will make the announcement and extend all help to enable them to get down on the track safely. He should specially take care of children, ladies and old men.

vi) The Driving Motorman should ensure that there is no passenger left behind in the disabled train and the last passenger is moving

towards the station.

vii) On arrival of the Conducting Motorman to the disabled train, the Driving Motorman will advise the Conducting Motorman to remove the shorting link between third rail and running rail, to normalize the step ladder, to close the cab exit and will wait for further instruction from the Traffic Controller.

3.4.2.2 The Conducting Motorman will do the following:

(i) The Driving Motorman and Conducting Motorman of disabled train will discuss about the situation promptly. On getting instruction from the Driving Motorman (only after receipt of confirmation of power block under exchange of private number with the Traffic Controller), the Conducting Motorman will secure the train by applying parking brake / skid and connect running rail and third rail through shorting links available in both cabs.

(ii) He will explain the circumstances to the passengers through the PA system and request them to wait for further advice.

(iii) On receipt of instruction from the Driving Motorman, he will announce through PA system to the passengers about the circumstances and request them not to be panicked and to get down on the track through the emergency door of front cab. In case the PA system fails, he will ask the Driving Motorman to make the announcement.

(iv) The Conducting Motorman should keep watch on the passengers, particularly on ladies, children and old men and ensure that all passengers have been detrained. Thereafter he will follow the last passenger towards the nearest station as per Traffic Control

(v) He will inform the Traffic Controller from station Superintendent / Shift-in-charge's room at the station along with the Station Superintendent /Shift- in-charge that detrainment is complete.

(vi) He will come back to the train and inform the Driving Motorman about the completion of detrainment and thereafter he will remove the shorting link between 3rd rail and running rail, pull back the step ladder and close the emergency door. He will wait for further instructions from the Driving Motorman.

3.4.2.3 The following action has to be taken by the Station Superintendent / Shift-in-Charge of the adjacent station of the disabled train:

(i) He will ensure from the Traffic Controller that power supply has been switched off under exchange of private number.

(ii) Frequent announcement shall be done over the station PA system by the Station Superintendent /Shift-in-charge of the affected station.

(iii) He or his nominated staff will go to the site of the stationary train from where passengers will be detrained. Before proceeding, earthing of third rail at platform end (effected side both lines) should be ensured by station-in-charge.

(iv) He or his nominated staff will guide the passengers through staircase provided at the end of the platform (and where staircase is not available the aluminium ladder shall be placed at the platform end) to come on to the platform to get out of the station, as required. He will inform the Control along with the Conducting Motorman about the completion of detrainment after the last passenger has reached station.

(v) After completion of evacuation of passengers, he will remove the aluminium ladder(s), if the same has been provided at the platform end.

(vi) He will wait for further instruction from the Traffic Controller for movement of the train.

3.4.2.4 <u>The Traffic Controller will do the following:</u>

(i) On receipt of information from Driving Motorman about the inability of the train to proceed further, necessitating evacuation of passengers, he will ask the TPC to switch off power supply of the 3rd rail for both the lines under exchange of private number.

(ii) The Traffic Controller shall then inform the Driving Motorman of the disabled train, under exchange of private number, confirming power block of the section. He will also inform the station-in-charge of the station, where passengers are to be evacuated, confirming the power block, under exchange of private number.

(iii) He will inform the Station Superintendent / Shift-in-charge of adjacent station of the affected train for deputing their staff with an advice to go towards the disabled train to help detrainment of passengers and bring them to the station.

(iv) In the meantime, the Traffic Controller shall inform to the nearest Police Station and Metro Railway Security Control about the incident and request them to attend the concerned station to maintain law and order and he may also ask railway doctor and nearest Hospital and ambulance and for any other medical assistance.

(v) After receiving the confirmation from Shift-in-charge in respect of completion of detrainment of passengers and on receipt of information as to safe return of the Conducting Motorman, closing of cab exit, removing of short links, skids etc from Driving Motorman, being supported by private number, he will ask TPC to switch on the third rail power supply, under exchange of private number, if situation so permits.

(vi) The Traffic Controller under exchange of private number shall inform the Station-in-charge concerned and Driving Motorman that third rail power supply has been "switched on" again and he will give instructions to the Driving Motorman to start the train cautiously up to the next station and restore normal service after the section has been cleared.

3.4.2.5 <u>The TPC will do the following:</u>

On receipt of request/information from Traffic Controller about the necessity of detrainment of passengers from disabled train, TPC will switch off 3rd rail power supply through remote control system by operating necessary HSCB controlling the power supply of the section.

i) In case of failure of remote control system, he will get the power supply to 3rd rail switched off through the substation operator by giving necessary message.

(iii) In case of communication failure to the substation, he may have to switch off power supply by switching off power to the rectifier transformers from either side of the section in question.

(iv) After switching off 3rd rail power supply/getting power supply switched off by substation operator, he will give the message about switching off of power to the third rail to the Traffic Controller on duty under exchange of private number.

(v) He will also inform the TLC that the power has been switched off from the 3rd rail of the section.

(vi) He will arrange to turn-on 100% tunnel lights/parapet lights in the affected section.

(vii) In case of tunnel section, he will arrange to run both the mid-point exhausts in the section and the tunnel intake fans at the stations on either side.

(viii) After detrainment of passengers is completed and message to the effect is received from Traffic Controller, he will, if situation so permits, restore 3rd rail power, normalize the ventilation system, viaduct/parapet lighting system and advise the Traffic Controller under exchange of private number for resuming further movement of train as required.

3.4.3 TRAIN WORKING UNDER CBTC SYSTEM & DETAINED BETWEEN STATIONS:

3.4.3.1 Train stopped between stations and evacuation of passenger on foot:

i) If a train stops between the stations due to Rolling stock failure, Traction power failure or any other reason for which train can't move, the Motorman of stranded train shall inform the Traffic Controller about the location i.e. kilometreage, particulars of the train and his identity within one minute.

ii) Traffic Controller after getting initial information from Motorman shall inform the shift-in-charges of the adjacent stations as well as Traction Power Controller (TPC) to remain in readiness for evacuation of passengers from the stranded train. The shift-in-charges of the concerned station will suitably manage the station in such occasion.

iii) If the cause for such hold up is failure of traction current and there is reason to believe that restoration of traction current is not possible within 10(ten) minutes, the Traffic Controller shall initiate the procedure of passengers' evacuation from the stranded train.

iv) If the reason for such hold up is other than traction current failure all trouble shooting efforts shall be completed and its status shall be informed to Traffic Controller over TETRA within ten minutes, so that the actual evacuation starts from eleventh (11^{th}) minute of occurrence. The reason for such hold up shall be suitably informed to the passengers inside the train by Traffic Controller and Motorman.

v) In case of derailment or any other eventuality such evacuation shall be started earlier.

3.4.3.2 Following procedures shall be followed for evacuation of passengers from mid-section:

a) Traffic Controller shall obtain power block of the concerned section (both lines covering platform zones) from the TPC by exchange of private number and relay the same to the shift-in-charges of the adjacent stations as well as Motorman by exchange of private number.

b) The shift-in-charges of adjacent stations, after opening manual secondary door (MSD) shall earth both lines of the affected sections by using earthing device and shall inform such earthing to Traffic Controller by exchange of private number. Subsequently the Traffic Controller shall confirm the earthing of both lines to Motorman of the said train by exchange of private number over TETRA.

c) The Motorman shall inform the passengers that evacuation shall start from the selected door and passengers to follow the next announcement.

d) Shift-in-charge of the nearest station shall send at least two traffic staff.

e) Motorman shall open the selected door and place the ramp between the train door and the walkway by securing its fixation. Passenger shall be detrained on the walkway after arrival of the station staff. One staff shall lead the passengers to the station and the Motorman shall ensure that all the passengers have left the disabled train.

f) After detraining of last passenger from the train, the second traffic staff shall follow them from the rear.

g) After all the passengers have reached the station the second traffic staff shall confirm completion of evacuation in writing to the shift in-charge.

h) Shift-in-charge shall confirm to the Traffic Controller that the evacuation has been fully completed by exchange of private number over TETRA and accordingly the Traffic Controller shall relay the same to the Motorman.

i) The Traffic Controller shall inform the Shift-In-Charge(s) of the station/adjacent stations to remove the earthing device.

j) When all the earthing devices are removed by the concerned personnel and MSD is closed, Motorman shall inform the Traffic Controller by exchange of private number, so that power block can be cancelled.

k) The Traffic Controller shall confirm the TPC about the completion of passengers' evacuation and then ask for cancellation of power block by exchange of private number.

l) After cancellation of power block, TPC shall inform Traffic Controller and Traffic Controller shall inform the Motorman and shift-in- charge^) as well by exchange of private number.

m) Such evacuation of passengers to the other station except the nearest one may be considered in case of non-availability of ventilation system in the station or any structural obstruction.

n) If a train becomes disabled between stations at such a place, evacuation of passengers to both stations may be considered by the Traffic Controller.

3.4.3.3 Train stopped between stations and evacuation of passenger by Assisting Train is required:

If a train stops between the stations but its mobility has not been lost, the Motorman of the stranded train shall inform the Traffic Controller about the location i.e. kilometerage, particulars of the train and his identity within one minute.

All trouble shooting efforts shall be completed and its status shall be informed to Traffic Controller within ten minutes over TETRA so that the evacuation, if required, starts from eleventh (11^{th}) minute of occurrence. The reason for such hold up shall be suitably informed to the passengers inside the train. The procedure for sending an assistant train shall be followed in line with the provisions confirmed in **sub rule (1) of GR no.232**.

Note: Only the above two procedures shall be followed for evacuation of passengers from the stranded train in the mid-section.

CHAPTER- 4 : FIRE IN STATION, VIADUCT AND TRAINS

4.1 Fire

4.1.1 Fire in Metro Railway can take place at various locations adversely affecting the system in different ways. The reasons may be unforeseen or anticipated. Fires in station area, viaducts, on track and in trains can cause acute distress to passengers and require prompt disaster management to bring the situation under control.

4.1.2 Fire can be due to electrical short circuit in cables, wires or in electrical equipment. It can be due to failure of cable joints or due to failure of the cable itself. In Metro Coaches it can be due to short circuit faults. Fires can also be due to sabotage including bomb blasts.

4.1.3 Universally accepted measures for fire prevention include:

i) Rigid observance of non-smoking regulations

ii) Total ban on carriage of inflammable/ explosive substance within metro premises and in trains

iii) Non accumulation of garbage in the metro station premises and inside trains

iv) All staffs posted at stations must ensure instructions are rigidly enforced by regular checks.

4.2 Fire and Smoke

In the event of fire and / or smoke either in train, station premises, right of way or other Metro premises, every Metro Rail official whether on duty or not shall,

i) Report the occurrence to the nearest station or OCC.

ii) Take all possible steps to extinguish fire.

iii) Disconnect electric supply, if required.

iv) Prevent the fire from spreading.

v) Seek assistance of adjoining Fire stations.

4.3 Fire in Electrical Equipment

In case of fire in electrical equipment, attempt shall be made to extinguish fire taking suitable precautions and report the matter to the nearest Station Controller / OCC. No water should be used to extinguish electrical fire. If required power supply shall be cut off immediately by sending information to Traction Power Controller. Inform to OCC or nearest station immediately for external help if required.

4.4 Fire in a Train

The guidelines set out below to handle fire in Train and minimize the damage of property and also casualty of passenger. Since every fire incident is unique, the Motorman is to exercise quick judgment based on

i) The nature of fire whether localized or widespread in passenger area.

ii) The extent of occupation of the train-number of passengers-if the number is manageable he will ask passengers of the affected coach to move away to other coaches.

iii) Proximity of the next station - passenger evacuation and handling of emergency is much easier at station than in between stations. Motorman has to exercise his judgment about those extreme cases where the train has to be stopped forthwith to save life by prompt evacuation or taken to the next station expeditiously.

4.4.1 Duties of Motorman:

a) Fire in Train in between Station:

i) In case of fire on train detected by passengers and made known to the Motorman on any of the sides or noticed by the Motorman of either side, first attempt should be to take the train, if it is in motion, to the next station without stopping it in mid-section. In case the train is unable to move due to the fire within the train, immediate action should be taken for evacuation of passengers from select side doors as per the procedure laid down for Detrainment of passenger.

ii) When fire or continued tripping in any equipment occurs in a train between station or the Motorman is informed by passengers about fire or smoke emission on any part of the train, he shall immediately inform OCC and

iii) The Motorman will assess the nature and extent of fire to decide whether the train can be safely taken to the next station. In which case he will again inform OCC and proceed to the next station addressing

the passengers on board not to panic but be in readiness to vacate the train at the next station in an orderly manner giving precedence to aged, Infirm handicapped, women and children.

iv) He will also request Metro Staff travelling on the train to assist in relief work.

v) In case it appears unsafe to proceed to next station, or the train itself has become disabled, the Motorman will advise OCC of the circumstances, Fire extinguishers provided in the train shall be used to extinguish the fire.

vi) In case the fire has been extinguished, he may cautiously proceed to the next station under instruction of OCC Traffic Controller.

vii) At the next station the passengers shall be detrained and the train withdrawn from revenue operation after the fire is finally put off.

viii) If fire cannot be controlled, he will make preparations to evacuate passengers keeping OCC informed.

ix) OCC to stop movement of trains on the adjacent line to facilitate safe passenger evacuation.

x) Fight the fire if possible with the help of station staff using the available firefighting equipment's keeping himself safe.

b) Fire in Train at the Station Platform.

The Motorman shall open all train doors on the platform side and ask passengers to vacate the train immediately. He will inform OCC and nearest Station and take assistance from station staff as required.

4.4.2 Duties of Traffic Controller:

(i) In case of fire on train, the Chief Controller should inform the fire-fighting personnel as well as the Medical Team for rushing to the station where the train has stopped, or on the stations on either side if the train has stopped in midsection for necessary assistance.

(ii) In case of train stopping at the mid-section, he should inform the TPC to switch off the third rail power on both sides for quick evacuation of passengers.

(iii) He should control all train services on both the lines.

(iv) He should inform TPC about the fire for taking necessary steps in respect of ventilation system.

(v) He should inform Station controller of station on either side and arrange for announcements over PA system to waiting passengers and also to guide detrained passengers to safety.

4.4.3 Duties of Traction Power Controller:

(i) He should switch off traction power in case of stoppage of train in mid section due to fire on train.

(ii) If the power is likely to affect the high tension cable, laid on viaduct walls he should switch off the power of the particular feeders, but ensure lighting in viaduct [in night] through alternate supply.

(iii) He should contact the Traffic Controller and exchange Private Number stating the power has been switched off and evacuation of passengers can be started as laid down in the procedure for evacuation of passengers.

(iv) He should inform AV staff at the station on either side, to continue running station intake fans.

(v) He will co-ordinate with concerned Section Engineer/Works & Section Engineer (Elec. Pump) to ensure availability of water by running all concerned pumps for firefighting purpose.

4.4.4 Duties of Inspector/RPF and OCC:

(i) He will co-ordinate from Control with the available SIPF/ASI on spot, obtain details of fire and ask for necessary assistance from State Police / Fire Brigade.

(i) He will coordinate with Traction Power Controller to ensure proper running of water pumps and availability of water in fire hydrants.

4.5 Fire Suppression System

A wet Fire Main System covers all the station areas. In addition, there are automatic sprinklers, smoke detector, heat & smoke detector, MCP (Manual Call Point) and portable fire extinguishers at various locations. If there is fire on running trains between stations then the Motorman should inform OCC immediately and announce in the train to make safe distance from fire in the train and tried to bring the train on the next station where additional staff, first aid, ambulance and other facilities shall be available easily.

4.6 Fire at Metro Station Premises

4.6.1 The fire can be at the following locations:

(i) In areas where the passengers enter for purchasing tickets or leaving the station after performing their train journey including staircases (and escalators / lifts, where provided). For underground stations this area includes the ground surface entries / exits. It also includes the escalators connecting the surface level to Concourse level and the Concourse level to platform floor level except for Central Park station which does not have a separate Concourse level. In Esplanade areas there are two Concourse level, lower Concourse and Upper Concourse. For all elevated Stations, it is the area where Metro tickets are sold and where the passengers disperse including the staircases / escalators / Lifts connecting the ground surface areas to the platform areas.

(ii) The service rooms and the installations housing the ventilation and air-conditioning equipment including the station air intake / exhaust locations which are situated on the ground surface or mezzanine level and are approachable through these areas.

(iii) In platform areas including the service rooms and installations housing the ventilation and air-conditioning equipment, station air intake / exhaust locations which are situated at the platform level and are approachable from the platform. This also includes cases of fire within the station limits in the viaduct / portion of track surface.

(iv) Traction and Auxiliary electrical substations situated at platform level.

4.6.2 In case of fire in areas where passengers enter / leave the station premises, the endeavour of the station staff should be to cordon of the area so that it is not approachable by intending Metro users or by Metro passengers leaving the station area.

4.6.3 Duties of the Station Shift-in-Charge.

(i) Inform the OCC about the fire and also appraise the requirement of medical assistance, if necessary.

(ii) Close the station entry and the exit from the platform near the fire location, to prevent access to the area by persons not connected with the salvage operations.

(iii) Announce through PA system to passengers to get out of the

platform and use the other mezzanine or other entries for entry and exit. In some underground stations there are areas which, if affected by fire would block all the exits from the stations. In such cases the passengers should be requested to be on the platform and board the next available train for detraining at the adjacent station.

(iv) Inform fire personnel for fighting the fire.

(v) Use fire extinguishers available at the station with the help of other staff and try to extinguish the fire.

(vi) Inform the TPC about the location of the fire so that TPC takes immediate action for rushing staff for control of ventilation and power supply.

(vii) Inform electrical staff / Traction Power Controller to cut off power supply to the affected area in a manner that it does not affect PA system and signalling and train control system.

4.6.4 Duties of Traffic Controller:

(i) After receipt of the report of fire, Traffic Control should inform the Fire Brigade personnel and the Medical Team for fire fighting and medical assistance (if required).

(ii) Regulate the Train service, as required. If the fire is at a station in an area blocking all exits from the mezzanine, the Motorman of trains approaching the station should be advised to inform his passengers that they should not detrain at the affected station. The doors of the coaches would however be opened to take the waiting passengers from the platform.

(iii) After clearing the passengers available on the platform the Traffic Controller should inform the Traction Power Controller to take necessary precautions about electrical equipment available at the station and regulate the ventilation system as required, depending upon the situation of the fire.

4.6.5 Duties of Traction Power Controller:

(i) All the station intake fan should continue to run except in case of fire in station intake duct itself. The intake fan should be switched off till the fire is extinguished in the case of fire in station intake duct itself.

(ii) At first both the UPE fans should be 'Switched OFF'. After changing the damper position to outward direction, both the UPE fans should be 'Switched ON' to exhaust the smoke generated inside the station.

(iii) 2nd midpoint exhaust fan should also to be put in service in addition to first midpoint exhaust fan which is already running.

(iv) Depute the concerned AV staff and power supply staff immediately to the station and advise them for cutting of power supply to the affected location and to fight the fire with the available firefighting equipment with them.

4.7 Fire in Platform Areas:

If the fire is at a station in an area blocking all access to the platform, the Motormen of trains approaching the station should be advised to inform passengers that they should not detrain at the affected station. The doors of the coaches would however be opened to take the waiting passengers from the platform. The endeavour of the station staff should be to prevent access of persons on to the platform and to disperse existing passengers from the platform.

4.7.1 Duties of the Station Master/ Station Controller / Shift-in-Charge:

(i) He should inform the Traffic Control immediately about the fire so that train services can be suitably regulated if the fire is likely to affect the running of train.

(ii) Suspend selling of tickets and announce through Public Address system to passengers not to get on to the platform.

(iii) Guide the passengers to go out of the station till such time the fire is extinguished and normalcy is restored and for the purpose all the gate shall be kept free for quick dispersal of the passengers from the station.

(iv) Inform the TPC about the location of the fire so that TPC takes immediate action for rushing staff for control of ventilation and power supply.

(v) Fight the fire with the help of available station staff with the available fire fighting equipment.

4.7.2 Duties of Traffic Controller:

(i) The Controller should regulate the train services depending on the situation on either side of the affected station.

(ii) Make announcement on the train and other stations (through Motorman and the Shift-in-charge(s) about the incident giving reasons for the regulation of train services.

(iii) In case the fire does not affect running of the trains, the passenger on the platform of the affected station can be taken to the next station by running the train services and announcement should be made to that effect.

(iv) Inform the fire fighting personnel and Medical Team for assistance depending on the gravity of the situation.

(v) Fire Brigade personnel of the state Govt. may also be informed for assistance.

4.7.3 Duties of the Traction Power Controller:

(i) All the station intake fan should continue to run except in case of fire in station intake duct itself. The intake fan should be switched off till the fire is extinguished in the case of fire in station intake duct itself.

(ii) At first both the UPE fans should be 'Switched OFF'. After changing the damper position to outward direction, both the UPE fans should be 'Switched ON' to exhaust the smoke generated inside the station.

(iii) 2nd midpoint exhaust fan should also to be put in service in addition to first midpoint exhaust fan which is already running.

(iv) Depute the concerned AV staff and power supply staff immediately to take action and advise them for cutting of power supply to the affected location and to fight the fire with the available firefighting equipment with them.

4.6.4 Duties of Security Staff:

(i) Coordinate with OCC.

(ii) Inform & coordinate with Security / Metro Rail Police / Local Police.

(iii) Make available staff to the station, to assist in passenger evacuation, crowd control and firefighting.

4.8 Section working under CBTC System and Fire in the Viaduct, Track, Surface Outside Limits of stations:

i) This covers the areas along the metro track over viaducts, and on surface. It also includes the mid-point shafts which can be approached through the sump areas.

ii) In case of fire areas in the area mentioned above, the incident should be immediately reported to the traffic controller by the person who locates the fire.

iv) In case of viaduct the fire fighting will be done through the fire tenders from the nearest fire station as the entire stretch of viaduct is accessible by road.

4.8.1 Duties of Motorman:

(i) In case of fire in the viaduct, the Motorman will observe the fire to assess whether he can run the train in the affected area and take his train to the next station, if possible, or stop the train short of the fire in case it is not possible to go to the next station.

(ii) When the train is stopped at the mid - section due to fire in the viaduct, he should immediately inform his Motorman about the incident and ask him to get prepared for evacuation of passengers through the selected door. In case of curve Motorman has to ascertain the doors to be opened depending on the gap between coach floor and the emergency pathway and fix the extendable ladder if necessary.

(iii) He should inform the OCC through Train Radio system and ask for switching off the third rail power;

(iv) The Traffic Controller, on receipt of such information, will inform TPC and get the power switched off. The TPC will exchange Private Number with the Motorman after switching off power, as required, for detrainment of passengers. There after detrainment of passengers will be undertaken by the Motorman as laid down procedures.

4.8.2 Duties of Traffic controller:

(i) On getting information of fire in the viaduct, train service should be regulated and trains should be stopped at the stations on either side of the location of the fire.

(ii) Passengers at the stations on either side as well as on trains should be informed on Public Address system through Motorman and Station shift-in-charge, about the incident. If necessary, they should be asked to vacate the train and get out of the Metro system.

(iii) The fire fighting personnel should be informed for fighting the fire.

(iv) Traction Power Controller should be informed about the situation for taking necessary steps in respect of ventilation system and switching off of power supply equipment, as required.

4.8.3 Duties of Traction Power Controller:

(i) In case of fire in viaduct, due to cable failure or cable joint failure, switching operation should be done to isolate the faulty section immediately and to restore power supply through alternate sources so that lighting and traction system power can be maintained.

(ii) Inform the AV staff and other Power supply staff concerned to take necessary steps for identifying the fire and fighting the fire with the equipment available with them.

(iii) At the station intake fan shall continue to run.

CHAPTER- 5 : ELECTRIC POWER BREAKDOWN

ELECTRIC POWER BREAKDOWN:

Kolkata Metro Railway uses electrically operated rolling stock for carrying passengers. Electric power is also required for lighting, air conditioning & ventilation, pumping (drainage water and water required for fire fighting), escalators & lifts, signage, for functioning of the signalling system, ticketing system, various communication systems and operation of gates and other ancillary uses. Metro Railway takes 33kV power supply from Calcutta Electric Supply Corporation (CESC) / West Bengal State Electricity Board (WBSEB) and distributes the same for its various requirements (through a network of various types of cables) including powering the 3rd rail system. Any breakdown in the power supply from CESC / WBSEB or in the network of cables or in the 3rd rail system affects the working of the Metro Railway system adversely.

5.2 Reasons for Electric Power Breakdown:

The various reasons that may lead to Electric power breakdown in the Metro Railway system causing disruption of train service are as follows:

(a) Power supply failure from supply authorities at the receiving point (from CESC/ WBSEB).

(b) Fault in the cable system 3rd rail system or in rolling stock leading to tripping of 3rd rail power.

(c) Short circuit of power cables.

(d) Fire in Substations.

(e) Failure of major equipment of the Substation i.e. Receiving Substation, Traction Substation and Auxiliary Substation.

5.3 Action to be Taken:

In case of breakdown of 33 kV supply from CESC/WBSEB at a particular receiving point, immediate action for connecting the affected portion with other receiving point has to be taken. In case of total break drown of supply from

CESC/WBSEB, suspension of trains is inevitable and all consequent actions have to be initiated including detrainment of passengers from trains stranded in the station/viaduct.

Fire in the cable system or 3rd rail system may require suspension of train services either for the full section from Joka to Taratala keeping the affected section suitably isolated. It may require detrainment of passengers also.

Fire in a substation or failure of major equipment of a substation requires its isolation and diverting power to the cable network and 3rd rail system through alternative routes. This applies to instances of short circuit in cable also.

5.4 Persons Involved in Tackling the Disaster:

(a) Traction Power Controller (TPC).

(b) Traffic Controller.

(c) SSE/JE (PD).

(d) Motorman.

(e) Shift-in-charge/Station Superintendent.

5.5 DUTIES:

5.5.1 Duties of Traction Power Controller (TPC):

(a) In case of any power failure in the Metro Railway system, TPC on duty shall come to know about the same through Supervisory Remote control system as the situation would be displayed in the Mimic Diagram Board provided in the Traction Power Panel. In case of fire in the cable system or 3rd rail system, he may get the information though the Traffic Controller or substation supervisors. TPC on duty will take the following steps in case of different types of power failure.

(b) In case of failure of power from the supply authorities to the receiving point, he will first restore the power in the affected section by resorting to switching operation of the required circuit breakers from his Remote Control panel so that the train services are not affected.

(c) After ensuring that the power supply has been restored through alternate sources, he will contact the supply authorities to ascertain the

reasons for the power failure and also the expected time for resumption of power supply. He will ensure that alternate power supply in the affected section is maintained till such time the normal power supply is resumed. On resumption of normal power supply, he will normalize the system by resorting to necessary switching operation through Remote Control or through substation operator as required.

(d) In case of power failure in a particular section due to failure of cable to 3rd rail or fire in cable/3rd rail system, or short circuit, TPC will ensure that the faulty section is isolated immediately. In case isolation does not take place due to failure of required circuit breaker to operate in time, he will isolate the system. After isolation of the system, TPC will inform the power supply supervisor and officers concerned about the incident and ask them to proceed to site to arrange rectification.

(e) He will perform the necessary switching operations from the Traction Power Control Center or through substation operator to ensure alternate power supply for running of train services. In case of failure/breakdown of 3rd rail system, the section concerned will, however, have to be isolated and train services in that particular section will have to be suspended. He will inform the Traffic Controller about such breakdown who should thereafter control train services accordingly.

(f) In case of power failure due to failure of equipment in the substation or due to fire in substation, TPC should immediately isolate the particular substation both on high voltage 11 kV and 33kV supply as well as on the 750V DC traction supply. He will then resort to switching operation at the adjacent substation to ensure that 3rd rail power be restored to the section through alternate arrangement so that train services remain unaffected. He will then inform the Traffic Controller about the situation and request him to regulate train services, as required, He will also inform the supervisor-in -charge of the section and the concerned officers about the incident and request them to proceed to the site of incident.

(g) He shall there after inform higher authorities of the incident.

5.5.2 Duties of Traffic Controller:

(a) On getting information regarding power breakdown from the Motorman or Shift-in-charge / Station Superintendent he shall immediately contact TPC and ascertain the position regarding gravity of the situation.

(b) If the TPC is able to arrange alternative source of power, train services are not affected. Otherwise, the train services are to be controlled depending on the situation as fed back from the Stations & Motormen.

(c) In case detrainment of passengers is necessary, action for the same has to be initiated taking care to keep the power supply to 3rd rail system switched off.

(d) He shall arrange suitable announcement through the PA system of the station and also in the trains stalled in the sections so that there is no panic among passengers.

(e) He shall thereafter inform his supervisors.

5.5.3 Duties of SSE/JE (PD):

(a) In case of power failure from the CESC/WBSEB, supervisor in-change of the section should contact the relevant CESC/WBSEB substation and find out reason for the failure and the time required for restoration of supply. He will keep the TPC informed of the developments.

(b) In case of failure of 3rd rail system he should proceed to the site of incident along with his staff and rectify the defects and certify to the TPC through a message about the fitness of the 3rd rail for charging.

(c) On resumption of train services after the 3rd rail is charged; he should observe the first train passing through the section to detect any abnormality during train running. In case of any abnormality, further block should be taken and necessary further repair carried out to ensure smooth running of trains.

(d) In case of fire in a substation or failure of any major equipment in a substation he should proceed to the substation with necessary breakdown maintenance staff and attend to failure/fault as early as possible. In case of major failure, alternate power supply should be maintained as long as rectification work is not completed. When traction receiving substation is out of power due to any failure, adjacent substations should be manned by competent supervisor/ staff to ensure continuity of alternate supply till such time normalcy is restored in the affected substation.

5.5.4 Duties of Motorman:

(a) The Motorman becomes aware of Traction Power breakdown through the stalling of the train. He should immediately get in touch with the TLC and await further instructions.

(b) If there is likelihood of delay in restoration, and on the advice of the Traction Power Controller, he shall arrange for detrainment of passengers as per procedure laid down in Chapter-4.

(c) He shall frequently make suitable announcement in the train PA system and keep the commuters informed so that no panic is created.

5.5.5 Duties of Shift-in-charge/Station Superintendent:

(a) The Shift-in-charge/Station Superintendent may become aware of Electric Power breakdown by the situation in his station or through the Traffic Controller.

(b) He shall arrange suitable announcements to the waiting passengers through his station PA system.

(c) He shall assist in the detrainment of passengers as necessary.

CHAPTER- 6 : ACCIDENT INVOLVING TRAINS

6.1 ACCIDENTS INVOLVING TRAINS:

6.1.1 Disaster causing distress to passengers can take place due to the following reasons involving trains with passengers:

(a) Derailment of a train.

(b) Collision between two trains.

(c) Stalling of a train due to equipment failures.

6.1.2 Action to be taken by the staff in each case is detailed in following paragraphs:

6.2 Derailment of a Train with Passengers (without CBTC)

6.2.1 Derailment of a train may take place:

(i) At a station.

(ii) In between two stations.

6.2.2 Derailment of a train at a station:

(a) The Driving Motorman should:

(i) Ascertain that the train cannot move further and should thereafter inform the Traffic Controller through Radio Telephone/Emergency Telephone about the incident and take action for detrainment of passengers.

(ii) Inform the Conducting Motorman to take action for detrainment of passengers.

(iii) Announce on train Public Address system to the passengers about the derailment and request the passengers to detrain.

(b) The Conducting Motorman should:

(i) Open the doors on the platform side.

(ii) Ask the passengers through train PA system to detrain and get out of the station.

(c) The Traffic Controller on receipt of the information about derailment should:

(i) Inform the officials concerned about the same.

(ii) Ask the Shift-in-charge of the station concerned to detrain passengers and guide them for exit out of his station.

(d) The Station Shift-in-Charge concerned on receipt of information should:

(i) Depute his staff to assist and guide the passengers to get out of his station.

(ii) Also announce over the Station PA system for guidance of the passengers.

6.2.3 Derailment between Two Stations:

(a) The Driving Motorman should:

(i) Secure his train by applying the brakes, if the Train cannot move further.

(ii) Inform the Controller about the incident through Train Radio system, Emergency phone, and ask for medical and other help as needed.

(iii) Inform the Conducting Motorman and get ready for detrainment of passengers.

(iv) Take further action for detrainment of passengers through emergency door and take them to the nearest station as per procedure laid down in Chapter-4 for detrainment of passengers with the assistance of Conducting Motorman, as required.

(v) In case of any difficulty in detraining and taking the passengers to the nearest station, detrainment through the other end should be organized as per procedure laid down in **Chapter-4**.

(vi) Attend to passengers and render First Aid as required.

(b) The Conducting Motorman should:

(i) Open emergency doors and lower the ladder for detrainment as detailed in **Chapter-4**.

(ii) Assist Motorman in rendering First Aid.

(iii) Assist and guide passengers to the nearest station.

(c) The Controller on receipt of the information should:

(i) Inform the higher officials concerned.

(ii) Ask for medical assistance as required.

(iii) Ask for assistance from local Civil Authorities/Fire Brigade as required.

(iv) Regulate train services.

(d) The Station Shift-in-Charge on either side of the place of derailment should:

(i) Depute his staff for rendering necessary First Aid.

(ii) Ask and arrange for medical assistance as required.

(iii) Announce over station PA system.

(v) Ask passengers to get down at the station and get out of the station.

(vi) Send assistance for detrainment in section.

6.3 Derailment of a Train with Passengers (with CBTC):

6.3.1 Derailment of Train at a Station:

(a) Duties of Motorman:

(i) Motorman becoming aware that his train has derailed shall stop the train immediately if not, already stopped and secure the train.

(ii) Inform passengers of the problem and action being taken.

(iii) Inform OCC providing information of Motorman identification, Location (line identification, Track (UP/DN), & Mast No, Train description (Train no. & train set no.), Adjacent track obstructed or clear & Passenger injury or presence of smoke or fire.

(iv) Announce on train Public Address system to the passengers about the derailment and request the passengers to detrain.

(b) <u>Duties of Traffic Controller:</u>

(i) Traffic Controller shall instruct Motorman of trains approaching the derailment site on both tracks to stop their trains and report their positions.

(ii) Instruct TPC to switch off 3rd rail power and arrange for applying earthing.

(iii) Traffic Controller shall immediately notify Disaster Management Team and all concerned Metro departments, Police and security to secure the accident site and Station shift-in-Charge on the affected line for informing waiting passengers at stations about the likely delay.

(iv) Mobilize medical assistance as required.

(v) Inform the depot to be in readiness to move the rescue and relief train.

(vi) Instruct to the Shift in charge to depute staff for evacuation of passengers and providing medical aid to the injured in case of derailment between stations.

(vii) Regulate train services and inform all stations on the route about the likely dislocation in train services.

(viii) Arrange for Public Address announcements to be made to passengers in trains and on stations.

(ix) Request assistance of Kolkata Police / Security staff for crowd control at critical stations.

(x) The Traffic Controller shall protect the adjacent track to avoid second accident.

(xi) Traffic Controller shall take prompt action to stop all movements towards the derailment site.

(c) Duties of Station Shift-in-Charge:

(i) Depute his staff to assist and guide the passengers to go out of his station.

(ii) Frequent announcement shall make over through the Station PA system for guidance of the passengers.

(iii) Depute his staff for rendering necessary First Aid to injured, old age or any needy passengers.

(iv) Act as per Nominated Nodal officer for the site, and inform to OCC for any updates.

6.3.2 Derailment between Two Stations:

(a) Duty of the Motorman:

(i) Secure his train by applying the brakes, if the Train cannot move further.

(ii) Inform the Controller about the incident through Train Radio system, Emergency phone, and ask for medical and other help as needed.

(iii) After De-energisation of 3rd rail, Motorman will take permission for track access from TC and the place Third Rail Earthing Device on rails.

(iii) Inform the Traffic Controller and get ready for detrainment of passengers.

(iv) Take further action for detrainment of passengers through door(s) and take them to the nearest station as per procedure laid down for detrainment of passengers with the assistance of security person if any or with any healthy passenger or any station staff if available, as required.

(v) In case of any difficulty in detraining and taking the passengers to the nearest station, detrainment through the other end should be organized as per procedure laid down procedure.

(vi) Attend to passengers and render First Aid as required.

(b) Duty of the Traffic Controller:

(i) Traffic Controller shall instruct Motorman of train approaching the derailment site on both tracks to stop their trains and report their positions.

(ii) Instruct TPC to switch off 3rd rail power and arrange for applying earthing.

(iii) Traffic Controller shall immediately notify Disaster Management Team and all concerned Metro departments, Police and security to secure the accident site and Station shift-in-Charge on the affected line for informing waiting passengers at stations about the likely delay.

(iv) Mobilize medical assistance as required.

(v) Inform the depot to be in readiness to move the rescue and relief train.

(vi) Instruct to the Shift in charge to depute staff for evacuation of passengers and providing medical aid to the injured in case of derailment between stations.

(vii) Regulate train services and inform all stations on the route about the likely dislocation in train services.

(viii) Arrange for Public Address announcements to be made to passengers in trains and on stations.

(ix) Request assistance of Kolkata Police / Security staff for crowd control at critical stations.

(x) The Traffic Controller shall protect the adjacent track to avoid second accident.

(xi) Traffic Controller shall take prompt action to stop all movements towards the derailment site.

(c) Duties of Station Shift-in-Charge:

(i) Depute his staff to assist and guide the passengers to go out of his station.

(ii) Frequent announcement shall make over through the Station PA system for guidance of the passengers.

(iii) Depute his staff for rendering necessary First Aid to injured, old age or any needy passengers.

(iv) Act as per Nominated Nodal officer for the site, and inform to OCC for any updates.

6.4 Collision without CBTC System:

(a) At a station.

(b) In between two stations.

6.4.1 Collision of trains at a station:

(a) Duty of Driving Motorman:

(i) Inform Traffic Control on Radio Telephone/ Emergency phone about the incident.

(ii) Inform and coordinate with Conducting Motormen if he is not injured.

(iii) Find out the extent of damage and injury to passengers and render First Aid as required with the help of Conducting Motorman.

(iv) Inform Station staff and ask for their assistance.

(v) Address the passenger on train PA system to detrain after opening of platform side door and guide the passengers to get out of the Station with the help of station staff and other persons. Arrange for detrainment of passenger as laid down in Chapter-4.

(b) Duty of Conducting Motorman:

(i) In consultation with Driving Motorman, assist in detrainment of passengers as laid down in Chapter-.3

ii) Communicate with the Traffic Controller as required and make announcement to passengers over Train PA system for detrainment.

(c) Duty of Traffic Controller:

(i) Arrange for detrainment of passengers as laid down in Chapter-4.

(ii) Regulate train services as required in consultation with higher officials.

(iii) Ask for medical assistance as required.

(iv) Advise Shift-in-charge concerned about the incident and ask them for rendering necessary assistance for detrainment and First Aid as required.

(d) Duty of Shift-in-Charge:

(i) Depute their staff for detrainment of passengers as laid down in Chapter-4.

(ii) Assist in rendering First Aid to passengers required.

(iii) Ask medical assistance if required.

(iv) Announce over Station PA system to detrain and get out of the station.

6.4.2 Collision of trains between stations:

(a) Duty of Driving Motorman:

(i) Inform Traffic Controller on TETRA Radio Terminal.

(ii) Should find out the extent of damage and injury to passengers and render First Aid to them.

(iii) Ask for Medical assistance if required.

(iv) Arrange for detrainment of passengers to the next station/or to stations on either side of the train and guide them to the station as per procedure laid down in Chapter-4.

(v) Inform the Conducting Motorman.

(b) Duty of Conducting Motorman:

(i) Assist the Driving Motorman in extending First Aid to injured persons.

(ii) Arrange detrainment of passengers through his cab, if required.

(iii) Assist the Driving Motorman in detraining passengers as per Procedure laid down in Chapter-4.

(v) Assist the Driving Motorman in all other operations, as required.

(c) Duty of Traffic Controller:

(i) Contact the officials in charge and inform them about the accident.

(ii) Arrange medical assistance and assistance from Local Authorities, as required.

iii) Inform Shift-in-charge/Stations on either side of the place of accident.

(iv) Inform the Traction Power Controller and ensure switching off the traction power for detrainment of passengers as per procedure laid down in Chapter-4.

(v) Control the train services, as required.

(d) Duty of Station Shift-in-Charge:

(i) Alert their staff and assist in helping passengers to get out of the station after detrainment.

(ii) Arrange for Medical assistance and First Aid, as required.

(iii) Announce through Public Address system about the accident to the passengers.

6.5 Collision with CBTC System.

6.5.1 Collision of trains at a station:

(a) Duty of Motorman:

(i) Inform Traffic Control on TETRA Radio Terminal about the incident.

(ii) Inform the no. of casualties if any, condition of train and exact location at platform to the TC.

(iv) Immediately open the Train door.

(iv) Find out the extent of damage and injury to passengers and render First Aid as required with the help of station staff if any.

(v) Inform Station staff and ask for their assistance.

(vi) Address the passenger on train PA system to detrain after opening of platform side door and guide the passengers to exit from station with the help of station staff and other persons. Arrange for detrainment of passenger as laid down procedure.

(b) Duty of Traffic Controller:

(i) Inform shift-in-Charge to reach the platform and assist them.

(ii) Inform to Traffic Controller about the collision and need of external help if required

(iii) Arrange for detrainment of passengers as laid down procedure.

(iv) Regulate train services as required in consultation with Traffic Controller.

(v) Ask for medical assistance if required.

(vi) Advise Station Superintendent/Station shift-in-charge concerned about the incident and ask them for rendering necessary assistance for detrainment and First Aid as required.

(c) Duty of the Station Shift-in-Charge:

(i) Alert their staff and assist in helping passengers to get out of the station after detrainment.

(ii) Arrange for Medical assistance and First Aid, as required.

(iii) Announce through Public Address system about the accident to the passengers

(v) Announce over Station PA system to detrain and get out of the station.

6.5.2 Collision of trains between stations:

(a) Duties of Motorman:

(i) In the event of collision taking place involving his train, the Motorman shall inform Traffic Controller by giving as many details as possible.

(ii) After confirmation from Traffic Controller about Switch off of Third rail and short circuiting of Third rail, he shall seek Permission from Traffic Controller for passenger evacuation as per procedure laid down.

(iii) He will inform passengers about the incident advising them about rescue and relief arrangements being made.

(iv) He shall quickly assess the situation particularly in respect of passenger's injury and again inform Traffic Controller with as much details as available seeking medical and other assistance as required.

(v) He will render first aid to passengers where ever possible.

(vi) He should await further instructions from Traffic Controller.

(b) <u>Duties of Traffic Controller:</u>

(i) On receiving information about train collision the Traffic Controller shall block all movement on both the tracks to protect the site of accident.

(ii) Instruct TPC to switch off 3rd rail power and make short circuiting to the station shift-in-charge.

(v) Inform Disaster Management Team members and other designated Personnel of Metro Railway, Kolkata.

(iv) Mobilize medical assistance as required.

(vi) Inform the train depot to be in readiness to move ART.

(vi) Instruct Station Superintendent to depute staff for evacuation of passengers and providing medical aid to the injured.

(vii) Regulate train services and inform all stations on the route about the likely dislocation in train services.

(ix) Arrange for Public Address announcements to be made to passengers in trains and at stations.

(x) The Traffic Controller shall inform the Disaster Management Team members, the Police and security to secure the accident

site and Station Superintendent/Station shift-in-Charge and emergency services.

(xi) Traffic controller shall inform their respective officers, maintenance/ emergency team and others as applicable.

(c) <u>Duties of Station Shift-in-Charge:</u>

(i) The Station Shift-in-Charge on receipt of information about collision at his station shall inform Traffic Controller.

(ii) Arrange for immediate medical assistance as required.

(iii) Mobilize the staff for evacuation of passengers and rendering of first aid to the injured and their hospitalization as required.

(iv) Inform passengers waiting at the station of the likely delays.

(v) Station Superintendent / Station Shift-in-Charge will evacuate passengers as per instructions of Traffic Controller.

CHAPTER- 7 : STAMPEDE

7.1 Stampede

Stampede is a sudden rush of a crowd of panic stricken people. It may result in injury to persons, loss of human life or extensive damage to metro property and can be cause acute distress to persons who are caught in rush.

7.2 Causes

The probable main cause leading to stampede are:

(i) Fire or sabotage or serious accidents inside Metro station and viaduct leading to passengers rushing out of system for safety.

(ii) Unusual rush of passengers during night service runs i.e. During Puja festivals and other festivals.

(iii) Unusual rush of passengers after big matches (Football, Cricket etc.), and political rallies.

(iv) Unusual occurrence in the Metro services, leading to heavy accumulation of passengers in a particular Metro Railway platform.

(v) Natural calamity like heavy rains, earthquake etc. leading to a rush of passengers into the Metro Railway stations.

(vi) Heavy rush of passengers in peak hours due to dislocation of other modes of city transport.

7.3 Areas Where Possible Locations of Stampede Can Occur:

(i) Entry, Exit points leading to Metro stations.

(ii) Station, concourse in front of ticket counter and entry/exit gates leading to platforms.

(iii) Near stairs, lifts and escalators.

(iv) Passenger platforms.

(v) Foot over bridge

7.4 Action to be Taken When Stampede Occurs:

Stampede can occur anywhere in station premises and as such conditions it is responsibility of station staff to control the situation. In serious cases help of security staff, police need to be taken. Medical attention may be necessary for the injured. Such situations shall be prevented by proper announcements. The security staff shall be vigilant and take prompt action.

7.5 Persons Involved in Tackling the Stampede:

(i) Station Shift - In charge and his staff
(ii) Traffic Controller.
(iii) Motorman.
(iv) Security and city police.
(v) Medical Unit.
(vi) Electrical staff at station.
(vi) Any Metro employees.

7.6 Duties

7.6.1 Duties of Station Shift-in-Charge and Station Staff:

Whenever the Shift-in-charge/Station Superintendent of a Metro Railway Station, or any of his staff, apprehends a stampede, he shall arrange to take the following steps:

(i) He will announce through Public Address system and request the passengers to keep their cool and leave the premises in an orderly manner. If the cause of the stampede is known, that should be explained to the passengers so that misinformation does not spread.

(ii) He will keep "free" all the entry/exit gates and also open the manual gates to facilitate quick evacuation.

(iii) He will direct station staff to guide the passengers out of the station premises.

(iv) He will stop booking of tickets from his station till situation comes to normal.

(v) He will inform the Traffic Controller about the situation of his station through Control Telephone or other available means of communication facilities available at station.

(vi) He will ask for assistance from the Traffic Controller for RPF staff and Kolkata Police for tackling the situation and to prevent

further deterioration of the situation. lf required, he will request for medical assistance.

(vii) He may request the Central Control, depending on the situation, to run trains through his station to avoid further accumulation of passengers in his station.

(viii) He may ask Traffic Controller for deputation of extra staff for assistance and/or run extra trains to clear the rush.

(ix) The direction of working of escalator shall suitably switched to facilitate early clearing of crowd and if necessary escalators may be stopped to avoid any untoward incident on running escalators.

(x) The time, duration and details of action taken must be recorded in the Station Log.

7.6.2 Duties of Traffic Controller:

(i) On receipt of message from Shift-in-charge/Station Superintendent regarding stampede, he will immediately inform the RPF control and local Police to proceed to the station concerned for control of the crowd.

(ii) He will inform the Medical Unit for mobilizing medical assistance to the concerned station.

(iii) He will direct the Motormen of the trains running in the system to run through the station if the situation so demands to reduce further accumulations of passengers in the station. In such a case he shall also inform the adjoining stations so that the over-carried passengers can be suitably informed at these two stations through PA system.

(iv) He will inform his superior officers about the situation.

7.6.3 Duties of Motorman:

(i) The Motorman of the trains running in the system at the time of stampede will act as per instructions given by the Traffic Controller over available means of communication.

(ii) He will run through the station on receipt of such instructions from Traffic Controller so that further accumulation of passengers into the affected station is avoided.

(iii) He will announce over PA system of the train, with the help of the Conducting Motorman, the situation and the reason for running through a particular station.

7.6.4 Duties of RPF / Kolkata Police:

(i) On receipt of information from the Traffic Controller, the RPF control will depute sufficient RPF staff to the affected station without any loss of time.

(ii) RPF on reaching the station will report to Shift-in-charge/Station Superintendent concerned and render all assistance in controlling the crowd and evacuate the station premises to restore normalcy. For this RPF will co-ordinate with Local Police if situation so demands.

7.6.5 Duties of Medical team of Metro Railway:

(i) On receipt of information of any stampede at any station, the In-charge of the Medical Unit will immediately move to the concerned station with his medical team.

(ii) On reaching the station, In-charge of the Medical Unit should report to the Shift-in-Charge/Station Superintendent of the concerned station and help the station staff in rendering First Aid and other medical help as required to the passengers or staff affected by the stampede.

(iii) At this stage the In-charge of the Medical Unit may request Shift-in-charge / Station Superintendent to announce through the station PA system regarding availability of medical facility.

(iv) In case of serious injury, the person(s) affected should be removed to the nearest hospital by ambulance or any other vehicle available outside the station.

7.6.6 Duties of Electrical Staff:

(i) In case of any stampede or stampede - like situation, Electrical staff on duty will ensure that lights and emergency lights are in working condition and they should remain available at the switch room to ensure that lighting is proper for dispersal of passengers.

(ii) The direction of working of escalator shall suitably switched to facilitate early clearing of crowd and if necessary escalators

may be stopped to avoid any untoward incident on running escalators.

(iii) All ventilation fans should be kept working normally.

7.6.7 Duties of Telecom Staff at the Station:

The Telecom Staff at the station should ensure that the following are in working order and they should be available there till the crisis is over:

(i) Station PA system;
(ii) Telephone system and communication with the Central Control;
(iii) Closed Circuit TV system.

In case no Telecom Staff is available at the station, the Signal Control Staff at the Central Control may be directed to immediately depute a suitable person from any other location where such staff is available to carry out the functions stated above.

CHAPTER- 8 : SABOTAGE

8.1 Introductory:

Sabotage is criminal interference with any part of working machinery of the Metro Railway with the object of rendering it inoperative or any criminal act intended to cause damage to Metro Railway property. Sabotage may occur anywhere in the Metro Railway's jurisdiction of action but its effect in Metro Stations in section between two stations or in running train will have profound impact in terms of human distress.

8.2 Action to be taken:

When sabotage has taken place in the station premises, the following action will have to be taken by the different staff-

8.2.1 Duties of Station Superintendent /Shift-in-charge:

(a) He should visit the affected spot and assess the extent of damage inflicted on Railway property and how that may affect the passenger service.

(b) He should immediately inform the Traffic Controller about details of the happening, the time when it occurred and how it will affect the train services, passenger movement etc. He should ask for Medical assistance, if necessary and indicate the gate through which the Medical Team should enter.

(c) He, depending on the seriousness, may announce through the station PA system what has happened and what the passengers are expected to do without getting into panic.

(d) In case any Railway property is seen to be damaged, he should immediately inform the in-charge of the concerning department to immediately attend the effected spot and take suitable remedial action.

(e) In case any person is seen to be moving with doubtful intentions, he may be detained for interrogation.

(f) Passengers found near the affected zone may also be asked about their first-hand knowledge of the occurrence.

8.2.2 Duties of Traffic Controller:

(a) Immediately on receipt of the sabotage information, Traffic Controller should contact the RPF and ask them to rush to the spot of occurrence and cordon off the area so that total evidence is conserved to the extent possible.

(b) Inform the Medical Department to reach the spot with necessary medicines, ambulances etc. in case of any injury to any person due to the sabotage act through the gate advised by the Shift-in-charge of the station.

(c) He should thereafter inform the COM the details of the occurrence and the action already taken by him and take directions from him for further action.

(d) Relay such directives to the persons concerned.

(e) Hold trains at the earlier station in case it is considered that the running of train through the affected station is not desirable and arrange for detrainment of passengers after proper announcements.

(f) Inform Section in-charge of Civil, Electrical and S&T Department of the incident and ask them to go to the spot immediately.

8.2.3 Duties of RPF Personnel:

(a) On being informed about the sabotage, they will rush to the spot and immediately cordon off the area to protect and preserve the scene of occurrence.

(b) Question any doubtful person detected earlier by the Shift-in-charge of the station or by them and if necessary, arrest them.

(c) In case of fire, immediately inform the Fire Brigade to rush to the spot for combating the fire.

8.2.4 Duties of Other staff:

(a) The Section Chiefs of all the three service departments viz. Civil, Electrical and S&T Department may visit the site immediately and assess the damage inflicted on equipment under their respective charges.

(b) Take suitable action, including informing their higher authorities, to restore the damage equipment/ installations in least possible time.

8.3 Sabotage in Section between Two Stations:

8.3.1 Action to be taken by Motorman:

When sabotage takes place in the section between two stations, it is the Motorman of running train who will come to know about it first and his duty will be:

(a) On noticing any unusual occurrence on track or other installation, he should immediately report to the on duty Traffic Control about the unusual sight with its location.

(b) In case it is possible to run through the spot, he should continue the journey.

(c) In case he notices a situation where train running will not be safe, he should stop the train and inform the Traffic Controller for further directive.

(d) Similar action should be taken by the Motorman in case he notices abnormality in the other track also indicating to the Traffic Controller whether passage of a train over the affected section will be safe.

(e) Take further action as per the directive of the on duty Traffic Controller.

8.3.2 Action to be taken by the Traffic Controller:

(a) On receipt of such information the Traffic Controller should immediately take action to regulate trains to prevent their running over the affected section.

(b) Inform the RPF about situation and take action to enable the RPF to make an immediate on the spot inspection.

(c) Inform the superior officers about the situation and get directive from them for further action.

(d) Take necessary action as per the directive of the superior officers.

(e) Inform Section-in-charge of Civil, Electrical and S&T Department to make an on the spot inspection to assess loss/damage etc.

(f) In case running of the train to Crashed is unsafe, control trains in earlier stations and arrange for detrainment of passengers after proper announcement.

8.3.3 Action to be taken by the RPF:

(a) On being informed, they should go to the affected spot and make a detailed assessment of loss and modus operandi adopted for sabotage. To reach the spot, they should ask the on duty Traffic Controller for power block and go to track bed only after confirming that 3rd rail power has been switched off.

8.3.4 Action to be taken by other staff:

(a) Other concerned staff of Civil, Electrical and S&T Departments should make an immediate inspection of site, assess loss/damage and organize their repair as early as possible.

(b) Inform their superior officers about the situation and the action they are taking to rectify the situation. In case of any specific directive from superior officers, they should act according to those directives.

8.4 Sabotage in Train:

Of all the sabotage actions, those happening inside a train will have most disastrous consequences and very prompt action will be necessary to restrict the damage to men and material. The following are envisaged towards sabotage activities:

(a) Bomb in track which detonates under a train.

(b) Detonation of bomb inside a coach.

(c) Criminal interference with train running equipment which causes fire to the coaches, while on run.

(d) Other sabotage activities incapacitating the train in the section.

8.4.1 Bomb Blast on Track:

There may be derailment of the train with large scale damage to the train, viaduct structure as well as injury to the passengers in the train. In case of derailment, the train will immediately come to a stop. The Driving Motorman (and in case he is already injured, the Conducting Motorman), will try to contact the other Motorman and try to assess the situation and immediately inform the Traffic Controller about the occurrence and ask for immediate assistance of RPF and Medical Department. At the same time the Motorman should seek permission for detrainment of passengers.

For detraining the passengers, action, as indicated in Chapter-III, should be immediately taken. In case, the situation does not permit detrainment from one end, it should be arranged from both ends. The injured passengers will have to be treated locally or transferred to hospital as soon as the Medical Team arrives at the spot. In case, the motormen cannot communicate with each other, both of them should independently try to assess the situation and take action to inform the Traffic Controller and take action, as indicated above.

8.4.2 Bomb Blast Inside The Train:

It will be the endeavour of the Driving Motorman to run the train to the next station as quickly as feasible. In case he is not able to take the train to the next station, he should stop the train and contact the Conducting Motorman to ascertain from him, if he has any knowledge of the situation. Immediately thereafter he should contact the Traffic Controller and inform him about the blast. He should seek from the Traffic Controller the assistance of RPF and Medical Department.

He should now ask Conducting Motorman to make an on the spot assessment of the situation including injury/ death of passengers. The Conducting Motorman will inform the same to the Traffic Controller for immediate appropriate action. At the same time, he should take the permission of the Traffic Controller to detrain the passengers. In case one of the Driving Motormen is incapacitated or the communication between them is disrupted, then the other

Motorman should take all the above actions himself. After assessing the situation and informing the Traffic Controller, the Motorman should make announcement to the passengers through train PA system about the station and should repeatedly ask them to remain calm indicating that action has already been taken to arrange for detrainment of passengers.

On arrival of the RPF and Medical Team, they should be brought inside the train through emergency cab door and the step ladder and they should be shown the affected coach/coaches so that immediate medical assistance may be given to the passengers in distress. The Motorman will thereafter arrange to de-train the passengers with the help of the RPF staff and other staff which may have already arrived at the site by this time.

8.4.3 Criminal Interference with Train Running Equipment Which Cause Fire:

In case of a fire in the train due to any criminal interference with train running equipment, the matter should be dealt with as in the case for fire in a train dealt in Chapter-4.

8.4.4 Other Sabotage Activities Incapacitating the Train in the Section:

In this case, arrangement should be made to detrain passengers as giving in Chapter-4 (Detrainment of passengers in a section).

8.4.5 Sabotage Activity in any other Area than the Station Premises or in Viaducts:

In case sabotage activity has taken place in any other place than the station or viaduct, action will have to be taken by the official/officer in-charge of the place of occurrence. In that case, he will have to deal with that situation like, a Shift-in-charge, when the sabotage occurs in station area.

CHAPTER- 9 : ACTIONS AND COORDINATION ASPECTS DURING TERRORIST THREATS / ATTACK

The various terrorist related threats that may be faced by the Kolkata Metro Railway shall be elaborated upon so as to highlight the tasks and actions to be taken by agencies/ organization other than Kolkata Metro Railway in succeeding paragraphs.

9.1.1 Security Threats and Terrorist Attacks:

Increase in terrorist actions against public transport worldwide, indicates that public transport systems are becoming more vulnerable and potential targets for terrorists. It is clear that preventing terrorist activities is the primary responsibility of security agencies and State Police. However, concern for passenger well-being and their security and adverse effects of such mishaps on the public image of the Transport System itself, requires best possible level of preparedness for prevention of such threats within Metro premises.

9.1.2 Key components of such preparatory and preventive action include:

(a) Encouraging and guiding passengers to be cautious themselves.

(b) An Awareness Programme - appealing users to be on the alert and report any suspect package.

(c) Well thought out crisis communication to prevent misinformation, confusion, panic and shock.

(d) Clear procedures and systems of communication need to be established for emergencies and regularly tested, in order to ensure a working communication during crisis situations.

(e) Frequent mock drills to test effectiveness of passenger evacuation systems including the collaboration and response of passengers.

(f) Training all front line staff to prevent dangerous situations and handle incidents.

(g) Once they have happened, act with courage, promptitude and alertness, reassuring the passengers and providing regular information for their guidance.

9.2 Duties:

9.2.1 Duties of Shift-in-charge/ Station Superintendent in case of Terrorist Attack at Station:

(a) The Shift-in-charge/Station Superintendent should visit the affected spot to assess the extent of impact on human life and also how it may affect train services.

(b) He should inform the Traffic Controller about details of incident.

(c) Inform Kolkata Police and Kolkata Metro Police and depute station security staff to cordon the site to preserve the clues and leave the site undisturbed for police investigation.

(d) Record the time it occurred.

(e) Assess the extent of injuries.

(f) Observe any presence of smoke/fire.

(g) Ask for medical assistance and, fire services as required indicating the gate through which the Medical Team/Fire Services should enter. He should depute a uniformed staff to receive and guide them.

(h) Sound the whistle to draw the attention of the passenger for vacating the station premises.

(i) Depute staff to announce at 5 minutes interval, through the station PA system what has happened and what the passengers are expected to do without getting into panic.

(j) Mobilize resources to protect and Cordon the site, render first aid, evacuate the injured.

(k) In case any Metro Rail property is seen to be damaged, he should immediately inform the Section-in-charge of the Department to attend the affected spot to take suitable remedial action.

(l) In case any person is seen moving in a suspicious manner, he may be detained for interrogation.

(m) Passengers found near the affected area may also be asked about their first-hand knowledge of the occurrence and their statement with name and addresses recorded.

9.2.2 Duties of Traffic Controller/Chief Controller:

Immediately on receipt of the information about terrorist attack, Traffic Controller /Chief Controller shall:

(a) Inform Metro Police and Security Personnel and ask them to rush to the spot of occurrence.

(b) Inform the NSG official immediately to attend the site of terrorist attack and take necessary measure.

(c) Mobilize Medical Assistance and/or Fire Services to reach the spot.

(d) Inform the Kolkata Metro Railway Officials of the incident.

(e) Hold trains at stations.

(f) Train movement shall only be resumed after confirming that the running of train through the affected station is safe. Till the position becomes clear regular announcements to be made to passengers in train and at station of the likely delay and evacuation procedures started.

9.2.3 Duties of Security Staff:

(a) On being informed about the terrorist attack, they will promptly move to the spot and immediately cordon off the area and retaliate, if possible.

(b) Flash the message to all concerned.

(c) Escape route should be closed.

(d) The Disaster Management Team of Security should be in place immediately.

(e) Re-enforcement should be arranged immediately.

(f) Assist station staff in passenger evacuation and crowd control.

(g) Assist Metro Police/Local Police in investigation and de-briefing, if required.

(h) Question any doubtful persons detected earlier by the Shift-in-Charge or by them and, hand them over to Kolkata Metro Police.

(i) In case of fire, immediately inform the Fire Services to rush to the spot for combating the fire.

(j) Assist Station Staff in combating fire with available means.

9.2.4 Duties of Other Staff:

(a) The Section in charges of Civil, Electrical and Signal departments should proceed to the site immediately and assess the damage to equipment under their respective charges.

(b) Take suitable action informing higher authorities, to restore the damaged equipment/ installations promptly.

CHAPTER- 10 : MEDICAL ASSISTANCE TO DISASTER VICTIMS

10.1 Immediate Steps to be Taken Prior to Arrival of Medical Team:

In case of disaster involving passengers or staff, the Station Master / Motorman or any Metro staff who are present at the site of such a disaster should take the following immediate steps:

(a) First Aid should be given to the disaster victim as per First Aid training given to staff. For this purpose, a first aid box will be available at every station and other installations. If after First Aid, the victim is in a position to leave Metro premises, he should be allowed to do so after recording his name and address.

(b) When the condition of the victim requires higher level of attention, he should be removed from the disaster site to the nearest available Doctor or Hospital for medical attention. The list of such Hospitals/Doctors should be available at each station in a conspicuous place in SM's room.

(c) In case a number of disaster victims are involved, medical help from Metro sources should be called through the available communication system, such as Railway Telephone, DOT telephone, Control Telephone, TPC's telephone, TLC or emergency telephone as the case may be. In case of a running train, TLC should be informed through Train Radio Communication System for such assistance. On receipt of such call for help, the Controller should inform the Metro Railway Medical assistance unit about the situation and mobilize medical team suitably.

(d) Announcement should be made by Motorman through Train PA system in case of a disaster involving a Metro train in a section between stations, to the passengers traveling by that train for help of a Doctor who may be available on the running train, to attend to the disaster victims.

(e) In case of disaster victims at a station, the station PA system should be used for announcement for help of a Doctor, if available in the station premises for immediate medical assistance.

10.2 Steps to be taken for transfer of disaster victims:

(a) After arrival of the Metro Railway Medical Team at the site of the disaster, the supervisor/Motorman/Station Master available at site, should inform the team about the condition of the disaster victims and give all assistance to the medical team, as necessary.

(b) On the advice of the Doctor of the medical team, the victims should be removed, if required, by hiring a taxi or any other vehicle to the nearest Hospital for attention.

10.3 Compensation for accident victims:

Two types of compensations are to be paid quickly in case of any accident to the victims involved in a disaster.

(a) Immediate compensation.

(b) Final compensation

The immediate compensation will have to be paid as per Metro Railway Act read in conjunction with the Indian Railways Act. Necessary action in this regard should be initiated by the station staff or supervisor in-charge of the installation where such occurrences take place. The final compensation will, however, be dealt with by the Personnel Branch of Metro Railway.

10.4 In case of Bomb Blast, Firing and during other crisis:

The Station Superintendent/shift-in-Charge of the station and Metro Staff who will be present at site during the incident should take the following steps immediately:

(a) They should call Metro Railway Medical Team, informing their control. First Aid should be given to the injured/victim as per First Aid training given to staff, for this purpose. A first aid box will be available at every station and other installation. If after First Aid, the victim is in a position to leave metro premises he should be allowed to do so after recording his name and address.

(b) When the condition of the victim requires higher level of attention he should be removed from the site to the nearest available doctor/ hospital

for Medical attention. The list of such hospitals should be available at each station in a conspicuous place in Shift-in -charge Room.

(c) In case of a number of injured / victims are involved, medical help from Metro Sources should be called through the available communication system such as railway telephone, DOT Telephone, Control Telephone, TPC Telephone, TLC or emergency telephone as the case may be, in case of a running train TLC should be informed through train radio communication system for such assistance. On receipt of such call for help, the controller should inform the Metro Railway Medical assistance unit about the situation and mobilize medical team suitably.

(d) Announcement should be made by Motorman through train PA system in-case of an injured involving in Metro Train in a section between two stations, to the passengers by that train for help of a Doctor who may be available on the running train to attend to the injured / victim.

(e) In case of injured / victim at the station, the station PA system should be used for announcement for help of a doctor, if available in the train / station premises for immediate medical assistance.

10.5 Steps to be taken for transfer of injured / victims:

After arrival of the Metro Medical Team at the site, the injured/ victims, the supervisor/ Motorman/ Shift-in-Charge available at the site, should inform the team about the condition of the injured / victim and give all assistance to the medical team, as necessary. On the advice of the doctor of the medical team, the victim should be removed, if required, by hiring taxi or any other vehicle to the nearest hospital for attention. In such crisis, close liaison may be made continuously with the Police authority and ambulance

CHAPTER- 11 : CHEMICAL DISASTER

11. Introduction:

Transportation or carrying of Chemical is prohibited in Metro Railway, Kolkata. In Metro Railway, Kolkata Terrorist can attack by using Chemical agents. This Chemical agent includes poisonous Gases, liquid or solids that have a deleterious effect on the biotic an non biotic environment. Due to the relatively easy availability of hazardous chemicals, Terrorists can procure chemical or even try to sabotage the facilities or passenger's trains as it offers them an easier and often more catastrophic method anti national activity. Chemical incident and uncontrolled release of Chemical form its containment that either threatens to, or does, expose people to a chemical hazard.

Effective chemical disaster Management (CMD) is possible by the adoption of preventive and mitigation strategies as most chemical disaster are preventable in comparison to natural disaster that are difficult to predict and prevent.

11.2 Areas where chemical incident can occur.

Chemical Disaster may take place by terrorist attack at various locations. Chemical incident can occur on the following areas of the Metro Railway system.

(a) Entry and exit points leading to Metro Stations.

(b) Stations concourse, in front of ticket counter, entry/ exit gate and leading to platforms.

(c) At train.

11.3 Action to be taken when chemical incident occurs:

Chemical incidents can occur accidentally or deliberately anywhere in station premises or passenger train. As such it is the primary duty of front line staff to protect, detect and de contaminate the incident site. In this

cases the help of NDRF, local Police and Security needs to be taken as well as medical attention may be necessary for the affected passengers.

11.4 Staff involved tackling the Chemical Disaster:

(a) Shift-in-Charge/ Station Superintendent and station staff.

(b) Traffic Controller.

(c) Motorman.

(d) Security and Kolkata Police.

(e) Medical Unit.

11.5 Duties:

11.5.1 Duties of Shift-in-Charge/ Station Superintendent and station staff.

Whenever the Shift-in Charge, Station Superintendent of Metro Railway station gets information regarding chemical occurrence from any office staff or on duty RPF or from any vulnerable sources, he shall arrange to take the following steps.

(a) He will announce through Public address system and request the passengers to keep cool and leave the premises in an orderly manner. If the cause of chemical incident is known that should be explained to the passengers so that panic does not spread.

(b) He will advise the on duty operating staff and on duty Security staff to protect the affected passengers/ site.

(c) He will inform details to the Traffic Controller regarding the incident and for seeking the help from local Police to maintain law and order, Medical team for medical assistance and NDRF for rescue operation.

(d) He may request the Traffic Controller depending on the situation, to run the train(s) through his station and/or not to

send further train to avoid further accumulation of passengers in his station.

(e) He will keep “free” all the entry/exit gates and also opened the manual gates to facilitate quick evacuations for unaffected passengers.

(f) He will direct station staff to guide the passenger out the station premises.

(g) He will stop booking of tickets from his station till situation comes to normal.

(h) He will inform the Traffic Controller about the situations of his station through control telephone or other available means of communication.

11.5.2 Duties of Traffic Controller:

(a) On receipt of message from shift-in Charge / Station Superintendent regarding chemical incident, he will immediately inform the NDRF for rescue operation, Security and Kolkata Police to maintain law and order and Medical team for medical assistance.

(b) He will direct the Motorman of the trains running the system to run through the station and / or stop the train at the adjacent station, if the situation so demands to reduce further accumulation of passenger in the station.

(c) He will inform the superior officers about the situation.

11.5.3 Duties of Motorman:

(a) He will run through and /or stop the train at the adjacent station or receipt of such instructions from Traffic Controller so that further accumulation of passenger into the affected station is avoided.

(b) He will announce over P.A system of the train, with the help of Conducting Motorman or self, the situation and the reason for running through a particular station.

11.5.4 Duties of Security/Kolkata Police:

(a) On receipt of information from the Traffic Controller, The Security control will depute sufficient Security staff to the affected station without any loss of time.

(b) Security staff on reaching the station will report to the Shift-in Charge / Station Superintendent concerned and render all assistance in controlling the crowd, protect the incident site and evacuate the station premises. For this, Security staff will coordinate with Kolkata Police, if situation so demand.

11.5.5 Duties of medical team.

(a) On receipt of information of any stampede at the station, the In-charge of the medical team will immediately move to the concerned station with his medical team.

(b) On reaching the station, In-charge of medical unit should report to the Shift-in-Charge/ Station Superintendent to the concerned station. This team should render medical help as required to the passenger and medical team will coordinate with NDRF if situation so demand.

11.6 Rescue operation by NDRF team.

On reaching the station, in-charge of the NDRF team should collect details information from Shift-in Charge and starts the rescue operation for the chemical

11.7 National Disaster Response Force (NDRF).

Ministry of Home affairs, Government of India has formed National Disaster Response Force at the Eight selection location in the country

for dealing with relief and rescue operation related to all type of disaster.

As per disaster management act 2005, various Ministry and department under Government of India should joins hand for mutual assistance in case of disaster. Assistance of local Government and Non-Government agencies are in variable required by the railway administration from prompt relief and rescue operation.

11.8 Coordination with NDRF.

Zonal Railway should get in touch with NDRF offices at the nearby locations to have the first-hand knowledge of the resources available with them and also to familiarise them with railway related disaster situations and the expose them to issues relevant to the rescue and relief of passengers during railway accident. It has also been advised to associate NDRF in full exercise that is held once in every year. There are no charges for availing the services of the NDRF except the rail transportation which railways may provide at their cost for attending to rail disaster.

CHAPTER- 12 : BIOLOGICAL DISASTER

12.1 Biological Disasters:

Biological disasters might be caused by epidemics, accidental release of virulent microorganism(s) or Bioterrorism (BT) with the use of biological agents such as anthrax, smallpox, etc. The existence of infectious diseases has been known among human communities and civilizations since the dawn of history.

In recent times travelling has become easier for which railways have made a significant contribution. More and more people are travelling all over the world which exposes the whole world to epidemics. As our society is in a state of flux, novel pathogens emerge to pose challenges not only at the point of primary contact but in far removed locations. The Marburg virus illustrates this. The increased interaction between humans and animals has increased the possibilities of zoonotic diseases merging in epidemic form.

12.2 Biological Warfare (BW) and Bio-Terrorism (BT):

The historical association between military action and outbreaks of infections suggest a strategic role for biological agents. The advances in bacteriology, virology and immunology in the late 19th century and early 20th century enabled nations to develop biological weapons. The Biological and Toxin Weapons Convention, however, resolved to eliminate these weapons of mass destruction. Despite considerable enthusiasm, the convention has been a non-starter.

12.3 Handling CBRN Disaster - Training:

For handling and to provide medical relief for all CBRN disaster which (include a Biological Disaster) and mitigation of BW and BT affected Railway staff, need to be incorporated in the Hospital DM Plan.

Training of a skeleton numbers of Medical Doctors in each Divisional Railway Hospital to manage CBRN casualties is to be planned.

12.4 Causes of Biological Disaster:

A Biological Disaster is the disaster, which causes sickness and fatalities in human being when they come in contact with Biological hazards in the form of living organisms such as bacteria, virus, fungi etc. All communicable diseases, either of human beings or livestock are potential biological disasters. They spread widely, affect huge number of people in communities, sometimes across the geographical limits of provinces and nations. Biological Disaster have caused havoc in human settlements in form of communicable disease since times immemorial.

Biological disaster essentially appears in the form of epidemics or pandemics, which are caused by microorganisms. Different microorganism cause different types of communicable diseases. The micro-organisms, which causes communicable disease could be categorized like as Bacteria, Virus, Rickettsia, Chlamydia, Fungi and Toxins.

12.5 Causal Phenomenon:

Communicable diseases leading to biological disasters often erupt and spread duty unhygienic living conditions and individuals and families within communities. It is very natural that affluent communities are less vulnerable to biological hazards as compared to poor cause for epidemics and pandemics may be generalized as under:

1) Congested living areas with inadequate hygiene and sanitation arrangements.

2) Movement of infected personnel to non-epidemic areas carrying micro-organism their incubation period.
3) Movement of non-immune persons to endemic areas.
4) Malnutrition particularly among children.
5) Ecological changes conducive to breeding of vectors.
6) Poor or insufficient water supply system leading to consumption of contaminants leading to water borne diseases.
7) Poor Health services and lack of programs for immunization and vector coordinate.

12.6 Preparedness for Mitigation:

The essential protection against natural and artificial outbreaks of disease (bio-terrorism) will include the development of mechanisms for prompt detection of incipient outbreaks, isolation of the infected persons and the people they have been in contact with and mobilisation of investigational and therapeutic countermeasures. In the case of deliberately generated outbreaks (bio-terrorism) the spectrum of possible pathogens is narrow, while natural outbreaks can have a wide range of pathogens. The mechanism required however, to face both can be similar if the service providers are adequately sensitized.

1) Create a pool of well-trained medical professionals.
2) Ensure availability of vaccines and drugs.
3) Ensure adequate stocks and ready availability of diagnostic re-agents.
4) Develop an effective network of surveillance system to detect outbreak of epidemics.
5) Improve public awareness to enable people to help the administration and medical in disaster management.
6) Have a reliable and credible public information system for dissemination of fact to avoid fear and panic among masses.

12.7 Corona virus (COVID-19):

Corona virus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus. Most people infected with the virus will experience mild to moderate respiratory illness and recover without requiring special treatment. However, some will become seriously ill

and require medical attention. Older people and those with underlying medical conditions like cardiovascular disease, diabetes, chronic respiratory disease, or cancer are more likely to develop serious illness. Anyone can get sick with COVID-19 and become seriously ill or die at any age.

The best way to prevent and slow down transmission is to be well informed about the disease and how the virus spreads. Protect yourself and others from infection by staying at least 1 metre apart from others, wearing a properly fitted mask, and washing your hands or using an alcohol-based rub frequently. Get vaccinated when it's your turn and follow local guidance. The virus can spread from an infected person's mouth or nose in small liquid particles when they cough, sneeze, speak, sing or breathe. These particles range from larger respiratory droplets to smaller aerosols. It is important to practice respiratory etiquette, for example by coughing into a flexed elbow, and to stay home and self-isolate until you recover if you feel unwell.

During pandemic situation like COVID-19, Railways had played a crucial role in effective management of the pandemic in various ways. But these huge/large no. of transportation carried out in the existing system/procedures to keeping the all precaution to save the officers and employees in Metro Railway, Kolkata. Metro Railway shall be played an important role during pandemic Covid-19 to prevent the are as follows:

1) Staff training / refresher, PME
2) Sanitizing the Station, Car Shed,
3) Office premises and Rake.
5) Using of Mask of Passengers and Staffs
6) Maintain distance among the passengers and staff in work.
7) Passengers are allowed in the station by booking of particular slot.
8) Subsequently increasing to passengers, Metro Authority also increase the head way of train to maintain the Safety protocol of COVID-19
9) Frequently counselled of staff done regarding maintaining of Covid-19 protocol.
10) Vaccination of staff and their dependents as well as mass RTPCR test done both for staff & general public.

CHAPTER- 13 : NATURAL CALAMITIES

13.1 Introduction:

Kolkata is situated at the natural origin of the South West monsoon and therefore is prone to heavy rains accompanied with cyclones, high velocity winds, storms, tempests, earthquake and even Tsunami.

13.2 Flood:

The rail corridor is elevated / at grade and is not likely to be affected by floods. However, Under Ground station, ground level station are more exposed to Flood. Action taken procedure are laid down on Chapter-5.

13.3 Earthquake:

Keeping in to account the fact that Kolkata is located in the Seismic Zone-III. The entire infrastructure of Metro Railway Corridor has been designed to withstand earthquakes of the intensity of 6.5 on Richter scale. If any earth quake tremor takes place in any of the metro station, then the train(s) shall run on the following procedure.

13.3.1 Action to be taken in case of earthquake:

(a) As soon as the tremor of earthquake is felt, Traffic controller will immediately advise all stations to control the trains at platforms and Motorman will control the train in the section(s). Trains already in sections will then be allowed to move up to stations ahead at 15 kmph with caution ready to stop short of any obstruction.

(b) All panel operators/ station-in-charges, who experienced tremor of earthquake shall immediately inform the Traffic Controller by putting back the departure signal at ON condition in Manual mode. If such a tremor is experienced at platform by Motorman, he will not start train and intimate Traffic Controller.

(c) When the tremor subsides the Traffic controller shall advise the Driving Motorman of the first train with or without passenger to check the section leading to immediate next station at a speed not exceeding 15 kmph and report the status of the section to Traffic Controller.

(d) Thereafter the sections to be declared obstruction free and trains shall run normal with passengers.

(e) Continuous announcement regarding earthquake shall be made from central control, stations or by Conducting Motorman in train through P.A. System.

(f) A thorough inspection of entire section may be conducted by concerned departments after commercial service.

13.4 Cyclone:

The trains are designed to withstand very heavy wind speeds. As per India Meteorological Department, Kolkata wind zone IS: 875, falls under wind zone 1. In the event of high velocity winds Motorman and/or Shift-in-Charge shall inform Traffic Controller. If Any abnormality observed by Motorman, Shift-in-Charge or any other staff must be immediately informed to OCC/Control. Traffic Controller shall take further step in consultation with concerned department.

13.4.1 Action to be taken in case of cyclone:

(a) When the Traffic Controller receives information about cyclone on viaduct section and visibility is impaired or it is felt by Motorman himself then the train will proceed cautiously up to the next station. Further movement of the train will be on the judgment of station-in-charge and/or Motorman.

(b) If situation is not permitted for commercial train service due to cyclone, the Traffic Controller shall stop the train service until the normal situation is restored.

CHAPTER- 14 : PUBLIC DEMONSTRATION

14.1 Introduction:

Considering the possibilities of disruption of revenue service/ damage to metro property during public demonstrations, following roles are assigned for various staffs.

14.2 Duties of Various Staff:

14.2.1 Duties of Station Master/Shift-in-charge:

(a) The station controller on the receipt of information about disruption at the station shall inform OCC giving as many details as possible.

(b) Inform station/Line manager and control situation.

(c) Inform passenger waiting at the platform about the delay.

(d) Keep update OCC about the incident.

14.2.2 Duties of Traffic Controller/Assistant Chief Controller:

(a) Immediately on receipt of the information about incident of disrupting traffic, Traffic Controller/ Assistant Chief Controller shall inform all concerned as per list of communication by OCC staff.

(b) Train movement shall only be resumed after confirming that the running of train to the affected station is safe till the position become clear regular announcements to be made to passenger in train and station of the likely delay and evacuation procedure started.

(c) If public occupy track, then Traffic Controller/ Station Superintendent / Motorman should prevent entering of train in that section and inform TPC to switch off the third rail.

14.2.3 Duties of Motorman:

(a) In the event of people disrupting the train movement involving his train, the Motorman shall inform OCC giving as many details as possible.

(b) In the case the adjacent track is infringed, he shall request Traffic Controller to protect the adjacent track to avoid the multiple accidents as prescribed procedures.

(c) He will inform passengers about the incident advising them to keep calm and likely delays.

(d) He shall quickly assess the situation particularly in respect of passenger and again inform OCC with as much detail as available seeking assistance as required.

14.2.4 Damage to Rolling Stock/METRO RAILWAY Property:

If any Motorman or Station Master/Shift-in-charge observes any kind of damage done by mob /public to the train or stations, then that particular section should be isolated and inform to the Security In-charge and Local Police.

14.2.5 Duties of Security / RPF / Kolkata Police:

(a) On receipt of information from the Traffic Controller, the RPF control will depute sufficient RPF staff to the affected station without any loss of time.

(b) RPF on reaching the station will report to Shift-in-charge/Station Superintendent concerned and render all assistance in controlling the crowd and evacuate the station premises to restore normalcy. For this Security or RPF will co-ordinate with Local Police if situation so demands.

CHAPTER- 15 – DISASTER MANAGEMENT DRILL

15.1 Drills:

The following drills for various types of Disaster Management should be conducted at regular intervals:

(a) Fire drill
(b) Drill for evacuation of passengers from train (detrainment drill)
(c) Drill for evacuation from station premises.
(d) Drill for re-railing of derailed coaches
(e) Drill for dealing with flood situation inside station.
(f) Drill for restoration of power supply due to power failure from source or due to major equipment failure.

15.2 Fire Drills:

The fire fighting drill should be conducted in conjunction with Fire Fighting Authorities of State Government viz. State Fire Brigade. For the purpose, Assistant Security Commissioner along with Inspectors for all such work should co-ordinate with the State Fire Brigade Authorities. In this drill the following staff should take part.

(a) Staff of fire wing of Metro Railway
(b) Station Supervisor and staff working at different stations
(c) Electrical staff working in ventilation installation.
(d) Running staff i.e. Motorman working in train.
(e) Senior Subordinates of Operating, Signal and Engineering Departments.

Such mock drills should be conducted once in 6 months to keep the staff of various disciplines aware of the procedures to be followed in case of fire. The mock drill should take into account the following.

(i) Information of the mock fire to OCC for initiating the procedures as indicated in the Disaster Management Plan for fires. Detrainment procedure as detailed in previous chapter no.3 should also be included in the mock drill for fire.

(ii) The fire drill should normally be conducted on a Sunday, in the morning hours when commercial services are not in operation, at a nominated place so that subsequent normal commercial services are not affected by the dill.

15.3 Detrainment Drills:

The detrainment procedure has been laid down in previous chapter no.3 of this Manual. This detrainment drill may be conducted once in 6 months to keep staff aware of the stipulated procedure of detrainment. This drill should normally be conducted on a Sunday in the morning hours when commercial services are not in operation, at a nominated place, with Metro Railway staff.

15.4 Drill for evacuation from station premises:

In case of fire, Sabotage or any other major incident, necessitating evacuation of passengers from the station, the procedure to be followed may be included in this drill. This drill is to be conducted by operating staff, security staff and air-conditioning and ventilation staff of Electrical Department working within stations. Station Manager / Station Controller of the station will have to lead the drill for such evacuation of passengers from the station. This drill should be conducted once a year and should include the following.

(a) Communication by the Shift-in-charge to the Traffic Controller by giving reasons for the evacuation of passengers from the station premises. Dissemination of the information to various authorities connected with the operation of evacuation i.e. RPF, local Police or other staff as required depending on the situation.

(b) Procedure to be followed by air conditioning and ventilation staff working at the station for operation of ventilation of fans.

(c) The drill should include the functions of the Electrical Department in ensuring that the lighting system, specially the emergency lighting system, is in working order.

(d) The S&T staff should ensure that channels of communication are in working order. After conclusion of the Drill, by following the laid down procedures, the difficulties encountered should be recorded for further review and rectification/ alteration of the procedures so that the situations can be more effectively tackled at the time of actual disaster.

15.5 Drill for re-railing of derailed coaches:

This drill should be conducted once in 6 months in the maintenance yard i.e. Central Park Depot. For conducting the drill, the following procedure should be followed:

(a) One Metro coach should be made to derail in the yard for the purpose of the drill. The drill should preferably be done at night, after office hours and on a line having 3rd rail.

(b) The breakdown staff along with AEE, AEN & ASTE is informed that derailment has taken place and should be directed to assemble at a particular location. The time of intimation to the breakdown gang and the officers and the time taken by them to reach the nominated site should be recorded.

(c) On reaching the site, the breakdown staff should re-rail the coach on a nominated line with the help of available equipment. The time taken for re-railing should be recorded.

(d) After re-railing, the various parts of the coach should be checked and results recorded as per Accident Performa and the time required for taking all the measurements should be noted.

(e) The Engineering officials and staff in charge of the section should check the track and record details as per Accident proforma. Track deformation should be rectified. The time for such restoration should be recorded.

(f) The ASTE with his staff should also check the systems of communication and line-side signalling equipment and record the items checked by him.

(g) A joint fit certificate should be made out after the whole operation is over, by AEE, ASTE and AEN.

(h) During such a drill, communication with the Traffic Controller should be established by S&T staff attending the mock drill. The time for establishing such communication should also be recorded.

(i) After the completion of the drill, the time required for various operations should be analyzed and improvements, if any, effected.

15.6 Drill for dealing with the flood situation inside station:

The drill should be conducted once in 6 months on a Sunday when commercial services are not in operation. Staff involved i.e. staff on the Pump Section and Power Supply Section of the Electrical Department, staff of S&T Department and Engineering Department are required to assemble at a particular place where such drills should be conducted. The station staff of either side should also be informed for participating in the drill. This drill should be conducted by creating flood situation inside the station by stopping the work of pumps, opening of fire hydrants blocking the passage of sump meant for

pumping out seepage of water from the station. While conducting the drill, time taken by various staff to react and reach the site of incident should be recorded by TPC and Traffic Controller. During such drill, communication should be established between Traffic Control and the site of drill by S&T staff. The time taken to restore normalcy should be recorded and after restoration, a joint certificate should be issued by AEE, AEN & ASTE. After such drill the time taken of various operations for restoration of normalcy should be recorded and analyzed so that remedial corrective measures can be taken to reduce time for attending to flood situations inside the station during the actual operation.

15.7 Power failure drill:

The drill should be conducted by power supply supervisor and another concerned officials in presence of AEE in charge of power supply once in 6 months. The procedure to be followed may be one of the following:

(a) Creating a fault on 3rd rail causing tripping of HSCB and finding out of the fault and rectification of the same.

(b) Switching off power from a Receiving Station and restoration of power through alternate source by remote control or by issuing instruction of various sub-stations through telephonic communication in case of remote control failure.

(c) The Time required for restoration should be recorded and the result analyzed.

15.8 Types of drills to be conducted on regular measures:

a) Fire drill
b) Derailment drill
c) Drill for evacuation from station premises.
d) Drill for re-railing of derailed coaches.
e) Drill for dealing with flood situation inside station
f) Drill for restoration of power supply.

CHAPTER-16 : LIST OF METRO STATIONS BETWEEN JOKA- ESPLANADE:

Sl No	Station Name	Station Code	KM	Running KM
1	JOKA	KJKA	0.00	0.00
2	THAKURPUKUR	KTKP	1.45	1.45
3	SAKHER BAZAR	KSKB	1.22	2.67
4	BEHALA CHOWRASTA	KBCR	1.45	4.12
5	BEHALA BAZAR	KBBR	1.34	5.46
6	TARATALA	KTRT	1.03	6.49

CHAPTER- 17 : IMPORTANT TELEPHONE NUMBERS

KOLKATA POLICE AND SUPPORTING RESCUE RELIEF AGENCIES:

1	**N S G**	
	29 Special Composite Group, NSG, Action Area -III, New Town, Rajarhat, Kolkata- 743502	033-2962 3508
2	**NDRF**	
	Office of the Commandant, 2BN NDRF Near RRI, Post - Mohonpur, Dist. - Nadia	033-2951 6721 +91-9474116775
3	**West Bengal**	
	Relief Commissioner Govt. of WB	2214-3674
	Kolkata Police HQ, Control Room, Lalbazar.	2250-5000 - 5009 / 5090 / 5099 / 5188 / 5265 Hot line- 2255-5491 (Rly.)
	Commissioner of Police	2214-5060 / 5424
	Spl. Addl. Commissioner of Police (o) For Metro Railway/Kolkata.	2214-5509 / 1307, 2250-5262
	Metro Bhavan Control Room (PBX)	2226-7280 / 86
	Metro Railway Police Control Room (Esplanade Station)	2228-1208 / 2264, 2255-57996
	Kolkata Police Lalbazar Exchange	2250-5000-9
	Special Branch Control Room	2282-3565 / 3240 / 3260, 2283-7016 / 7017
	Security Manger Indian Airlines	033-25119101
	IGP (Law & order)	2414-5401/5417

CHAPTER- 18 : NEAREST HOSPITAL/ NURSING HOME & AMBULANCE:

Sl. No	Name	Address	Contact No.
1	Kasturi Medical Research Centre	5, Diamond Harbour Road Kolkata – 700104 URL: www.kasturimedicalcentre.com	+91 83369 25809 033 6614 1915 / 16 / 17 / 33
2	ESI Hospital & Medical College, PGIMSR, ESIC, Govt. Hospital	5 CA, Diamond Harbour Road Kolkata – 700104 URL: www.esic.nic.in	2467 1764
3	Apollo Clinic Taratala	26, Diamond Harbour Road Kolkata – 700038 URL: www.apolloclinic.com	2445 8576
4	Bharat Sevashram Sangha Hospital	Diamond Harbour Road Kolkata – 700104	7947434422 7947152989
5	Swadesh Basu Hospital	Diamond Harbour Road Kolkata – 700063	7947151346
6	Narayana Memorial Hospital	Diamond Harbour Road Behala, Kolkata – 700063	7947133483
7	Tapan Sinha Memorial Hospital	Tollygunge Metro Railway Station Kolkata - 700040	2255 4473
8	Vidyasagar State Govt. Hospital	54, Brahmo Samaj Road, Behala, Kolkata - 700034	7947423393
9	B.P.Poddar Hospital & Medical Research Ltd.	71/01, Block-G Humayun Kabir Sarani Kolkata - 700053	7947418062

CHAPTER- 19 : NEAREST POLICE STATIONS:

Sl No	Name	Address	Contact No.
1	THAKURPUKUR P.S.	123/117, Diamond Harbour Road Kolkata – 700063 Email: ps.thakarpukur@kolkatapolice.gov.in	2493 6680 2461 6004
2	BEHALA P.S.	131, Diamond Harbour Road Kolkata – 700034 Email: ps.behala@kolkatapolice.gov.in	2396 7350 2397 505*
3	TARATALA P.S.	63, Taratala Road Kolkata – 700088 Email: taratalaps@kolkatapolice.gov.in	2401 1881 2401 2796

CHAPTER- 20 : NEAREST FIRE SERVICE STATIONS OF GOVT. OF WEST BENGAL:

Sl No	Name	Address	Contact No.
1	Behala Fire Station	Diamond Harbour Road, Barisha Kolkata - 700008	2497 6285
2	Lal Bazar Fire Station	Lal Bazar Street Kolkata - 700001	7947122273
3	Metro Railway Fire Service	Mahanayak Uttam Kumar Metro Station, Tollygunge Kolkata - 700040	2255 4411 2377 5430

CHAPTER- 21 : FIRE EXTINGUISHER LOCATION DETAILS IN METRO STATIONS

FIRE EXTINGUISHER IN JOKA METRO STATION				
LEVEL	**LOCATION**	**CO2 TYPE (4.5 G)**	**ABC TYPE (6KG)**	**FOAM TYPE (9L)**
Street Level	Pump room	1		1
	DG Room	1		1
Concourse Level	FHC near Gr. to concourse stair case 1	1	1	
	FHC near Gr. to concourse stair case 2	1	1	
	FHC near Gr. to concourse stair case 3	1	1	
	FHC near Gr. to concourse stair case 4	1	1	
	Out side of ticket counter	1	1	
	Office area corridor	1	1	
	Security Room	1	1	
	HSCB Room	1		
	Telecom Equipment Room	1		
	Signal Equipment Room	1		
	S&T UPS Room	1		
	Battery Room	1		
	Ticket Room	1		
	Station Control Room	1	1	
	Paid/Unpaid area near FHC (UP side)	1	1	
	Paid/Unpaid area near FHC (DN side)	1	1	
	Paid/Unpaid area near grid "F", viaduct column	1	1	
	ASS/TSS Room (LT Panel area)	2		
Platform Level	UP Platform end (towards Joka Depot end)	1	1	
	UP Platform end (towards Thakurpukur end)	1	1	
	UP Platform near grid no. E	1	1	
	UP Platform near grid no. H	1	1	
	UP Platform near grid no. K1	1	1	
	DN Platform end (towards Joka Depot end)	1	1	
	DN Platform end (towards Thakurpukur end)	1	1	
	DN Platform near grid no. E	1	1	
	DN Platform near grid no. H	1	1	
	DN Platform near grid no. K1	1	1	
	Total	**31**	**21**	**2**
1. One Fire extinguisher, dry chemical powder type, 10KG capacity shall be provided at ASS/TSS LT Panel area.				
2. One Fire extinguisher, dry chemical powder type, 10KG capacity shall be provided at DG Room.				
3. One set (4 nos Fire Buckets of 10 Litres capacity) Fire Buckets shall be provided at ASS/TSS LT Panel area.				

FIRE EXTINGUISHER IN THAKURPUKUR METRO STATION				
LEVEL	**LOCATION**	**CO2 TYPE (4.5KG)**	**ABC TYPE (6KG)**	**FOAM TYPE (9L)**
Street Level	Pump room	1		1
	DG Room	1		1
Concourse Level	FHC near Gr. to concourse stair case 1	1	1	
	FHC near Gr. to concourse stair case 2	1	1	
	FHC near Gr. to concourse stair case 3	1	1	
	FHC near Gr. to concourse stair case 4	1	1	
	Out side of ticket counter	1	1	
	Office area corridor	1	1	
	Security Room	1	1	
	HSCB Room	1		
	Telecom Equipment Room	1		
	Signal Equipment Room	1		
	S&T UPS Room	1		
	Battery Room	1		
	Ticket Counter	1	1	
	Station Control Room	1	1	
	Paid/Unpaid area near Lift (UP side)	1	1	
	Paid/Unpaid area near Lift (DN side)	1	1	
	Paid/Unpaid area near grid "J", viaduct column	1	1	
	ASS/TSS Room (LT Panel area)	2		
Platform Level	UP Platform end (towards Joka Depot end)	1	1	
	UP Platform end (towards Taratala end)	1	1	
	UP Platform near grid no. E	1	1	
	UP Platform near grid no. H	1	1	
	UP Platform near grid no. L	1	1	
	DN Platform end (towards Joka Depot end)	1	1	
	DN Platform end (towards Taratala end)	1	1	
	DN Platform near grid no. E	1	1	
	DN Platform near grid no. H	1	1	
	DN Platform near grid no. L	1	1	
	Total	**31**	**21**	**2**
1. One Fire extinguisher, dry chemical powder type, 10KG capacity shall be provided at ASS/TSS LT Panel area.				
2. One Fire extinguisher, dry chemical powder type, 10KG capacity shall be provided at DG Room.				
3. One set (4 nos Fire Buckets of 10 Litres capacity) Fire Buckets shall be provided at ASS/TSS LT Panel area.				

FIRE EXTINGUISHER IN SAKHER BAZAR METRO STATION				
LEVEL	**LOCATION**	**CO2 TYPE (4.5KG)**	**ABC TYPE (6KG)**	**FOAM TYPE (9L)**
Street Level	Pump room	1		1
	DG Room	1		1
Concourse Level	FHC near Gr. to concourse stair case 1	1	1	
	FHC near Gr. to concourse stair case 2	1	1	
	FHC near Gr. to concourse stair case 3	1	1	
	FHC near Gr. to concourse stair case 4	1	1	
	Out side of ticket counter	1	1	
	Office area corridor	1	1	
	Security Room	1	1	
	HSCB Room	1		
	Telecom Equipment Room	1		
	Signal Equipment Room	1		
	S&T UPS Room	1		
	Battery Room	1		
	Ticket Counter	1	1	
	Station Control Room	1	1	
	Paid/Unpaid area near Lift (UP side)	1	1	
	Paid/Unpaid area near Lift (DN side)	1	1	
	Paid/Unpaid area near grid "J", viaduct column	1	1	
	ASS/TSS Room (LT Panel area)	2		
Platform Level	UP Platform end (towards Joka Depot end)	1	1	
	UP Platform end (towards Taratala end)	1	1	
	UP Platform near grid no. E	1	1	
	UP Platform near grid no. H	1	1	
	UP Platform near grid no. L	1	1	
	DN Platform end (towards Joka Depot end)	1	1	
	DN Platform end (towards Taratala end)	1	1	
	DN Platform near grid no. E	1	1	
	DN Platform near grid no. H	1	1	
	DN Platform near grid no. L	1	1	
	Total	**31**	**21**	**2**
1. One Fire extinguisher, dry chemical powder type, 10KG capacity shall be provided at ASS/TSS LT Panel area.				
2. One Fire extinguisher, dry chemical powder type, 10KG capacity shall be provided at DG Room.				
3. One set (4 nos Fire Buckets of 10 Litres capacity) Fire Buckets shall be provided at ASS/TSS LT Panel area.				

FIRE EXTINGUISHER IN BEHALA CHOWRASTA METRO STATION				
LEVEL	**LOCATION**	**CO2 TYPE (4.5KG)**	**ABC TYPE (6KG)**	**FOAM TYPE (9L)**
Street Level	Pump room	1		1
	DG Room	1		1
Concourse Level	FHC near Gr. to concourse stair case 1	1	1	
	FHC near Gr. to concourse stair case 2	1	1	
	FHC near Gr. to concourse stair case 3	1	1	
	FHC near Gr. to concourse stair case 4	1	1	
	Out side of ticket counter	1	1	
	Office area corridor	1	1	
	Security Room	1	1	
	HSCB Room	1		
	Telecom Equipment Room	1		
	Signal Equipment Room	1		
	S&T UPS Room	1		
	Battery Room	1		
	Ticket Counter	1	1	
	Station Control Room	1	1	
	Paid/Unpaid area near Lift (UP side)	1	1	
	Paid/Unpaid area near Lift (DN side)	1	1	
	Paid/Unpaid area near grid "J", viaduct column	1	1	
	ASS/TSS Room (LT Panel area)	2		
Platform Level	UP Platform end (towards Joka Depot end)	1	1	
	UP Platform end (towards Taratala end)	1	1	
	UP Platform near grid no. E	1	1	
	UP Platform near grid no. H	1	1	
	UP Platform near grid no. L	1	1	
	DN Platform end (towards Joka Depot end)	1	1	
	DN Platform end (towards Taratala end)	1	1	
	DN Platform near grid no. E	1	1	
	DN Platform near grid no. H	1	1	
	DN Platform near grid no. L	1	1	
	Total	**31**	**21**	**2**
1. One Fire extinguisher, dry chemical powder type, 10KG capacity shall be provided at ASS/TSS LT Panel area.				
2. One Fire extinguisher, dry chemical powder type, 10KG capacity shall be provided at DG Room.				
3. One set (4 nos Fire Buckets of 10 Litres capacity) Fire Buckets shall be provided at ASS/TSS LT Panel area.				

FIRE EXTINGUISHER IN BEHALA BAZAR METRO STATION				
LEVEL	**LOCATION**	**CO2 TYPE (4.5 G)**	**ABC TYPE (6KG)**	**FOAM TYPE (9L)**
Street Level	Pump room	1		1
	DG Room	1		1
Concourse Level	FHC near Gr. to concourse stair case 1	1	1	
	FHC near Gr. to concourse stair case 2	1	1	
	FHC near Gr. to concourse stair case 3	1	1	
	FHC near Gr. to concourse stair case 4	1	1	
	Out side of ticket counter	1	1	
	Office area corridor	1	1	
	Security Room	1	1	
	HSCB Room	1		
	Telecom Equipment Room	1		
	Signal Equipment Room	1		
	S&T UPS Room	1		
	Battery Room	1		
	Ticket Room	1		
	Station Control Room	1	1	
	Paid/Unpaid area near FHC (UP side)	1	1	
	Paid/Unpaid area near FHC (DN side)	1	1	
	Paid/Unpaid area near grid "F", viaduct column	1	1	
	ASS/TSS Room (LT Panel area)	2		
Platform Level	UP Platform end (towards Joka Depot end)	1	1	
	UP Platform end (towards Thakurpukur end)	1	1	
	UP Platform near grid no. E	1	1	
	UP Platform near grid no. H	1	1	
	UP Platform near grid no. K1	1	1	
	DN Platform end (towards Joka Depot end)	1	1	
	DN Platform end (towards Thakurpukur end)	1	1	
	DN Platform near grid no. E	1	1	
	DN Platform near grid no. H	1	1	
	DN Platform near grid no. K1	1	1	
	Total	**31**	**21**	**2**
1. One Fire extinguisher, dry chemical powder type, 10KG capacity shall be provided at ASS/TSS LT Panel area.				
2. One Fire extinguisher, dry chemical powder type, 10KG capacity shall be provided at DG Room.				
3. One set (4 nos Fire Buckets of 10 Litres capacity) Fire Buckets shall be provided at ASS/TSS LT Panel area.				

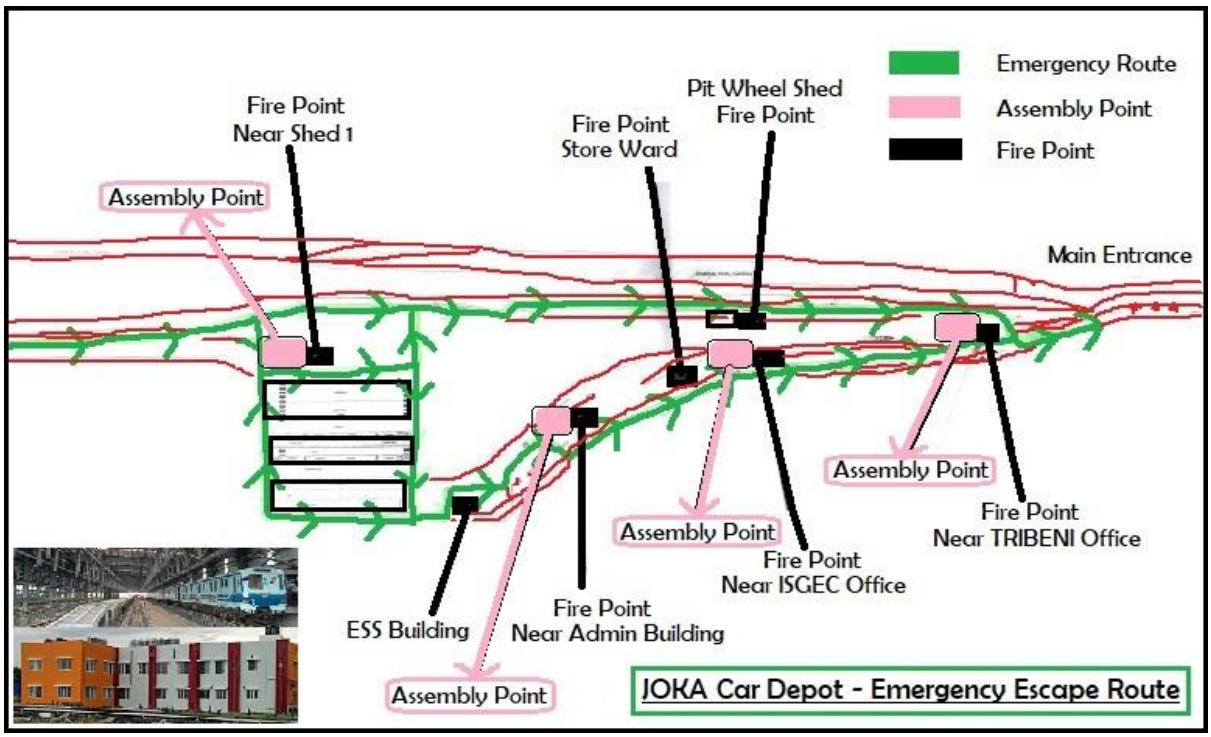
FIRE EXTINGUISHER IN TARATALA METRO STATION				
LEVEL	**LOCATION**	**CO2 TYPE (4.5KG)**	**ABC TYPE (6KG)**	**FOAM TYPE (9L)**
Street Level	Pump room	1		1
	DG Room	1		1
Concourse Level	FHC near Gr. to concourse stair case 1	1	1	
	FHC near Gr. to concourse stair case 2	1	1	
	FHC near Gr. to concourse stair case 3	1	1	
	FHC near Gr. to concourse stair case 4	1	1	
	Out side of ticket counter	1	1	
	Office area corridor	1	1	
	Security Room	1	1	
	HSCB Room	1		
	Telecom Equipment Room	1		
	Signal Equipment Room	1		
	S&T UPS Room	1		
	Battery Room	1		
	Ticket Counter	1	1	
	Station Control Room	1	1	
	Paid/Unpaid area near Lift (UP side)	1	1	
	Paid/Unpaid area near Lift (DN side)	1	1	
	Paid/Unpaid area near grid "J", viaduct column	1	1	
	ASS/TSS Room (LT Panel area)	2		
Platform Level	UP Platform end (towards Joka Depot end)	1	1	
	UP Platform end (towards Taratala end)	1	1	
	UP Platform near grid no. E	1	1	
	UP Platform near grid no. H	1	1	
	UP Platform near grid no. L	1	1	
	DN Platform end (towards Joka Depot end)	1	1	
	DN Platform end (towards Taratala end)	1	1	
	DN Platform near grid no. E	1	1	
	DN Platform near grid no. H	1	1	
	DN Platform near grid no. L	1	1	
	Total	**31**	**21**	**2**
1. One Fire extinguisher, dry chemical powder type, 10KG capacity shall be provided at ASS/TSS LT Panel area.				
2. One Fire extinguisher, dry chemical powder type, 10KG capacity shall be provided at DG Room.				
3. One set (4 nos Fire Buckets of 10 Litres capacity) Fire Buckets shall be provided at ASS/TSS LT Panel area.				

CHAPTER- 22 : FIRE EXTINGUISHER LOCATION DETAILS IN JOKA CAR DEPOT

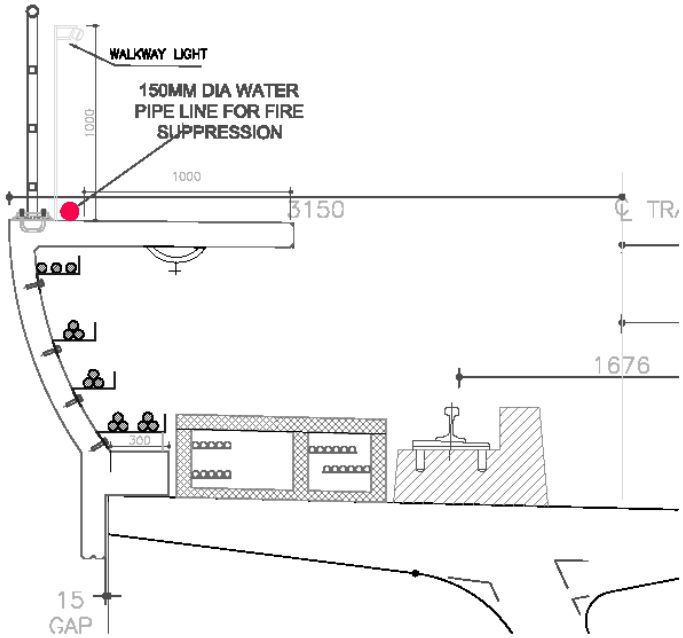
FIRE EXTINGUISHER IN JOKA DEPOT			
LOCATION	CO2 TYPE (4.5 KG)	ABC TYPE (4KG)	FIRE BUCKET
PIT WHEEL SHED		1	1
STORE WARD		1	1
ISGEC OFFICE		1	1
RVNL OFFICE		4	
ADMIN BUILDING		1	1
SHED 1		1	1
ZAMIL OFFICE		1	
DEEVEE SOLUTION		2	
ISGEC PANEL ROOM (NEAR LAB)	1	3	2
JCC OFFICE		1	
SBR OFFICE		1	1
DIESEL STORE	1		
TOTAL	2	17	8

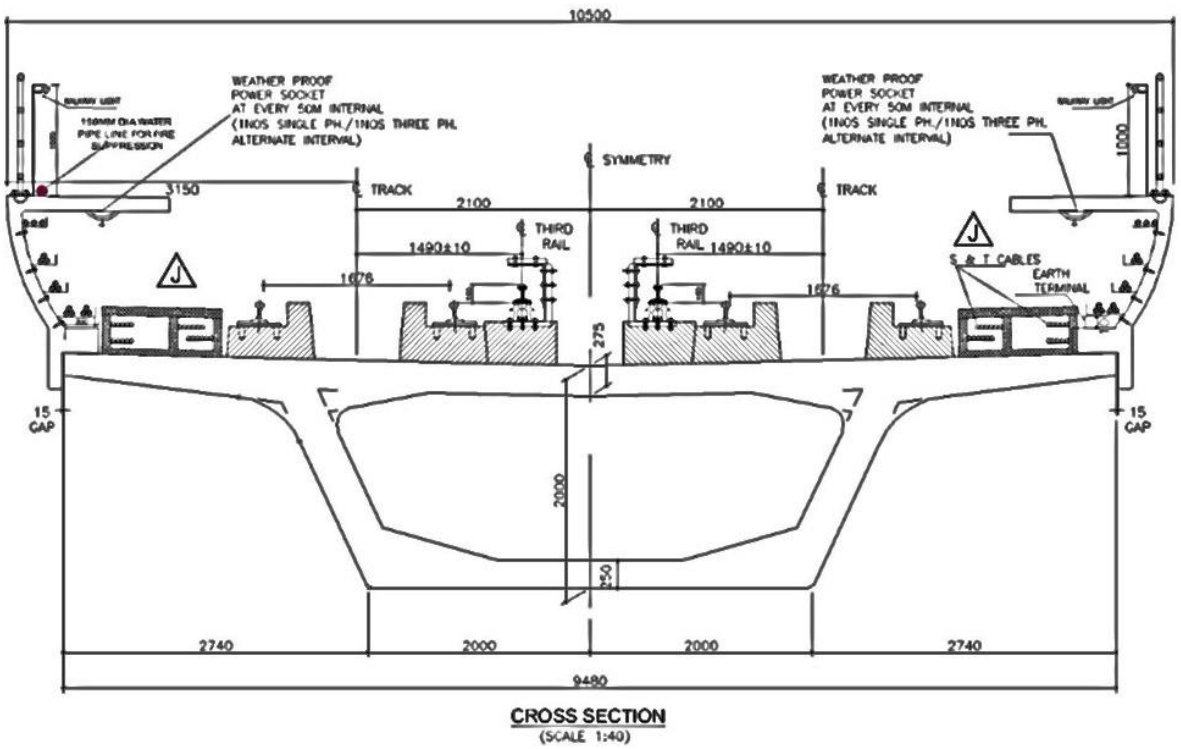
FIRE EXTINGUISHER IN JOKA DEPOT			
LOCATION	CO2 TYPE (4.5 KG)	ABC TYPE (4 KG)	DCP (6 KG)
TCL OFFICE	1	NIL	1
DIESEL STORE	NIL	NIL	1
BLT	1	NIL	NIL
OFFICE KITCHEN	1	NIL	NIL
OFFICE DG	1	NIL	1
TOTAL	4	NIL	3

CHAPTER- 23 : EMERGENCY ESCAPE ROUTE IN JOKA CAR DEPOT



CHAPTER- 24 : CROSS SECTION OF VIADUCT:





CROSS SECTION
(SCALE 1:40)

CHAPTER-25 : RULES FOR WORKING OF TRAINS IN ELECTRIFIED SECTIONS

(FOR ONE TRAIN ONLY SYSTEM)

750V DC TRACTION STATION WORKING RULES FOR JOKA STATION (FOR ONE TRAIN ONLY SYSTEM)

:

1.0 The general principles governing operation and maintenance of traction equipment operated on 750V DC will be guided by these rules. This Rules Book shall be kept in each station and all the staff dealing with safe working shall make themselves thoroughly familiar with the **GR 10.01 to 10.08** and **SR 10.01, 10.02(2)** and **10.5(5)** and concern clauses of PDSR for Metro Railway issued by Chief Electrical Engineer dt.30.09.1990.

Brief reference to important rules required to be followed by station staff in their day to day work has been given in this appendix. These are, however, illustrative and not exhaustive.

2.0 General Safety Precaution:

2.1. All cables, conductor Rail and electrical equipment shall be regarded as being alive all time and consequently dangerous for human life, save and except in cases where the Conductor Rail and electrical equipment has been specially made dead in accordance with the provisions of these Rules.

2.2. All staff is warned usual direct or indirect contact with live portion of 750V Conductor Rail with any conducting materials as it is dangerous and impairs safety.

2.3. No work on 750V DC line (Conductor Rail) or its immediate vicinity of any live equipment shall be carried out unless a regular Permit to work (PTW) is obtained from the authorized traction staff and line is made dead and earthed as per rule.

2.4. No work shall be undertaken on Conductor Rail or its associated equipment or in Zone within 1(one) meter from conductor rail. The work should be carried out in accordance with instructions issued in this regard by Chief Electrical Engineer.

2.5. No Metro Railway employee excepting those authorized is allowed to go to the track bed in any of the alignments as third rail is always alive/ charged.

3.0 Section Diagram:

3.1.For feeding arrangement indicating the sectioning diagrams which have been dedicated to carry 750V DC for electric traction purposes Diagram No. RVNL/KOL/JOKA-MAJERHAT/SYSTEM/01(Revision-Q) should be followed. The diagram indicates the position of controlling circuit breakers, isolators and substations. The limit of an electrical section is indicated by arrow mark with Map. The arrow mark at the end of each electric section indicates the position of the slope rails.

3.2. For all purposes connected with train movement and power block, Diagram No. RVNL/KOL/JOKA-MAJERHAT/SYSTEM/01(Revision-Q) is the only authorized document to be referred to.

4.0 Operation of Switches:

4.1 All switching operations shall be carried out in accordance with the instruction of the Traction Power Controller.

5.0 Procedure for Power Block Working:

Power Block are of three different types:

a) Pre-arranged / normal power block;
b) Emergency power block;
c) Local power block.

5.1 Such power block is granted for the purpose of carrying out scheduled maintenance by various departments on planned basis. Each Department is expected to send their requirement of weekly power block Programme to TPC as per instruction in force.

5.2 Granting of Normal Power Block:

5.2.1 One Supervisor from branch, not below the rank of JE, is to be nominated to collect all maintenance works scheduled to be carried out from that department for the 10 days period.

5.2.2 The 10 days programme, to be carried out during non-commercial hours, is to be submitted to a nominated supervisor of Electrical branch on every 1st, 11th, 21st of each month for execution of works on 11th, 21st, and 01st of the next 10 days periods.

5.2.3 After collection of all the programmes from all the departments the nominated supervisor of Electrical Department will submit a consolidated statement of works proposed to Dy.COM-II for his perusal and approval by 3rd, 13th, and 23rd every month. In absence of Dy.COM-II it is to be put up to STM-I.

5.2.4 The approved programmes are to be circulated to all concerned including Traffic Controller by 5th, 15th, 25th for execution of works from 11th, 21st of the month and 1st of the next month.

5.2.5 As per the above programme Supervisors from Civil, Electrical and S&T departments will make out a message in PTW -1, asking permission – to work from one of the PD (Power Distribution) Supervisors (not below the rank of JE), stationed at (name of Maint. Depot) --------- under exchange of private number, with the following details:

(i) Requisition No.
(ii) Nature of work
(iii) Location
(iv) Date/Time (From…….. to …….)
(v) Name of the Maint. Depot
(vi) Name of the supervisor
(vii) No. of workers

5.2.6 All supervisors entrusted to take PTW and grant PTW must have an authorized Private Number Sheet.

5.2.7 The PD(Electrical) Supervisors stationed at (Name of Maint. Depot) will communicate the requisitions to Traction Power Controller on duty at Central Control, Metro Rail Bhavan under exchange of private numbers.

5.2.8 The Traction Power Controller on duty will keep the Section Controller on duty advised in writing about the requisitions placed by the supervisors.

5.2.9 Then the Traction Power Controller on duty will arrange power block through remote control or in co-ordination with the sub-stations and will communicate the same to the 3rd rail supervisors stationed at the above 4 locations under exchange of private number.

5.2.10 The PD (Power Distribution) Supervisors, after getting confirmation of power block will arrange earthing of the 3rd rail on either end before issue of Permission – to – work in PTW-2.

5.2.11 The PD (Power Distribution) Supervisors will issue PTW-2 under exchange of private numbers with the concerned supervisors indicating date and time from which PTW has been issued and date & time PTW is to be returned clearly indicating that PTW is to be returned only after removal of men and materials from the site of works and track is free from obstruction for safe restoration of train movement.

5.2.12 Work at each location is to be supervised by a competent supervisor.

5.2.13 After complete of work a cancellation advice is to be issued by the concerned supervisor in the prescribed form PTW-3, under exchange of private number with the concerned PD (Power Distribution) Electrical Supervisor with date and time.

5.2.14 The concerned supervisors must confirm that the work has been completed, men and materials have been removed from the site of work and the track is free from obstruction for restoration of train movement.

5.2.15 After complete cancellation of permission – to – work and ensuring removal of men and materials from the site of works and confirming track free from obstruction the concerned 3rd rail supervisors will pass on a power block cancellation message to Traction Power Controller in a prescribed format PTW-7, under exchange of private number. In the message they should confirm that men and materials under their charge have been removed from the site of work and earths have been removed. Power in the sections may be charged.

5.2.16 On receipt of the power block cancellation message from the PD (Power Distribution) Supervisors, Traction Power Controller on duty will arrange to switch on the feeders.

5.2.17 After charging of the 3rd rail in the sections Traction Power Controller will issue a "**Line Safe Certificate"** to Section controller on duty.

5.2.18 After receiving the "**Line Safe Certificate"** from Traction Power Controller the Section Controller on duty will plan to run Up and Down Pilot Trains.

5.2.19 For maintenance works at Joka, Thakurpukur, Sakherbazar, Behala Chowrasta, Behala Bazar, Taratala and Joka Yards/Car sheds requisition for PTW may be addressed to Car Shed Supervisors not below the rank of JE.

5.2.20 All concerned (Supervisors asking PTW, PD (Power Distribution) 3rd rail Supervisors granting PTW, TPC and SCNL) are to maintain Registers to record the above activities during the power block. Format of the Registers of the Supervisors and Central Control is to be designed to record all above activities in clear and convincing manner right from asking PTW to restoration of normal train running.

5.3. EMERGENCY POWER BLOCK:

5.3.1.Emergency Power Block can be imposed during any time by the supervisors of Civil, Electrical and S&T in the grade of Rs (5000-8000) (RSRP) and above or Sr.TS / TS or Motorman on telephone and the conductor rail will be switched Off from the substation after getting advice from the TPC. If any emergency power block is required which has not been programmed, the co-coordinating supervisor shall give the particulars in the proforma mentioned under Para 5.2.1 above and avail the permit-to-work by following the procedure mentioned above.

5.3.2. In exceptional and rare case and in a grave emergency situation, where emergency power block procedure cannot be duly followed, emergency switching off of power supply the conductor rail may be restored to by the TPC or the substation operator on advice from any Metro Railway supervisory staff including those of the Traffic Department. In such a situation, it is the responsibility of the concerned supervisory staff requisitioning emergency switching off of the power supply to ensure that power supply to the third rail has actually been switched off and the conductor rail is dead before physical contract with the conductor rail to establish by any person or work in the vicinity of the conductor rail is permitted. It is imperative that duration of such interruptions to power supply to be kept to the barest minimum. The above mentioned supervisory staff, after satisfying himself that the grave situation is over limit the conductor rail and the track has been cleared of all infringements, that damages, if any, have been repaired by respective Departmental staff and that the affected site has been cleared of men and materials, will advise the TPC or substation operator to restore the power supply by exchanging private numbers. Application of normal power block procedure will be restored from this stage onwards. In all such cases, a report must be sent to the Chief Electrical Engineer, Metro Railway through proper channel, justifying such a course of action.

5.3.3.Power supply by exchanging private numbers. Application of normal power block procedure will be restored from this stage onwards. In all such cases, a report must be sent to the Chief Electrical Engineer, Metro Railway through proper channel, justifying such a course of action.

5.3.4.The emergency power block will be endorsed only in case of extreme emergency which may endanger human life, train or any other equipment, property or disruption to traffic.

5.3.5. The Motorman of a stranded train in the section shall issue a message to TPC through communication circuit at his disposal for imposition of power block either for attending the defective train or evacuation of the passengers. On getting the power block, the motorman shall earth the rail as per extent procedure. In case the power block has been imposed by any agency other than motorman, the earthing of the line shall be done in consultation with TPC.

6.0 LOCAL POWER BLOCK

The power block on the conductor rail of "Secondary Lines" such as sidings, yards, shades etc. Arranged by Sr.TA/ TS, Yard Master or JE/SSE of concerned shed, come under this category.

7.0 TRAFFIC BLOCK

However, power block is taken on any section; traffic block shall also be taken simultaneously, i.e. during pendent of power block there should no movement allow in or out of the section, under power block. In special circumstances when movement of self-propelled vehicle like Battery locomotive is required, this may be done by piloting or restricted speed.

8.0 PROTECTION AT THE TIME OF POWER BLOCK

8.1 All section over which a power block has been granted shall be protected against entry of Metro Coaches during the period of the block as per annexed sheet no. A.

8.2 Before introducing a single line working the Sr.TS/TS/Sr.TA on duty shall ensure from the Traction Power Controller that there is no power block on the route on which single line working is being introduced.

9.0 BREAKDOWN OF ELECTRIC EQUIPMENT:

9.1 All breakdown or defects noted or reported on the conductor rail or any other electrical equipment shall immediately be reported to the Traction Power Controller. Temporary caution order should be launched to the motorman on duty led by the Traction Power Controller observing the existing rules regarding issue of caution order.

10.0 FIRE AND ACCIDENT:

10.1 Regarding accident and fire on or adjacent to any electrical equipment refer SR 6.12, 6.12(1), 6.12(3) and PDSR (6.1& 5.1- 5.3.1)

11.0 ELECTRIC SHOCK:

11.1 Station Master shall exhibit prominently the instructions issued regarding the treatment of a person suffering from electric shock in the station and shall ensure that all class III staff are familiar with these instructions (as per electric shock treatment chart).

12.0 **POWER BLOCK AT JOKA STATION:**

12.1 Normal Maintenance Power Block:

12.1.1 Issue of P.T.W. for normal maintenance is restricted during commercial hours.

12.1.2 The procedure of Normal Power Block is indicated in Para 5.2 and emergency power block as mentioned in Para 5.3 should be followed.

13.0 Procedure for Power Block at JOKA station

13.1 Power to conductor rail on DN line between Joka (Esplanade end Neutral Section) DN Platform (inclusive) and Joka Depot DN Neural Section is fed from Single end by 750 V DC through cables from high speed circuit breaker (HSCB) 112DB03 at Joka /RSS. Power to conductor rail on UP line between Joka (Joka Depot End Neutral Section) UP Platform (inclusive) & Taratala, Joka end neutral section is fed from both end through cables from high speed circuit breaker (HSCB) at Joka/RSS 112DB02 and Taratala/TSS 107DB04.
Emergency power supply feed can be extended on DN line Joka- Joka Depot section by 112DS03 & 112DB05 from Joka/RSS and on UP line (Joka Platfom inclusive) Joka-Taratala Section by 112DS02 & 112DB05 from Joka/RSS and 107DS04 and 107DB05 at Taratala/RSS.

13.2 Third option is available for extension of feed by closing Bridging HSCB. For Joka DN PF (inclusive) to Joka Depot Neutral Section 750 Volts DC feed can be extended from Taratala -Joka DN line by closing 112BCP01 at Joka/RSS. Similarly, UP line 750 Volts DC feed can be extended from Joka Depot-Joka UP line to Joka – Taratala UP line by closing 112BCP02 at Joka /RSS.

13.3 The sequence of switching operation/cancellation of power block from the section mentioned in Para 13.1 shall be carried as per Annexed sheet – A.

13.4 All the operation and information regarding taking and releasing P.T.W. in the above section should be confirmed by the parties and the PD (Power Distribution) supervisor who will be available at (JOKA DEPOT) by exchanging private number as Para 5.2.5.

JOKA ZONE (Joka-Esplade Line):

WORKING RULE OF ELECTRICAL TRACTION FOR DOWN AND UP LINE

(For One Train Only System)

Section Blocked	Protection against entry of Metro Coaches.		Switching operation sequences	
	Longitudinal	Transverse	For granting power Block	For cancellation of Power Block
DN line conductor Rail in between Joka Esplanade end neutral section to Joka Depot Neutral section (Inclusive Joka DN Platform)	No train should start from TARATALA DN Platform towards Joka DN Platform.	No transverse movement is possible from UP line to DN line Joka Depot end Cross over.	OPEN/OFF i) 112DB03 at Joka/RSS. Confirm that ii)112BCP01 at Joka /RSS is in open condition. iii) 112IM03 is in open condition. iv) confirm that TD15A & TD15B (Bridging Isolator at Joka Depot) are in open condition. v) confirm that 112DS03 is in open condition.	CLOSE/ON i) 112DB03 at Joka/RSS. Confirm that ii)112BCP01 at Joka /RSS is in open condition. iii) 112IM03 is in close condition. iv) confirm that TD15A & TD15B (Bridging Isolator at Joka Depot) are in open condition. v) confirm that 112DS03 is in open condition.
UP line conductor Rail in between Joka, Joka Depot End Neutral section to Taratala, Joka end Neutal Section. (Joka UP platform inclusive and Taratala UP	No Longitudinal movement is possible in this section. No train should start from Joka Depot towards Joka UP P.F.	No transeverse movement is possible from DN line to UP line in between Joka & Taratala and Vice-Verse	OPEN/OFF i) 112DB02 at Joka /RSS and ii) 107DB04 at Taratala / RSS. iii) confirm that 112IM02 is in open position. (iv) 107IM04 is in open condition.	CLOSE/ON i) 112DB02 at Joka /RSS and ii) 107DB04 at Taratala /RSS. iii) confirm that 112IM02 is in Close position. (iv) 107IM04 is in Close condition.

platform exclusive).			v) 112BCP02 is in open condition. vi) 107BCP02 is in open condition. vii) 112DS02 is in open condition. viii) 107DS04 is in open condition.	v) 112BCP02 is in open condition. vi) 107BCP02 is in open condition. vii) 112DS02 is in open condition. viii) 107DS04 is in open condition.

N.B. :

1) Bridging HSCB at Behala Bazar (108BCP01 & 108BCP02), Behala Chowrasta (109BCP01 & 109BCP02), Sakher Bazar (110BCP01 & 110BCP02) & Thakurpukur (111BCP01 & 111BCP02) are in *close position*.

2) DN line Conductor Rail, Section from Taratala Esplanade End Neutral Section to Joka Esplanade Neutral Section *to be treated* as *one elementary section*.

3) UP line Conductor Rail, Section from Joka, Joka Depot End Neutral Section to Taratala, Joka end Neutral Section *to be treated as one elementary section*.

Thank You