GENERAL RULES

FOR

METRO RAILWAY

WITH SUBSIDIARY RULES

AND

APPENDICES

OF THE METRO RAILWAY,
KOLKATA

(FOR OFFICIAL USE ONLY)

(PRINTED ON JULY, 2021)

GOVERNMENT OF INDIA

MINISTRY OF RAILWAYS

(RAILWAY BOARD)

No. 388

New Delhi, the 1st July 2019

RESOLUTION

1. General Rules for working of the Metro Railway, Kolkata to be used for the Public carriage of passengers have been revised and incorporated in the Various Chapters of Kolkata Metro Railway General Rules, 2019 in Suppression of Calcutta Metro Railway, General Rules, April 2002.

2. The Metro Railway with underground and elevated track with Automatic Signaling system in North-South corridor and CBTC system in East-West corridor along with some additional safety features differs from Open Line Railways. Therefore, General Rules for Metro Railway, Kolkata have to be different in many respects from General Rules for Indian Railways (Open Lines), 1976.

3. These revised rules shall come into force on the date of publication in the Official Gazette.

4. The rules shall be modified, amended, enlarged or replaced by new set of Rules as required.

ORDER

Ordered that this Resolution, with its enclosures, be published under Notification in the Official Gazette as required by Section 60 of the Railways Act, 1989 (24 of 1989) read with Section 18 of the Calcutta Metro Railway (Operations and Maintenance) Temporary Provisions Act, 1985, (10 of 1985) and in suppression of the Railways (Open Lines) General Rules, 1976, in so far as they relate to the Calcutta Metro Railway and that a copy thereof be kept open for inspection at Metro Railway stations as directed by Sub Section (4) of Section 60 of the Railways Act read with section 18 of the Calcutta Metro Railway (Operations and Maintenance) Temporary Provisions Act 1985, also that a copy of Resolution and of its enclosures be communicated to the Governments, Administrations and Officers noted below for information.

(GIRISH PILLAI)

Member Traffic, Railway Board

Documents accompanying: Kolkata Metro Railway General Rules, 2019

1. Secretaries, Ministry of Communications, Defense, Home Affairs, Law, Justice and Company Affairs, Petroleum, Surface Transport, Civil Aviation and Tourism.

2. The Chief secretaries to the Governments of Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhatisgarh, Delhi, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharastra, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Telangana, Tripura, Uttar Pradesh, Uttarakhand, West Bengal.

3. The Chief Secretaries, Administrations of Delhi, Andaman and Nicobar, Chandigargh, Dadra and Nagar Haveli, Ladakh, Jamu & Kashmir, Daman and Diu, Lakshadweep and Pondicherry.

4. Deputy Comptroller and Auditor General of India (Railways).

5. The Chief Commissioner of Railway Safety.

6 The Commissioners of Railway Safety, Metro, Central, Eastern, Northern, North- Eastern, North East Frontier, Southern, South Central, South Eastern and Western Circles.

7. The General Managers, Central Railway, Eastern Railway. East Central Railway, East Coast Railway, Northern Railway, North Central Railway, North Eastern Railway, North Frontier Railway, North Western Railway, Southern Railway, South Central Railway, Southern Coast Railway, South Eastern Railway, South East Central Railway, South Western Railway, Western Railway, West Central Railway

8. The Officers on Special Duty, North Central, South Central, East Central, East Cost, North West and West Central Railways.

9. The General Managers, Chittaranjan Locomotives works, Diesel Locomotive Works, Integral Coach Factory, RCF, DCW, W&AP, NF(Con), RE.

10. The General Manager, Metro Railway, Kolkata.

11. The Chief Administrative Officers, Metropolitan Transport Projects (Railways), Mumbai and Chennai.

12. The Director General, Research, Design and Standards Organization, Lucknow.

13. The Principals, Indian Railways Institute of Civil Engineering, Pune, Indian Railways Institute of Mechanical and Electrical Engineering, Jamalpur, Indian Railways Institute of Signal Engineering and Telecommunications, Secunderabad and Railways Staff College, Vadodara.

14. The Chairmen, Mumbai Port Trust, Kolkata Port Trust

15. Port Trust Railway, Kandla Port Trust Railway, Chennai Port Trust Railway and Vishakapatnam Port Trust Railway.

16. The Chairman Railway Rates Tribunal.

17. The Secretary, Indian Railways Conference Association.

18 The Director, National Archives of India.

19 The Librarians, Central Secretariat Library, National Library, Kolkata. Parliament Library and Railway Board Library.

20. The Superintendent, Library and Research, Ministry of Law and Justice.

Published in the Gazette of India Extra-ordinary Part-II, Section 3 Sub Section (i)

KOLKATA METRO RAILWAY
GENERAL RULES
2019

FOR THE GUIDANCE OF METRO RAILWAY SERVANTS

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(Railway Board)

NOTIFICATION

New Delhi, the 1st July, 2019

G.S.R. 465(E).—In exercise of the powers conferred by Section 60 of the Railways Act, 1989 (24 of 1989 read with Section 18 of Calcutta Metro Railway (Operations and Maintenance) Temporary Provisions Act 1985 (10 of 1985) and in supersession of the Calcutta Metro Railway General Rules, 2000, the Central Government hereby makes the following rules, namely: -

PREFACE

1. The General Rules for Metro Railway Kolkata, 2019 together with the subsidiary Rules of Metro Railway are herewith published for the information and guidance of the staff.

2. The Subsidiary Rules of the Metro Railway, Kolkata 2019 of working of trains on North-South Corridor and East-West Corridor are published herewith. This supersedes the Subsidiary Rules (Temporary Provisions) in 2002 along with Correction Slips issued afterwards and subsidiary rules reprinted in 2002 and 2014 for working the Trains.

3. The present Subsidiary Rules are based on the Kolkata Metro Railway General Rules 2019 and are subservient to these Rules. Arrangements of chapters have also been done following the Kolkata Metro Railway General Rules 2019.

4. The Subsidiary Rules are not serially numbered; they bear the same numbers as the General Rules which they explain or amplify Subsidiary Rules shall be read in conjunction with General Rules.

Nothing in these Rules shall be taken to supersede or in contravention with the provisions of General Rules.

5. Every Metro Railway Employee is bound to obey General, Subsidiary and other departmental Rules issued for the guidance of Metro Railway employees. Ignorance of Rules will not be accepted as a justifiable plea for disregarding it.

6 Supplementary books, instructions or manuals issued for guidance of staff shall be carefully studied in conjunction with General and Subsidiary Rules and will be binding on the staff.

7. A record of all addenda and Corrigenda issued subsequent to the publication of this book shall be kept carefully by the staff who should keep their copies of the rule books upto date by pasting of these addenda/corrigenda at the appropriate place.

8. Should any order not being fully understood by any employee, he will forthwith refer it to his immediate supervisor.

9. No order contained in this book shall be varied, superseded or suspended, except under the authority of the authorised officer in writing.

(Satyaki Nath)
Principal Chief Operations Manager
Metro Railway
Kolkata

Kolkata
Dated ……..

Register of Addenda and
Corrigenda Issued Subsequent to the publication of this book

Correction Slip		Page No.	Rules No.(S) Corrected
No.	Date		
01	10.04.2023	01,106,239	GR-01
02	05.10.2023	27,28	SR-03
03	30.11.2023	78,79	GR -53

Register of Addenda and
Carrigenda Isued Subsequent to the publication of this book

Correction Slip		Page No.	Rules No. (S) Corrected
No.	Date		

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No.	Date		

PART-I

(COMMON RULES)

(AUTHORITY- Para B of Addendum and corrigendum No.01 dated 10.04.2023)

CHAPTER-1

PRELIMINARY

1. Short title and commencement.
2. Definitions.
3. Classification of stations.
4. Applicability of rules for male and female railway servants.
5. Meaning of words and Expressions not defined in these Rules.

CHAPTER – II

RULES APPLYING TO METRO RAILWAY SERVANTS GENERALLY

6. Supply of Copies of Rule.
7. Upkeep of the copy of Rules.
8. Knowledge of Rules.
9. Assistance in observance of rules.
10. Prevention of trespass, damage or loss.
11. Obedience to Rules and Orders.

12. Attendance for duty.

13. Absence from duty.

14. Taking alcoholic drink, sedative, narcotic, stimulant drug or preparation.

15. Conduct of Metro Railway servants.

16 Duty for ensuring safety.

CHAPTER –III
SIGNALS

17. Placing of Fixed Signals.

18. Exhibition of hands signal.

19. Methods of display of hand signals for controlling train movement.

20. Hand Signals for shunting movements.

21. Knowledge and possession of hand signal.

CHAPTER –IV
WORKING OF TRAINS GENERALLY

22. Standard Time.

23. Adherence to advertised time.

24. General.- Duration of absence and Number of road learning trips.

25. Speed of trains over Facing Points.

26. Trains driven from the trailing Driving Cab.

C. Trains with damaged or Defectives coaches.

27. Examination of defective Coaches.

D. Precautions before Starting Trains.

28. Duties of staff to examine notices before starting.

29. Examination of Train by Driving Motorman.

E. Duties of staff on arrival.

30. Train crew not to leave the train till handed over.

CHAPTER - V
CONTROL AND WORKING OF STATIONS

31. Access to booking office and areas not open for public.

32. Authorities and Messages in prescribed Forms.

33. Station Working Rules .

34. Opening of station.

35. Control of over-crowding on platforms.

36. Prohibition of begging, vending, smoking, etc.

37. Prohibition against carrying of dangerous or offensive goods.

38. Securing of Metro Coaches.

39. Responsibilities of Booking office staff.

40. Security.

CHAPTER - VI

ACCIDENT AND UNUSUAL OCCURENCES

A. General

41. Report of the accident and unusual occurrences.

42. Duties of Traffic Controller in case of "Emergency".

43. Duties of Station Shift-in-charge and departmental Supervisor generally in case of Emergency.

44. Order of priority for action in emergency.

45. Recording of activities during "Emergency

46. Traffic regulation.

47. Duties of the station staff.

B. Unusual occurrence

48. Flooding of tunnel.

49. Accidents.

50. Fire and Smoke.

51. Electrical equipment on Fire.

52. Action to be taken in case of earthquake, cyclone.

C H A P T E R – VII
PERMANENT WAY AND WORKS

53. Maintenance of line.

54. Condition of permanent way and works.

55. Keeping of materials.

56. Inspection of Permanent Way and works.

57. Works involving danger to trains or traffic.

58. Emergency repairs to track and structure.

59. Work under conditions of impaired visibility.

60. Precautions before commencing operation which would obstruct the line.

61. Engineering Supervisor in each gang.

62. Knowledge of signals and equipment of gang.

63. Inspection of gauges, signals, tools and implements.

64. Responsibility of Senior Section Engineer or Junior Engineer as to safety of line.

65. Putting in or removing points or crossings.

66. Working of Lorries, trollies and motor trollies.

67. Track work and track side work in non traffic hours.

68. Maintenance of line in traffic hours.

69. Engineer's Possession.

CHAPTER-VIII

POWER SUPPLY and TRACTION CURRENT ARRANGEMENTS

70. Inspection of Electrical Way and Work.

71. Permit to work adjacent to or involving electrical equipment.

72. Warning to staff and public.

73. Work on the third rail or any associated equipment thereof.

74. Work on service building and structures in the vicinity of live equipment.

75. Train maintenance works on the line.

76. Battery locomotives.

77. Protection of the trains in case of Traction system failure or breakdown.

78. Issue of Caution Order.

79. Work on service building and structures in the vicinity of live equipment.

80. Alterations to Track.

81. Additional rules for electrified Sections.

82. Rules applicable to DC Traction Third Rail equipment only.

83. Procedure for preventing admission of electric rolling stock into or over sections of track with dead or earthed third rail.

PART-II

(TRAIN WORKING UNDER OTHER THAN CBTC SYSTEM)

(AUTHORITY- Para C of Addendum and corrigendum No.01 dated 10.04.2023)

CHAPTER-I

SIGNALS

A. General Provisions

84. Signals.

85. Kinds of signals.

B. Description of Signals

86. Use of Fixed Signals.

87. Colour light stop signals.

88. Fixed stop signals for admission of approaching trains.

89. Fixed stop signals for departing trains.

90. Combination of signals.

91. Placing of more than one signal on the same post.

92. Calling on Signal.

93. Shunt Signals.-

94. Repeating Signals.

95. Point Indicator.

96. Signals out of use.

C. Equipment of Signals

97. Minimum equipment of fixed signals at stations and carshed cabins.-

98. Additional fixed Signals provided at stations and cabins generally.-

99. Commissioning of Fixed signals.-

100. Signals at Non Block Stations.-

D. Working of Signals and Points.

101. Fixed signals generally.

102. Normal Aspect of Signals

103. Points affecting movements of a train.

104. Locking of facing points.

105. Condition for taking 'off' Home Signal.

106. Condition for taking 'off' Starter Signal.

107. Condition for taking 'off' calling on signal

108. Lighting of Signals.

109. Fixed Red Light.

110. Stop Board.-

111. Block Section Commencement Board.

112. Traps and other points.

113. Points.

114. Duties of Station Shift-in-charge generally when a signal is defective.

115. Intimation to officials when defects remedied.

117. Defective or damaged point.

118. Duties of Driving Motorman in respect of signals.

119. Duties of Driving Motorman when approach signal is defective.

120. Duties of Driving Motorman when departure signal is defective.

121. Duties of Driving Motorman in respect of a Calling-on Signal.

122. Permission before entering a running lines.

123. Reporting of defects in signals.

125. Kinds of Fixed stop signals in Automatic Block Territories.

CHAPTER –II
WORKING OF TRAINS GENERALLY
A. Timing

126. Setting Watch.

127. Supply of working time table and Schedule of Standard Dimensions.

B - Speed of Trains.

128. Limits of speed generally.

129. Caution order.

130. Limits of Speed while running through Stations.

C. Equipments of Trains and Train Staff.

131. Head Light, Marker Light and Speedometer.

132. Tail Lamp and Parking Lights.

133. Equipment of Driving Motorman and Conducting Motorman.

134. Manning of trains.

D. Precautions before Starting Trains.

135. Examination of trains.

136. Examination of train by Conducting Motorman.

137. Driving Motorman to obey certain orders.

E. Duties of Staff working trains

138. Driving Motorman and Conducting Motorman to keep a good look out during journey.-

139. Application of Parking Brake by Conducting Motorman.

140. Sounding of train whistle.

141. Be signals between conducting motorman and Driving Motorman.

142. Passengers.

F. Duties of staff on arrival

143. Driving Motorman to see that the train is stopped at the proper place.

144. Moving of train carrying passengers after it has been stopped at a station.

145. Stabling of trains on running lines.

146. Reception of a train on an obstructed line.

147. Control of Shunting.

148. Responsibility for Shunting.

149. Shunting on Gradients.

G . Detrainment of Passengers in Mid section.

150. Conditions for detrainment.

151. Procedure for detrainment.

152. Working of track maintenance machine.

CHAPTER - III

CONTROL AND WORKING OF STATIONS

153. Responsibility of the Station Shift-in-charge for working.

154. Keeping of books and returns.

155. Access to and operation of equipments.

CHAPTER – IV
ACCIDENT AND UNUSUAL OCCURENCES
A. Trains stopped between stations.

156. Train defect.

157. No traction current.

158. Train parting.

159. Train in a Block Section without Authority To Proceed.

B. Unusual occurrence

160. Report of unsafe conditions likely to affect running of train.-

161. Action to be taken in case of accident.

CHAPTER-V
SYSTEM OF WORKING

162. System of working.

163. Authority to enter the block section.

A. Absolute Block System

164. Essential of absolute block system.

165. Conditions for granting permission to approach.

166. Rules and regulation for single line working on a double line section when one line is obstructed.

B. One train only system

167. Essentials of one train only system.

168. Condition for granting permission to approach and making over authority to proceed at block sections.

169. Procedure in case of accident or disablement on the "One Train Only System".

C. General

170. Block back and block forward.

171. Authority for shunting.

172. Isolation of siding.

173. Obstruction at a block station or in the block section after permission to approach has been given.

174. Shunting or obstruction in the block section.

D. Automatic Block System

175. Essentials of Automatic Block system on double line.

176. Duties of Driving and Conducting Motorman when an Automatic stop signal is to be passed at 'ON'.

177. Protection of a train stopped in an Automatic Block Signaling section.

178. Condition for taking 'OFF' Manual Stop Signals in Automatic Block Territory.

179. Driving Motorman to report failure.

180. Procedure during failure of Automatic Signaling.

181. Movement of trains against the direction of traffic on the Automatic Block System.

182. Procedure when Semi-Automatic Stop Signal at 'ON'.

CHAPTER – VI
BLOCK WORKING

183. Means of getting or obtaining permission to approach.

184. Provision of instruments.

185. Interference with points, signals, or related equipments and other gears connected with for obtaining or granting Line Clear etc.

186. Disconnection and reconnection of Signal and Telecom equipments.

187. Certificate of Competency.

188. Train Signal Register.

189. Authority to proceed.

190. Driving Motorman to examine authority to proceed.

191. Conditions for closing the block section.

192. Responsibility of Station Shift-in-charge as to authority to proceed.

193. Failure of track circuits, axle counters, panel boards.

194. Form for written authority to proceed.

195. Special responsibility as to operation of panel.

196. Preservation of messages and written authorities to proceed.

197. Cancellation of permission to approach.

198. Working of trains in case of failure of communication including total failure of communication.

199. Failure of radio communication between train crew and Traffic Controller.

200. Use and operation of block working equipment.

C H A P T E R – VII
PERMANENT WAY AND WORKS

201. Showing of signals to control train speeds.

C H A P T E R – VIII
POWER SUPPLY AND TRACTION CURRENT ARRANGEMENTS

202. Switching 'off' traction current.

203. Switching 'on' traction current.

PART-III

(TRAIN WORKING UNDER CBTC SYSTEM)

(AUTHORITY- Para D of Addendum and corrigendum No.01 dated 10.04.2023)

CHAPTER -1
RULES APPLYING TO METRO RAILWAY SERVANTS GEERALLY

204. Access control.

CHAPTER –II
SIGNALS AND CONTROL

205. General.– (a) Cab signals; (b) fixed signals; (c) hand signals.

206. Description of signals.– (1) Cab Signals, (2)Fixed Signals,and (3) Depot Signals,

207. Provision of Signals.

208. Working of Signals and points.

209. (1) Control of Signaling, (2) Safety Communication,

210. Train detained on Line.

211. Absence of cab signaling.

212. Failure of fixed Signals.

213. Failure of route setting.

CHAPTER-III

SPEED AND WORKING OF TRAINS

214. Service Regularity.

215. Speed of trains.

216. Caution Order.

217. Train Staffing.

218. Train Defects.

219. Examination of Trains.

220. Duties of a Motorman.

221. Locomotives, work trains and maintenance vehicles.

CHAPTER -IV
PLATFORM DOORS

222. Kinds of Platform doors.

223. Normal working of doors.

224. Abnormal working and emergency usages of doors.

225. Indications.

CHAPTER –V
CONTROL AND WORKING OF STATIONS

226. Responsibilities of Station Shift In-charge.

227. Responsibilities of Platform Supervisor.

228. Responsibilities of Baggage Handling Supervisor.

229. Station Working Rules.

230. Emergency Evacuation.

231. Supervision of train movements.

CHAPTER –VI
(ACCIDENT AND UNUSUAL OCCURRENCES)

232. Train stopped between stations.

233. Train divided.

234. Unusual occurrences.

235. Other unsafe conditions.

CHAPTER-VII
SYSTEMS OF WORKING

236. Continuous Automatic Train Control System.

237. Automatic Mode.

238. Automatic Reversal Mode.

239. Coded Manual Mode or Automatic Train Protection Mode.

240. Restricted Manual Mode.

241. Cut Out Mode.

242. Run on Sight Mode.

243. Communications-based train Control.

CHAPTER-VIII
SINGLE LINE WORKING

244. Objective of single line working.

245. Implementation.

246. Signaling Failures.

CHAPTER -IX
PERMANENT WAY AND WORKS

247. Works at Stations.

CHAPTER - X
POWER SUPPLY AND TRACTION ARRANGEMENT

248. Switching on, and off, of traction and power supply distribution.

249. Access.

250. Arcing and Fire.

251. Sectioning and siding switches.

CHAPTER- XI

OTHER SYSTEMS OF WORKING

252. Application of Special Procedure.

253. Driverless Train Operation.

PART-I

(COMMON RULES)

(AUTHORITY- Para B of Addendum and corrigendum No.01 dated 10.04.2023)

CHAPTER-1

PRELIMINARY

1. Short title and commencement.- (1) These rules may be called the Kolkata Metro Railway General (Amendment) Rules 2023.

(AUTHORITY- Para A of Addendum and corrigendum No.01 dated 10.04.2023)

(2) They shall come into force on the date of their publication in the Official Gazette.

2. Definitions.-In these rules, unless the context otherwise requires,-

(1) **"Absolute Block Working"** means the systems of working the trains specified in Part-II, Chapter-V;

(2) **"Act"** means the Calcutta Metro Railway (Operation and Maintenance) Temporary Provisions Act, 1985 (10) of 1985;

(3) **"Adequate Distance"** Means the distance sufficient to ensure safety;

(4) **"Approach Lighting"** means an arrangement in which the lighting of signals is controlled automatically by the approach of a train;

(5) "**Approved means of communication"** means any communication equipment or system which is capable of

audio transmission between Controller, and/or stations and/ or train crews and is approved under special instructions;

(6) **"Approved Special Instruction"** means special instruction approved or as prescribed by the Commissioner of Railway Safety;

(7) **"Aspect of a signal"** means the appearance of signal as seen by the Motorman of an approaching train;

(8) **"Authorised Electrical Person"** means any person who is duly authorised to perform specific work on the electrical equipment of circuitry, the authorisation being done by an officer of Metro Railway Administration empowered for this purpose;

(9) **"Authorised Officer"** means a person who is duly empowered by General or special order of the Metro Railway Administration either by name or by virtue of his office, to issue instructions or to do any other thing.

SR 2 (9): **Authorised Officer**.- (a) The Principal Chief Operations Manager is the authorised officer.

(b) Power to issue working instructions during emergency is also delegated to the Traffic Officers in Senior Scale and above on Metro Railway on behalf of the Principal Chief Operations Manager.

(10) **"Authority to Proceed"** means the authority given to the Motorman of the train, under the system of working, to enter the block section with his train;

(11) **"Automatic Block working"** means systems of working of the trains specified in Part-II, Chapter-V;

(12) "**Automatic Mode"** means the mode of operation of train under Automatic Train Operation where train is driven automatically including control of acceleration, coasting, braking and stopping of trains;

(13) **"Automatic Train Operation"** means a Continuous Automatic Train Control system or Communication Based Train control System, which automatically controls acceleration, coasting, braking and stopping of trains;

(14) **"Automatic Train Protection"** means Continuous Automatic Train Control System or Communication Based Train control System which maintains safe train operation, including train direction, train separation, interlocking and speed enforcement;

(15) **"Automatic Train Supervision"** means a sub-system of Continuous Automatic Train Control system or Communication Based Train control System which automatically monitors the entire system and directs train running so as to provide scheduled service under normal circumstances;

(16) **"Auxiliary Substation"** means a substation where equipments are provided for conversion of high voltage AC to 415/230 Volts AC;

(17) **"Axle Counter"** means an electrical device which, when provided at two given points on the track, proves by "counting axles in" and "counting axles out", whether the section of the track between the said two points is clear or occupied;

(18) **"Bad weather impairing visibility** "means adverse weather condition whereby normal visibility is affected due to fog, dust or thunder storm, heavy winds, rain etc. resulting in reduced visibility;

(19) **"Berth"** means length of track nominated to be occupied by a train;

(20) **"Block Back**" means to dispatch a message from a block station intimating to the block station immediately in rear that the block section is obstructed or is to be obstructed;

(21) **"Block Forward"** means to dispatch a message from a block station to the block station immediately in advance the fact that the block section in advance is obstructed or is to be obstructed;

(22) **"Block Section**" means that portion of the running line between block stations as specified by special instructions on to which no running train may enter, until permission to approach has been received from the block station at the other end of the block section;

SR 2 (22) **Block section:** Block stations and/or special class station are those at which the driver must obtain to authority to proceed under the system of working to enter the block section with his train.

(23) **Blue Light Station**" means a location indicated by a blue light where a person can communicate with the Operations Control Centre and disconnect traction power of a specified section to stop a train, in an emergency;

(24) **"Bond"** means connections for electrical continuity in the running rail for traction return current or for signaling track circuit;

(25) **"Braking Distance"** means the distance required by a train to stop in normal braking conditions, taking into account the track gradient, the train weight and its speed;

(26) "**Building Management System**" means a control-panel or workstation installed at every station to monitor and control proper functioning of building services, including safety critical systems; It includes Integrated Station Management System and Tunnel Ventilation System;

(27) **"Cab to Cab Communication"** means voice communication provided between Driving Motorman and the Conducting Motorman;

(28) **"Cab Signal"** means visual indication displayed as speed limit and target distance on the Motorman's console granting him the authority to proceed under Automatic Mode, or Coded Manual Mode of driving;

(29) **"Calendar Day"** means the period from midnight to midnight;

(30) **"Car Shed"** means an area where the Metro Railway trains and Coaches are berthed either for repair or for any other attention including stabling;

(31) **"Caution Order"** means an instruction given to the Motorman to observe special precautions including speed reduction at notified locations;

(32) **"Certificate of Competency"** means the certificate issued to the Metro Railway servant after he has been examined for his knowledge of rules, regulations, procedures and manuals relevant to his duties, and found fit;

(33) **"Chief Controller"** means the Metro Railway servant in overall charge of Operations Control Centre functions;

(34) **"Circuit"** means an arrangement of conductors and electrical apparatus connected to a source of electric supply;

(35) **"Circuit Main Earth"** means any earth, whether portable or integral with the equipment, which is applied prior to the issue of a "permit to work";

(36) **"CCTV"** means Closed Circuit Television for surveillance and Monitoring of passengers and others;

(37) **"Coded Manual Mode**" means the mode of operation of train under Train Control System where train is driven manually but remains subject to maximum speed determined by Automatic Train Protection codes (Coded Manual Mode is also referred as Automatic Train Protection Mode);

(38) **"Commissioner of Railway Safety "**means a Commissioner of Railway Safety appointed to exercise designated functions under the Act, and includes the Chief Commissioner of Railway Safety;

(39) **"Communication Based Train Control**" system is a continuous, automatic train control system using high-resolution train location determination, bidirectional train-to-wayside data communications and train borne and wayside processors capable of implementing Automatic

Train Protection functions, with option of Automatic Train Operation and Automatic Train Supervision;

(40) **"Competent Metro Railway servant"** means a Metro Railway servant duly qualified and nominated to undertake and perform the duties entrusted to him;

(41) **"Continuous Automatic Train Control system"** means an automatic system of controlling and monitoring train movements continuously by means of sub-systems, namely, Automatic Train Protection System, Automatic Train Operation system and Automatic Train Supervision System;

(42) **"Conducting Motorman"** means a competent Metro Railway servant in-charge, for the time being, of a train (in the rear cab) and includes the second Motorman or any other competent Metro Railway servant who may perform duties of the Conducting Motorman;

(43) **"Connection"** means when used with reference to a running line, the points and crossing or other appliances arrangements used to connect such line with other lines or to cross it;

(44) "**Controller"** means a railway servant on duty who, for the time being is responsible for regulating the working of traffic on a section of a railway provided with communication equipment between the Control, Stations and Train Crew;

(45) **"Cross Passage"** means a physical connection between two single track tunnels, which is used for maintenance of the Metro Railway, and can also be used for evacuation of passengers and for other relief works during emergencies;

(46) **"Cut Out Mode"** means the mode of operation of trains under Continuous Automatic Train Control system or Communication Based Train control System when train borne Automatic Train Protection Equipment is cutout;

(47) **"Day and Night"** means the period from sunrise to sunset and vice versa;

(48) **"Depot Controller"** means a Metro Railway servant responsible for movements of rakes within the depot area including interchange of rakes between the depot and the main line;

(49) **"Departure Order Indication"** means an indication on a display panel in the Motorman's cab conveying authority to the Motorman to proceed or start his train;

(50) **"Direction of Traffic"** means the direction for which the line is signalled;

(51) **"Driving Motorman"** means the train driver or any other competent Metro Railway servant in-charge, for the time being, of driving a train;

(52) **"Driverless Train Operation"** means a train operation where a train can start and stop itself but a train attendant may be present to operate the train doors and to manually drive the train in case of emergencies;

(53) **"Earth"** means the general mass of the earth and any conductor in direct electrical connection with it;

(54) **"Earthed"** means connected to earth in such a manner as will ensure at all times an immediate discharge of electric energy without danger;

(55) **"Electrical Way and Works"** means the traction installations including third rail and other connected works provided on the Metro Railway;

(56) **"Emergency"** means an incident involving injury to passengers and employees, damage to Metro Railway equipment or property, delay or disruption to traffic or any combination of these circumstances shall be considered as "Emergency" and dealt with accordingly;

(57) **"Emergency Stop Plunger"** means the device, the operation of which causes the trains, within the station limits, running on Automatic Train Protection, to come to a stop;

(58) **"The Engineer in-charge"** means the Assistant Engineer or any other officer in immediate charge of the section concerned;

(59) **"Engineer's Possession"** means a defined section of track and works under the sole control of a competent Metro Railway servant for a specific length of time;

(60) **"Engineering Train Unit"** means a train which is used for the maintenance and repairs of track side fixed infrastructure;

(61) **"Facing and Trailing Points"** means points are facing or trailing in accordance with the direction of a train or vehicle moves over them; Points are said to be facing points when by their operation, a train approaching them can be directly diverted from the line upon which it is running;

(62) **"Feeding Post"** means a supply control post in overhead traction, where the incoming feeder lines from grid sub-station are terminated;

(63) **"Fixed Signal"** means a signal at fixed location controlling the movement of trains and forming part of the signalling system;

(64) "**Fouling Mark**" means the mark at which the infringement of fixed Standard Dimensions occurs, where two lines cross or join one another;

SR 2 (64) "**Fouling Mark**"-Train or Vehicle placed on either of the two lines must stand inside these Fouling marks in order to avoid the risk of collision with a train or vehicle moving on the other line.

(65) "**Global System for Mobile Communications Railways"** means a wireless Mobile Railway communication system, specially designed for Railway applications with features like priority calls, emergency calls, all party conference, etc. and facilitates communication between on board Motorman and Controller or Railway Officials or Maintenance staff;

(66) **"Headway**" means the time interval between trains;

(67) **"Integrated Station Management System Controller"** means a Metro Railway servant competent and responsible for the control of the Auxiliary systems including tunnel ventilation system, station air conditioning and building management system of the Metro Railway;

(68) **"Interlocking**" means an arrangement of signals, points and other appliances, operated from a panel or lever frame, so interconnected by mechanical or electrical locking or both that their operation must take place in proper sequence to ensure safety;

(69) **"Incident"** means any occurrence which causes or has potential to cause delay or disruption to passenger services;

(70) **"Inspection Car"** means a self propelled vehicle, which is used for the inspection, maintenance and repairs of the equipments of the Metro Railway;

(71) "**Insulated Third Rail Joint**" means a special joint for the purpose of sectioning the third rail being powered from different traction substations;

(72) **"Irrevocable Emergency Brake"** means that when an emergency brake gets applied, intentionally or otherwise, the brake remains applied until the train speed comes to zero and the cause of application of the emergency brake is removed or reset;

(73) **"Isolate"** means to disconnect from all sources of electric supply;

(74) **"Isolation"** means an arrangement secured by the setting of points, or other means approved under special instruction, to protect the line so isolated from the danger of obstruction from other connected line or lines;

(75) **"Jumper Cable"** means a cable provided with clips for use as a temporary electrical connection to bridge a gap e.g. in a running rail, cable or pipe;

(76) "**Line Clear"** means the permission from a block station to a block station in rear for a train to leave the latter and approach the former, or the permission obtained by a block station from a block station in advance for a train to leave the former and proceed towards the latter;

(77) **"Local Control"** means the assumption of the responsibilities of the Traffic Controller for the specific station by a person who is authorised to do so for the time being;

(78) **"Metro Railway servant"** means a servant duly qualified, possessing a valid certificate of identity and nominated to undertake and perform the duties entrusted to him;

(79) **"Multiple Aspect signalling"** means a signalling arrangement in which signals display at any one time in any one of the three or more aspects and in which the aspect of every signal is pre-warned by the aspect of the previous signal or signals;

(80) **"Motorman"** means the train driver or any other competent Metro Railway servant in charge, for the time being, of driving a train;

(81) **"Non-signalled Areas"** means that position of track in the depot when fixed signals are not installed, movements on these tracks are thus controlled by hand signals;

(82) **"Non-traffic Hours"** means the period between the times of running of the last passenger train at night and the first passenger train the following morning;

(83) **"Normal Direction of Traffic**" means traffic moving on the left side track;

(84) **"Obstruction"** means a train, vehicle or obstacle on or fouling a line or any condition which is dangerous to trains;

(85) **"OFF Aspect"** means any prescribed aspect other than its most restrictive aspect displayed by a signal;

(86) **"ON Aspect"** means the most restrictive aspect displayed by a signal;

(87) **"One Train Only System"** means the systems of working the train specified in Part-II, Chapter-V;

(88) **"Open Circuit"** means the condition when a circuit is incomplete by the opening of a switch or otherwise thus preventing electric current from flowing;

(89) **"Operating panel"** means the panel in the panel Operation Room which monitors and controls station signaling system;

(90) **"Operation Control Center or Control Office"** means the organisation in overall charge of controlling the movement of trains includes Central Control and Area Control;

(91) **"Panel Operator"** means the competent Railway servant who is for the time being responsible for the operation of the points and signal from the panel within the station limit in independent charge for working of trains under the system in force;

(92) **"Passenger Train"** means a train intended solely or mainly for carriage of passengers;

(93) **"Permission to Approach"** means the permission given from a block station to a block station in rear for a train to leave the latter and approach the former;

(94) **"Platform Screen Doors"** means a system of automated doors synchronised with the train doors which are provided at the platform edge to isolate passengers on platform from track;

(95) **"Platform Supervisor Booth"** means a monitoring cabin on platform for supervisor;

(96) **"Points and Trap indicators"** means the appliances fitted to and working with points to indicate the position in which they are set;

(97) **"Pointsman"** means a competent railway servant responsible for showing hand signals, ensuring correct setting and locking of points, shunting movements, and other train passing related works as per advice of panel operator;

(98) **"Power Block"** means withdrawing traction current or power supply from a particular section;

(99) **"Proceed Code"** means the Automatic Train Protection code other than zero speed code on the Motorman's console which indicates the target speed;

(100) **"Provisional Terminal Block Station"** means a station not at the end of running line but provided with car reversing siding to enable reversing of trains;

(101) **"Railway Board"** means the Railway Board as empowered under section 2 of the Indian Railway Board Act, 1905 (4 of 1905);

(102) **"Receiving Substation"** means an electric sub-station where electric power supply is received from Grid substation and transformed to appropriate voltage for distribution;

(103) **"Rectifier"** means an apparatus for conversion of alternating current into direct current;

(104) **"Restricted Manual Mode"** means a driving mode where train is driven manually and is subjected to Automatic Train Protection in respect of maximum speed limit only;

(105) **"Rolling Stock Supervisor"** means a Metro Railway servant duly qualified to "examine trains and certify their fitness for safe running";

(106) **"Run On Sight Mode"** means a driving mode where the train is driven manually and is subject to Automatic Train Protection restriction in respect of speed only until Automatic train protection track indications are recognised after which it automatically changes to Coded Manual Mode;

(107) **"Running Line"** means the track used for running trains through and between stations and includes connections, if any used by a train when entering or leaving stations;

(108) "**Running Train"** means a train which has started but has not completed its journey;

(109) **"Supervisory Control and Data Acquisition system"** means the system for the purpose of remote monitoring and control of all traction power supply installations and auxiliary systems;

(110) **"Section Gap"** means the gap between the lengths of third rail fed by two different feeders;

(111) **"Secure a Train"** means to make a full brake application, close down all driving positions and remove the Motorman's control key and apply parking brakes wherever applicable;

(112) **"Senior Section Engineer or Junior Engineer (Permanent Way or Works or Bridge or Third Rail or Signal and Telecommunication)"** means competent Metro railway servant responsible for the construction or

maintenance of Permanent Way, points, signals, communication equipments, bridges and Third Rail or other works connected therewith;

(113) **"Senior Section Engineer or Junior Engineer (Train Examination)"** means a Metro Railway servant so designated and entrusted with the duties to examine trains or any other rolling stock and certify their fitness for safe running and includes any other railway servant who may be for the time being performing these duties;

(114) **"Short Circuiting Device"** means such devices provided for safety reasons on each station located in Auxiliary Sub-station/Traction sub-station/station control room to temporarily short circuit the running rails to earth in case the rise of running rail potential exceeds prescribed limits;

(115) **"Short Circuit"** means a fault condition in the circuit arising from the introduction of a path of low resistance to electric current;

(116) **"Shunting"** means the movement of a coach or coaches with or without traction motors or of any other self propelled vehicle, for the purpose of attaching, detaching or transfer or for any other purpose;

(117) **"Signal"** means an indication given to a Motorman for controlling the movement of his train;

(118) **"Special Instructions"** means instructions issued from time to time by the authorised officer in respect of particular cases or special circumstances;

(119) **"Staff Protection Key"** means a key provided in station control room extracted and given to authorised staff going to a particular track section for inspection or maintenance;

(120) **"Staff Special Key"** means a key provided to open Manual Secondary Door from platform side which is used by the maintenance staff to access the track side;

(121) **"Station"** means any place on a line of the Metro Railway at which passenger traffic is dealt with;

(122) **"Station Control Room"** means the room where station control panel or work-station is located;

(123) **"Station Shift-in-charge's Office"** means the office of the Station Superintendent or **Station Shift-in-charge** at station for the command and control of various activities in the station - Public Address system, Closed Circuit Television, Automatic Fare Collection System and Passenger Assistance Telephone;

(124) "**Station Limits**" means the limit of Metro Railway section which is under the administrative control of a Station Shift-in-charge as specified by special instructions;

SR 2 (124) **Station Limits:** Demarcation of station limits at stations shall be the outer most signals or any indication board in each direction of both UP and Down lines separately, including 'Y' siding up to buffer end.

(125) **"Station Shift-in-charge"** means the person on duty who is for the time being responsible for the working of the station and traffic within station limits in independent charge of the station, working of signals and responsible for the working of trains under the system of working in force;

(126) **"Station Section"** means that portion of station limits at a block station, which forms the boundary of the contiguous block section;

(127) **"Subsidiary Rule"** means a special instruction which is subservient to the general rule to which it relates and shall not be at variance with any general rule;

SR 2 (127) **Subsidiary Rules**: The Subsidiary rules in this book shall be read in conjunction with General Rules and are equally binding on the staff. Also working rules and instruction issued in the form of manuals or otherwise shall be read in conjunction with General and Subsidiary Rules and be binding on the metro railway staff.

(128) **"Sub-Station"** means a building or area containing electrical equipment for reception and transmission of electrical energy;

(129) **"Supply Control Post"** means an assembly of interrupters, isolator switches, remote control equipment and other apparatus provided for controlling power supply to overhead equipment or third rail traction equipment, and it includes feeding posts, sectioning and paralleling posts;

(130) **"System of Working"** means the system adopted for the time being for the working of trains on any portion of a railway;

(131) **"Target Distance"** means the farthest point to which the train may safely proceed;

(132) **"Target Speed"** means the speed displayed on the Motorman's console which the train must not exceed;

(133) **"Temporary Earth"** means an additional earth which is applied after the issue of a 'permit to work' and which must be removed prior to the cancellation of the 'permit to work';

(134) **Terminal station"** means station, specially declared so by the authorised officer, where normally no train runs through and passenger trains originate or terminate or continue its onward journey after change of crew and issue of Caution Order or shunting etc; such station shall be provided with stop boards (where no stop signals are

provided) at a place where trains normally come to a stop; Signal overlap is not required at such station;

SR2 (134) In North-South corridor the speed of all trains while entering Platform at Terminal Station namely Dakshineswar and Kavi Subhash shall not exceed 30 kmph.

(135) **"Test Track"** means the track in carshed area which is used to test movements of trains and performance of on board appliances or equipment, when required;

(136) **"Third Rail"** means the rail on insulator laid by the side of the running rails by means of which electrical energy is supplied to electric trains through current collectors;

(137) **"Track Circuit"** means an electrical circuit provided to detect the presence of a vehicle on a portion of track, the rails of the track forming part of the circuit;

(138) **"Traction Feeder Breaker"** means a circuit breaker controlling the supply of 750 volts DC to the third rail equipment;

(139) **"Track maintainer"** means a Metro Railway servant employed on permanent way or work connected therewith;

(140) **"Traffic Controller"** means a Metro Railway servant on duty who is for the time being responsible for regulating the working of traffic on a part or full section of the Metro Railway;

(141) **"Traffic Hours"** means the period between the time of the start of the running of the first scheduled train in the morning and termination of the last scheduled train at night;

(142) **"Track and Structure or works Engineer"** means any Metro Railway servant responsible for the construction or maintenance of points, underground structure, surface structure, bridges or other works connected therewith;

(143) **"Traction"** means a traction system working on 25000 volts single phase, 50 Hz alternating current or 1500 volts Direct Current with Overhead Equipment System, or on 750 volts or some other voltage of Direct current with third rail system;

(144) **"Traction Current"** means the current drawn by an electrical train at 750 volts DC for movement;

(145) **"Traction Power Controller"** means a competent Metro Railway servant who is for the time being responsible for the control of power supply and operations pertaining thereto on the traction power distribution system of the Metro Railway;

(146) **"Traction Power Distribution System"** means a power distribution system provided for traction purposes;

(147) **Traction Sub-station"** means a sub-station where equipment is provided for converting from AC to DC through rectifier transformer sets;

(148) **"Train"** means one or more units of coaches with driving cabs at either end or both end or any self-propelled vehicle with or without a trailer, which cannot be readily lifted off the track;

(149) **"Train Control and Monitoring system"** or "**Train Integrated Management System**" means a system designed to provide information and exercise control on a variety of functions related to movement of metro trains, like traction, power, braking, air conditioning, etc;

(150) **"Train Radio**" means a wireless telephone message communication system between the cab of the train, stations and the control;

(151) "**Train Protection and Warning System"** means an Automatic Train Protection system to safeguard against over-speeding, passing signal at danger and avert collision;

SR (151) Details laid down on Train Protection and Warning system (TPWS) manual.

(152) **"Transformer"** means a static apparatus for transforming and supplying alternating current at different voltage;

(153) **"Tunnel Ventilation Section"** means a minimum length of a tunnel section of an up or down line capable of being mechanically ventilated using tunnel ventilation fans;

(154) **"Two-aspect signaling"** means a signaling arrangement in which each signal displays at any one time either of the two aspects;

(155) "**Unattended Train Operation** " means a train operation where the starting and stopping of trains, as well as operation of train doors and handling of emergencies are fully automated without any regulatory requirement of staff present in the trains;

(156) **"Work Train"** means a departmental train intended solely for execution of works, including maintenance works, on the Metro Railway network.

3. Classification of stations.- (1) Station shall, for the purpose of these rules, be divided into two categories –block stations and non block stations.

(2) Block stations are those at which the Driving Motorman must obtain an authority to proceed under system of working to enter the block section with his train; and under the absolute Block system consist of three classes, namely:-

(a) **Class 'A' stations, -** where line clear may not be given for a train unless the line on which it is intended to receive the train is clear for at least 400 meters beyond the Home Signal or up to the Starter;

(b) **Class 'B' stations,-** where line clear may be given for a train before the line has been cleared for the reception of the train within the station section; and

(c) **Class 'C' stations, –** block hut, where line clear may not be given for a train, unless the whole of the last preceding train has passed complete at least 400 meters beyond the Home Signal, and is continuing its journey, which will also include an Intermediate Block Post.

(3) **Special Class Stations,-** are such block stations which do not fall under the category of class 'A', 'B' and 'C' mentioned above.

(4) Non-block stations or Class 'D' stations are stopping places which are situated between two consecutive blockstations and does not form the boundary of any block section.

(Existing SR 3 and Note under SR -3 incorporated under existing GR 3 deleted. AUTHORITY- Addendum and corrigendum No.02 dated 05.10.2023)

4. **Applicability of rules for male and female railway servants.-** In these rules ,wherever words such as he or his or him etc. are used in the context they shall include corresponding feminine word such as she or her etc. unless expressly mentioned to the contrary. These rules will apply equally to both male and female railway servant.

5. **Meaning of words and Expressions not defined in these Rules.-**All other words and expressions used in these rules and not defined but defined in the Act or the Construction Act, shall have the meanings respectively assigned to them in those Acts.

CHAPTER – II

RULES APPLYING TO METRO RAILWAY SERVANTS GENERALLY

6. Supply of Copies of Rule.- The Metro Railway administration shall supply a copy of these rules and the amendments made thereto,-

(1) (a) to each station and OperationsControl Center;

(b) to each maintenance shed; and

(c) to such offices as may be specified.

(2) to each Metro Railway servant on whom any definite responsibility has been placed by the said rules, or of such portions thereof as relate to his duties.

SR 6 Supply of Copies of Rules: - (1) Supply of Copies of Rules to the staff shall be arranged by the Station-in-Charge or the departmental Supervisor in-charge.

(2) Station-in-charge shall be responsible for explaining the rules for working fixed signals, use of hand signals, signaling panel boards, axle counters and all relevant rules pertaining to their duties to the staff concerned, whether working as permanent or temporary at their stations. Signature of the staff shall be taken on an Assurance Register to confirm that the staff has understood all rules required to be obeyed by him.

(3) A Junior Scale Officer of Traffic department and S&T Department or above shall jointly examine all the staff engaged in train passing and issue a Certificate of

Competency to each of them before such staff are allowed to take up the train passing work independently.

7. Upkeep of the copy of Rules.- Every Metro Railway servant who has been supplied with a copy of these rules, shall,-

(1) have his copy readily available when on duty;

(2) keep it posted with all amendments;

(3) produce the same on demand by any of his superiors;

(4) obtain a new copy from his superior in case his copy is lost or defaced; and

(5) ensure that the staff working under him are supplied with all amendment and that they also comply with the provisions of the amended rule.

SR 7 Upkeep of the copy of Rules: All corrections to Rule Books or any working instructions or manuals shall be numbered serially and notified by the Traffic Department. They will be made available to all Metro staff concerned through the Station-in-charge /Station Shift-in-Charge or departmental Supervisors-in- charge. Such correction to the Subsidiary Rules (SRs) will be issued in the form of addendum and corrigendum, serially numbered.

8. Knowledge of Rules.-Every Metro Railway servant shall,

(1) be conversant with the rules relating to his dutiesand the Metro Railway administration shall ensure that he does so;

(2) pass the specified examinations, if any;

(3) satisfy himself that the staff working under him have complied with sub-rule (1) and (2); and

(4) if necessary, explain to the staff working under him, the rules so far as these apply to them.

9. Assistance in observance of rules.- Every Metro Railway servant shall render assistance in carrying out these rules and report promptly any breach thereof, which may come to his notice, to his superior official and other authority concerned.

10. Prevention of trespass, damage or loss.-(1) Every Metro Railway servant shall be responsible for the security and protection of the property of the Metro Railway administration under his charge.

(2) Every Metro Railway servant shall endeavor to prevent,-

(a) trespass on Metro Railway premises;

(b) theft, damage or loss of Metro Railway property;

(c) injury to himself and others, and

(d) fire in Metro Railway premises.

11. Obedience to Rules and Orders.- Every Metro Railway servant shall promptly observe and obey,-

(1) all rules and special instructions, and

(2) all lawful orders given by his superiors.

12. Attendance for duty.- Every Metro Railway servants shall be in attendance for duty at such times and places and for such periods as may be fixed by the Metro Railway administration and shall also attend at any other time and place at which his services may be required.

13. Absence from duty.- (1) No Metro Railway servant shall, without the permission of his superior, absent himself from duty or alter his appointed hours of attendance or exchange duty with any other Metro Railway servant or leave his charge of duty unless properly relieved.

(2) If any Metro Railway servant, while on duty, desires to absent himself from duty on the ground of illness, he shall immediately report the matter to his superior and shall not leave his duty until a competent Metro Railway servant has been placed in charge thereof.

14. Taking alcoholic drink, sedative, narcotic, stimulant drug or preparation.- (1) While on duty, no Metro Railway servant shall, be in a state of intoxication or in a state in which, by reason of his having taken or used any alcoholic drink, sedative, narcotic or stimulant drug or preparation, his capacity to perform his duties is impaired.

(2) No Metro Railway servant, directly concerned with the working of trains, shall take or use any alcoholic drink, sedative, narcotic or stimulant drug or preparation

within eight hours before the commencement of his duty or take or use any such drink, drug or preparation when on duty.

SR 14 Taking alcoholic drink, sedative, narcotic, stimulant drug or preparation: (1) When any Metro Railway servant on duty is found or suspected to be in state of intoxication, evidence of two independent witnesses need to be obtained and if possible, a medical report regarding his condition shall also be obtained.

(2) If any Metro Railway staff whether on duty or not, is found misbehaving in a state of intoxication or even otherwise within the Metro Railway premises, evidence of two independent witnesses need only be obtained.

15. Conduct of Metro Railway servants.- A Metro Railway servant, shall,-

(1) wear the badge and uniform, as may be specified, and be neat and tidy in his appearance while on duty;

(2) not wear any attire unsuitable for public appearance;

(3) be prompt, alert, civil and courteous;

(4) not solicit or accept illegal gratification;

(5) give all reasonable assistances and be careful to give correct and relevant information to the public;

(6) not read newspapers and publication other than those connected with his duties, or play radios or other gadgets while on duty;

(7) avoid any threatening gesture or behavior or arguments as would tend to create adverse criticism of the Metro Railway administration;

(8) give his name and designation without hesitation, when asked if his duties require him to contact the public;

(9) conduct himself, whether on or after duty, so as to merit the confidence and respect of the public.

SR 15 Conduct of Metro Railway Staff: Metro Railway staff, when on duty and in contact with public or in uniform, shall not indulge in smoking anywhere in the Metro Railway premises.

16 Duty for ensuring safety.- (1) Every Metro Railway servant shall,-

(a) see that every effort is made for ensuring the safety of the public;

(b) promptly report to his superior any occurrence affecting or likely to affect the safe or proper working of the Metro Railway which may come to his notice;

(c) render on demand all possible assistance in the case of an accident, disaster or obstruction; and

(d) never resort to shortcut methods endangering safety.

(2) Every Metro Railway servant who observes,-

(a) that any signal is defective;

(b) any obstruction, failure or threatened failure of any part of the Way or Works or Third rail;

(c) anything wrong with a train; and

(d) any unusual circumstance or situation likely to int erfere with the safe running of train, or the safety of the public shall take immediate steps, such as the cir cumstances of the case may warrant, to prevent accident , disaster or obstruction; and must inform the nearest Shift-in-charge or control office by quickest possible means.

CHAPTER - III
SIGNALS

A. General Provisions

17. Placing of Fixed Signals.- Fixed signals shall be clearly visible to the Driving Motorman of trains approaching it and shall be placed immediately over or to the right or left side of the line to which it refers unless otherwise authorised by special instructions.

B. Hand Signals.

18. Exhibition of hands signal.- (1) All hand signals shall be exhibited by showing a flag or hand by day and showing a light by night and at tunnel.

(2) During day a flag or flags shall normally be used as hand signals. Hand signal shall be used in emergencies only when flags are not available.

(3) The size of hand signal flags (green and red) should not be less than fifty centimeters long and forty five centimeters wide.

(4) During night and bad weather and impairing visibility, a hand signal shall be given by showing a red or green light. A white light vigorously waved in horizontal direction shall be used as a stop signal only when the red light is not available. White light in such eventuality should be waved horizontally.

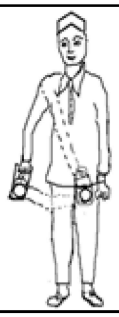
(5) Red or green light of hand signals shall be either a static or flashing type.

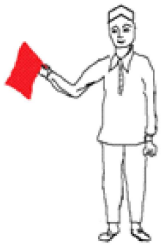
(6) Red flag should normally be kept in the active hand and green flag in the other hand.

(7) In tunnel section hand signal shall be exhibited by showing a hand lamp by day and night time.

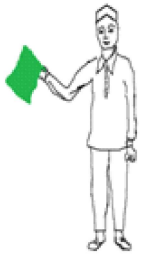
19. Methods of display of hand signals for controlling train movement.- Methods of display of hand signals for controlling train movement and Indications are explained below,-

(1) STOP DEAD,-

INDICATION:	
(a) Display of red light	(b) Waiving of white light violently
	

(3) By showing red flag	(4) By raising both arms with hands above head
	

(2) Proceed,-

INDICATION:	
(a) Display of green flag	(b) Display of green light
	

(c) By holding one arm steadily


3) Proceed with caution hand signal,-	
INDICATION:	
(a)) By waving vertically up and down a green flag or a green light as illustrated below,-	
	
(b) By waving one arm vartically up and down as illustrated below,-	
	

20. Hand Signals for shunting movements.-

(1) To move away from the person signalling.

(2) To move towards the person signalling.

(1) By waiving green light slowly up and down.

(2) By waiving a green light from side to side across the body.

(3) To move slowly for coupling.	(3) By holding a green light above the head and twisting the wrist.
(4) To stop dead.	(4) By showing red signal.

21. Knowledge and possession of hand signal.- (1) Every Metro Railway servant connected with the movement of the trains, shunting operations, maintenance of installation and works of any nature affecting safety of trains shall have,–

(a) a correct knowledge regarding display of hand signals; and

(b) the requisite hand signals in good working order with him and ready for immediate use while on duty.

2) Every Station Shift-in-charge and other supervisory staff shall see that the staff working under him who are required to use hand signals are supplied with all necessary hand signalling equipment and have a correct knowledge of their use.

CHAPTER –IV

WORKING OF TRAINS GENERALLY

A. Timing

22. Standard Time. - The working of trains between stations is regulated by the Indian Standard Time.

23. **Adherence to advertised time.**- No train-carrying passenger shall be dispatched from a station before the advertised time.

B - Speed of Trains.

24. General.- (1) No person shall drive a train unless he is in possession of a valid certificate of competency and medical fitness.

(2) No Motorman shall be booked to work a train until he has learnt the road and signed a certificate that he is fully acquainted with it and for this purpose, he shall be booked for minimum three round trips including one trip during night before being put to work the train independently.

(3) A Motorman who has not worked on a section for three months or more should be given road learning trips to refresh his knowledge as under:

Duration of absence	**Number of road learning trips**
Three-Six months	One round trip
Over six months	Three round trips

(4) No train shall be driven on a running line from the rear cab except,–

(a) a locomotive working within an Engineer's Possession under the control of hand signals; and

(b) in exceptional circumstances, when authorised by an official not below the grade of Traffic Controller. A look out shall be positioned in such cases at the leading end with the capacity to apply the emergency brake, and the speed of the train shall not exceed ten kilometer per hour in such cases.

(5) In depot, the train shall be always driven from the leading cab in the direction of travel or otherwise the Motorman in the rear cab shall be instructed by cab to cab telephone by a second qualified Motorman in the leading end cab.

(6) In depot, where a part consist or damaged train cannot be driven from the leading end, a look out shall be posted at the leading end, the Motorman shall have the means of sounding an audible warning and, if practicable, the means of applying the emergency brake.

(7) Each train while manned shall show two white lights to the front and two red lights to the rear in the direction of travel.

(8) A stationary train on a running line shall be secured and shall show two red lights at each end of the train.

(9) A train stabled in a depot or siding shall show at least one red light at each end at a double ended siding and at the outermost end in the dead end siding .

25. Speed of trains over Facing Points . - (1) The speed of a train over an interlocked facing point shall be as specified in the "Approved Special Instructions".

(2) Speed of a train over a non interlocked facing point and cross over shall not exceed fifteen kmph unless otherwise specified.

SR 25 (1) **Speed of trains over Facing Points at Stations.- (**a) The prescribed limit of speed over facing points on straight route, at interlocked stations should not exceeding 50 kmph in North-South Corridor. In case of East-West Corridor not exceeding 80 kmph or target speed under ATP whichever is less. This will be shown in the Working Time Table also.

(b) The speed of all trains while negotiating a turn out shall not exceed 15 kmph, unless otherwise prescribed in the Working Time Table.

26. Trains driven from the trailing Driving Cab.-No train shall be driven from the trailing Driving Cab outside Station Limits, except in emergency in accordance with "Special Instructions" and at a speed not exceeding fifteen kmph.

SR 26 Train driven from the trailing Cab: (a) No train shall be driven from the trailing Driving Cab outside Station Limits, except with the permission of the Traffic Controller on duty.

(b) The Traffic Controller shall permit such movement at a speed not exceeding 15 kmph for empty trains required to go to

Car Depot or yards or station(s) when the leading Driving Cab apparatus becomes defective.

(c) The telephone communication between the rear and the front Cab in the train and means of communications provided between the train and Traffic Controller must be in proper working order.

(d) For passenger carrying trains such movement shall be permitted only in emergency up to the next station at a speed not exceeding 10 kmph, where passengers shall be safely detrained and empty train taken to the stabling point or maintenance shed as directed by the Traffic Controller to clear the running line.

C. Trains with damaged or Defectives coaches.

27. Examination of defective Coaches.- (1) No train with a coach, which has derailed or has been rendered defective, shall be kept in service to run between stations until it has been examined and passed by a rolling stock supervisor.

(2) Where a coach has derailed between stations, the Driving Motorman shall not take the train after re-railment to the next station unless the coach has been examined and certified fit to run and accompanied by a rolling stock supervisor.

D. Precautions before Starting Trains.

28. Duties of staff to examine notices before starting. - Every Driving Motorman and Conducting Motorman, after coming on duty to work with train, shall examine the notices issued for their guidance and ascertain there from whether there is anything requiring their special attention on the section over which they have to work.

29. Examination of Train by Driving Motorman.- The Driving Motorman shall, before the commencement of journey, ensure that,-

(1) the train is properly coupled;

(2) all electrical couplings are properly made;

(3) the train control and power apparatus are working properly as specified;

(4) the brake system of the complete train is working properly as specified;

(5) the head and tail lights are functioning properly;

(6) the train is in proper working order; and

(7) the radio communication system with the control is in working order.

E. Duties of staff on arrival.

30. Train crew not to leave the train till handed over.- No Driving Motorman or Conducting Motorman shall leave his train unless it has been ensured that custody of the train remains in the hands of authorised personnel and he can only get down from the cab in case of any failure of train movement in accordance with special instructions.

SR 30 Train crew not to leave the train till handed over: When a Conducting Motorman or a Driving Motorman wants to be relieved due to sickness or for attending to Nature's Call or for some other reason, he will advise the Traffic Controller through available means of communication in advance to make necessary relief arrangements at station nominated for this purpose to avoid any delay to train and passengers. If no relief is available, and it becomes unavoidable, the train will be permitted the minimum extra halt at the nominated station by the Traffic Controller and the passengers will be kept informed of the expected delay.

CHAPTER - V

CONTROL AND WORKING OF STATIONS

31. Access to booking office and areas not open for public.- (1) Only persons authorised under special instructions shall be permitted inside booking offices and other offices.

(2) Suitable notices shall be displayed restricting entry to prohibited areas.

SR 31 (1) **Access to Booking Offices**:- Besides booking staffs on duty, other supervisory staff of Traffic Department, AFC&PC maintenance staff, TIA and such other staff may be permitted by the Station in-charge or Station shift-in-charge to enter the booking office.

32. Authorities and Messages in prescribed Forms. - (1) All messages and written authorities connected with working of trains shall be prepared on forms as may be specified and shall be stamped with the station stamp.

(2) If the necessary printed form is not available, a manuscript form containing particular shall be prepared as an emergency measure and the reasons thereof will be recorded in the station diary.

(3) All messages and written authorities connected withworking of trains shall not be prepared and signed in advance.

SR 32 (1) Authorities and Messages in prescribed Forms: In case of manuscript forms are used in lieu of printed forms, all pages thereof shall be serially numbered, stamped with date and signed by the Station in-charge or Station shift-in-charge. Moreover voice message and text message shall be used through TETRA in lieu of printed form in East-West Corridor.

33. Station Working Rules .- (1) In addition to the General Rules for Metro Railway and Subsidiary Rules of a Railway, each station shall be provided with the station working rules applicable to the station issued under special instructions.

2) A copy of the Station Working Rules or relevant extracts shall be kept at Station Shift-in-charge's as well as at Panel-room.

34. Opening of station.- Stations shall remain open throughout traffic hours unless otherwise authorised by special instructions or when temporary closure is necessary in emergencies.

SR 34 Opening/Closing of Stations.- (1) Stations may be temporarily closed during traffic hours, if required, to regulate crowds on platform and mezzanine floor, to enforce law and orderat stations and during 'Emergency'. When the station is closed, the entry shutters will be brought down and a "closed" sign displayed outside for information of the users. The station entry will be re-opened when situation becomes normal.

(2) Closure of station during non-traffic hours.

(a) Before closing the station at the close of the traffic hours during night the Station Shift-in-charge shall ensure that the Station premises including platform and mezzanine are cleared off all passengers.

(b) Persons other than those who are required to remain on duty in the station premises and staff on duty must possess identity cards to establish their credentials. If there is any doubt as to the authority of a person to remain inside station premises, the departmental official in- charge

will be contacted by the on duty RPF and his advice obtained. If necessary, Traffic Controller on duty will be informed who will communicate with the department supervisor and inform the on duty RPF suitably.

(c) Prior to the departure of the last train, the Station Shift-in-charge will once again announce that the last train is approaching and the station will be closed thereafter.

(d) After departure of the last train, the Station Shift-in-charge will once again announce that the station is being closed. He shall then give instruction to close shutters and lock all the station entrances except one which will be manned by security personnel. This gate will be protected by security personnel.

35. Control of over-crowding on platforms.-(1) Station staff must monitor directly or as an alternative through the Closed Circuit Television.

(2) In case of over-crowding on the platforms, the sale of tickets shall be stopped temporarily and regulation of passengers shall be enforced in accordance with special instructions.

(3) In cases referred to in sub-rule (2),-

(a) the Driving Motorman of the approaching train, shall approach cautiously; and

(b) the passengers at the stations, shall be cautioned.

SR 35 (2) Control of overcrowding on platforms.- The following action will be taken by the station Shift-in-charge :-

(a) For regulating the crowd during overcrowding the booking of passengers may be temporarily suspended

(b) The entry shutters may be brought down and 'closed' sign displayed outside for information of users.

(c) Announcement made through PA system for the passengers to wait in the mezzanine floor till overcrowding on the platform is reduced.

(d) Passengers on the platform are cautioned on the PA System not to stand at the edge of the platform.

(e) Metro Railway Police (MRP) and/or Railway Protection Force (RPF) personnel deployed on the mezzanine floor and at platform to ensure discipline and to avoid any law and order violation.

36. Prohibition of begging, vending, smoking, etc.- No person shall beg, vend, smoke, create nuisance or create inconvenience to other passengers and misuse Metro Railway property.

37. Prohibition against carrying of dangerous or offensive goods.- (1) No person shall take or cause to be taken any dangerous or offensive goods upon the Metro Railway.

(2) If any Metro Railway Official has reason to believe that any such goods are contained in a package in the custody of the passengers, he may cause the package to be opened for the purpose of ascertaining its contents.

38. Securing of Metro Coaches.- The Station Shift-in-charge shall ensure that metro coaches stabled at the station are properly secured in accordance with special instructions.

SR 38 Securing of Metro Coaches/ Rakes: Station Shift-in-charge shall enquire from the Motorman and be satisfied that:-

(1) The Metro Coaches stabled at the station have been properly secured by means of application of parking brakes and fouling mark if any, is cleared Parking lights are kept 'switched on' by Motorman and serve a written memo to the Station shift-in-charge.

(2) (a) In North-South Corridor a suitable entry is made in the 'Train Signal Register' about occupation of the Station Sectionwith coaches /Rakes by the Station Shift-in-charge on duty in red ink.

(b) Safety collars are fixedx on the relevant switches in the panel Board.

(3) Keep the Traffic Controller informed about the said station area having been occupied through a diary entry under exchange of private number.

39. Responsibilities of Booking office staff.– (1) The booking office staff shall,–

(a) be responsible for the sale of tickets at ticket window and by self service machines where provided;

(b) sell tickets for the prices in the current fare table and render exact change as may be required;

(c) account for all tickets sold and all cash taken in accordance with instructions issued from time to time;

(d) keep such amounts of cash at their points of sales, as is necessary for giving change, and the surplus shall be kept in a locked safe or the other secure storage;

(e) be responsible for ensuring that self service ticket vending machines, if provided are adequately stocked with tickets and that cash is regularly removed from the machines to secure storage;

(f) be responsible for reporting malfunctioning or irregularities in the operation of ticket issuing equipments to the maintenance departments; and

(g) assist the passengers during crowd control and emergency evacuation procedures.

(2) The Traffic Supervisor or Senior Traffic Assistant or Traffic Assistant, wherever provided, shall, –

(a) be responsible for the accurate accounting for ticket sold and cash received; and

(b) be required to assist or depute for the Station Shift In-charge when circumstances demand.

40. Security.–

(1) (a) Stations shall be open for access to the public at least ten minutes before the advertised time of departure for the first train and until all the passengers have left the station after the arrival of the last train and at all other times the station shall be secured, as laid down in the special instructions, against unauthorised entry;

(b) at a location near station control room, a key to a designated emergency exit shall be provided in a glass box, which is for use of maintenance staff in the event of emergency during non-traffic hours. The emergency key box shall be inspected each morning by Station Shift In-charge and use of the key, when made, shall be reported to the Security Controller who shall arrange for the box to be secured again;

The opening of emergency exit doors should be monitored by suitable mechanism to keep track of its usage, and ensuring their closure after usage.

(c) the emergency exits, where ever provided, may also be used for the passenger's evacuation in emergency, if required.

(2) All the equipment rooms shall be kept locked at all times when access is not required and when these rooms are accessed by authorised person, such person shall be responsible for ensuring that no unauthorised person is permitted access.

(3) (a) All areas not required for the passage of passengers at the station shall be secured against unauthorised access;

(b) booking offices and other places where items of value, such, as tickets and cash are kept, shall be locked at all times, and within such areas, tickets and other items of value shall be kept in locked cupboards;

SR 40 (1) (a) Closing and securing of stations against unauthorized entry:- Procedure to be followed for closing and securing the station doors.-

(a) The Station Shift-in-charge shall make an announcement three minutes before the scheduled departure of the last train in each direction informing passengers that the entry to the concerned Platform is closed.

(b) Issuing of ticket will be closed three minutes before the schedule departure time of the last train.

(c) The Station Shift-in-Charge shall then personally check that all inward passengers have left the concourse area and gone to the correct platform.

(d) The Station Shift-in-Charge should personally supervise the departure of each last train from the platform concerned.

(e) After the departure of the last train from the station, the Station Shift- in-Charge shall personally inspect all public areas of the station to ensure that no passengers or other unauthorized persons or any baggage remains on the station and will once again announce that the station is being closed.

(f) All station entrances shall then be closed and locked except anentrance for the designated staff which shall be manned.

(g) If any unauthorized baggage is found at the station, the security staff shall be informed.

(h) The Station Shift-in-charge shall check that all staff except authorized maintenance staff have left the station, check that the booking office and Station Shift-in-charge office have been secured.

CHAPTER - VI

ACCIDENT AND UNUSUAL OCCURENCES

A. General

41. Report of the accident and unusual occurrences.– (1) Any accident or incident shall be reported by the Metro Railway servant concerned or any other person who notices it with utmost expediency to the Traffic Controller and the nearest Station Shift In-charge as soon as practicable.

(2) On receipt of a report under sub-rule (1), the Station Shift in-charge shall inform the Traffic Controller and vice versa.

42. Duties of Traffic Controller in case of "Emergency".- (1) When a report of any incident or obstruction is received by the Traffic Controller ,he shall see that all necessary precautions are taken by the most expedient means possible, for the protection of traffic or Metro Railway property and equipment.

(2) In case of an accident, the Traffic Controller shall arrange for all necessary assistance to be sent to the site of accident.

(3) The Traffic Controller on duty shall, on receipt of information about any incident, immediately inform the nearest Station Shift-in-charges, departmental Supervisor sand Officers concerned who shall take necessary action in accordance with Special Instructions.

SR 42 (3) Duties of Traffic Controller.- Detailed instruction in regard to duties of Traffic Controller are given in Accident Manual.

43. Duties of Station Shift-in-charge and departmental Supervisor generally in case of Emergency.- A Station Shift-in-charge or Departmental Supervisor, on being informed about the incident, shall,-

(1) take action as possible within his means and in accordance with Special Instructions to tackle the situation and inform the Traffic Controller, if any outside assistance is required; and

(2) submit a report on each incident after normal conditions have been restored in accordance with special instructions.

SR 43. Reporting of incidents by station –in- charge.-Instructions in regard to duties of Station in-charge or Station Shift-in-charge, Engineering Official (Civil, Signal & Telecom and Electrical) and reporting of incidents by them are given in Accident Manual.

44. Order of priority for action in emergency.- In case of an emergency, action shall be taken as promptly as possible in the following priorities,-

(1) Save life and alleviate sufferings;

(2) Protect Metro Railway property and equipments;

(3) Restore conditions for safe running of trains;

(4) Resume Traffic services.

45. Recording of activities during "Emergency".- A detailed record of all activities till the emergency lasts shall be maintained in chronological order by the Traffic Controller.

46. Traffic regulation.- Traffic regulation as required shall be arranged by the Traffic Controller. Trains shall be worked between stations, as possible, in accordance with special instructions.

SR 46 Traffic regulation in emergency. If the obstruction caused is such that it will last for few hours, running of trains on the section may be suspended till normalcy is restored. The decision to suspend train services, shall not be taken by any one lower than the Sr. Traffic Officer.

(1) In the event of the Driving and/or Conducting Motorman experiencing any abnormal condition in the track over which his train has passed and he considers that the portion of the said track is detrimental for safe running of subsequent trains, will take action as under:-

(a) The Motorman shall Stop his train immediately under CBTC system and under Automatic block system without clearing the signalling section, then inform the Traffic Controller with location, kilometerage of the affected portion of the track by available means of communication.

(b) After receiving the information form Motorman the Traffic controller shall stop the movement of following train on the affected section, inform

engineering official and rear end shift-in-charge and/ or Panel operator of affected section.

(c) Arrange to dispatch a train accompanied by an engineering official with a caution order to the effect to stop dead sufficiently short of the affected portion of the track. The engineering official accompanying will inspect the track and shall allow the train to pass only after satisfying that the track is safe for the passage of train. Advice the condition of the track and any restriction of speed to be imposed to the Panel Operator through written memo which may be sent through the Motorman.

(d) In the absence of engineering officials the train with a caution order mentioning the exact location to be served to the Motorman to stop his train short of the obstruction and judge whether it is feasible to pass or not, if it is considered to pass the affected section, the speed of the train not exceeding 10 kmph till the arrival of concerned P. Way official. If it is considered not to pass, he will inform Traffic Controller and the train will be backed to the station in rear guided by the Traffic Controller.

(2) If Traffic Controller receives the information of sabotage or likely sabotage to the track, bridges or other fixed

installation, he will stop movement of trains in the affected section as well as on both Up and down adjacent lines on affected section. The affected line to be inspected by sending an empty rake with due caution. If it is really so the train movement is not possible the said train to be backed to the rear station. The concerned officials will inspect and examine the affected section and after getting fit certificates normal train services will be resumed accordingly.

47. Duties of the station staff.– (1) On receipt of a report of an incident or accident or emergency, as the case may be, under sub-rule (1) of rule 41, the Traffic Controller shall first ascertain the extent of injury to passengers and others and take prompt action to prevent further injuries and he shall also assess the potential effect on the train services and then take all reasonable measures to maintain the train services, prevent delay or damage to property and equipment.

(2) If the incident is an emergency, the Traffic Controller shall report it to the Chief Controller and the Chief Controller shall arrange for the assistance of the Metro Railway emergency response staff and where necessary, arrange the assistance of the Police, fire and the Ambulance services.

(3) The Traffic Controller shall keep a log of all reports and requests received, action taken and other relevant information obtained or distributed.

(4) A Station Shift in-charge, in the event of an accident at his station, shall take measures to prevent the situation becoming worse, render first aid if possible, arrange for the injured to be hospitalised and inform the Traffic Controller for outside help, if required.

(5) If the accident is an emergency, the Station Shift In-charge shall evacuate the area concerned and take measures to prevent access to the area other than by the emergency services, and in extreme cases, the station may be closed and the Traffic Controller shall be requested to arrange for trains to pass the station without stopping.

(6) A full record of events and actions shall be entered in the Station Log, including the video recording as necessary, to preserve the clues.

(7) All staff of the Metro Railway shall deal with the accidents and emergencies expeditiously and with the following priorities,–

(a) save life, prevent further injury, and alleviate suffering;

(b) protect the Metro Railway property and equipment;

(c) take steps for preservation of clues;

(d) inform the public of the effect on train services and the availability of alternative transport facilities;

(e) restore conditions for safe operation of the train services as quickly as practicable; and

(f) restore normal services.

B. Unusual occurrence

48. Flooding of tunnel – (1) (a) When a Metro Railway servant notices a flood condition in the tunnel, he shall immediately report to the Traffic Controller and provide the information regarding location of the affected area, approximate water level with respect to the Rail Top, place where the water is entering the system, if known, estimated flow and length of the flooded area; and

(b) The Traffic Controller shall, on receipt of information, report the incident to all concerned in accordance with special instructions.

(2) (a) The Motorman of any train approaching the area shall be cautioned by the Traffic Controller; and

(b) When the water level is above the Central drain, train services over the affected area shall be suspended.

(3) (a) The traction power supply shall be switched off in the affected flooded length after ensuring that the train is standing there; and

(b) The traction power supply shall be restored after the situation has normalised in accordance with the special instructions.

(4) When a train gets stalled in the flooded area, action shall be taken to detrain passengers under Rule 151 of Part-II or Rule 232 (3) (c) of Part-III.

(5) The departmental Supervisors concerned, on receipt of information, shall take steps to tackle the flooding condition in accordance with procedures under Special Instructions.

SR 48. Traffic regulation in case of flooding of tunnel,- (1) W**ater level is below Rail Fastenings- (a)** When a Motorman or staff finds that permanent way is likely to be affected by water, he shall immediately inform the stations and the traffic controller about the water level and the location of flooding over available means of communication.

(b) The Traffic Controller shall inform all the Motormen in the section to be vigilant about the location specified and look out for the flow and level of water.

(c) If the water level is flowing below the rail fastenings the Traffic Controller shall instruct the Motorman to run at a speed not exceeding 25 kmph and be prepared to stop short of any obstruction.

(d) Further movement of train over the affected section to be stopped till the level of water comes down to normal by pumping out the ingress water by concerned department intervention.

(2) **Water level is above Rail Fastenings but below rail level.-** (a) Whenever water has risen above the fastenings level, in ballasted track the trains shall be stopped until the water level recedes below the fastening level. In ballast less track, the Motorman shall move the train at restricted speed of 5 kmph to the next station if water level is up to the track plinth level.

(b) After the water level recedes the track shall be examined by SSE/JE (P.Way), SSE/JE (Traction) & SSE/JE (Sig) after ensuring power block. If it is found to be safe for the passage of the train necessary fit certificate to be given to the Station Shift In-Charge and inform the Traffic Controller who shall authorize the movement of train.

(3) W**ater level is above rail level. -** (a) If water has risen above the rail level no attempt shall be made to pass the train over the location. Motorman to stop the train & inform theTraffic Controller for its safe return to station in rear.

(b) After the safe return of the said train at the station Traction power shall be switched off.

(c) Now the SSE/JE (P.Way), SSE/JE(Traction) & SSE/JE (Sig) will inspect the affected track length after receding water level and ensuring power block when the track is fit in all respect to their satisfaction a joint fit certificate shall be issued to the Station Shift-in-Charge who shall inform

the Traffic Controller for resumption of normal train service.

49. Accidents.– (1) In case of accidents, arrangements for medical aid, evacuation of sick, injured passengers, access for ambulance, staff and vehicles shall be made and included as per the provisions specified in special instructions.

(2) In the event of serious accident, the Chief Controller may, in consultation with senior management, declare the situation an emergency, as per the provision specified in special instructions.

(3) Chief Safety Officer or officer nominated shall set up an emergency control either at Operations Control Centre or at the site depending on the nature of the occurrence.

(4) The Chief Safety Officer or officer nominated shall be in over all charge of all the Metro Railway resources of staff and materials for the handling of the emergency and the coordination between the Metro Railway and external emergency agencies, such as fire, ambulance and police and utility services.

SR 49 (1) Accidents.-Whenever an emergency situation arises, following action shall be taken by Traffic Controller , Station Shift-in-charge and Metro Railway Officer.

(a) The occurrence shall be immediately informed by the Chief Controller to General Manager, PCSO, PCOM, PCSTE,

PCEE, PCE CPRO and to the police control room. Other Controllers in OCC shall inform the supervisors to rush for rescue and restoration.

(b) The Traffic Controller and Station Shift-in-charge shall communicate with the Motorman and ascertain the assistance required.

(c) Stations and OCC will have a list of hospitals, where injured passengers may be treated as per guidance of the Officer In-Charge or Motorman at accident site and in addition to that Station Shift-in-Charge of the station and Traffic Controller will inform Metro Medical and ambulance to proceed accident site.

(d) The Senior most official present at the site of an accident shall be the overall in-charge of the relief operations or a senior official is specially deputed by the Chief Safety Officer shall take charge of the entire situation and arrange for timely rescue and relief.

(e) In case of disasters, the Station Shift-in-charge will take power block of 3rd rail by using Emergency Trip Switch (ETS) provided in the Station Shift-in-charge office on first priority in East-West corridor and in North-South Corridor where provided, the Station shift-in-charge will take 3rd rail power block through Traffic Controller and shall arrange to earth by provision of Short Circuiting

Device (SCD) or earthingrod on both the lines. Similarly Traffic Controller shall take initiative to protect the train.

(f) The entry to the station shall be restricted. Only the medical and paramedical staff and rescue personnel will be allowed to get in.

(g) Arrangements shall be made by the Motorman, Station Shift-in-charge & Traffic Controller for evacuating passengers followed by detrainment procedure rule laid down on SR 151 for North-South Corridor and sub rule1&2 SR 232 for East-West Corridor.

(h) If required, assistance can also be obtained from NDRF, Kolkata Police and voluntary organizations like Rotary Club, Red Cross, Lions Club etc.

(i) Provision of lighting the accident spot shall be arranged by the Electrical maintenance officials. AFC & PC gates shall be opened and emergency stair cases, escalators shall be used if required to facilitate quick passenger exit.

(j) At station or accident site first aid will be given by the qualified personnel.

(k) The officer at the site shall advice to OCC for any assistance required.

(l) Passenger Information Booth to be opened and manned by the competent person to provide information to the person concerned in relation to any query to the accident.

(m) The Traffic Controller shall make necessary arrangements for restoration of train service and necessary announcement may be made accordingly.

SR 49 (2) Declaration of the situation as emergency.-(a) An Emergency Cell shall be set up at the OCC by PCSO. A set of current rule books, station lay out plans and other items shall be kept in the Emergency Cell duly up dated.

(b) The emergency cell is responsible for the overall control and coordination of emergency situation.

(c) The Officer In-Charge at site is responsible for overall control and coordination of all activities at the incident site.

(d) Rolling Stock Department is responsible for providing technical assistance to Emergency Cell & Officer in-charge at site, for managing site restoration work as required.

(e) Station staff are responsible for making appropriate station announcement.

(f) The Senior Security official at the site is responsible for controlling and coordinating all police activities at all times. In doing so, this official has final authority to determine when these activities will be completed and shall coordinate

these activities with the Officer In-Charge at site and the Senior Fire services official.

(g) Entry into the incident area by the media or other visitors must be authorised and coordinated by the CPRO.

(h) Ensure that all personnel involved at the site, work efficiently to restore Metro rail service as quickly and safely as possible;

50. Fire and Smoke.-(1) All Metro Railway servants shall be conversant with the provisions of Fire Fighting manual or any other approved instruction or special instruction for the time being in force.

(2) On noticing fire, which may endanger life or cause damage to property or obstruction to running of trains, a Metro Railway servant shall,-

(a) take all possible steps to save life and property, prevent fire from spreading and extinguish it as necessary; and

(b) report the incident to the nearest Station Shift-in-charge or the departmental Supervisor concerned when equipments are involved in the Fire.

(3) The Station Shift-in-charge or the departmental Supervisor concerned on receipt of such information shall,-

(a) report the incident to Traffic Controller giving information regarding location, nature and extent of Fire, seek assistance as necessary;

(b) take all possible action within his means to have the fire extinguished with the assistance of local staff; and

(c) render all possible assistance to the persons, if any, involved in fire accident and call for medical relief if necessary. In case of injuries of serious nature, action shall be taken to despatch such persons to the nearest hospital by the fastest means.

(4) On receipt of a report regarding incidence of fire, the Traffic Controller shall,-

(a) collect information regarding location, nature and extent of the smoke or fire;

(b) arrange to have the electric current switched off, if necessary;

(c) inform all the officials concerned in accordance with Special instructions;

(d) arrange assistance as required, including activation of smoke extraction system wherever existing in accordance with Special instructions.

(e) arrange detrainment of passengers if required; and

(f) regulate traffic suitably keeping the passengers and Station Staff informed.

(5) (a) The train shall be worked to the next station by the Driving Motorman, if practicable, where prompt action shall be taken to deal with the outbreak including cutting off the source of electric supply to stop serious arcing or fusing.

(b) If it is not possible to take the train to the station in advance, the Driving Motorman shall make efforts to bring the train to a stand at a place convenient for the detrainment of passengers.

(c) If there is a risk of Fire spreading, the train shall be divided, if possible, and arrangements made to clear unaffected portion of the train.

SR 50 Fires and Smoke.- (1) Fire in the Tunnel,- (a) Driving Motorman and Conducting Motorman on seeing any Fire inside the tunnel shall, if possible, proceed to the next station, otherwise proceed cautiously to the rear station with the permission of the Traffic Controller under exchange of private number and stop at the approaching end of the platform of the rear station and then after being guided by hand signal exhibited from the end of platform and also inform the Traffic Controller through available means of communication with particulars of location and nature of Fire. The Traffic Controller shall inform Fire station of Metro Railway,

Kolkata, as well as West Bengal State Fire Service who will proceed to the spot ensuring that 3rd rail power supply is switched off by TPC.

(b) In all cases of Fire in the tunnel, the Shift-in-charge at two ends of the affected section will be kept informed by the Traffic Controller. 3rd Rail power supply will be 'switched OFF' and train services will remain cancelled during the period Fire extinguishing operation is in progress.

(c) After fire has been extinguished the Station Shift-in-charge shall ensure the clearance of all personnel from the tunnel and track bed. The incident site should be inspected by any Traffic Official or Engineering Official (Civil, Signal or Electrical) and Fire staff to ensure that the fire has been extinguished and the track is safe for movement.

(d) Whenever track bed is involved in Fire, this must be inspected by the concerned Engineering (P. Way & works), 3rd Rail, and Signal Officials after the Fire is extinguished completely. Traction current shall be 'switched ON' only after the "Line Safe Certificate" has been received from all concerned Officials and then the train services shall be resumed.

2. Passenger Coach on Fire,- (a) In the event of a coach of a train being on Fire, while running between stations, the Driving Motorman shall make every effort to take the train to the next station.

(b) The passengers in the affected coach in the mean time will be advised to vacate the fire –affected coach and move to the adjacent coach. Traffic Controller and the Conducting Motorman will be kept informed by the Driving Motorman.

(c) Traffic Controller will advise Station Shift-in-charge concerned promptly to keep station staff ready with available appliances to extinguish fire.

(d) On arrival at the station, passengers will be advised on Public Address System to vacate the train.

(e) Entry to platform will be closed but exit will be kept open. If required, passengers on the platform will be advised to vacate the platform and go to the Mezzanine floor to help Fire extinguishing operation.

(f) Station Shift-in-charge of the station with the help of station staff and the Conducting Motorman will extinguish fire using the Fire Appliances available in the train and at Station.

(g) If the outbreak is serious, assistance of Fire official of Metro Railway, Kolkata and the W.B. Fire Service will be taken.

(h) Station Shift-in-charge of the station will make necessary announcements on the station Public address system to guide the passengers.

(i) When Fire is extinguished, and safe running conditions are restored, running of train will be resumed after necessary Public Announcements.

(j) Fire appliances after use will be replaced or recharged with minimum delay.

3. Fire prevention:- (a) No Metro Railway employees shall store any Inflammable Article; Grease or Oil; Petrol, Diesel or Kerosene or waste papers / plastic /wooden or paper boards, Paints in underground section of Metro Railway. No article which can catch Fire will be kept or stored in any switch room or rooms containing electrical apparatus, except under specific permission in writing from the departmental officer in charge of the section.

(b) Plant and apparatus which require the use of inflammable Gas /Liquid shall not be used in underground structures, except for emergency operation and in accordance with departmental instructions.

(c) Metro Railway users are not permitted to bring any inflammable materials inside Metro Railway premises by law.

(d) Accumulated litters in the underground system will be periodically cleaned by Special Civil Engineering Gang to prevent outbreak of fire.

(e) A water pipe line with valved Hydrant outlets at intervals is provided at North South section between Dakshineswar

and Kavi Subhash. In East West corridor such provision exists only at stations area from Sector V and Salt Lake Stadium and water pipe line with valved Hydrant outlets at intervals is provided at tunnel section.

4. Duties of Metro Railway staff in case of Fire Accident.- (a) All Metro staff shall be conversant with the Accident Manual issued by the Metro Railway Administration, for prevention of fire as well as prompt action to extinguish any sort of fire that may accidentally break out.

(b) The Traffic Controller on receipt of the information regarding outbreak of Fire shall intimate Tollygunj / Noapara fire station of Metro Railway, Kolkata and in case of East-West Corridor the traffic Controller shall inform the W.B Fire and emergency services and depending on the situation, also inform the Assistant Commissioner Security /Fire. These Officials will be responsible for rendering all assistance from Metro Railway Fire Services and also for co-ordination with the W.B. Fire and emergency Services.

SR 50 (4) (c) & (d) Duties of Traffic Controller in case of fire and smoke.

Details are given in Accident Manual and Disaster Management Manual.

51. Electrical equipment on Fire.-In case the Fire is on or adjacent to any Electrical Equipment, the Metro Railway servant concerned, if he is competent to handle the equipment and trained for such

purpose shall arrange to switch off the current and isolate the affected part.

SR 51 Electrical Equipment on Fire.- (1) When an authorised Electrical person notices Fire on any part of Electrical Equipment, the affected portion shall be completely isolated from the distribution system by him. If arcing still continues, it shall be got interrupted by local or remote operation of switches to cut off any other electrical feed. The fire shall be extinguished by the electrical Official-incharge on duty with the help of local staff using fire appliances provided for this purpose.

(2) If any other person not specifically authorised, notices fire on or adjacent to traction electrical equipment, he shall make no attempt to extinguish the fire but report the outbreak to Traction Power Controller on emergency telephone or through the station Shift-in-charge.

(3) The Traction Power Controller on receiving the information shall arrange for isolation of the affected portion of the equipment and for extinguishing the fire.

(4) Ordinary Fire extinguishers or water from a hose pipe shall not be used to extinguish the fire on live wire or electrical equipment. When called, the fire Brigade shall be allowed to commence operations after all electrical equipments in the vicinity of the fire have been made dead.

(5) Where sand bins are provided, the Supervisor-in- charge shall see that they are kept dry and clean.

52. Action to be taken in case of earthquake, cyclone.-In case of earthquake or cyclone, the train movement should be done in accordance with special instructions.

SR 52 Action to be taken in case of earthquake, cyclone.- (1) (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 than 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.

(2) (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.

C H A P T E R – VII

PERMANENT WAY AND WORKS

53. Maintenance of line.- Each Senior Section Engineer or Junior Engineer of way or works shall, – (1) programme and arrange maintenance works during non-traffic hours after obtaining power block on third rail;

(2) see that his length of line or works in his charge is efficiently maintained;

(3) promptly report to the Engineer-in-charge all accidents or defects in the way or works, which he considers likely to interfere with the safe running of trains, at the same time taking such action as may be necessary to prevent accidents, and

(4) Co-ordinate with Senior Section Engineer or Junior Engineer Signal and/ or electrical so that track equipments are not damaged or become defective while undertaking maintenance and repair works as required.

(5) Planned maintenance and asset repair or replacement or creation work shall be executed in accordance with the "Rolling Block Programme".

Explanation:- For the purposes of this clause,"Rolling Block Programme" means advance planning of traffic blocks or disconnections (civil or electrical or signal &telecommunication etc., including non-interlocked work) over a specified duration upto 52 weeks, required for maintenance and asset repair or replacement or creation work, to be prepared on a rolling basis by adding one week plan every week by reviewing the output of the immediate preceding week and planning for the remaining weeks ahead.

(Para 5 inserted below Para 4 AUTHORITY- Gazette notification No.G.S.R.870(E) dated 29.11.2023)

SR 53 (3) Engineer-in-charge.- The Engineer-in-charge referred to in this Chapter shall mean the Assistant Engineer or any other officer in immediate charge of the section concerned.

54. Condition of permanent way and works.- Each Senior Section Engineer or Junior Engineer of way or works shall be responsible for the condition of the permanent way and works under his charge.

55. Keeping of materials. - Each Senior Section Engineer or Junior Engineer of way or works shall see to the security of all rails, chairs, sleepers and material in his charge and ensure that such of the said articles as are not actually in use are properly stacked clear of the line so as not to interfere with the safe running of trains.

56. Inspection of Permanent Way and works.- (1) Every portion of the permanent way shall be inspected daily on foot by a Metro Railway employee appointed in this regard in accordance with special instructions.

(2) All joint works connected with signals and connecting gears, points and crossing, third rail and any other equipment

affecting the safety and working of trains shall be jointly inspected regularly in accordance with special instructions.

SR 56 Inspection and maintenance of Way and Works.- (1) (a) Inspection and maintenance of the Track will be done at the non-traffic hours.

(b) Neither any person nor any tool or equipments used by him, shall approach within two meters of the third rail unless traction current has been confirmly 'switched off' and appropriate section has been isolated and earthed.

(c) (i) In all cases of schedule inspection and maintenance operations which are programmed during non-traffic hours, the procedure shall be followed laid down on sub rule (2) (a) of SR 71.

(ii) Where any unscheduled inspection or maintenance work is to be done during non-traffic hours, whether within the station limits, or outside, involving permanent way, signaling/interlocking gears or third rail/tunnel lighting/sump, pumps and its associated equipments by the Engineering official (Civil, Electrical & S&T) and any work to be done by the Commercial official will communicate with TPC for switching OFF of the traction power supply and obtain necessary permit to work from TPC. The Engineering official-in-charge or

commercial official of work shall issue a memo in writing informing the Traffic Controller or Traction Power Controller (TPC), that work is being undertaken on the section viz line, between stations and Kilometerage, expected duration of work.

(iii) For any unscheduled work during traffic hours procedure under sub-rule 2(b) of SR 71 shall be followed.

(2) (a) SSE/JE (P.Way and Works) shall inspect the schedule length of P.Way and Works as laid down for them in the Indian Railway Engineering Manual. During inspection of any maintenance operation the permanent way supervisor shall be responsible for ensuring that signal or third rail gears and/ or cables are kept clear of all obstructions.

(b) SSE/JE (Signal) shall inspect each interlocked station according to inspection schedules laid down for them in the Indian Railway Signal Engineering Manual and shall inspect the working of commissioned signaling gears as prescribed in the Indian Railways Signal Engineering Manual.

(c) SSE/JE (Elect.) shall inspect their schedule works involving safe operation of train as per their concerning Manual.

(d) Any work related to the concerned department involving the activities of other engineering departments' equipment must inform them in writing and representation of the concerned department personnel are mandatory for ensuring safety for the working of trains.

57. Works involving danger to trains or traffic.-(1) A Track maintainer or worker shall not commence or carry on any work which may involve danger to trains or to traffic without the prior permission of Senior Section Engineer or Junior Engineer (Permanent Way and works), or a competent Metro Railway servant appointed in this behalf by special instructions and the Metro Railway employee who gives such permission shall himself be present to oversee such works and shall see that the provisions of rule 60 and rule 201 are observed.

(2) Where the work under sub-rule (1) involves any signal or electrical gears, the presence of a competent representative of the department concerned shall be arranged during the period the work is in progress.

(3) The traction current shall be switched off to ensure safety of staff, when necessary, in accordance with special instructions.

SR 57 (1) & (3) Works involving danger to trains or traffic.

Detailed instructions in this regard are given in SR 71.

58. Emergency repairs to track and structure.- When a report is received from any source informing damage to structure or track requiring immediate attention for safe running of trains, the Traffic Controller shall, if the work is to be done during traffic hours,-

(1) give order to stop train services over the affected sections;

(2) inform the concerned Senior Section Engineer or Junior Engineer of permanent way or works to proceed to the site of occurrence.

(3) have the traction current on the affected portion switched off before the work is commenced.

(4) resume train services over the affected section in accordance with special instructions after the concerned structure or track has been attended and certified fit by the competent engineering official not lower than the rank of Senior Section Engineer or Junior Engineer of Permanent Way in case of track work or Senior Section Engineer or Junior Engineer of Works in case of structures.

SR 58 (4) **Emergency repair to track and structure**.

Details instructions are given in Sub-rule 2(b) of SR 71.

59. Work under conditions of impaired visibility.- No rails shall be displaced and no other work which is likely to cause unsafe condition to traffic shall be performed in poor lighting or visibility conditions within the tunnel. In open sections or elevated structures

in foggy or tempestuous weather impairing visibility, no rails shall be displaced and no work which is likely to cause unsafe conditions to the passage of trains shall be performed.

SR 59. Work under conditions of impaired visibility: Details instructions are given in Sub-rule 2(b) of SR 71.

60. Precautions before commencing operation which would obstruct the line.- No person employed on the way or works shall change rails, disconnect points or signals, or commence any other operation which would obstruct the line until,–

(1) possession of the track has been taken over from the Traffic Controller by the authorised engineering official in accordance with special instructions;

(2) all safety precautions for staff have been taken;

(3) the engineering official-in-charge superintending the work at site has ensured that the traction current has been switched off, if necessary; and

(4) the site of work is protected in accordance with special structions.

SR 60 (1) **Precaution before commencing operations which would obstruct the line.-** (a)The Engineering official shall serve to the Traffic Controller by a memo in written about the nature of work, the Kilometerage over which the work will be carried out, the approximate period required for completion of the work etc.

(b) The Traffic Controller shall then decide, taking into account the train service as well as the urgency of the repair, the period when possession of the track can be given over to Engineering official. The decision of the Traffic Controller shall be endorsed on the duplicate copy of the memo and handed back to the Engineering official duly signed.

(c) Before giving permission for executing work the Traffic Controller shall ensure that the third rail power has been switched off.

SR 60 (4) The site of work shall be protected by danger (red) signal at either end kept at a distance of not less than 20 meters from the place where the staffs are working.

61 Engineering Supervisor in each gang.- Each Senior Section Engineer or Junior Engineer (Permanent Way and works) shall satisfy that in every gang employed in his length of line there is a competent Engineering supervisor.

62 Knowledge of signals and equipment of gang.- Each Senior Section Engineer or Junior Engineer (Permanent Way and works) shall ensure, –

(1) that every track maintainer and Engineering Supervisor employed under him has a correct knowledge of hand signals;

(2) that every gang employed in his length of line is supplied with a permanent way gauge, and two hand signal lamps

or Flag in addition to such other tools or implements as laid down in special instructions; and

(3) that every maintainer or Trolley-man is periodically tested for his competence as laid down in special instruction and is in possession of competency certificate to perform his work.

SR 62 (2) **Equipment of gang.-** the equipment of each gang shall be as specified by chief engineer or any subordinate officer authorized for this purpose.

SR 62 (3) Details laid down in sub-rule (2) of SR 66.

63. Inspection of gauges, signals, tools and implements.- (1) Each Senior Section Engineer or Junior Engineer (Permanent Way and works) shall at least once in every month inspect the permanent way gauges, hand signal lamps/flag, tools and implements supplied to the gangs under him under sub rule 2 of rule 62 .

(2) He shall see that any defective or missing articles are replaced promptly.

64. Responsibility of Senior Section Engineer or Junior Engineer as to safety of line.- Each Senior Section Engineer or Junior Engineer shall ensure,–

(1) that his length of line is kept safe for passage of trains;
(2) that the hand signals, tools and implements supplied are kept in proper order and ready for use; and

(3) that all the men working with him have a correct knowledge of hand signals.

65. Putting in or removing points or crossings.- Except in cases of emergency, no Metro Railway employee shall put in or remove any points or crossings on and from the running line otherwise than as permitted by special instructions.

66. Working of Lorries, trollies and motor trollies.- (1) A material trolley is a vehicle which can be lifted bodily off the line by four or less persons. A similar but heavier vehicle shall be deemed to be a lorry. Any trolley, which is self propelled by means of a Motor is a Motor Trolley. When a material trolley is loaded with permanent way or other heavy materials, it shall also be deemed to be a lorry.

(2) Each trolley or lorry shall have the minimum equipment as laid down in special instruction.

(3) (a) No lorry or material trolley shall be placed on the line except under the supervision of a qualified engineering official-in-charge (permanent way or electrical or signals) who has been authorised by special instructions in this behalf.

(b) Such official-in-charge shall be present at the site when it is used and shall be personally responsible for its proper protection, and removal from the line after use.

(4) A lorry or a material or push or Motor trolley shall be run,-

(a) during non-traffic hours under conditions of clear visibility and under power block or

(b) during traffic hours when track possession has also been taken of that section by the engineering official-in-charge and traction Power Controller has confirmed that the traction current on the section has been switched off.

(5) (a) material or push or Motor trolley or lorries shall not be left unattended when in use.

(b) A lorry or material or push or Motor trolley when not in use, shall be placed at safe place clear of the line and the wheels thereof be secured with a chain and pad lock.

(6) At the close of the work, the Engineering official-in-charge shall issue a certificate in writing to the nearest Station Shift-in-charge that the material trolley or lorry has been taken off the line and secured, the line is free from all obstructions, third rail alignment is clear from any tools, implements, wire etc. which might have been used at site, no staff is working in the section and the track is safe for resumption of train services. On confirmation of the receipt of safety certificate by the Station Shift-in-charge, the Traffic Controller shall permit switching 'on' of traction current and resumption of train services.

(7) After a material trolley or lorry has been removed from the track, the Station Shift-in-charges on duty at either end of the section shall, if necessary, restore to normal the axle counter of the section by utilising the resetting device as per procedure laid down in special instructions.

SR 66 (1) **Trolley and Lorry**.- (a) A four wheeled vehicle, which is worked by hand power and has a total weight not exceeding 220 Kg and is capable of being lifted off the track by four men, is called a trolley.

(b) If the weight of the vehicle, worked by hand power, exceeds 220 Kg or which cannot be lifted bodily off the track by Fourman, shall be called a lorry.

(c) A 'dip lorry' which consists of two separate four wheeled vehicle that can be joined together to form a single vehicle for the conveyance of materials and equipments, shall be treated as lorry even when run light, whether as single units or in pairs coupled together.

(d) The term 'material trolly' shall be taken synonymous with the term 'Lorry' as used in this chapter. When run light, it may be treated as trolly if it satisfied the conditions under sub-rule (a).

(e) Every trolly or lorry in departmental use on the line on Metro Railway shall be registered in the respective department along with the name of the holder. A list of the

same shall be sent to the Sr.DEN and Dy.COM to ensure that trolly/lorry holders are issued necessary competency certificate under SR 66 (2).

SR 66 (2) **Trolly or Lorry Permit.-** Permit to work trollies or lorries shall be granted in accordance with the following procedure-

(a) All trolly holders, not in possession of a permit, shall apply to Senior Transportations Manager (STM) or Dy.COM for issue of the same.

(b) ATO and AEN will jointly hold a written and oral test and put up the list of successful candidate to PCOM for approval and issue of competency certificate. All permits will be valid for a maximum period of one year and a fresh certificate will be issued in December every year for the next Calendar year i.e., from January to December.

(c) Assistant Officers and above will not be required to appear at the examination. Copy of instruction for working trollies and lorries along with changes if any shall be circulated to all officers every December to refresh their knowledge.

(d) All permit holder shall send a certificate every December to Sr.DEN that they are conversant with the section and other rules of working trollies and lorries and undertake to comply with the same. On receipt of such certificate their permits will be renewed for the next calendar year. If any trolly holder fails to submit such certificate, he will

forfeit his right to use the permit in the next Calendar year till such time he has submitted a certificate and his permit has been renewed.

SR 66 (5) (b) Working of lorries, trollies and motor trollies.- (1) The authority under whose charge a Material/push/Dip Lorry remains at a particular point of time, shall be solely responsible for its operation/safe custody and stabling.

(2) Material/Push Dip lorry on completion of work shall be stabled only at nominated places in Metro Railway and shall be properly secured using padlock, safety chain and locks and shall in no way infringe running lines.

(3) (a) Nominated places for stabling of material/push/Dip Lorries in **North-South Corridor** of Metro Railway, Kolkata (Authority– Sr.DEN).

(i) Wider space at KKVS end at KDMI column side of DN track at Km 0/6-0/8.

(ii) KBEL north end within the double column at Km 1/19-2/1.

(iii) Wider spaces at KKVS end at KSHY in between Up and DN lines at KM 4/0-4/1

(iv) KCEN north end within the double column at Km 7/6-7/7.

(v) KNBN north end within the double column at Km 12/0-12/1.

(vi) KMUK south end within the down line side at Km 16/11-16/12.

(v) KGTN north east end within the side of down line at Km 21/2-21/3.

(vi) KKVS carshed end within the side of down line at Km 25/4-25/5.

(b) Nominated places for stabling of material/push/Dip Lorries in **East-West Corridor** of Metro Railway, Kolkata (Authority – Sr.DEN).

No place for stabling of push/Dip lorries between Salt Lake Sector-V and Salt Lake Stadium station.

67. Track work and track side work in non traffic hours.– (1) No maintenance staff shall enter on to the track of any running line without the permission of the Traffic Controller.

(2) Traffic Controller who will grant block permission after ensuring that Traction Power Controller has disconnected the third rail power, earthed and secured.

(3) Non traffic hours are defined as the hours between the passage of the last train, including any work train, and a published time before start of traffic again in the morning and the normal time shall be published in the relevant handbooks which may be varied from time to time by the Metro Railway.

(4) The Traffic Controller shall give permission, specifying the location and reason for which permission is given and the time by which staff shall have to leave the track.

(5) The Traffic Controller shall log the time, location and the name of the person to whom permission under sub rule (4) has been given.

(6) On completion of the work, the person to whom permission has been given under sub rule (4), shall report to the Traffic Controller, identify himself and affirm that he and his equipment are clear of the track and that it is safe for service to resume.

(7) If the work cannot be completed within the allotted time, the person to whom permission has been given under sub rule (4) shall inform the Traffic Controller before the expiry of the time he has been allotted and agree with the Traffic Controller for an extension of time and the extension of an Engineer's Possession.

(8) The Traffic Controller shall not permit the start of normal service until all permission to work have been properly given up and rescinded; and

(9) All other works carried on in non traffic hours shall be protected by an Engineer's Possession

68. Maintenance of line in traffic hours.- (1) No routine maintenance shall be undertaken during the hours in which train services normally run.

(2) If emergency repair work is required to be carried out to prevent accidents or to maintain or restore train services, such emergency work shall be done under the Engineer's Possession which shall be granted by the Traffic Controller without delay taking the exigencies of trains services into account and making adjustments in train schedules.

(3) The train services on adjacent sections of the line shall be operated with appropriate caution order or other precautions as prescribed in special instructions.

SR 68 (3) Maintenance of line in traffic hours.-(a) The track and trackside works which are undertaken during non-traffic hours with or without Engineer's possession shall be completed well before the traffic hours.

(b) However due to unforeseen circumstances, if Emergency repair to track and structure is required, then follow the procedure the rule laid down under Sub Rule (2)(b) of SR71.

69. Engineer's Possession.- (1) Engineer's Possession on running lines is granted by the Traffic Controller who has final responsibility on whether or not the Engineers may take possession.

(2) All works on tracks in depot shall be undertaken within an Engineer's Possession which shall be granted by

the Depot Controller but in other matters the provisions hereinafter provided shall apply.

(3) An area under the Engineer's Possession is the sole responsibility of engineering official in charge and all issues of safe working within that area including the movement of trains is his responsibility.

(4) The person in charge of Engineer's Possession shall be trained in the duties and responsibility of the role and certified so by the authorised Official or institution of Metro Railway.

(5) Where work on one track is likely to affect the passage of trains on an adjacent track, possession shall be taken of all tracks likely to be affected.

(6) If trains are required to pass on an adjacent track, the person in charges of the possession shall be responsible for ensuring that the track is safe to use.

(7) Unless essential for the movement of trains, traction power shall be switched off from the area of the possession by the Traction Power Controller and shall only be re-energised on receipt of clearance.

(8) All switching ON or switching OFF operations of traction power required for maintenance work or Engineer's Possession or for any other purpose shall be approved by Traction Power Controller.

(9) The person in charge shall be responsible for confirming to the Traffic Controller on completion of the work that the track is safe for traction power to be switched on, all protection measures have been removed and the track is safe for trains to run.

CHAPTER-VIII

POWER SUPPLY and TRACTION

CURRENT ARRANGEMENTS

70. Inspection of Electrical Way and Work.- The Electrical Way and Works shall be inspected regularly in accordance with instructions by officials nominated for the purpose and in accordance with the duties assigned to them.

71. Permit to work adjacent to or involving electrical equipment.-

(1) Works should be carried out adjacent to electrical equipment and involving any parts thereof only by qualified Metro Railway employees.

2) No works under sub-rule (1) shall be undertaken unless an authorised electrical person has given a permit of work and addition, nominated a qualified representative of the electrical branch, when necessary, in accordance with instructions on this behalf to be available at the site of work to ensure necessary safety and guidance.

(3) The authorised electrical person shall not be issued such permit to work without the knowledge and consent of the traction power controller who in turn, shall keep the Traffic Controller informed when train movement are affected.

(4) When ever such work is likely to affect any other installations, the work will be carried out as per special instructions.

(5) The maintenance and operation of Electrical Traction Installations in emergency conditions shall be carried out after obtaining permit to work as per procedure contained in Special instructions.

SR (71) Permit to work- (1) Before commencing any work on third rail or its associated cables and equipment, or any other maintenance/inspection work within 2 meters of the third Rail, a permit to work shall be obtained from an authorized electrical person deputed at work site or TPC in the case of multiple working parties and in the case of single working party from TPC on duty.

(2) There are normally two types of electrical maintenance operations under which works on Electrical Traction Installations can be carried out. **(a) Pre-arranged maintenance during non-traffic hours. (b) Emergency maintenance during traffic hours**.

(a) **Permit for pre-arranged maintenance during non-traffics hours**,- (i) Officials of all engineering departments (Civil, Electrical, S&T) and commercial

department shall send their 10 days maintenance programme in advance to the authorized Electrical Engineer on 1st, 11th and 21st of every month for the next 10 daysperiod. For example, the programme submitted on the 1st day in the month will cover the maintenance programme from 11th day to 20th day of the month.

(ii) The requirements of all departments shall be coordinated in the office of the authorized Electrical Engineer and a consolidated statement forwarded to the Dy.COM for his concurrence by 3rd,13th and 23rd of every month.

(iii) The approved maintenance programme shall be sent to Traffic Controller, Traction Power Controller, SSE/JE(Power Supply) and concerned Engineering officials of departments concerned latest by 5th, 15th and 25th of the month.

(iv) As per approved programme, Supervisor from Civil, Electrical, S&T and Commercial department will make out a message in PTW, asking permission to work from TPC under exchange of private number with the following details.

(v) After completion of commercial service, TPC shall arrange power block over the concerned section and keep it earthed by earthing device.

Then he will inform the concerned supervisor(s) about the confirmed power block and work permission by exchanging private number and advise to on duty Traffic controller in writing.

(vii) After completion of work, the concerned supervisor(s) is/are to ensure his men and materials have been withdrawn from work site and ensuring the section is free from obstruction for safe restoration of train movement. A PTW cancellation advice is to be issued by concerned supervisor(s) in prescribed form under exchange of private number with TPC.

(viii) TPC will arrange to charge the 3rd rail and accordingly he will pass on line safe certificate to Traffic Controller on duty.

(ix) The line safe certificate will expressly imply fitness of track clearance of SOD track and 3rd rail for the purpose of train movement as well as clearance of all men and materials from the track bed.

(b) **Emergency maintenance during traffic hours,-**(i) On receipt of any advice of breakdown, accident etc. directly or indirectly, the TPC shall immediately switch OFF third rail power supply after consultation of Traffic Controller.

(ii) The staff giving such information directly to the TPC and requesting switch OFF of the third rail power supply shall give his identity i.e. name designation and also the kilometerage where breakdown is noticed, nature of breakdown and place of reporting. The person reporting the incident will be advised to stay at the same place and shall not leave the place without information of TPC

(iii) The TPC shall, after switching OFF the third rail power supply shall inform the Traffic Controller and then communicate again with the same person to obtain further details as available.

(iv) The TPC shall then inform the Traffic Controller further about the circumstances. The Traffic Controller shall in consultation with TPC inform the Engineering official concerned to proceed to the site with his staff. The Engineering official concerned after ensuring from the TPC that the third rail power supply is switched OFF, shall issue an advice in writing to the nearest Station-in-charge in this regard and shall then proceed to the site when consented to.

74. **Work on service building and structures in the vicinity of live equipment. –**The Metro Railway servant required to carry out work on service buildings and structures in the proximity of third rail equipment shall exercise special care to ensure that tools, measuring tapes, materials are not placed in a position from which they are likely to fall on or make contact with electrical equipment.

75. **Train maintenance works on the line.-** When it is necessary to carry out any work on train which involves person working within two meters from third rail, works shall be carried out with proper safety precautions in accordance with instructions issued by the Chief Electrical Engineer in this regard.

76. **Battery locomotives. -** The rules for movement and working of the battery locomotives shall be laid down by special instruction.

77. **Protection of the trains in case of Traction system failure or breakdown.**– Whenever a Motorman finds that his train cannot proceed further on account of Traction system failure or breakdown the Motorman shall follow instructions laid down in sub-rule (2) of rule 232.

78. **Issue of Caution Order.** – In case of breakdown of third rail equipment, when it is necessary for a train to proceed cautiously, the Traction Power Controller shall arrange for issue of caution order in accordance with the procedure in force.

79. **Work on service building and structures in the vicinity of live equipment. –**The Metro Railway servant required to carry out work on service buildings and structures in the proximity of

Third Rail Equipment shall exercise special care to ensure that tools, measuring tapes, materials are not placed in a position from which they are likely to fall on or make contact with electrical equipment.

80. Alterations to Track..– Before any alteration to alignment or level of electrified tracks is commenced, due notice shall be given to those responsible for the Third Rail, so that the Third Rail may be adjusted using specified gauge to confirm to the new conditions of track.

81. Additional rules for electrified Sections.–Special instructions, if any, for working of trains on electrified sections shall be issued.

82. Rules applicable to DC Traction Third Rail equipment only. – Switching 'OFF' and 'ON' of Traction power. - (1) Traction power shall ordinarily remain 'ON' and shall be switched 'OFF' during traffic hours for a specified section by the Traction Power Controller or through the Authorised Servant immediately after informing the Traffic Controller in emergencies, like,-

(a) to stop serious arcing or fusing;

(b) to stop train in unusual circumstances and

(c) when flood water overflows the drains.

(2) The Traction Power Controller shall issue emergency power block as per prescribed procedure, to the Authorised Servant.The Traffic Controller shall also inform all concerned that train movements on the affected section have been stopped.

(3) When the cause of 'Switching OFF' is over, the servant who has taken emergency power block will inform Traction Power Controller to that effect and cancel the emergency power block.

(4) Before switching 'ON' the current, the Traction Power Controller shall obtain the permission of Traffic Controller who shall confirm from the Engineering and Signaling officials that the track is safe and free from any obstructions before permitting energisation of third rail. Thereafter, Traffic Controller will resume the traffic.

83. Procedure for preventing admission of electric rolling stock into or over sections of track with dead or earthed third rail. – (1) In order to prevent electric rolling stock from being admitted into a track or a crossover for which third rail equipment, is made dead or for which a permit to work is to be issued, suitable measures shall be enforced to block setting of such routes.

(2) The levers or slide or push buttons of signals and points governing movement of electric Rolling stock shall be suitably protected and if the points and signals are locally operated, they shall be clamped and padlocked in their normal position and the keys shall be kept with the Station Shift In-charge or Depot Controller as the case may be.

(3) These protective measures shall not be withdrawn until the Station Shift In-charge or the Depot Controller, as

the case may be, receives a message from the Traffic Controller and acknowledges the same, and the Traffic Controller shall not issue a message unless he has received a message from the Traction Power Controller cancelling the power block.

PART-II

(TRAIN WORKING UNDER OTHER THAN CBTC SYSTEM)

(AUTHORITY- Para C of Addendum and corrigendum No.01 dated 10.04.2023)

CHAPTER-I
SIGNALS

A. General Provisions

84. Signals.-Signal is an indication given to a Driving Motorman or a Conducting Motorman for controlling the movement of his train in all cases, except under approved special instructions.

85. Kinds of signals.- The signals to be used for controlling movements of trains on running lines in car sheds and sidings shall be,-

1) Fixed signals and
2) Hand signals.

The aspects of the signals displayed by day and by the night shall be the same.

B. Description of Signals

86. Use of Fixed Signals.-(1) Except under approved special instructions the Metro Railway shall be equipped with fixed signals as specified in these rules.

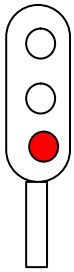
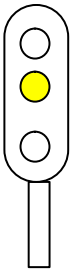
2) Colour light signals-The aspects of a colour light and position light signal both by day and by night shall be the same and shall be displayed by static light.

87. Colour light stop signals.-(1) All stop signals on the Metro Railway shall be colour light signals with aspects as explained in the pictures below .

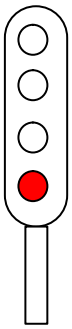
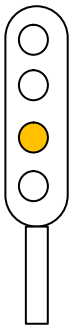
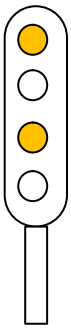
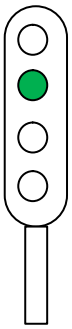
2) Short range colour light signals shall be installed in tunnel sections, normally mounted at Driving Motorman's eye level.



(3) Colour light stop signal in Multiple Three-Aspect Signalling Territory

'On' Position	**'Off' Position**	
		
ASPECT :		
STOP	CAUTION	PROCEED
Indication		
Stop dead	Proceed and be Prepared to stop at the next stop signal	Proceed

(4) Colour Light stop signal in Multiple Four-Aspect Signalling territory,-

On Position	Off Position		
			
ASPECT :			
Stop	**Caution**	**Attention**	**Proceed**
Stop dead	**Proceed and be prepared to stop at the next stop signal**	**Proceed and be prepared to pass next signal at such restricted speed as may be prescribed by special instruction**	**Proceed**

88. Fixed stop signals for admission of approaching trains.- (1) A home signal shall be located outside all connections on the line to which refers;

(2) Where necessary, additional 'inner' home signal may be provided; and

(3) Unless otherwise premitted by special instructions, where two or more lines diverge, the stop signal be provided with approved type of route indicator.

SR 88 Fixed stop signals for admission of approaching trains.

(3) The route indicator to be provided shall be stencil type.

89. Fixed stop signals for departing trains.- (1) A starter signal shall be fixed at the limit beyond which no train may pass unless the Driving Motorman is given an authority to proceed under the system of working;

(2) A starter signal should be placed outside all connections to which it refers except at stations where block section commencement boards are provided; and

(3) Shunting operation beyond the starter shall be carried out only in accordance with special instructions.

SR 89 (3) Fixed stop signals for departing trains. (a) Any shunting beyond such fixed stop (Starter/Departure) signal where provided shall not be permitted by Panel Operator unless he has taken permission from the Traffic Controller on duty and has Blocked Forward or Blocked Back the block section.

(b) Before permitting the shunting the Panel Operator shall ensure that all relevant points are properly set and locked in favour of the movement where shunt signals are provided the movement shall be governed by the shunt signal.

(v) After necessary repairs have been carried out successfully the Engineering official concerned shall prepare an 'Line Safe Certificate' and hand it over to the Station-in-charge concerned after making sure that 'all men and materials have been cleared from the track and there is no obstruction to safe running of trains'.

(vi) The Traffic Controller on the advice of the Station-in-charge shall then advise the TPC to switch ON power supply to the third rail and issue instruction for resumption of train services after the traction power supply is switched ON.

72. Warning to staff and public.- All electrical equipment shall be regarded as being live at all times and consequently dangerous to human life, save and except in cases, where the electrical equipment has been specially made dead in accordance with instructions, on this behalf. Caution notices shall be prominently fixed near all vulnerable places to warn staff and public to exercise due caution.

73. Work on the third rail or any associated equipment thereof - No work shall be undertaken on third rail or its associated equipment or in zones within two meters from third rail excepted in accordance with instructions issued in this regard by the Chief Electrical Engineer.

(c) (i) The Driving Motorman shall be given an authority for shunting in the block section as per specimen given in Appendix-6 or any other tangible authority stipulated by the Metro Railway Administration in station working rules.

(ii) This authority will be returned to the Panel Operator of the issuing station after completion of shunting operation.

90. Combination of signals - Under approved special instructions, a colour light home signal may be combined with the starter signal of a station in rear. When so combined, the arrangements shall be such that the combined signal shall display 'ON' aspect until conditions for taking 'OFF' both the signals have been fulfilled.

91. Placing of more than one signal on the same post.- Not more than one signal referring to trains moving in the same direction, whether on the same line or on separate lines, shall be placed on the same post, except for subsidiary signals.

92. Calling on Signal.- (1) Calling on signal is a subsidiary signal which when taken 'off' calls on the Motorman to draw the train ahead with caution after the train has been brought to a stop even though the stop signal above it is at 'ON' and indicates to the Motorman that he should be prepared to stop short of any obstruction.

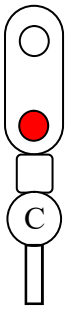
(2) Calling on signal, where provided, shall be fixed below a stop signal governing the approach of a train. Under approved special instruction, calling on signal may be provided below any other stop signal except the last stop signal.

(3) A calling on signal shall show 'no' light in the "ON" position and a miniature yellow light provided (with a 'C' marker) in the "OFF" position.

(4) The aspects of the color light calling on signal are shown below,-

a) Colour light type Calling-on signal in Two Aspect Signal Territory

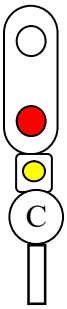
"ON' Position



STOP

Driver should obey the aspect of the stop signal

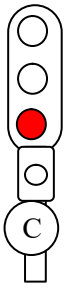
"OFF" Position



PROCEED

Stop and draw ahead with caution and be prepared to stop short of any obstruction

(b) Colour light type Calling-on signal in three aspect Signal Territory.

"ON' Position	"OFF" Position
	
STOP	**PROCEED**
Driver should obey the aspect of the stop signal	Stop and draw ahead with caution and be prepared to stop short of any obstruction

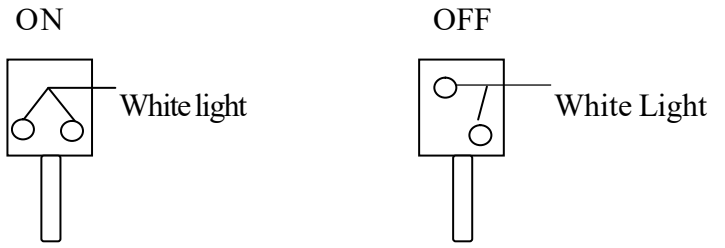
SR 92 Calling on Signal.- Calling on Signal is a miniature colour light signal provided with a non-illuminated (C) maker for identification, placed below the stop signal except the last stop signal.

It shall show no light in the 'ON' position and miniature yellow light in the 'OFF' position to indicate, the Driving Motorman to proceed cautiously and be ready to stop short of any obstruction ahead.

93. Shunt Signals.- (1) A shunt signal is a subsidiary signal for controlling shunting movements and shall be a position light type signal. It may be placed on a post by itself or below a stop signal other than first stop signal.

(2) The aspects and indication of a shunt signal are shown below,-

Manual Aspect



3) When a shunt signal is taken 'OFF', it authorizes the driver to draw ahead with caution for shunting purposes although stop signal if any, above it is at 'ON'.

(4) A Shunt Signal placed below a Stop Signal Shall show no light in 'ON' Position.

(5) Where shunt signals are not provided, hand signals may be used for shunting.

94. Repeating Signals. - (1) A Signal placed in rear of the fixed Signal for the purpose of repeating to the Driving Motorman of an approaching train the aspect of the fixed Signal in advance is called a Repeating Signal.

2) A Repeating Signal shall be a colour light Signal provided with 'R' marker.

3) The aspects and indications of a colour light Repeating Signal shall be as shown below,-

Manual Aspect

'ON' 'OFF'



Caution proceed to stop at next signal Proceed

SR 94 Electric Repeater of Starter Signal: (1) The aspect of any departure signal which cannot be seen from rear cab of the train by Conducting Motorman, a Electric repeater of Starter Signal may be provided on the platform nearer the Conducting Motoman's cab to apprise the Conducting Motorman regarding the aspect of the starter signal. It is fixed on the platform where it can be seen by the Conducting Motorman from the rear cab of a train. There will be "no light" in the repeater in case of 'ON' aspect of the starter signal or when repeater is defective. When starter signal is "OFF 'aspect, repeater will show "yellow light".

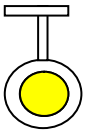
(2) In case of the repeater does not indicate 'yellow' light then the Conducting Motorman may confirm the aspect of starter signal from the Driving Motorman. Starting bell should be given by Conducting Motorman only after getting confirmation from the DrivingMotorman that starter signal has been taken "off" or Authority to proceed has been issued.

(3) In case of Starter Signal showing 'off' aspect but repeater showing no light, the repeater is to be treated as failed. The failure should be reported by Conducting Motorman immediately to the Traffic Controller.

(4) The aspect and indication of a repeater is shown below.



'No light' indicates on 'ON' aspect of the starter signal



Yellow light indicates on 'OFF' aspect of the starter signal

95. Point Indicator.- Point Indicator where provided shall show a miniature white light in both directions when the point is set for the straight and a miniature green light in both direction when the point is set for the turnout.

96. Signals out of use.- (1) When a fixed colour light signal is not in use, it shall be distinguished by two crossed bars, each bar being not less than thirty cms. long and ten cms. wide.

(2) Signals not use shall not be lit.

C. Equipment of Signals

97. Minimum equipment of fixed signals at stations and carshed cabins.- Minimum equipment of fixed signals at a special class station on double line, except otherwise exempted under approved special instruction,-

(1) In absolute Block System,- (a) Home and Starter Signals shall be provided at intermediate block stations and Provisional Terminal Block Stations.

(b) Home signal and Starter signal in opposite direction, shall be provided at a Terminal Block Station.

(2). In Automatic Block system - Manual, Semi Automatic and Automatic stop signal shall be provided.

98. Additional fixed Signals provided at stations and cabins generally.- In addition to minimum equipment of signal prescribed in rule 97 above, such other fixed signals shall be provided at every station as may be necessary for the safe working of trains.

SR 98 Route Indicator: A stencil type route indicator shall be provided along with the Home signal to indicate the Motorman on which platform or grid of lines he is being admitted.

99. Commissioning of Fixed signals.- Fixed Signals shall not be brought into use until they have been sanctioned by the

Commissioner of Railway Safety as being sufficient to secure safe working of trains.

100. Signals at Non Block Stations.- Signals may be dispensed with and trains may be stopped in such manner as authorised by special instructions.

SR100 Signals at 'D' Class Stations : (1) The Non block stations or "D' Class stations shall be provided with a Automatic Signal and/or a stop board 100 x 40 cms shall be fixed at these stations at the location where trains are required to come to a stop for entraining and detraining of passengers. The side of the board facing the train shall be painted white with '**STOP'** written in Red Letters. The reverse side of the board will be painted black.

(2) At these stations, where stop board is provided, a passenger halt (PH) marked board of the size 50x15 cms, shall be provided at distance of not less than 300 meters from the place where the stop board is fixed. The side of the board facing the train will be painted with yellow with '**PH'** written in black and reverse side of the board will be painted black.

D. Working of Signals and Points.

101. Fixed signals generally.- (1) Every fixed signal shall be so constructed that in case of any type of failure, it shall remain at or return to its most restrictive aspect.

(2) A stop or shunt signal which has been taken "OFF" for a train shall not be placed at "ON" until the whole of the train has passed it, except,-

(a) In an emergency, if a signal has to be put back to the ON' position before the passage of the train for which it was taken 'OFF' no points or lock shall be operated until train has come to stand.

(b) Where the signalling arrangement automatically restores the signal to "ON" position, the control operating the signal shall not be restored to its normal position till the whole of the train has passed it.

(3) No fixed signal within the station limit shall be taken "off" without the permission of the Panel Operator on duty or Traffic Controller or such person may, for the time being, be in independent charge of the working of such signal.

102. Normal Aspect of Signals.- (1) Unless otherwise authorised under approved special instructions fixed signals, except automatic signals, shall always show their most restrictive aspect in their normal position.

(2) The normal aspect of an automatic stop signal is 'proceed'. Where, however, the signal ahead is manually operated, the aspect normally displayed is 'Caution' or 'Attention'.

103. Points affecting movements of a train.- (1) A signal shall not be taken " off" for a train until, -

(a) all points over which the train will pass are correctly set and all concerned facing points locked , and

(b) the line over which the train will pass is clear and free from obstructions.

(2) (a) Whenever a running line is blocked by a train , the Panel Operator on duty after its arrival shall ensure that the points in rear are set against the blocked line immediately where interlocking or station layout permits, except when shunting or any other movement is required to be done on that line.

(b) The panel operator must make use of the lever collars, slide collars/pin; button or switch collars leading to the obstructed line to prevent operation of points and signals and also to serve as a visual reminder of the line occupied by train.

104. Locking of facing points.- Facing points for passage of trains shall be either interlocked or key locked or shall be clamped and padlocked.

SR104 Locking of points: When panel working shall be suspended due to any reason, the Panel Operator shall set the point(s) for the intended route and take out the panel key. This will lock all interlocked points irrespective of being facing or trailing. Before taking out the key, the Panel Operator must ensure that the movements for which signal had been given earlier have been

completed. He/ She must ensure that points are set for the intended route and correct indications of points are available near the respective point switches. Then SM's key must be taken out and kept in his custody till such time the normal working of panel operation resumes.

105. Condition for taking 'off' Home Signal.- The Home signal may be taken 'OFF' if,-(1) On double line the line is clear and free from obstructions for and adequate distance beyond the next stop signal.

(2) At terminal block station where adequate distance beyond the place where the trains normally come to a stand is not available, the home signal or inner home signal where provided, shall be taken 'off' after the train has first been brought to a stand outside it and the line is clear up to the place at which the train is required to come to a stand.

(3) The adequate distance referred to in clause (1) shall not be less than 180 meters in Absolute Block System and not less than 90 meters in Automatic Block System except under approved special instructions.

106. Condition for taking 'off' Starter Signal. - (1) In the event of Absolute Block Working system,-

(a) A Starter Signal shall not be taken 'off' for a train unless permission to approach has been received from the block station in advance.

(b) A Starter Signal shall not be taken 'off' for shunting purpose.

(2) In the event of manual operation of Starter Signal in Automatic Block Working system,-

The Starter signal shall not be taken 'Off' for a train unless the line is clear up to the next Automatic Stop Signal and adequate distance beyond it. The adequate distance referred to shall not be less than 90 meters.

107. **Condition for taking 'off' calling on signal**.- A calling on signal shall not be taken 'off' until a train has been brought to a stand at the stop signal below which the 'calling on' signal is provided.

108. Lighting of Signals.-All fixed signals and indicators shall be kept lit throughout the day and night.

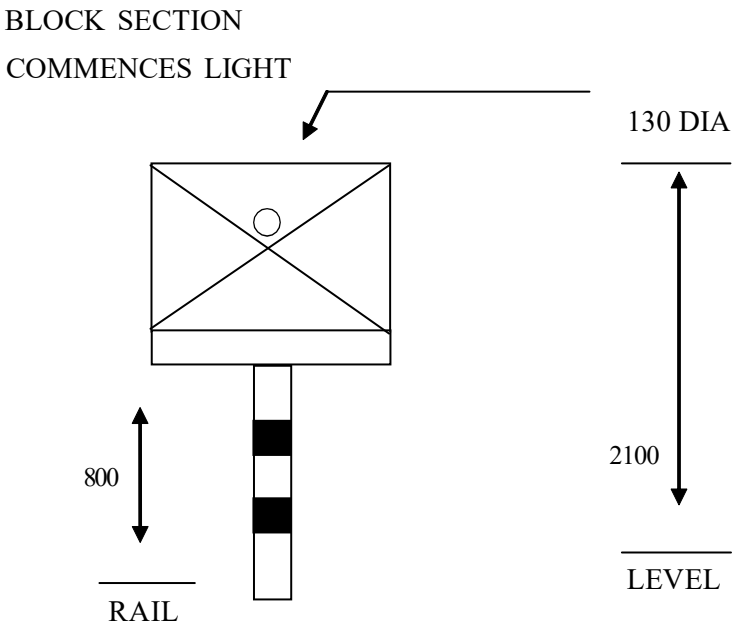
109. Fixed Red Light.- Fixed Red light shall be provided on terminal platform tracks, siding and car-shed tracks to indicate the farthest points beyond which no train or shunting movements may be permitted.

110. Stop Board.- Stop Board of specified design shall be provided on platforms so as to be visible to the Driving Motorman of an approaching train, indicating the location where the train shall be brought to a stand for detraining or entraining of passengers.

SR 110. **Stop Board:** A Stop Board of size 100x 40cms. shall be fixed horizontally at Driver's Eye level at Class 'D' stations at the departure end and at terminal block stations at the end of 'Y

reversal siding or Emergency Cross- over reversal end and also wherever required at Car-shed area.

111. Block Section Commencement Board. - Block Section Commencement Board is a board (as shown below) which when provided denotes the commencement of a block section and indicates the limit beyond which a train shall not proceed unless it has been received the authority to proceed into the block section.



112. Traps and other points.- Trap points are single switched rail points provided on a line to isolate it from other line . The switch is so designed that a vehicle passing over the switch in the open position will derail. Trap switches shall be set against the running

line and locked in that position. Points leading to a short dead-end and used solely for the purpose of isolating the running line or siding shall be treated as derailing switches.

113. Points.- (1) All points shall normally be set for the straight route except when otherwise authorised by special instructions.

(2) No Metro Railway servant shall interfere with any points, signals, or their fittings or any interlocking or other connecting gears for the purpose of effecting repairs or for any other purpose except with the previous permission of the on duty Station Superintendent or Shift-in-Charge or Panel Operator.

(3) The Metro Railway servant concerned with the operation of the points and signals shall not, while on duty, leave the place of operation of points and signals under his charge except as authorised by special instruction.

SR 113 (1) **Duties of staff handling the points:** (a) Panel Operator on duty and/or points man responsible for operation of points and signals for shunting of trains or coaches shall not leave his place of duty without obtaining permission of Station shift-in-charge and without being relieved by any other competent station staff.

(b) Before leaving the place of duty he shall explain to his reliever the position of points and signals and movement involved and satisfy himself / herself that his/her reliever

has understood the same and an acknowledgement in this regard must be taken in the dairy.

(c) Panel Operator and Pointsman on train passing duty shall remain on duty, if line clear has been given for a train, till such time the train has been received completely and conditions for granting fresh permission to approach have been restored.

114. Duties of Station Shift-in-charge generally when a signal is defective.- (1) As soon as a Station Shift-in-charge becomes aware that any signal or indicator has become defective or has ceased to work properly, he shall,–

(a) immediately arrange to place the signal at 'ON' position if it is not already in that position.

(b) report occurrence to the Traffic Controller who shall inform Metro Railway servant responsible for the upkeep of the signals.

(2) When Station Shift-in-charge receives information of any defect in a signal not within his station control limits from a Driving Motorman or any other Metro Railway servant, he shall immediately inform the Traffic Controller who shall advise the signal maintenance staff and also the Station shift-in-charge concerned.

(3) When the approach signal is defective, the Station Shift-in-charge shall,–

(a) advise the station in rear to caution the Driving Motormen of approaching trains.

(b) inform the Traffic Controller on duty about the arrangements for receiving trains, and

(c) after ensuring that the conditions for taking 'off' approach signal have been fulfilled, advise the Traffic Controller to permit the Driving Motorman of the approaching train on radio telephone to pass the defective signal in accordance with special instructions.

(4) When a departure signal is defective, the Station Shift-in-charge after ensuring that the conditions for taking 'off' starter signals have been fulfilled,–

(a) depute a Pointsman to hand over the written authority to proceed to the Driving Motorman and show hand signals for the train to start; and

(b) keep the Traffic Controller informed about the defective signal.

SR 114 (1) Duties of Station Shift-in-charge /Panel Operator generally when a signal is defective.-At stations provided with RRI, PI or EI, in case of failure of a reception/departure signal, a train can be received by piloting or can be dispatched on the prescribed written authority, as per the laid down rules, only after ensuring correct point(s) setting & locking and crank handle "IN"

steady indications appearing in the Panel, without clamping and pad locking of the points.

Operation of cancellation should not be initiated till completion of the train movement over the route governed by the defective signal.

SR 114 (3) Duties of Shift-in-charge / Panel Operator generally when an approaching signal is defective.

When the reception signal at a Special Class Station is defective, the Panel Operator on duty on being satisfied that, the conditions for taking 'off' the reception signal have been fulfilled , shall depute the Pointsman or any other competent Traffic staff on duty to the platform end, to exhibit a green hand signal to the Driving Motorman of the approaching train, after ensuring that the approaching train has stopped at the foot of the reception signal. The Driving Motorman on receipt of green signal or such green hand signal exhibited from the platform end, sound two long whistles as a token of acknowledgement that he has been authorised to pass the reception signal at 'ON' position. The Driving Motorman shall then enter the platform zone with his train cautiously. This procedure shall continue till the defective reception signal is rectified.

SR 114 (4) Duties of Shift-in-charge when a departure signal is defective.

When the departure signal at a 'Special Class' station is defective, the Panel Operator on duty on being satisfied that the conditions for taking 'off' the departure signal have been fulfilled, shall besides

issuing authority to proceed and permission to pass the signal at danger will be combined form, specimen of which is given in Appendix- 4 & Appendix- 5.

115. Intimation to officials when defects remedied.- As soon as a defective signal has been put into good working order, the Shift-in-charge shall intimate the fact to the officials who were advised of its being defective.

116. Absence of a signal or a signal without light.-

(1) If - (a) there is no signal at a place where it ordinarily exists, or

(b) the light of a signal is not burning when it should, or

(c) the aspect of a signal is misleading or imperfectly shown or

(d) more than one aspect is displayed, the Driving Motorman shall act as if the signal is showing its most restrictive aspect.

(2) At signal equipped with 'R' marker, and when absolute block working is in use, the Driving Motorman shall bring his train to stand, if it does not show any light or show an imperfect aspect, and having satisfied himself that the signal is provided with a 'R' marker shall proceed preparing to stop at the next stop signal and shall be guided further by its aspect.

117. Defective or damaged point.- (1) Whenever points, crossings or check rails are defective or damaged, the Metro Railway

servant in charge of operation of points shall protect them and immediately arrange to report the circumstances to the shift-in-charge on duty.

(2) The Panel Operator or Shift-in-charge on duty on becoming aware of such defective or damaged points etc. shall, –

(a) inform the Traffic Controller about it, and arrange to have the defect rectified by the person responsible for its maintenance ;

(b) personally ensure safe passage of trains, after setting and locking of facing points, and

(c) arrange to keep the signal or signal concerned at 'ON' positionuntil the defect is rectified.

SR 117 (2) (a) Defective or damaged points: In the event of a points being inoperative in running line through the panel operator shall, when required, call for the Signal maintainer in charge who shall set the point(s) for the intended route by the use of Crank Handle and then clamp and padlock the point(s) by the pointsman. In case it is not possible to set the point by the Crank Handle for any defect or damage caused to the point and if there is no alternative route available, the train services shall be suspended till the defective point is rectified.

118. Duties of Driving Motorman in respect of signals - (1) The Driving Motorman shall be vigilant and cautious and pay attention

to and obey every signal whether the cause of the signal being shown to him is known to him or not.

(2) When he notices any unsafe condition, he shall immediately bring his train to a stop and after informing the Conducting Motorman and the Traffic Controller, proceed exercising great caution so as to stop short of any obstruction. He shall report the incident in writing at the next station on arrival.

(3) Every Driving Motorman shall acquaint himself with the system of working, location of signals and other local conditions affecting the running of trains on the section over which he is required to work.

119. Duties of Driving Motorman when approach signal is defective.- The Driving Motorman shall not pass the approach signals that refers to his train, when it is defective unless,-

(1) bring his train to stand;

(2) contact the Traffic Controller on available means of communication for seeking permission from the Panel operator to pass the signal;

(3) proceed past such signal at a restricted speed after proper authorization in accordance with special instructions; and

(4) The Driving Motorman then proceed at a restricted speed on being guided by the green hand signal exhibited from the nearest edge of the platform or he is either authorised by a calling-on signal in 'OFF' position.

SR 119 (3) Duties of Driving Motorman when approach signal is defective: The Driving Motorman on noticing a Home Signal at danger shall always bring his train to a stop at the foot of such signal and then proceed at a restricted speed on being guided by the green hand signal exhibited from the nearest edge of the platform.

120. Duties of Driving Motorman when departure signal is defective.- The Driving Motorman shall not pass the defective starter signal unless, –

(1) the train has been brought to a stop at the station;

(2) a proper authority to proceed under the system of working is received by him; and

(3) a proceed hand signal is given in accordance with special instructions.

SR 120 (3) Duties of Driving Motorman when departure Signal is defective, - In addition to a written authority to proceed the Driving Motorman will be given by the Panel Operator, a written authority to pass the departure signal in 'ON' position or any defective condition, subject to the Panel Operator on duty on being satisfied that the conditions for taking 'off' the departure signal have been fulfilled. The "written authority to proceed" and the "permission to pass the signal at danger" are in a combined form specimen of which is given in Appendix – 4 & Appendix 5 and being guided by the green hand signal exhibited from the front of Motorman Cab.

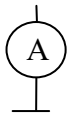
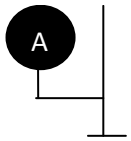
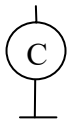
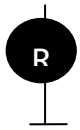
121. Duties of Driving Motorman in respect of a Calling-on Signal.- The Driving Motorman of a train shall be guided always by the indication of the Stop signal below which the Calling–on signal is fixed. If this Stop signal is at 'ON' he shall bring his train to a stop. If he finds that the Calling-on signal is taken 'OFF' he shall, after bringing his train to a stop draw ahead with caution and be prepared to stop short of any obstruction.

122. Permission before entering a running lines.- No Driving Motorman shall take his train on any running line or cross it until he has obtained permission of the Station Shift-in-charge in the manner as may be specified and has satisfied himself that all correct signals have been shown.

123. Reporting of defects in signals.- If a Driving Motorman observes that a signal light is imperfectly visible or partially obscured, he shall report the matter to the Traffic Controller on duty who shall take steps to inform the Station Shift-in-charge and also advise the persons concerned to get it rectified immediately.

124. Distinguishing markers and signs for signals.- Where necessary, signals shall be distinguished by prescribed markers and such markers shall be fixed on the signal posts below the signals as under –

125. Kinds of Fixed stop signals in Automatic Block Territories.- (1) Stop signals in Automatic Block Territory shall be colour light signals and may be of the following kinds namely,-

Appearance	Provided on	Description
	Automatic Stop Signal	Letter 'A' in black on white circular disc.
	Semi-Automatic Stop signal	White illuminated letter 'A' against black back ground working as an Automatic stop signal, and letter 'A' extinguished when working as a Manual Stop signal.
	Calling-on signal	Letter 'C' in black on white circular disc.
	Repeating signal in Colour light signalling territory.	White illuminated letter 'R' against black background.

(a) An Automatic Stop Signal which is not dependent upon manual operation but is controlled automatically by the passage of a train into, through and out of the automatic block signaling section;

(b) A Semi Automatic Stop signal which is capable of being operated either as an Automatic Stop signal or as a Manual Stop signal, as required;

(i) When a Semi-Automatic Stop signal works as an Automatic Stop signal, it assumes 'ON' and 'OFF' aspects automatically according to the conditions of automatic block signaling section ahead;

(ii) When a Semi-Automatic Stop signal works as a Manual Stop signal, it assumes 'ON' aspect automatically on the occupation of the automatic block signaling section ahead, but shall assume 'OFF' aspect when operated manually, provided the relevant automatic block signaling sections ahead are clear;

(iii) When a Semi-Automatic Stop signal works as an Automatic Stop signal, the 'A' marker provided under the signal is illuminated and when the 'A' is extinguished, the signal shall be deemed to work as a Manual Stop signal; and

(c) A Manual Stop signal operated manually and which cannot work as an Automatic or a Semi-Automatic Stop signal.

(2) Colour Light signals in Automatic Block territory shall be three aspects or four aspects.

CHAPTER –II

WORKING OF TRAINS GENERALLY

A. Timing

126. Setting Watch.- Before a train starts from the originating station, the Conducting Motorman shall set his watch by the Station Clock

and communicate the time to the Driving Motor man who shall set his watch accordingly.

127. Supply of working time table and Schedule of Standard Dimensions.- (1) A copy of the Working Time Table in force shall be supplied to each station, Motorman, and Senior Section Engineer or Junior Engineer (Permanent Way or Works and Signal and Telecom) and any other Metro Railway servant requiring the use of the working timetable during the course of his duties;

(2) A copy of the said Working Time Table shall on issue, be supplied to the Commissioner of Railway Safety;

(3) A copy of the Schedule of Standard Dimensions for the time being in force shall be supplied to Controller, Traffic Inspector (Planning) and each Senior Section Engineer or Junior Engineer (Signal and Telecom, Permanent Way and Train Examiner).

SR 127 Under heading "Pilot cum commercial Train" as: - (a) Pilot cum commercial trains will be time tabled to run at beginning of every business day on both UP and Down lines. Such Pilot cum commercial trains will cover the entire stretch of Metro Railway at a speed not exceeding 40 Kmph. In case any unsafe condition is noticed action shall be taken as per GR&SR 160.

(b) On duty Traffic Controller shall not permit running of such pilot cum Commercial trains until and unless he has received 'Line Safe Certificate' from TPC or Engineering

Control (SSE/JE/P.way) confirming that the running lines are free from any obstruction and are safe for running of trains carrying passengers.

(c) On departure of pilot cum Commercial train from the station in advance, the second and subsequent trains may run at normal booked speed.

B - Speed of Trains.

128. Limits of speed generally.- (1) Every train shall be run within the limits of speed as may be specified for a section.

(2) The sectional speed and the permanent speed restrictions shall be shown in the working time table.

(3) Whenever it is necessary to indicate to the Driving Motorman the locations where trains are run at a restricted speed or where trains have to come to stop dead and proceed due to the track being under repairs or due to any other cause, action shall be taken as specified under special instructions.

129. Caution order.- (1) Whenever, in consequence of line being under repair or for any other reason, special precaution is necessary, a caution order detailing the kilometer between which the precautions are necessary, the reasons for taking such precautions and the speed at which the train shall travel, shall be handed over to the Driving Motorman at stopping station immediately short

of the place where such precaution is necessary or at such other station and in such a manner, as provided under special instructions.

(2) Sub-rule (1) does not apply in cases of long continued repairs when fixed signals are provided at an adequate distance short of such place and have been notified to the Motorman concerned.

(3) The caution order referred to in sub-rule (1) shall be green paper and be made out as above and signed in full.

SR 129 (1) Caution order: (1) Whenever due to any line being under repair or due to any special circumstance certain precautions are necessary, details of the kilometers between which such precautions are necessary, the restricted speed at which the train can move and the reason thereof shall be entered serially in a register, called the Caution Order Register, at the Notice Station (namely Kavi Subhash, Mahanayak Uttam Kumar, Dum Dum and Noapara) and also in the Central Control. Entries in the Caution Order will be made only on receipt of a memo signed by an Engineering official (Civil, Signal or Electrical) not below the rank of a Junior Engineer, the contents of which shall be repeated by the station Shift-in-charge or panel operator receiving the memo to the Notice Station and Central Control under exchange of private numbers. As and when the restrictions are amended or cancelled by the concerned Engineering official through a signed memo, suitable entries shall be made in the Caution Order Registers after following the procedure prescribed above for imposition of restrictions.

(2) A Caution Order (as given in Appendix-2 & Appendix-3) shall be prepared in triplicate by the panel Operator on duty at Kavi Subhash, Mahanayak Uttam Kumar, Dum Dum & Noapra and signed in full. The stations and sections shall be indicated in geographical order in relation to the direction of movement. One copy each of the caution order shall be served to the Driving and Conducting Motorman of each rake received from the shed after commencement of thetrain services in the morning. The Driving & Conducting Motor Man will hand over the Caution Order to the relievers. The Caution Order thus served shall remain valid for the entire Calendar day if not, amended or cancelled earlier by a competent Engineering Official. The 3rd copy shall be kept as Station Record.

(3) The amended Caution Order shall be served at Kavi Subhash Mahanayak Uttam Kumar, Dum Dum & Noapra station, as the case may be, to the Driving and Conducting Motorman, if after commencement of the train services the earlier restriction order has been modified and Traffic Controller is to ensure that all the trains in Section have received the amended Caution Order.

(4) Signature of the Driving Motorman and Conducting Motorman shall be taken on the station foil of the Caution Order, whenever it is served.

(5) While handing over the charge to the relieving Motorman at the end of their trip of duty the outgoing Driving Motorman and the Conducting Motorman shall hand over their

respective copies of Caution Order to the incoming Driving and Conducting Motorman and take their signature as acknowledgement.

(6) In emergent circumstances Caution Order as necessary shall also be prepared and served by the station Shift-in-charge/Panel Operator on duty on the instructions of the Traffic Controller at any station (whether Special Class or "D" Class) immediately short of the place where such precaution is necessary.

(7) All speed restrictions and precautions in force on the running line shall be exhibited to the train crew at the places where such precaution is necessary.

(8) Caution Order need not be served for Permanent Restrictions, which are shown in the Working Time Table.

(9) In case, there is no restriction a NIL Caution Order must be issued from the Notice Stations –Kavi Subhash, Mahanayak, Uttam Kumar, Dum Dum and Noapara.

(10) No entry shall be made on the backside of the Caution Order.

130. **Limits of Speed while running through Stations.**- (1) No train shall run through any station unless the line on which the train has to run, has been isolated from all connected lines by proper setting of points and interlocking has been provided to maintain the conditions during the passage of the train.

(2) The speed of a train while running through a station shall not exceed the speed as may be specified.

C. Equipments of Trains and Train Staff.

131. Head Light, Marker Light and Speedometer.- (1) All trains shall have an electric head light of approved design and in addition an electric white marker light in front.

(2) The electric headlight on the train shall be switched OFF and marker light switched 'ON' when the train is stationary at a station, and such other occasions as may be specified.

(3) In case the head light of a train fails, the train shall run at a speed as may be specified.

(4) Rakes should not be turned out from car-shed if the speedometers records are in defective condition. In case of speedometer recorder becoming defective during the run, the train should run at a speed prescribed by special instructions.

SR 131 (A) **When head light of train shall be switched off :** The Driving Motorman shall "switch off" the head light and "switch on" the Marker light in the following cases also,-

(a) To avoid running into dazzled human beings,

(b) To spot the light indication of any signal and

(c) When employed in shunting operation.

SR 131 (B) **When head light of train shall be switched off: (a)** No speed restriction will apply when the train headlight fails. The Driving Motorman shall, however, use the engine whistle

intermittently when the train is running between stations and approaching a station. The Driving Motorman will keep the Traffic Controller informed.

(b) The headlight will be attended to at the first point where facilities exist for such repairs. Passengers will be kept advised about the expected delay, if any.

132. Tail Lamp and Parking Lights.- (1) All trains shall have a red Tail Lamp in the rear.

(2) Within station limits or in depot sidings when stabled a train shall have red parking light in rear and in the front unless otherwise specified.

(3) All trains shall have in addition to Red tail Light, a yellow flashing back light in the rear to be activated by Conducting Motorman as per advice of Driving Motorman when the train has stopped in rear of a 'Red' or 'Defective signal.

SR 132 (3) The "Yellow" flashing back light once activated by the Conducting Motorman, as per the advice of the Driving Motorman, shall not be put "off" till further advice from the Driving Motorman to do so. The Driving Motorman shall not give such advice to put up 'off' the flashing back light till such time he does not resume normal speed after getting the next Automatic Signal at "off" position.

133. Equipment of Driving Motorman and Conducting Motorman.- Each Driving Motorman and Conducting Motorman shall have

with him while on duty with his train, the following equipments and copies of Rules, Manual and Time Table,-

(1) a copy of General Rules, Subsidiary Rules and Accident Manual;

(2) a copy of the Metro Railway Working Time Table;

(3) a Wrist Watch;

(4) two pairs of such spectacles as he is required to wear under medical advice;

(5) a tricolor torch;

(6) GSM-R hand set;

(7) Cab equipments such as;

(a) First Aid Box;

(b) Emergency Telephone;

(c) Train Radio;

(d) Train Public Address System ;

(e) Earthing Rod;

(f) Passenger detraining Ladder during emergency;

(g) Tail Lamp and a yellow flashing light (fixed) in last vehicle Wedge;

(h) Fire Extinguisher;

(i) Trouble Shooting Tool Box;

(8) such other articles as may be specified.

134. Manning of trains.- (1) (a) Except as otherwise specified by special instructions, no train shall be allowed to be in motion on any running line unless the leading cab is manned by a Driving Motorman and the rear Cab by a Conducting Motorman; and

(b) In no circumstance any person other than the Driving Motorman and the Conducting Motorman or any railway servant duly qualified and in possession of a Competency Certificate to move or drive a train on a running line.

(2) (a) If a Driving Motorman becomes incapacitated while the train is in motion, the train shall be brought to a stand. Driving Motorman or the Conducting Motorman shall inform the Controller on duty. The Conducting Motorman shall broadcast suitable information to the Passengers on the Public Address System, if required, and Conducting Motorman shall drive the train from rear cab up to the next station. Thereafter, Conducting Motorman shall drive the train from leading cab till relieved by competent person; and

(b) If a Conducting Motorman becomes incapacitated while the train is in motion, the train shall be worked upto next station by the Driving Motorman

informing Controller on duty. The door control of the train shall be taken over by the Driving Motorman and work until the charge of Conducting Motorman is taken over by a competent person.

(3) (a) In the event of the Driving apparatus in the leading Cab becoming defective, the train shall be driven up to the next station from the trailing Driving Cab by the Conducting Motorman under intimation to the TrafficController. The Driving Motorman in the leading Cab shall be responsible for application of emergency brake and safely conducting the train; and

(b) Action to detrain the passengers at the next station, if required, clearance of the defective train from the running line and induction of another train from the running line for resumption of services shall be taken in accordance with procedure as specified.

(4) For shunting movements in a depot or car-shed on non-running line, manning of the rear cab by Conducting Motorman will not be compulsory.

SR 134 (1) (a) **Manning of trains:** (1) (a) **Manning of trains during Shunting in a Depot or Car Shed,-** For Shunting movements in a Depot or Car Shed on non-running line, manning of the rear Cab by Conducting Motorman will not be compulsory.

(b) **Riding in the Cab:** Other than the Driving or Conducting Motorman persons authorised to ride in the Driving Cab will be officials specifically authorised by Chief Electrical Engineer or by Sub-ordinate officers authorised for this purpose. Notwithstanding any provisions as given above, total number of persons in the Driving Cab including the Motorman on duty should not exceed three.\

SR 134 (2) **Working of Trains when trains Crew becomes disabled, -** (a) If the Driving Motorman becomes disabled while the train is in motion between stations, the Driving Motorman will stop the train by applying emergency brake and inform the Conducting Motorman about the circumstances. The Conducting Motorman will close the rear Cab; move to the front Cab and after informing the Traffic Controller proceed with the train to the next Station.

(b) If the Driving Motorman becomes disabled while the train is in station, the Driving Motorman will stop the train by applying emergency brake and inform the Conducting Motorman about the circumstances. The Conducting Motorman will close the rear Cab and move to the front Cab. After informing the Traffic Controller, the Motorman shall proceed cautiously with the train up to the next three Stations.

(c) The Traffic Controller will arrange a fresh Conducting Motorman at the next three stations. If the same cannot be arranged, the passengers on the train will be informed

about the circumstances on the Public Address System and Passengers will be detrained. The Motorman as empty rake at the earliest possible will clear off the train so that services are not affected.

SR 134 (3) (a) Leading Driving Cab defective:(i) If it is apparent that the defect cannot be rectified immediately passengers will be informed on arrival at the next station about the circumstances and detrainment of passengers to be arranged after informing the Traffic Controller.

(ii) Procedure as laid down under SR-163 for arranging assisting train and clearance of the disabled train will be followed by all concerned.

(iii) After the disabled train has been cleared from the running line, the assisting train will be utilised for resuming train services.

D. Precautions before Starting Trains.

135. Examination of trains:- (1) A Rolling Stock Supervisor in accordance with procedures as may be specified shall examine a train.

(2) Unless the rolling stock supervisor has given a report to the effect that a train is fit for traffic service in all respects and has the specified brake power, the Station Shift-in-Charge of the station or the Car Shed in-charge of the

Car Shed where the train is examined, shall not give permission to put the train in service.

SR 135 (1) Protection of train during examination.- (a) In order to afford protection to the Train Examining Staff a circular Board of a 20 cm radius, painted red and inscribed with the word "STOP" in white, will be erected or hung at both ends of the train. Except the Rolling Stock Supervisor on duty or any other person acting under his personal orders who has fixed the STOP board, no other person will be authorised to remove the board.

(b) Unless the STOP boards at both ends have been removed by the Rolling Stock Supervisor, the train shall not be moved by its own power or with the help of any assisting train .No shunting of any other train also be permitted in its vicinity.

SR 135 (2) Fit Report of Coaches after examination: Fitness Report for each individual coach will be given in prescribed form by the Rolling Stock Supervisor after the examination is over and the STOP boards at both ends of the train have been removed.

136. Examination of train by Conducting Motorman.- The Conducting Motorman after coming on duty to work a train shall satisfy himself that,-

(1) communication system between the Conducting Motorman and the Driving Motorman is operative;

(2) the door closing apparatus is working properly;

(3) the passenger alarm apparatus on the train is working properly;

(4) the train light and fan controls are in proper working order;

(5) the emergency brake system is working properly; and

(6) the Public Address system in the train and Radio Communication system with OCC is working satisfactorily.

137. Driving Motorman to obey certain orders.- At stations and during the journey the Driving Motorman shall obey,-

(1) any order of the Traffic Controller in matters connected with starting, stopping and movement of trains or detrainment of passengers in mid section during emergency;

(2) any order communicated to him by the Station Shift-in-charge on duty or any railway servant acting under special instructions, so far as they do not infringe the safe and proper working of his train;

(3) any order given to him by the Conducting Motorman concerning safe working of the train or safety of passengers.

E. Duties of Staff working trains

138. Driving Motorman and Conducting Motorman to keep a good look out during journey.-1) Every Driving Motorman and Conducting Motorman shall keep a good lookout while the train is in motion.

(2) On noticing any dangerous condition or a red signal, the Driving Motorman shall take immediate steps to stop the train.

(3) In emergency, the Conducting Motorman shall stop the train by application of emergency brake.

SR 138 (3) Before giving starting bell to Driving Motorman and/ or Conducting Motorman should ensure that everything is safe with the train.

139. Application of Parking Brake by Driving Motorman or Conducting Motorman.- The Conducting Motorman shall apply Parking Brakes on the train when required by the Driving Motorman to secure the train.

140. Sounding of train whistle.- The Driving Motorman shall sound the whistle of the train according to the specified whistle code-

(1) before putting train in motion; and

(2) at such other times and places as may be specified.

SR 140 Whistle code for train Crew: Whistle of the train shall be sounded as follows of purposes of running of trains.

Code	Indication	Whistle sounded by
O	: Before Starting	
	(a) Doors are closing	:Conducting Motorman
	(b) Train is Starting	:Driving Motorman
OOO	:Train is out of Control Conducting Motorman to assist	:Driving Motorman
OOOO	:Train can't proceed further on account of obstruction.	:Driving Motorman
OO ---	:Alarm Apparatus pulled Conducting Motorman to reset	:Driving Motorman

NOTE: - 'O' indicates short whistle and '——' indicates long whistle

141. Bell signals between Conducting Motorman and Driving Motorman.- When all communication is provided between the leading and the rear driving cab, bell signal code, as may be specified, shall be used.

SR 141 Bell code for Train Crew: The following Bell Codes shall be exchanged between the Driving Motorman and the Conducting Motorman of trains proved with the Bell Communication.

Code	Indication	Acknowledgement
O	:Stop the train	**: O**
O—O	:Proceed with Caution	**: O—O**
O O	:Start the Train	**: O O**
O O O	:Communicate on the Telephone	**: O O O**
O O—O O	:Passing a Stop Signal at ON	**: O O — O O**
O O O O	:Resume sectional speed	**: O O O O**

NOTE: 'O' represents a short Bell '——' represents a 'pause'

142. Passengers.- (1) Every Conducting Motorman shall keep a watch on the Passengers detraining or entraining at stations and shall exercise due care while closing the doors of the coaches. In case of Conducting Motorman becomes incapacitated Driving Motorman shall exercise the same. Motorman shall also warn the passengers before closing the doors on the Public Address System.

(2) Means of Communication, -

(a) In every coach, Passenger Alarm System is provided and when operated, the Alarm Apparatus draws the attention of the Motorman without stopping the train.

(b) In the event of such an alarm operation, the Driving Motorman while continuing to proceed ahead shall inform through the cab to cab communication to the

Conducting Motorman to check the affected coach and verify the reasons for such an operation.

SR 142 (2) (b) **Passenger alarm apparatus on trains:** In every coach, Passenger Alarm System is provided. When passenger(s) pull or push the alarm apparatus to draw the attention of the Driving Motorman and/or Conducting Motorman, then,-

(a) if the train or coach is in Platform, the Conducting Motorman shall apply emergency brake to stop the train and communicate with passengers regarding the cause of such passenger alarm application. Conducting Motorman shall only allow starting the train afterchecking and ensuring full safety and communicate the same with Driving Motorman.

(b) the Driving Motorman shall try to contact Conducting Motorman regarding cause of such emergency application and after confirmation of ensuring safety of the train and after getting/acknowledging prescribed bell code, Driving Motorman shall start the train.

(c) when the train is between two stations, the train shall proceed to the next station without stopping. Conducting Motorman shall communicate with passengers or attend the same, on exigency Driving Motorman shall also attend.

F. Duties of staff on arrival

143. Driving Motorman to see that the train is stopped at the proper place.- When a train stops at a station, the Driving

Motorman shall see that the train has stopped short of the starter signal or at the STOP Board so as to ensure that the train is properly berthed at the platform. If not, he shall inform the Conducting Motorman at once through the cab to cab communication and prevent the opening of the doors of the coaches.

144. Moving of train carrying passengers after it has been stopped at a station.- (1) When any moving train stop beyond or short of the scheduled stopping point, coach doors to be opened only after the Conducting Motorman makes sure that there is no coach door remained outside the platform.

(2) When a train carrying passengers has been brought to a stand at a station alongside, beyond or short of the platform, the Driving Motorman shall not move it unless clearance from the Conducting Motorman is obtained.

145. Stabling of trains on running lines.- (1) When a train is stabled at a station on a running line, the Driving Motorman and the Conducting Motorman shall not relinquish charge until they have properly secured the rake, exhibit parking light and ensure that the train is not fouling any points or crossings.

(2) The Station Shift-in-charge shall ensure that,-

(a) all necessary points have been set against the line on which the train is stabled and such points have been secured with clamps and padlocks;

(b) the keys of such padlocks are kept in his personal custody until the train is ready to leave the line; and

(c) the coaches have been properly secured.

146. Reception of a train on an obstructed line.- (1) No train shall be received on an obstructed line at a station by taking off Signals.

(2) In emergency, if a train has to be received on an obstructed line, the Station Shift-in- Charge shall inform the Traffic Controller who shall inform the Driving Motorman on available means of communication. The train shall be moved slowly in accordance with special instructions.

(3) The Driving Motorman shall keep his train well under control and be prepared to stop short of any obstruction.

SR 146 (2) Reception of a train on an obstructed line : (a) The exact kilometer where the train has to stop, the nature and location of the obstruction will be obtained by the Traffic Controller from the Station Shift-in-charge and furnished to the Driving Motorman of the train thorough available means of communication.

(b) The speed of the train shall not exceed 20 kmph while entering the obstructed line and reduced to walking speed when in close proximity (within 40 meters) of the place where it has to stop.

147. Control of Shunting.- (1) Shunting Operation shall be controlled by Fixed signals or hand signals.

(2) The speed during Shunting operations shall not exceed ten kmph unless otherwise authorised by Special instructions.

(3) The coaches shall not be loose shunted.

SR 147 Shunting regulation: (a) Rake reversal at Dum Dum, Mahanayak Uttam Kumar and Kavi Subhash station is to be done by taking "off" the concerning Shunt Signals. During the rake reversal from one platform to another platform, via "Y" Siding/ Rake Reversal Siding, speed limits shall be as under:

(i)	Dum Dum UP/DN PF to "Y" Siding	:15 KMPH
(ii)	"Y" Siding to Dum Dum DN/UP PF	:30 KMPH
(iii)	Mahanayak Uttam Kumar UP/DN PF to "Y" Siding	:15 KMPH
(iv)	"Y" Siding to Mahanayak Uttam Kumar DN/UP P	:30 KMPH
(v)	Kavi Subhash UP/DN PF to Rake Reversal Siding	:15 KMPH
(vi)	Rake Reversal Siding to Kavi Subhash UP PF	:30 KMPH

(b) The above Para 147 (a) will be applicable only for reversal of empty rakes from one platform to another platform via the rake reversal sidings at Dum Dum, Mahanayak Uttam Kumar and Kavi Subhash station. At other stations/yards the speed during shunting operations shall not exceed 10 Kmph.

(c) When it is neither practicable to take "off" a shunt signal nor practicable to issue a written authority for shunting, shunting will be done according to verbal instructions given through available means of communications with exchange of private number between Panel Operator and Motormen. Under this circumstance speed not exceeding 10 Kmph.

(d) When it is has to be performed in a dead end siding, the Motorman at two ends must be communicating with each other. Bell Code for communication between train crew during Shunting Operations.

Code	**Indication**	**Acknowledgement**
O	:Stop	**O**
O O	:Move forward	**O O**
O O O	:Move Backward	**O O O**

(e) Whistle code for communication between train crew and station staff operating points and signals.

Whistle Code	**Indication**
O	:Train moving forward
O —	:Train moving backward
O O	:Train is stopping clear of the point.
O — O	:Train is standing on the point or fouling the point

148. Responsibility for Shunting. - The Station Shift-in-charge or the Car Shed in-charge shall see that the shunting of trains or coaches is carried out only at such time and in such manner as will not involve any danger.

149. Shunting on Gradients.- When shunting is being performed on a gradient, the Metro Railway servant in charge of shunting shall ensure that parking brakes are put on and all precautions are taken to prevent the train or coaches getting out of control.

G. Detrainment of Passengers in Mid section.

150. Conditions for detrainment.- (1) Passengers shall not be detrained on to the track except in extreme emergency and on Traffic Controller's instructions.

(2) Notwithstanding anything contained in sub-rule (1), if it is not possible for the train crew to establish communication with the Traffic Controller within ten minutes of the\stoppage of the train, the Driving Motorman shall, if in his judgment find detrainment is necessary, arrange to get the passengers detrained from either end or passengers detrained from both ends and escorted by the Conducting Motorman or nominated traffic staff to the nearest adjacent station, only after taking all necessary safety precautions including 'switching OFF' of third Rail.

(3) Notwithstanding the provisions of sub-rule (1) and sub-rule (2), in all cases of fire, fusing, fumes etc. or any other causes presenting immediate hazard to passengers, arrangement for detrainment shall be made as quickly as possible.

(4) The train shall be kept secured by application of parking brakes.

SR 150 Condition for detrainment of Passenger in the mid – section.- (1) The Traffic Controller on receipt of information about hold up of a passenger train in the mid section { in the manner stated vide SR. 156 (1) (a) shall ascertain the cause for such hold up from Traction Loco Controller/Traction Power Controller as the case may be and assess the time required for restarting the train after removing the cause of hold up.

(2) (a) If the cause for such hold up be 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 evacuation of passengers from the stranded train.

(b) The Traffic Controller will initiate measures vide (a) above within 6 (six) minutes of such occurrence so that actual evacuation can start by 10 (ten) minutes after such disability.

(3) (a) If the reason for holdup be on account of some failure pertaining to the Rolling Stock other than involving supply of 750 V DC, all trouble shooting efforts must be completed within fifteen (15) minutes of occurrence and by 15th minute Driving Motorman must convey Traction Loco Controller about status

of readiness/failure who in turn will inform Traffic Controller immediately.

(b) In absence of communication from Driving Motorman till 15th minute, it will be assumed by Traffic Controller and Traction Loco Controller that the Motorman is not in a position to communicate and rectification of fault is not practicable.

(c) At 16th minute the Traffic Controller will initiate evacuation of passengers from the stranded train.

(d) Traction Loco Controller will communicate the decision of evacuation to Driving and Conducting Motorman of the stranded train through any mean of communication available as per SR.156 (1) (c). In case communication cannot be established otherwise motormen will be advised regarding power block and evacuation through Station Shift-in-charge of nearest station.

(4) In case the holdup is on account of major breakdown, derailment etc. and movement of the train in either forward or reverse direction is found to be infeasible, the Driving Motorman may communicate the situation to Traction Loco Controller as soon as possible who will in turn inform Traffic Controller immediately. Traffic Controller in such situation will decide for evacuation immediately.

(5) (a) If the reason for holdup be on account of obstruction, infringement of SOD, breach of running track or even some Rolling Stock failure where further movement in the established direction is not possible although movement in reverse direction is possible, the Traffic Controller may decide to draw the train upto the next station (fully or partially) against the established direction of movement.

(b) For this purpose "the next station against established direction of movement" i.e. the station in rear will be considered as obstructed and rules for reception of a train on obstructed line vide provisions of GR 146 and SR 146 (2) will apply.

151. Procedure for detrainment.- In all cases of detrainment, Traffic Controller shall ensure that,-

(1) traction current is switched "OFF";

(2) tunnel light is kept glowing;

(3) a Metro operating official is deputed to supervise detrainment of passengers and to escort them safely to the nearest or adjacent station; and

(4) if such Operating official can't be immediately deputed, the train crew under the advice of Traffic Controller are to arrange detrainment under their supervision. The passenger

shall be escorted to the nearest or adjacent station by the Conducting Motorman.

SR151 Procedure for detainment of passengers in the mid section.-

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 sealed tunnels 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 advice both Driving and Conducting Motorman regarding detrainment of passengers from both end of the train.

5. The Traffic Controller before granting permission for evacuation of passengers 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. 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 earthing cable supplied in the cabs to ensure de-energisation of the traction current. The ConductingMotorman shall short circuit the Third Rail to the running rail (unaffected line in opposite direction) by means of earthing cable 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 mean time, 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 to lower the step ladder at both end. After testing that the step ladder(s) are properly secured, 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 center 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 exchange of private number. He will take further course of action as directed by the Traffic Controller through TLC. Traffic Controller then advise Station-in-charge of both stations to remove earthing of third rail of their stations and confirm exchanging 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.

152. Working of track maintenance machine. – Track laying or on track tamping or maintenance machines shall be worked only with the permission of the Station Superintendent and in accordance with special instructions.

CHAPTER - III

CONTROL AND WORKING OF STATIONS

153. Responsibility of the Station Shift-in-charge for working.- The Station Shift-in-charge shall, –

(1) be responsible for the efficient discharge of the duties devolving upon staff employed under his control within the station limits and such staff shall be subject to his authority and direction;

(2) report, without delay, to his superior all neglect of duty on the part of any Metro Railway servant under his control;

(3) see or cause to be seen that all signals, points, emergency equipments, platform indicator, Closed Circuit Tele Vision surveillance equipment where provided, Radio Frequency Identification based Automatic Fare Collection equipment, lifts and escalators or any other machinery provided at his station are kept in proper working order and shall report all defects therein to the proper authority;

(4) ensure that the station working rule in force together with all amendment slips and appendices instructions and see that the working of the station is carried out in strict accordance with the rules and regulations for the time being in force;

(5) see that no person other than the authorised person at the station asks for or gives mission to approach or gives authority to proceed;

(6) see that any working notices or instructions or orders issued by the Metro Railway administration are properly exhibited or distributed to staff concerned;

(7) see that the train timings and fare lists are correctly exhibited at the station;

(8) see that all staff under him are supplied with a copy of these rules or relevant extracts thereof;

(9) frequently visits the platforms, booking counters, ticket collection gates and other areas under his administrative control to maintain an effective supervision and to ensure that the platforms, passenger circulating areas, working offices and other areas are kept neat and clean;

(10) attend all passenger complaints or requirements give necessary assistance to passengers when required; and

(11) perform any other duties as may be specified.

SR 153 Responsibility of the Station-in-charge for working.- The Station-in-charge shall be responsible for proper maintenance of records at his station.

All staff connected with train passing duties posted at a station shall make written declaration in an assurance register maintained at station that they have read and thoroughly understood the rules in force relating to the working of the station and shall sign such declaration. The Station-in-charge shall be responsible for maintenance of the assurance register for this purpose.

Station in-charge shall examine the staff to satisfy himself that the rules have been thoroughly understood by them and shall certify at the certification portion to that effect in the Assurance Register supplied by Metro Authority. In case of Class –IV staff the Station-in-charge must read over and clearly explain the working to the staff concerned and must certify in the Assurance Register to that effect. Station in-charge shall also obtain thumb impression/

signature of the staff concerned as proof thereof that these have been done.

Fresh declaration for the Station Working Rules shall be obtained from the staff concerned and duly certified by the Station-in-charge in the following case;-

(1) When there is any change in the SWR whether permanently or temporarily.

(2) When a Metro Railway staff or a relieving hand resumed duty at a station after an absence of 15 (fifteen) consecutive days or more.

154. Keeping of books and returns.- The Station Shift-in-charge shall see that all books and returns are neatly kept and posted regularly.

155. Access to and operation of equipments.- No unauthorised person shall be permitted to have access to places from where points, signals, electrical communication instruments or any other appliances connected with working of the Metro Railway are operated.

CHAPTER – IV

ACCIDENT AND UNUSUAL OCCURENCES

A. Trains stopped between stations.

156. Train defect.- If a train is stopped by reason of any defect, the Driving Motorman and the Conducting Motorman shall communicate with each other. The Driving Motorman shall,-

(1) after ascertaining the cause, inform the Traffic Controller;

(2) take such action as he is competent to take to rectify the defect and clear the section;

(3) inform passengers of the circumstances, if an extended delay is likely;

(4) inform the Traffic Controller, if an assisting train is required to clear the disabled train from the section, and wait till the assistance arrives;

(5) not take any action to move the train after assistance has been asked for, even if the train defect is rectified, unless the Traffic Controller has confirmed that the assisting train has not entered the blocked section and arrangements for assistance have been cancelled;

(6) take action to detrain passengers in accordance with Special Instructions, if so desired by the Traffic Controller, after ensuring that the traction current has been switched off; and

(7) give a report in writing to the Station Shift-in-charge on his arrival at the station.

SR 156 Train Defect .- If a train is stopped by reason of any defect, the Driving Motorman and the Conducting Motorman shall communicate with each other. The Driving Motorman shall –

(1) (a) Whenever a train is stopped on account of any defect in Rolling Stock, Running Track or 3rd Rail Power

Supply, the Driving Motorman shall give preliminary intimation to Traction Loco Controller (TLC) within one (1) minute of such occurrence & TLC will immediately inform to Traffic Controller.

(b) If due to any reason Driving Motorman is not able to give such information the duty of communicating the first information to Control vide Para (a) be devolve upon Conducting Motorman.

(c) Means for such communication shall be in the following order of priority:

(i) GSM-R Cab Radio.
(ii) GSM-R Handset.
(iii) CUG.
(iv) Other available means of communication.

(2) The Conducting Motorman shall inform passengers of the circumstances through on board Public Address system and will continue to provide updated information at regular interval if an extended delay is likely.

(3) (a) All trouble shooting efforts must be completed within 15 minutes of occurrence and by 15th minute Driving Motorman must convey Traction Loco Controller about status of readiness/failure who will in turn immediately inform Traffic Controller.

(b) In absence of communication from Driving Motorman till 15th minute, it will be assumed by Traffic Controller and Traction Loco Controller that the Motorman is not in a position to communicate and rectification of fault is not practicable.

(c) Driving Motorman however, applying his discretion may declare and communicate failure of train even before that in case of major break down, derailment etc.

(d) In case the trouble shooting is successful and train is ready to move, the Driving Motorman shall communicate to Traction Loco Controller (TLC) before starting the train and TLC will immediately inform to Traffic Controller. In case such communication is not possible he will draw the train upto the next station and report the Station Shift-in-charge about the incident.

(4) Inform the Traffic Controller, if an assisting train is required to clear the disabled train from the section, and wait till the assistance arrives.

(5) Not take any action to move the train after assistance has been asked for, even if the train defect is rectified, unless the Traffic Controller has confirmed that the assisting train has not entered the blocked section and arrangements for assistance have been cancelled.

(6) Action to detrain passengers will be taken in accordance with provisions of G&SR-151.

(7) Give a report in writing to the Station Shift-in-charge on his arrival at the station.

157. No traction current.-If a Driving Motorman becomes aware when running between stations that the traction current has been switched off and is not switched on again,-

(1) he shall proceed to the next station if possible, keeping a sharp look out for hand danger signal or any unusual circumstances on the way. On arrival at the next station he shall seek instructions from the Station Shift-in-charge.

(2) he shall, if it is not possible to proceed to the next station,-

(a) stop his train at a convenient position and secure it against rolling movement as per Special Instructions;

(b) establish communication with the Traffic Controller and try to ascertain the cause, if traction current is not switched on within specified time;

(c) inform the passengers of the circumstances and detrain the passengers, if necessary, in accordance with Special Instructions; if traction current is not likely to be restored within ten minutes;

(d) clear the section as instructed by the Traffic Controller; and

(e) check up from the Traffic Controller, in case where an assisting train is required from which end the assisting train is being sent and take further appropriate action as directed by him.

SR 157 No traction current.- (1**) (**a) the Station Shift-in-charge shall check up from the Traction Power Controller the approximate time when traction current supply will be restored.

(b) if the cause for such hold up be 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 evacuation of passengers from the standerd train.

(2) **Duties of driving Motorman when train stopped for no traction current.-** (a) section will be cleared by the driving Motorman when traction current is switched 'ON'.

(b) if for some reasons the Driving Motorman is not able to start the train after traction current has been switched ON, he will inform the Traffic Controller through TLC about the circumstances on available means of communication, ask for assistance to clear the section and obey the provisions of sub rule (2) & (5) of GR 156 and Subsidiary rules there to.

158. Train parting.- (1) After both parts of the train have come to a stop due to automatic application of emergency brakes in the

event of parting of a train while in motion, the Driving Motorman and the Conducting Motorman shall prevent rolling of the respective parts as per Special Instructions.

(2) The Driving Motorman after communicating with the Conducting Motorman shall report to the Traffic Controller about the circumstances.

(3) The train shall be cleared intact after coupling the two parts when couplers are not damaged. In case of damage at mechanical couplers, the two parts shall be cleared separately in accordance with instructions received from Traffic Controller.

(4) When assistance is required to clear the section, Traffic Controller shall be so informed by the Driving Motorman and action shall be taken as directed by the Traffic Controller.

(5) The Traffic Controller on receipt of information about the parting of the train shall keep the Station Shift-in-charge at both ends advised. He shall also attempt to inform the passengers on both the portions of the train over Train Radio in case the Motorman are not able to do the same.

SR 158 (1) **Train Parting**.- (a) If a train carrying passengers parts on a rising gradient, the Driving Motorman will see whether it is safe before coupling the two parts at the same location

(b) The train unit will be either reformed with the assistance of the assisting train and cleared from the running line as coupled units or cleared from the running line in two parts.

(c) After the running line is cleared the standby rake will be used to resume train services. Before resuming train services the Traffic Controller will collect particulars from the Driving Motorman & Conducting Motorman of each and every individual coach of the parted train to make sure that no more coach is left behind in mid section on the running line.

159. Train in a Block Section without Authority To Proceed.- (1) The Driving Motorman shall, on becoming aware that he does not have authority to Proceed, inform the Conducting Motorman of the circumstances and take immediate action to stop the train.

(2) The Driving Motorman shall, thereafter establish communication with the Traffic Controller and obtain his permission to proceed to the nearest station.

(3) The Driving Motorman shall, after informing the Conducting Motorman, move the train to the next station.

(4) The incident shall be reported in writing by the Driving Motorman on arrival at the next station.

(5) The Traffic Controller on getting information from the Station Shift-in-charge or otherwise about a train having entered a block section without authority to proceed shall arrange to have the train stopped as per special instructions.

SR 159 (5) Train in block section without authority to Proceed, duties of Traffic Controller thereto.- (a) The Traffic Controller on getting information from the Station Shift-in-charge or otherwise, about a train having entered Block Section without Authority to Proceed shall take immediate steps to prevent an accident, if necessary by switching off the Traction current. Before switching off the Traction current, the position of other trains on the section shall be checked up, so that these trains are not held up in the tunnel.

(b) The Traffic Controller will as soon as possible, communicate with the Driving Motorman and give him permission supported by a private number to move the train to the Station in advance or push back the train to the station in rear in case of Absolute Block System working after ensuring that conditions for safe admission of the train have been complied with by the Station Shift-in-charge concerned. The Traffic Controller shall also check up from the Driving Motorman that the brake power of train is adequate. If the brake power is reported inadequate the Driving Motorman will be advised to move at a speed not exceeding 10 kmph up to the next station.

B. Unusual occurrence

160. Report of unsafe conditions likely to affect running of train.-

(1) The Driving Motorman, Conducting Motorman and Station Shift-in-charge shall advise the Traffic Controller

of any known conditions or unusual circumstances likely to affect the safe and proper working of trains.

(2) The Traffic Controller, on becoming aware of such defect or failure, shall inform the same to the departmental Supervisor concerned responsible for the maintenance.

SR 160 Report of unsafe conditions likely to affect running of trains.- (1) In case any unusual sound of the P.Way is heard by the Motorman of any train, he shall immediately inform such incident indicating the location to the Traffic Controller through Traction Loco Controller (TLC) by available means of communication or to the Station shift-in-charge and/or Panel Operator of the nearest station for communications to the Central Control.

(2) On receipt of such information the Traffic Controller and the Station Shift-in-charge shall arrange for serving Caution Order to the next train to be vigilant at the location / over the section and to report to the Central Control if anything unsafe for train running is noticed.

(3) In case of any rail fracture/rail gap etc. being noticed by the Motorman, he shall immediately control the train short of the fracture/gap and inform the Traffic Controller. The Traffic Controller will immediately arrange to send back the train to the station in rear and advise the Driving Motorman accordingly exchanging private number. He will

also advise the concerned SSE/JE (P-Way) for rectification and certification of the P. Way for normal service.

(4) The Driving Motorman, on receipt of such advice from the Traffic Controller, shall arrange to take back the train in OFF mode of TPWS to the rear station cautiously consulting the Conducting Motorman and also keeping the passengers informed through Passenger Address system. In course of taking back the train to the rear station, the Motorman shall stop his train near the Starter Signal of the opposite direction and sound two long hooters and subsequently enter the station cautiously only on being exhibited green hand signal from the edge of the platform by an authorised Metro staff deputed by the Station Shift-in-charge.

(5) No further train movement over the section of the track shall be permitted by the Traffic Controller, unless it is certified fit with or without caution order by an Engineering (Civil) official, not below the rank of SSE/JE (P.Way).

(6) If it is not possible to take the train back to the rear station, arrangement for evacuation of passengers in the mid section shall be made after switching off the 3rd Rail current, as per procedure laid down in GR 151 and SR thereto.

(7) In case of experiencing any abnormal lurching /rough riding etc. the Motorman will inform immediately the incident to

the Traffic Controller /Station Shift-in-charge of the nearest station .He will also indicate whether he considers movement of train over the affected section with caution order safe or not.

(8) The Traffic Controller/Shift-in-charge, on receipt of such information shall inform the Engineering Official (SSE/JE (P.Way) as well as the SSE/JE (Elect.) / Rolling Stock/ Traction) for immediate remedial measures.

(9) If the Motorman reporting the incident considers it safe to run trains over the affected section with caution order, the Traffic Controller shall allow train movement with necessary caution order till the track is certified fit for normal service by an Engineering Official, not below the rank of SSE/JE (P.Way).

161. Action to be taken in case of accident.- (1) When a train is stopped between stations on account of accidents warranting protection of the adjoining track, Driving Motorman shall switch on flasher light of his train immediately to warn oncoming trains and shall apprise the Conducting Motorman of the fact by approved means of communication and control shall be informed.

(2) (a) Arrangement for medical aid, relief operation, transport of injured, ex-gratia payments etc. shall be made in accordance with Special Instructions;

(b) Necessary announcement regarding traffic regulations till the emergency lasts shall be made on the Public Address

System at stations and on trains or as otherwise considered necessary; and

(c) In case of serious accident involving suspension of services, injury to the passengers, details as considered necessary for information of the General Public should be made known through the Press and Other Media.

SR 161 (a) Arrangements **for Medical Aids etc. after Train Accidents :** Instructions dealing with medical aid, relief operations and other activities concerning restoration etc. of normal conditions are given in the Accident Manual.

CHAPTER-V

SYSTEM OF WORKING

162. System of working.- All trains working between stations shall be worked on one of the following systems,-

(1) Absolute Block System.
(2) One train only system.
(3) Automatic Block System.

SR 162 System of working.- (1)'Automatic Block Working System' will be the normal system of working.

(2) In case of failure of "Automatic Block System', the train operation will be done under 'Absolute Block System'

of working either on the whole line or only on the affected part of the line.

(3) 'One Train Only System' of the working will be resorted to when any one of the two running lines is obstructed fully or partially.

163. Authority to enter the block section. - (1) A Driving Motorman shall not take his train into the block section unless he has received an authority to proceed as specified under special instructions.

(2) Provided that in an emergency the Traffic Controller may permit a second train to enter the section in accordance with special instructions.

SR 163 Authority to enter the Block Section.- (1) Authority for enter block section is given in SR 189 (2)

(2) In case of emergency, the traffic controller may decide to permit another train into the Block Section. Before doing so, the following actions should be taken:-

(a) Before sending an assisting rake, normally the Traffic Controller shall decide to evacuate passengers from the disabled train as per procedures laid down vide SR 151. However, in certain extreme emergent conditions he may, at his discretion decide to utilize an assisting rake without evacuation of passengers from the disabled train.

(b) The Traffic Controller should decide which of the passenger train should be utilized for assisting a disabled rake or for sending to the site of obstruction. Considerations that will weigh with the Traffic Controller are:

(i) Proximity to the terminal.

(ii) Proximity to the place of disablement or obstruction.

(c) The train which has been decided to be utilized as an assisting train should be discharged of all the passengers at the previous station.

(d) The Traffic Controller shall advice the Driving Motorman of the assisting train making him aware of the duties, he is expected to perform. The Driving Motorman shall be given an exact idea as far as possible, of the nature of disablement/ obstruction and location etc. The Driving Motorman of the assisting train should be given clear instruction as to the manner in which the disabled train or obstruction would be cleared from the running line. The Traffic Controller shall also at the same time advise the Motorman of the disabled train about the assistance being given.

(e) The Driving Motorman of the assisting train shall proceed only after all the points enroute have been correctly set, all facing points are locked, hand signal exhibited and blocked line ticket with a caution order as per specimen in Appendix-2 & 3 are handed over. In the Block Line Ticket, details of the obstruction or disablement should be specifically indicated.

(f) The assisting train will be driven with a speed not exceeding 20 kmph. with Driving Motorman in the leading cap facing the disabled rake.

(g) The assisting train shall be stopped about 40 meters short of the disabled trains have communicated with each other on radio telephone/ Emergency telephone, the Driving Motorman of the assisting train will move his train at a speed not exceeding 5kmph, and two trains shall finallybe coupled.

(h) The coupled trains shall be moved to the station as per the instruction of the Traffic Controller and passengers shall be detrained on arrival.

(i) The disabled train will thereafter be taken to the carshed/ car depot for repair.

(j) The train documents of the original and assisting train will be returned to the Station-in-charge and the Driving Motorman of the Assisting Train will make an endorsement that the running line is clear in all respect and normal services can be resumed.

(k) The Traffic Controller on being satisfied that the disabled train has been taken away from the running line or that the obstruction has been removed for the passage of trains, he shall then give instruction to the Station-in-charge to resume normal services. The advice will be supported by exchange of Private Number.

A. Absolute Block System

164. Essential of absolute block system.- (1) Where trains are worked on absolute block system,-

(a) No train shall be allowed to leave a block station unless permission to approach has been received from the block station in advance; and

(b) Such permission to approach shall not be given unless the line is clear, not only up to the first stop signal at the block station at which such permission to approach is given, but also for an adequate distance beyond it.

(2) Unless otherwise authorised by approved special instructions, the adequate distance referred to in clause (b) of sub-rule (1) shall not be less than one hundred eighty meters.

165 Conditions for granting permission to approach.- The line shall not be considered clear and permission to approach shall not be granted unless,–

(1) the whole of the last preceding train has arrived complete and has cleared an adequate distance beyond the first stop signal as specified in sub-rule 2 of rule 164 above;

(2) all signal have been put back to 'on' behind the said train;

(3) the line on which the train is intended to be received is clear of any obstruction up to the starter or, at terminal block stations, up to the place where the train is required to come to a stop; and

(4) all facing points have been correctly set and locked for the admission of the said train and all trailing points have been set including isolation.

166. Rules and regulations for single line working on a double line section when one line is obstructed.- In case an accident to a train or track or other obstruction precludes the use of one of the lines on the double line section; the traffic may temporarily be worked over the other single line or over the portion of the

obstructed line which is clear of obstruction under the system of "one train only system" subject to the following,-

(1) The line or the portion of the line is free from all obstructions;

(2) If there is any point over the line or portion of the line on which the train shall run under "one train only system', the same is set and locked;

(3) The occupants of the affected train have been detrained and none is left inside tunnel. The affected train is not fouling the other line and same is properly secured.

SR 166 Introduction of "one train only system" of working when any one of the two running lines is obstructed "fully or partially".

In the event of any one of the running lines on the Dakshineswar - Kavi Subhash section being obstructed and if more than 30 minutes time is expected to be required to remove the cause of such obstruction, the traffic controller shall introduce 'One Train Only System' of working between Dakshineswar - Kavi Subhash section or between any two 'special class' stations observing all safety norms and shall run the train by the obstruction free running lines suspending 'Automatic Block System' and/or 'Absolute Block System' of working. In such case, the following procedures shall be observed:-

(1) The Traffic Controller shall first decide, with a view to give maximum frequency of train service, the portion of line/lines on which "One Train Only System" is to be introduced.

(2) The Traffic Controller, before introducing 'One Train Only System', shall ensure that the line or the portion of the line on which this system will be introduced is free from all obstructions.

(3) The Traffic Controller shall ascertain that all the moving rakes are either properly berthed at convenient places of safe distance or in case any one of the rakes has become disabled, passengers of such disabled rakes have been evacuated and other rakes have reached the nominated stations and have been stable conveniently after detraining all passengers.

(4) The Driving Motorman of the stabled rakes which are not to be utilized under "One Train Only System" shall be responsible to put on Parking Brake and take out the Motorman Keys after stabling the rake at the nominated place of safe distance and certify the fact to the Station-in-charge who shall in turn inform the Traffic Controller under exchange of Private Numbers through a diary entry.

(5) The Traffic Controller shall also ensure from the Panel Operator duly exchanging Private Number that all points on the section are correctly set and locked in favour of the line by which the trains shall run on 'One Train Only System'

and the panel key has been taken out and kept under the custody of the Panel Operator of the station.

(6) The Traffic Controller shall than advise all Station-in-charges on the section and the Driving Motorman of the rake to be utilized for service about the situation demanding the introduction of 'One Train Only System' suspending 'Automatic Block System'and/or 'Absolute Block System' and the line or portion of the line on which the system shall be introduced. The Station-in-charges of all station shall be turn make frequent announcement through P.A. System about the position for the information of passengers and Metro Railway staff. Panel Operator shall make an entry in red in the TSR to this effect.

(7) Block working of intermediate 'Special Class' stations between the section where 'One Train Only System' of working will be introduced shall be suspended and these stations shall be treated as 'Class D' stations till Automatic Block System and/or 'Absolute Block System' of working is reintroduced for running trains.

(8) All signals on the running lines in the nominated section shall be temporarily treated as out of use and trains shall be run on paper line clear ticket (O&M/T-3A) under 'One Train Only System'. But when a train shall run in the right direction by the nominated line, the dispatching terminal station shall issue 'permission to pass' all the signals enroute

at 'ON' position. The signals which are to be passed in 'ON' position shall be specifically indicated.

(9) 'Permission to approach' shall be obtained through Block Magneto phone /Rly. Auto phone / Central Control by the Panel Operator of the Terminal Special Class' Stations by exchange of private Numbers. When line clear shall be obtained by Panel Operator through Railway Auto telephone, they shall ensure by using Station name that they are communicating with the right person.

(10) The Panel Operator after obtaining 'permission to approach' shall handover to the Driving Motorman, a written advice about the circumstances of such introduction of 'One Train Only System' and permission to pass all the signals enroute when the train is running in the right direction etc. and also a written 'Authority to proceed'.

(11) The Traffic Controller shall ensure before introduction of 'One Train Only System' that adequate security measures for all the staff working in the stations, Motormen as well as station premises have been taken.

(12) The Traffic Controller, in the event of either not having any one of the entire up or down running line on the whole section free from obstruction or with a view to give maximum frequency of service, shall introduce 'One Train Only System' of working of train partly on the up line

between a section and partly on the down line between the rest section and thus converting the entire section, if such part sections are suitable available for safe carrying of passengers between the terminals on the entire section. Under these circumstance, the Traffic Controller shall arrange connections between the shuttle trains at the nominated station so that passengers of one shuttle train can avail the other shuttle train in a short time to reach their destination.

(13) This procedure shall be observed till the obstructed line is free from all obstructions, fit certificates for of running of trains are received and 'Automatic Block System' and/or 'Absolute Block System' of working is introduced.

(14) Before resumption of the 'Automatic Block System' and/or 'Absolute Block System' of working of trains the Traffic Controller shall ensure that –

(a) The obstruction line is free from all obstructions and fit in all respect for running of trains.

(b) Panels at all stations are in working order in all respects.

(c) The train/shuttle train (in case of truncated services) under 'One Train Only System' has/have reached the destination station.

After ensuring the above points, the Traffic Controller shall give message to all Station-in-charge to resume 'Automatic Block System' suspending 'One Train Only System'. An entry to this

effect shall then be made in TSR by Panel Operator on duty in red ink and normal working shall be resumed.

B. One train only system

167. Essentials of one train only system.- Under the One Train Only System, only one train shall be on a section at one and same time.

168. Condition for granting permission to approach and making over authority to proceed at block sections.- (1) Permission to approach shall not be given to a block station in rear, unless the block section between the stations is clear of all obstructions and the line on which the train is to be received is clear up to the place where the train is required to stop.

(2) Authority to proceed shall not be handed over at a block station to the Driving Motorman, unless permission to approach has been received from the block station in advance.

169. Procedure in case of accident or disablement on the "One Train Only System".-(1) If train become disabled and requires assistance or if an accident occurs which renders it impossible for the train to proceed, the Driving Motorman and the Conducting Motorman shall take action as laid down in rules 150 and 156.

(2) In case of accident, the Traffic Controller and Station Shift-in-charge of adjoining station shall take action as laid down in rule 161.

C. General

170. Block back and block forward.- Block back or block forward shall be done only on accordance with the procedure prescribed under special instructions.

SR 170 Block forward and Block back,-(1) The Panel Operator shall changing over the all Semi Automatic signal from auto mode to manual mode (if it is not a manual signal) and give a message with exchange of private number to the adjacent special class station(s) and Traffic Controller on Magneto Block Phone/Control Phone/Railway Auto Telephone.

(2) After receiving the message from special class station, the adjacent station Panel Operator(s) shall change the concerned departure Semi Automatic signal from auto mode to manual mode. He will then put safety collars on concerned departure signal button and shall give the confirmation message with exchange of private number.

(3) After completion of shunting movement the concerned station shall inform the Traffic Controller and give section clear message to the adjacent special class station(s) with exchang of private number.

171. Authority for shunting.- (1) When permitting shunting the Driving Motorman shall be given a written authority and shunt signal to be taken off with the procedure prescribed under special instructions.

(2) If shunt signal is out of order or inoperative then the Driving Motorman shall be given a written authority and hand signal shall be exhibited. Before giving such written authority the Panel Operator shall personally ensure correct setting and locking of points.

(3) The Motorman shall not back his train in the midway of shunting unless he is given a written authority by on duty Panel operator and hand signal passed.

172. Isolation of siding.- All siding lines must be isolated from the running lines except under approved special instructions.

173. Obstruction at a block station or in the block section after permission to approach has been given.- No obstruction shall be permitted outside the home signal and on the line on which the train is intended to be received after permission to approach has been given.

174. Shunting or obstruction in the block section.- Shunting or obstruction in the block section shall not be permitted unless the block section is clear and is either blocked back or blocked forward in accordance with the special instructions.

D. Automatic Block System

175. Essentials of Automatic Block system on double line.- (1) Where the trains on a double line are worked on the Automatic Block System,-

(a) the line shall be provided with continuous track circuiting, axle counters or any other similar approved device;

(b) the line between two adjacent block stations may, when required, be divided into a series of automatic block signaling sections each of which is the portion of the running

line between two consecutive stop signals, and the entry into each of which is governed by a stop signal; and

(c) the track circuits, axle counters or any other similar approved device shall so control the stop signal governing the entry into an automatic block signaling section that,-

(i) the signal shall assume 'OFF' aspect only when the line is clear for an adequate distance beyond the next stop signal in advance; and

(ii) the signal is automatically placed to 'ON' as soon as it is passed by the train.

(2) Unless otherwise directed by approved special instructions, the adequate distance referred to in sub-clause (i) of clause (c) of sub-rule (1) shall not less than 90 meters.

176. Duties of Driving and Conducting Motorman when an Automatic stop signal is to be passed at 'ON'.- (1) When a Driving Motorman finds an automatic stop signal with an 'A' marker at 'ON' he shall bring his train to a stop in the rear of the signal and after bring his train to a stop in the rear of the signal the Driving Motorman shall wait there for "one minute by day as well as by night and two minutes when visibility is impaired due to thick foggy or dusty or any other type of the bad weather" If, after waiting for this period, the signal continues to remain at 'ON' he shall give prescribed Code of whistle and exchange signals with the Conducting Motorman and then proceed ahead, as far

as the line is clear, towards the next Stop signal in advance exercising great caution so as to stop short of any obstruction.

(2) The Conducting Motorman shall activate the 'Yellow' flashing back light as per advice of the Driving Motorman when the train has been so stopped at Automatic Stop Signal.

(3) The Driving Motorman before proceeding ahead shall inform controller on duty about the situation with reference to the signal.

(4) When an Automatic Stop Signal has been passed at 'ON' the Driving Motorman shall proceed with great caution until the next stop signal is reached and even if this signal is 'Off' the Driving Motorman shall continue to look out for any possible obstruction short of the same and thereafter shall proceed cautiously up to that signal and shall act upon its indication only after he has reached it.

SR 176 (1):**when an Automatic stop signal is to be passed at 'ON':** (a) The 'ON' position of an Automatic Signal may be due to the presence of a train in the Automatic Signalling Section ahead including the overlap or due to an obstruction on the track or broken or a displaced rail or any other cause.

(b) The Driving Motorman after waiting for the due time at the signal at "ON" and if the signal continues to remain as "ON" Shall give prescribed Code of whistle (two long

whistles) and exchange Bell Code - two pause two (oo-oo), then proceed ahead cautiously.

(c) Therefore, when a Driving Motorman passes an Automatic Stop Signal at 'ON', he shall proceed with great caution at a speed never exceeding 15 (Fifteen) Kmph even if the Visibility may be quite clear. He shall go on proceeding with such caution, looking out for any possible obstruction and be prepared to stop short of the same, until he reaches the obstruction or near the next Stop Signal, as the case may be, even if this Signal may from some distance be seen exhibiting 'OFF' aspect.

(d) Where owing to the curvature of the line, fog, rain or dust storm or any other cause impairing visibility and if the line ahead cannot be seen clearly, the Motorman shall proceed at a very slow speed, which shall under no circumstances be exceeded to 8 (Eight) Kmph.

(e) Whenever any Automatic Signal is passed at 'ON' the Conducting Motorman shall record in his Train Journal the time of passing the Signal at 'ON' and the time of passing the next Stop Signal. All such cases of passing the Automatic Stop Signal at 'ON' together with the timings of passing the two signals shall be recorded in a special register to be maintained in the Control Office and this should be scrutinized by the Traffic Officers to ensure that the Motormen take not less than the minimum running time required for observing the speed restriction and cautious driving.

(f) When a train has to stop at an Automatic Signal at 'ON' the Driving Motorman shall draw his train as close as possible in rear of the Signal, in order to provide maximum possible margin for a train following cautiously behind it in accordance with GR 176.

(g) After passing an Automatic stop Signal at 'ON' the Driving Motorman of the following train shall ensure that a minimum distance of 100 metres or two clear kilometerage plates, whichever will be more, is maintained between his train and the preceding train or any obstruction on the line.

(h) After passing an Automatic Stop Signal at 'ON' the Conducting Motorman of a train shall watch that the Driving Motorman does not exceed the prescribed speed limit. In case the Driving Motorman exceeds the prescribed speed, the Conducting Motorman shall give three pause three (ooo - ooo) beats on the bell code to warn the Driving Motorman to follow the prescribed speed limit. However if the Driving Motorman does not control the prescribed speed of the train then the Conducting Motorman shall apply emergency brake gradually to bring the speed of the train to the prescribed speed limit.

SR 176 (2): The yellow flashing back light, once activated to be put "off" as per the instructions laid down in sub rule (3) of G&SR.132.

SR 176 (3):In case of passing an Automatic Signal at 'ON' the Driving Motorman shall inform the Controller on duty about the situation with reference of Signal and record the same. If he fails to inform the Controller on duty necessary action is to be taken by the Driving Motorman at the next Station(s).

177. Protection of a train stopped in an Automatic Block Signaling section.- When a train stopped in an Automatic Block Signaling section, the Conducting Motorman shall immediately checkup that both tail lamp and 'Yellow' flashing backlight are correctly exhibited and the Driving Motorman shall immediately report to the controller on duty over Train Radio Communication.

SR 177 (1). Protection of a train stopped in an automatic block signalling section.- Due to any obstruction, asset failure or for any other reason if a train is likely to detain for some time in the automatic block signalling section, the Conducting Motorman shall keep sharp look out and be ready to stop an approaching train running in the same direction. He will follow the sub rules (h) of SR-180 (2).

SR 177 (2). Regulation of trains between Belgachia and Mahanayak Uttam Kumar in both direction covering SA-1263 and AS-1168 under the Automatic Block Signalling System - When a Motorman of train finds the aspect of departure Semi-Automatic signal ('A' marker is glowing) and/or Automatic Signal as "Yellow" or "Red" the following rules to be followed by the driving Motorman to pass the signal.

(a) All Automatic & Semi Automatic departure signals are to be freely passed in "Green" aspect by Driving Motorman.

(b) If a Motorman of train finds the aspects of Automatic Signals as "Yellow" or "Red" then the driving Motorman will stop at the foot of the departure signal and will wait there for 2 minutes to assume the signal aspect as "Green". If the signal does not assume "Green" even after expiry of the stipulated time, then he will try to establish communication with the on duty Traffic Controller through Traction Loco Controller by any one of the available means of communications (CUG mobile phone or GSM-R communication or Hot phone provided at the end of platform at a 'D' class station. In case of advance "special Class' station is a point zone station (reversal facility), the Motorman shall seek permission from Panel Operator through Magneto phone. He will start from the departure signal only after getting permission from the Traffic Controller or Panel Operator under exchange of private numbers.

(c) (i) Before giving such permission to the driving Motorman, the Traffic Controller or Panel Operator shall ensure that the section in advance is clear up to the departure (Semi-Automatic) signal of the next station by observing Train Management System (TMS) by Traffic Controller or panel board by Panel Operator.

(ii) In case of failure of TMS the Traffic Controller shall confirm the position of the train immediately in advance of the affected train (in the rear) and has cleared the departure signal of the next station. Then he will allow the affected train to pass the signal by exchanging of private number.

(d) The driving Motorman shall pass the Semi-Automatic signal at yellow aspect on both direction where "**permitted to pass at yellow"** board is provided on signal post, when the station in advance is "D" class station and shall not pass the Yellow aspect of Semi-Automatic signal where "**permitted to pass at yellow"** board is not provided, when the station in advance is a 'special class' station.

(e) In case of a Motorman of train finds aspect of Semi-Automatic signal is at 'ON' and does not assume as 'Yellow' or 'Green' after waiting of 2 minutes then the following course of actions are to be initiated by the Motormen, on duty Traffic Controller, Panel Operator and on duty Traction Loco Controller :-

(i) The driving Motorman shall inform the Traffic Controller through Traction Loco Controller disclose his identity giving his name, Train No., Rake No. and Signal No. while seeking permission to pass the signal in "Red" aspect by exchange of private Number with Traffic Controller.

(ii) The Traffic Controller shall give the permission to the Driving Motorman to pass the signal as rule laid down in sub-clause (i) & (ii) of Para (c) above.

(f) In case the situation persists for long time, the Traffic controller will advice the shift-in-charge of the Special class station to depute the panel operator and Traffic Controller will guide the panel operator about the position and condition of the section for the first train in both the direction.

(g) The panel operator will obtain section clearance of the immediate preceding train from the station in advance and the station in advance is to comply that the said train has cleared the departure signal of his station. The process to be confirmed by exchanging private number. Then the Motorman whoever is nearer to the panel to be exhibited green hand signal to proceed.

(h) In case it is authorised to pass a semi-Automatic or an automatic departure signal with "Red" aspect, he shall proceed up to the next signal at a speed not exceeding 15 kmph when view ahead is clear and 8 kmph when view ahead is not clear. The motorman, while proceeding ahead, shall observe all the existing speed restrictions and instructions stipulated in the SR – 176.

178. Condition for taking 'OFF' Manual Stop Signals in Automatic Block Territory.– (1) Home Signal – when a train is approaching a Home Signal, otherwise than at a terminal station, the signal

shall not be taken 'Off' unless the line is clear not only up to the Starter but also for an adequate distance beyond it.

(2) Last Stop Signal – The last stop signal shall not be taken 'Off' for a train unless the line is clear up to the next Automatic Stop Signal and adequate distance beyond it.

(3) The adequate distance referred to in sub-rules (1) and sub-rule (2) shall not be less than ninety meters.

179. Driving Motorman to report failure.- In case of failure of automatic stop signal, the Driving Motorman shall report to the Controller on duty over available means of Communication and follow rule 176 and the Controller on duty shall promptly report the failure to the Station Shift-in-charge of the Panel Interlocked Station in rear and in advance of the signal in question and also report to Signal official concerned.

180. Procedure during failure of Automatic Signaling.-When a failure of Automatic Signaling is likely to last for some time or cause serious delay, trains shall be worked from station to station over the section or sections concerned as per the special instructions.

SR 180 (1) : Failure of Automatic Signals likely to last for some time and cause serious delay, when means of communications are available.- In the event of failure of all signals occurring in an area consisting of two or more stations of the Automatic Block Territory, then all concerned are to be informed and the following procedures are to be adopted,-

(a) Before any train is allowed to enter the affected section the Motormen of the train are to be advised in writing in the prescribed form O&M/T-3A by the on duty Panel Operator of the station. The on duty Traffic Controller and Panel Operator of the Special Class Station in advance are also to be kept apprised of the circumstances.

(b) The Panel Operator on duty at the station in rear of the affected section shall obtain "Permission to Approach" for the train by any one of the following means of communications i.e Magneto phone, Control Phone, Railway Auto Phone and/or any other means of communication as per special instruction.

(c) The Panel Operator on duty at the station in advance shall not give such "Line Clear" unless –

(i) The whole of the last preceding train has arrived complete.

(ii) the line on which it is intended to receive the incoming train is clear at least 90 meters beyond the Starter or the place at which the trains usually come to a stand and

(ii) all points have been correctly set and all facing points locked for the admission of the train on the said line.

(d) (i) The Driving Motorman of the first train entering the affected section on "Authority to Proceed" O&M/T-3A shall proceed with utmost caution and must not run at a speed exceeding 25 KMPH, under any circumstances subject to other speed restrictions enforced. The Driving Motorman shall continue to look out for any obstruction until he reaches the station ahead.

(ii) After ensuring that the first train has arrived safely at the station ahead of the affected section, the Driving Motormen of all subsequent trains shall also proceed with great caution, subject to other speed restrictions enforced and must continue to look out for any possible obstruction.

(e) The Panel Operator shall give the Driving Motorman of each train,– An "Authority to Proceed" on specified form O&M/T-3A. Distinguishing number(s) of the departure signal(s) required to be passed shall also be indicated on this authority, authorizing the Driving Motorman to pass it/them.

(f) Before handing over the "authority to Proceed" all the points over which the train will pass shall be correctly set and facing points locked.

(g) When approaching the next station, the Driving Motorman shall bring his train to a stand before the first stop signal and sound one long whistle. The Panel Operator after

satisfying himself that all is safe shall arrange for a man in uniform to pilot the train from this signal.

(h) Clearance of the section by each train shall be intimated to the station in rear under exchange of private numbers.

(i) All activities of the train working during the failure period are to be recorded in TSR (Train Signal Register). Section Controller shall be kept advised of all train movements taking place in the affected section.

(j) As soon as signals are put right by competent authority, normal working of trains on Automatic Block System may be resumed, after exchanging messages with private numbers by the staff concerned, ensuring that the section is clear. Controllers permission, if possible, should be obtained before resumption of normal working.

(k) All records in connection with train working on this system shall be retained at the station and Traffic Inspector of the section must scrutinize them and submit his report to Dy. COM within 7 days of the resumption of the normal working.

SR 180 (2) : Failure of Automatic Signals likely to last for some time and cause serious delay, when no means of communications are available.- In the event of failures of signals occurring in an area consisting of two or more stations, working under Automatic Block System and when trains cannot be worked by any of the following means i.e Magneto phone, Control Phone, Railway

Exchange Auto Phone and/or Any other authorised means of communications.

(a) The movement of trains on the affected section shall be controlled by such stations, where Semi Automatic Stop Signals are provided.

(b) All the points over which the trains will run within the affected sections shall be correctly set and facing points locked before the movement of any train is authorized over them.

(c) Before any train is allowed to leave, the Driving and Conducting Motormen of the train will be apprised of the situation by the on duty Panel Operator.

(d) The Driving Motorman shall be given an "Authority to Proceed "without line clear on the prescribed form O&M/ T-7A or O&M/T-8A for Up and Down lines respectively.

(e) A caution order with a speed not exceeding 15 KMPH over straight line and not exceeding 08 KMPH over curvature or when view ahead is not clear, to be served to the Driving Motorman.

(f) No train shall be allowed to enter an affected section until there is a clear interval of 15 minutes between the trains about to leave and the train which has immediately proceeded.

(g) In the event of a Motorman approaching or passing any portion of the line, where view ahead is not clear, he is to keep a sharp look out and to use the cab whistle freely.

(h) The Conducting Motorman, in addition to activation of the "yellow" flashing back light shall keep a sharp look out in the rear and take necessary precaution to attract attention of the Driving Motorman of an approaching train by sounding two long whistles.

(i) While approaching the next station the Driving Motorman shall bring his train to a stand at the first Stop Signal and sound one long whistle. The Panel Operator after satisfying himself that all points have been correctly set and facing points locked, shall arrange for a man in uniform to pilot in the train from the signal displaying green hand signal from the edge of platform nearest to the first stop signal.

(j) The Driving Motorman shall make over the "Authority to Proceed without "Line Clear" to the Panel Operator of the nominated station at the end of the section. This should be kept by the Panel Operator in his personal custody for inspection of the same by the TI of the section, who shall prepare a report and produce his report to Dy. COM within 7 days of resumption of communications.

(k) A record of all trains passed over the affected section on "Authority to Proceed without Line Clear" during the

course of total interruption of communication shall be maintained in the Train Signal Register.

(l) Trains must continue to work on this system until either the signals are put right or any one of the means of communications is restored by the competent authority.

(m) Permission to approach shall not be obtained or given by any of the means of communication which has been restored until the Panel Operators of both the stations have satisfied themselves that all trains dispatched from the station have arrived complete at the station at the other end under exchange of private numbers. This shall be intimated to Traffic Controller, if possible.

181. Movement of trains against the direction of traffic on the Automatic Block System.- In Automatic signaling territory, trains shall run in the established direction of traffic only and the movement of trains against the established direction of traffic is not permitted and in an emergency, when it becomes unavoidably necessary to move a train against the established direction of traffic, the same shall be done only under special instructions ensuring that no conflicting movement is permitted and the last preceding train has cleared the signal overlap, as may be applicable.

SR 181 (1) Movement of trains against the direction of traffic,- In Automatic signaling territory, the movement of trains against the established direction of traffic is not permitted. In case of an

emergency, the Traffic Controller shall permit to move a train against the established direction of traffic. Before doing such regulation of train, the Traffic Controller will act as follows,-

(a) if the rear station of the stranded train happens to be "D" class station, the line is to be considered clear not only up to the platform area of D class station but also upto the Departure signal of special class station in rear be/it Semi-Automatic Signal or Manual signal.

(b) the rear station of the stranded train happens to be Special Class station, the line is to be considered clear not only up to the platform area of special class but also upto the Reception signal of the said station in rear be/it Semi-Automatic Signal or Manual signal

(c) the aspect of the signal in all respect to be kept at 'ON' position.

(d) The Driving Motorman of immediate following train to be informed of such movement and to be advised to stop his train till further advice through TLC under exchange of private number

(e) Then Driving Motorman of the stranded train will be permitted to proceed against the establishment of traffic through TLC under exchange of Private number.

The driving Motorman shall move his train and come to stop at the end of rear Platform and shall give a long whistle. Thereafter the train will be piloted in by displaying green hand signal from the edge of the platform through competent Traffic staff of the said station, after ensuring and securing of the intended route for reception of the train.

SR 181 (2) Rules and regulations for working of trains under the Automatic Block System, on Double Line, during obstruction of one of the lines, when signals are operative and means of communications are available.-

When it is desired to introduce temporary Single Line Working on Double Line on available means of communications, the Panel Operator at one end of the affected section shall on receipt of reliable information in writing that one line is clear, takes steps to introduce temporary Single Line Working on that line in consultation with the Section Controller and the Panel Operator of the station at the other end of the section.

(a) If there is reason to suspect that the line over which temporary Single Line Working is to be introduced is also fouled or damaged, temporary Single Line Working shall not be introduced until a responsible engineering official not below the rank of an Junior Engineer (JE) has inspected that section and certified that the path is safe for the passage of trains. After getting this certificate Traffic Controller on

duty shall initiate steps for temporary Single Line Working on Double Line.

(b) The movement of trains on UP/DN Line of the affected section shall be controlled by Kavi Subhash, Maha Nayak Uttam Kumar, Maidan, Central, Girish Park, Dumdum, Noapara, Baranagar and Dakshineswar stations, where rake reversal facilities are available.

(c) All signals at the intermediate Special Class stations are to be kept in Automatic mode and signals are to be treated as out of use.

(d) Before introduction of Single Line Working trains on run on the non-obstructed UP/DN line, on which Single Line Working will be introduced, are to be admitted at as per sub rule (3) above, and the section between two nominated station is to be confirmed as section clear by exchange of private numbers between the two panel operators..

(e) Train Signal Registers are to be introduced at either end of the affected section.

(f) "Permission to approach" shall neither be asked for nor given unless the Panel Operators of two nominated stations have assured under exchange of private numbers that the line on which a train is to be received is clear at least 180 meters beyond the place at which the trains usually come to a stop.

(g) For starting a train on Single Line Working on Double Line an authority to proceed is to be handed over to the Driving Motorman in a prescribed form O&M/T-3A. The authority to proceed is to be handed over to the Motorman only after ensuring that the route for the train is correctly set and secured.

(h) A caution order in the prescribed form O&M/T-2 is to be handed over to the Driving Motorman of each train indicating the line on which the train is to run treating all signals in between the said nominated stations as out of use. Subject to any other speed restrictions enforced speed of the train should not exceed 25 KMPH.

(i) In case of trains running on the right direction numbers of the intervening semi automatic and automatic signals are to be clearly indicated in the prescribed form O&M/T-3A, treating these signals as out of use and authorizing the Driving Motorman to pass these signals at "ON". On arrival of the semi automatic approach signal of the nominated station the Driving Motorman shall come to a stop and shall give a long whistle and from there the train will be piloted displaying green hand signal from the edge of the platform after ensuring correct setting and securing of the route for reception of the train.

(j) In case of a train running in the wrong direction the Driving Motormen shall bring his train to a stop opposite to the first stop signal of the nominated station pertaining to the

correct line or at the last stop signal pertaining to the wrong line on which he is running whichever he comes across first and give a long whistle and from there he shall be piloted displaying green hand signal from the edge of the platform. Such green hand signal shall not be displayed unless it is ensured that the line on which the train is intended to be received is free from obstruction, and route is correctly set and secured.

(k) On receipt of a written certificate from a responsible Engineering official (Civil, Electrical and/or S&T) not below the rank of a Junior Engineer (JE) that the obstructed track is free for passage of trains the Panel Operator shall issue a message to other stations under exchange of private numbers and shall decide in consultation with the Traffic Controller that train, after the passage of which, normal working shall be introduced.

(l) An entry shall also be made in the Train Signal Registers of the stations concerned showing the time at which Double Line Working was suspended, Single Line Working was introduced and normal working resumed.

(m) All records in connection with temporary single line working shall be retained at the stations for inspection by the inspecting officials.

(n) TI of the section shall scrutinize the record and shall send a report to Dy. COM within 7 days of resumption of normal working.

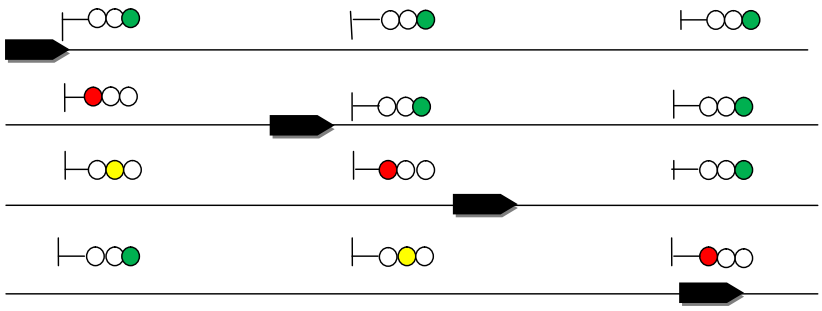
182. Procedure when Semi-Automatic Stop Signal at 'ON'.- (1) When a Semi- Automatic stop signal is worked as an Automatic Stop Signal, rule 176 shall apply.

(2) When a Semi-Automatic Stop signal is working as Manual Stop signal other than approach signal and becomes defective, it may only be passed in accordance with the special instructions.

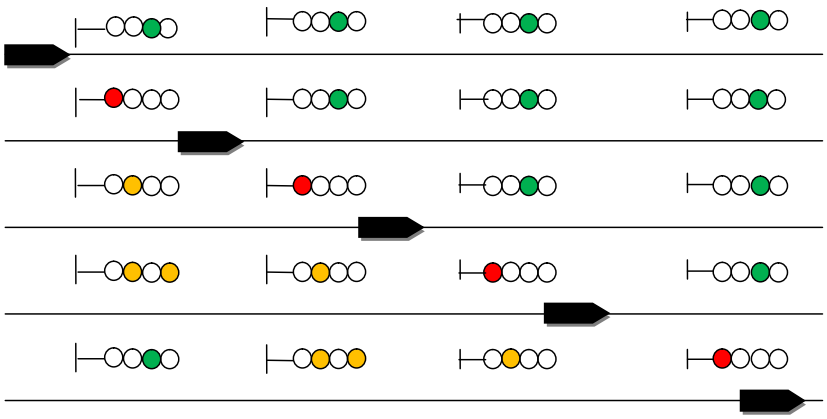
(3) When a Driving Motorman is authorised to pass a Semi-Automatic Stop signal at 'ON' by taking 'Off' the Calling-on signal fixed below it, he shall follow the precautions stipulated in rule 176.

Automatic change of sequence of aspects behind the train in three-aspect and four-aspect signaling is illustrated in the following diagrams, which are not drawn in scale,-

AUTOMATIC CHANGE OF SEQUENCE OF ASPECTS BEHIND THE TRAIN IN THREE- ASPECT SIGNALING TERRITORY



AUTOMATIC CHANGE OF SEQUENCE OF ASPECTS BEHIND THE TRAIN IN FOUR- ASPECT SIGNALING TERRITORY.



SR 182 (1): Semi-Automatic stop signal is worked as an Automatic Stop Signal,- If semi automatic reception signal of a 'Special Class' station becomes defective (no light, not assuming to "off" even after clearance of the next signalling section and overlap and/or showing conflicting signal lights) the following procedures are to be adopted:

(a) The Panel operator shall ensure that the approaching train has come to stand at the foot of the reception signal.

(b) He shall ensure that conditions for taking "off" the reception signal have been fulfilled.

(c) A competent Railway person, in uniform, will stand at the platform edge nearest to the defective reception signal to display green hand signal.

(d) Observing the green hand signal the Motorman will sound two long whistles and draw his train up to the next stop signal.

(e) When due to curvature, the competent Railway person referred in Para (c) displaying " Green" hand signal is not visible by the Motorman, the Motorman on being authorised by the Panel Operator of the station supported by a private number through Signal Post Telephone (SPT) or other available means of communication to pass the reception signal at "ON' or 'No light' shall start the train cautiously and draw it upto the place or upto the edge of the platform whichever is earlier, from where the displaying of the green

hand signal by the Railway person referred in Para (c) may be visible. After observing the display of 'Green' hand signal by the Railway person in uniform, the Motorman shall draw his train upto the platform.

SR 182 (2) : Semi-Automatic Stop signal is working as Manual Stop signal other than approach signal and becomes defective,- If semi automatic departure signal of a panel station becomes defective (no light, not assuming to "off" even after clearance of the next signaling section and overlap and/or showing conflicting signal lights) the following procedures are to be adopted,-

(a) The Driving Motorman is to be served with O&M/T-3B to pass the defective departure signal at "ON" and to proceed up to the next automatic stop signal cautiously. Before serving of O&M/T-3B the on duty Panel Operator shall ensure that the route is correctly set and secured and the next signalling section with overlap is clear.

(b) The Driving Motorman, after getting the written authority to pass the defective departure signal at "ON" will sound a long whistle and will start his train duly piloted by a competent Railway servant displaying a green hand signal from nearer to the defective signal. The Driving Motorman will draw his train ahead up to the next automatic stop signal with sharp look out and to be ready to stop short of any obstruction.

CHAPTER – VI

BLOCK WORKING

183. Means of getting or obtaining permission to approach.- Permission to approach, transaction for the running trains between block stations shall be regulated by means of any one of or a combination of the followings,-

(1) Track Circuits;
(2) Axle Counters; and
(3) Approved means of Communication.

184. Provision of instruments.- (1) Approved means of communication instruments shall be provided at all block stations.

(2) Panel Boards for granting of permission to approach through indication by means of electrical circuits shall be provided at all block stations to establish absolute block working as and when required.

185. Interference with points, signals, or related equipments and other gears connected with for obtaining or granting Line Clear etc.- (1) No Railway employee shall interfere with or disconnect any points, signals, continuous track circuits, axle counters, any other secured device for the purpose of obtaining or granting Line Clear, communication equipment or system, connected gears including interlocking gears, relay rooms for the purpose of effecting repairs, or for any other related purpose,

which would affect running of trains or endanger safety without prior written permission of station shift-in-charge on duty of the concerned station.

(2) No work requiring interference with points, lock bars, detectors, signals, interlocking gear, related equipments and other gears connected with, for obtaining or granting Line Clear etc., which is likely to involve safety of trains or traffic shall be commenced at a station except with the knowledge and written authority of the Senior Section Engineer or Junior Engineer (Signal) and station shift-in-charge on duty as per laid down procedure.

186. Disconnection and reconnection of Signal and Telecom equipments.- (1) The railway employee of Signal and Telecom department shall not undertake any work involving repair, replacement, alteration, additions, removal of any Signal and Telecom equipments or instruments affecting the train working, for obtaining or granting Line Clear etc. before a disconnection memo is issued by him and acknowledgement of station shift-in-charge on duty is obtained on the record foil of the Disconnect ion Memo. After completion of the work a Reconnection Memo must be issued.

(2) On receipt of Disconnection Memo station shift –in – charge on duty shall inform the controller about the gears to be disconnected and likely affection running of trains during disconnection period.

(3) After the work is completed the railway employee of Signal and Telecom dept. on duty shall ensure after testing that the disconnected gear is in proper working order. Thereafter the railway employee of Signal and Telecom dept. on duty shall give reconnection memo to the station shift-in charge on duty. The disconnection and reconnection Memo will be preserved and pasted on the opposite pages on the concerned Register.

187. Certificate of Competency.- (1) No person shall operate the electrical block instruments until he has passed a test in the operation of block instruments and unless he holds a certificate of competency granted by a railway employee appointed in this behalf by the Railway Administration.

(2) The certificate of competency referred to in sub-rule (1) shall be valid for a period specified in special instructions.

SR 187 (1) Certificate of Competency,- (a) A Certificate of Competency shall be issued jointly by Jr. Scale Officers or above of the Traffic Department and S&T Department.

(b) Such certificate of competency shall be issued to the Traffic staff by name and designation.

(c) This certificate shall be issued jointly, only after the Jr. Scale Officers or above of the Traffic and S&T Department are satisfied on questioning the Traffic staff, that he/she is conversant with the rules for train passing, both under

normal and abnormal conditions and that he/she is fit to hold independent charge.

(d) The Jr. Scale Officers or above of the Traffic and S&T Department may at their discretion subject the Traffic staff to a written test before issue of such certificate.

SR 187 (2) Validity of Competency Certificate,- The Certificate of competency referred to in sub-rule (1) shall be valid for a period of three years after which it shall be renewed with or without any further examination at the sole discretion of the joint certifying authority.

188. Train Signal Register. - (1) A train signal register shall be kept by the Station Shift-in-charge in accordance with special instructions.

(2) Actual timings of messages sent or received or train received or dispatched shall be entered therein as per special instructions. Timings shall be recorded to the nearest half-minute.

(3) All entries in the registers shall be made in ink or dot pen.

(4) No erasure shall be made in the register, but if any entry is found to be incorrect, a line shall be drawn through it so that it may be read at any time, and the correct entry made over it.

(5) The person who is the custodian of the register for the time being shall be responsible for all entries made therein and for correctly filling in each column thereof.

SR 188 (2) Departure/Arrival timings of trains shall be entered in the Train Signal Register (TSR), where panel operator are deputed.

189. Authority to proceed.- Authority to proceed for a train under the system of working shall be,-

(1) taking 'off' of the starter signal;

(2) any document or procedure specified in this behalf in special instructions.

SR 189 (2) **Authority to proceed**.- A line clear ticket, specimen of which is given in Appendixes together with the written permission to pass the signal at danger shall constitute a written Authority to proceed.

190. Driving Motorman to examine authority to proceed.- (1) The Driving Motorman shall ensure before starting the train that, –

(a) he has obtained an 'authority to proceed';

(b) the 'authority to proceed' given to him is proper authority under the system of working; and

(c) if the said authority is in writing, it is complete and duly signed in full in ink or dot pen with station stamp.

(2) If the conditions mentioned in sub-rule (1) are not complied with, the Driving Motorman shall have the mistake or the omission rectified before the train is started.

191. Conditions for closing the block section.- When trains are worked in Absolute Block system and when the train has cleared the block section and arrived at the station intact or cause of blocking the section has been removed, the block section shall be closed.

SR 191 Conditions for closing the Block Section(s),- In case of Absolute Block System territory, the train has arrived complete and comes to a stop at the normal stopping place, the Panel Operator at the Terminal block station or provision Block station, as the case may be, shall close the block section by operating the panel.

Before closing the Block Section, Panel Operator must ensure that,

(1) The train has arrived complete.
(2) All Signals behind the said train have been put back to 'ON' and
(3) Section between Starter Signal of the Station in rear and the Home Signal is cleared of all obstructions.

After the Block Section has been closed Panel Operator shall operate the required points for further train movement or shunting movement as the case may be under appropriate Signals and appropriate procedures.

However, in case of intermediate Block Stations, the Block Section shall be closed only after the train has cleared the Platform Zone and cleared past the Starter Signal.

192. Responsibility of Station Shift-in-charge as to authority to proceed.- (1) An authority to proceed shall not be given to the Driving Motorman except by Metro Railway servant appointed in this behalf by special instructions.

(2) Authority to proceed shall be given to the Driving Motorman after the procedure prescribed for the purpose has been followed.

(3) When the authority to proceed is in writing, it is correct, complete and signed in full in ink or dot pen with station stamp.

SR 192(1) Responsibility of Station Shift-in-charge regarding Authority to proceed.- (a) I**ssuing of Line clear Ticket,-** (i) The authority to proceed in the prescribed form of line clear ticket (O&M/T-3A) will be filled up by the Panel Operator after obtaining permission to approach from the Station in advance.

(ii) Each such ticket shall bear a serial number which shall be recorded in the Train Signal Register, the numbers for UP & Down directions being clearly distinguished from each other.

(iii) Private Number shall be recorded in both figures and words.

(iv) The Line Clear Ticket shall be handed over to the Driving Motorman by the Panel Operator or the Pointsman or any other competent Metro Railway

staff authorized by the Station-shift-incharge for this purpose.

(b) **Withdrawing Line Clear Ticket**,- If for any reason a train has to be detained and line clear ticket already delivered to the Driving Motorman, has to be taken back, the Panel operator shall do so by a written memo.

(c) **Disposal of Line Clear Ticket,-** All Line Clear Tickets received by a Driving Motorman during his shift of duty shall be made over to the Crew Controller, when he signs off. The Crew Controller shall send a special report to the Dy.COM, if incorrectly prepared Line Clear Tickets are issued.

193. Failure of track circuits, axle counters, panel boards.- (1) Where track circuits provided for block working and their connections fail, or the axle counters when in case of block working fail to correctly count in and out, or the panel indications and trains are worked in Automatic Block System, are out of order, permission to approach shall be obtained through the approved means of communication.

(2) When permission to approach has been so obtained, an entry to the effect shall be made in the Train Signal Register and the train allowed to proceed on the issue of written authority to proceed which shall also bear remarks to that effect.

SR 193 (1) **Failure of Track Circuits, Axle Counters, Panel Boards.-** In case of failure of Track Circuits, Axle Counters and/or Panel Boards ,the panel operator shall followed the SR 180(1)

194. Form for written authority to proceed. (1) Authority to proceed shall be written on forms specially provided for the purpose by the Metro Railway administration.

(2) Such forms shall be bound up in books and kept at each Special class Station by the Station Shift-in-charge.

(3) No written authority to proceed shall be written out or signed until necessary.

(4) Every message dispatched in connection with the working of a train shall distinctly describe the train to which it refers.

(5) For every train, a separate enquiry and reply shall be sent.

SR 194 (2) **Forms for written authority to proceed. -** (a) A specimen of written 'authority to proceed' combined with 'Permission to pass signal at danger' is given in Appendix 4 & 5**.**

(b) Such forms bound up in books shall be kept in the custody of the Station-in-charge. One such book shall be issued at a time to the Panel Operator on train passing duty.

(c) It will be the responsibility of Panel Operator on train passing duty to keep the book in safe-custody and to ensure inaccessibility to unauthorized person.

(d) Loss of this book shall be promptly reported to the Station-in-charge who shall immediately make out a written report fixing responsibility and send the report to the controlling Traffic Officer.

195. Special responsibility as to operation of panel. - The Station Shift-in-charge on duty shall be responsible to ensure that, –

(1) no one but himself operates the panel for purposes of granting or obtaining of permission to approach; and

(2) no one except a person who holding certificate of competency is authorised to operate the panel.

SR 195 Special responsibility as to operation of panel, - (1) Panel Operator working on the panels:-

(a) Shall ensure that Panel Keys and axle counter resetting keys are in their possession. While taking over duty the Panel Operator shall insert Panel Key for operation of panel and axle Counter resetting key shall be inserted only when it is required for resetting the axle counter.

(b) At the time of taking over and making over duty, different counter readings shall be correctly recorded in the panel diary and shall every time be verified by the reliever on duty.

(2) (a) Only authorized person of S&T Department namely ESM/MSM/SSE/JE(Sig) shall be allowed to open the panel either for repair or for maintenance purpose when memo is served to the on duty Panel Operator at Panel.

(b) Before granting such permission, the Panel Operator shall ensure that the person is an authorized staff of the S&T Department as mentioned above. No staff below the rank of Electrical Signal Maintainer shall be allowed to work in the panel for repair of maintenance purpose.

(c) On being permitted by the on duty Panel Operator and after attending the panel such staff shall record in the Signal failure register the nature of failure if any attended to by him and the details of rectification. This shall be signed by him in full, giving his name and designation as well.

196. Preservation of messages and written authorities to proceed.- Train messages and written authorities to proceed shall not be destroyed before the time as laid down in the special instructions.

SR 196 Preservation of Messages.- (1) All operating books and forms e.g. T.S.R, Authority to proceed, caution order books, Private Number Books etc. shall be preserved for six months at the respective station. Unless otherwise required in connection

with any pending case, all such old and used records shall be disposed of by selling, after expiry of six months.

(2) Such disposal of old and used records must be done once in six months and essentially in presence of sectional TI.

197. Cancellation of permission to approach.- When permission to approach already granted is cancelled, the messages dispatched or received shall be entered in the train signal register.

198. Working of trains in case of failure of communication including total failure of communication.- In case of failure of communication, trains shall be worked between stations under absolute block system as follows,–

(1) When panel phone or magneto telephone provided for obtaining line clear fails, the line clear shall be asked through the Traffic Controller and line clear shall be obtained by the operation of line clear switch.

(2) When line clear switch is defective, line clear shall be obtained through panel phone or magneto phone exchanging private number and the authority to proceed will be paper line clear ticket indicating private number thereon.

(3) When both the line clear switch and panel or magneto telephone fail, the line clear shall be obtained through control phone exchanging private number and the authority to proceed will be paper line clear ticket. In such case, both the Station Shift-in-charges shall indicate arrival and

departure time of last proceeding train and the Traffic Controller shall keep a record of private number exchanged between stations.

(4) When all the above communication systems fail, the trains shall be worked on "Authority to proceed without line clear" subject to, –

(a) the Driving and the Conducting Motorman shall be advised about the circumstances;

(b) "Authority to proceed without line clear" on prescribed form (separate for up and down) shall be given to the Driving Motorman;

(c) a caution order restricting speed to twenty five Kmph over the straight and eight Kmph over a portion where view ahead is not clear shall be handed over to the Driving Motorman;

(d) train shall run at an interval as specified in special instructions;

(e) when approaching the station ahead the Driving Motorman must bring his train to a stand at the foot of the stop signal and shall move as guided by the signal or piloted post;

(f) paper line clear ticket should be issued as per special instruction; and

(g) the Driving Motorman shall hand over the authority to proceed to the Station Shift-in-charge at the end of the affected section who will preserve this for inspection.

(5) When all communications including the communication between the Traffic Controller and the Motorman through radio telephone or emergency telephone fail, the train service will be regulated as per special instruction.

SR 198 Details laid down on SR180 1 & (2).

199. Failure of radio communication between train crew and Traffic Controller.-In the event of failure of radio communication between the train crew and the Traffic Controller, the train crew shall use emergency telephone to contact the Traffic Controller and act in accordance with special instructions.

200. Use and operation of block working equipment. - The use and operation of the instruments provided for block working shall be governed by special instructions.

C H A P T E R – VII

PERMANENT WAY AND WORKS

201. Showing of signals to control train speeds.- Whenever due to lines being under repair or due to any other reason it is necessary to indicate to the Driving Motorman that he has to stop or proceed at a restricted speed,-

(1) a stop and proceed board or a speed indicator with a warning board of approved shape and size shall be provided for traffic in both directions under special instructions;

(2) the Driving Motorman of approaching train shall be served with a caution order, informing him of the restriction and the details there of.

SR 201 Imposing Speed Restrictions.- (1) Speed restrictions shall be classified as temporary, semi-permanent and permanent. Temporary restrictions are short term in nature and are not listed in the Working Time Table. Rules relating to permanent speed restriction shall also apply to semi-permanent restriction.

(2) Indicator boards as required for various speed restrictions as referred to in sub-rule (1) above and their use on the line shall be governed by the following:

(a) **Caution Indicator.-** This shall be vertical board of height 60 cm and width 17.5 cm as shown in figure S.R. 201 (2) (i) painted with luminous yellow and black paint. The reverse side of; the board shall be painted black. The board shall be fixed on left-hand side wall facing approaching train, 300 m in rear of commencement of restriction. This indicator shall be provided both for permanent and temporary speed restriction.

(b) **Speed Indicator**.- This shall be vertical trapezoidal board of height 35 cm and width 17.5 cm as

shown in figure SR 201 (2)(ii) painted with luminous yellow paint and the restricted speed at which train shall proceed painted with black paint. The reverse side of the board shall be painted black. The board shall be fixed on left hand side wall facing approaching train, 30 m in rear of commencement of restriction. This indicator shall be provided both for permanent and temporary speed restrictions.

(c) **Termination Indicator**.- This shall be a vertical semi-circular board of height 35 cm and width 17.5cm as shown in the figure SR 201(2)(iii), painted with luminous yellow paint and then letter 'T' in black paint. The reverse side of the board shall be painted black. The board shall be fixed on left hand side wall facing approaching train, 170m (length of longest passenger train on the section) in advance of the position where the speed restriction ceases. This indicator shall be provided both for permanent and temporary speed restrictions.

(d) **Stop Indicator.-** This shall be vertical board of height 60 cm and width 17.5 cm as shown in the figure SR 201 (2) (iv) painted with luminous red and white horizontal strips. The reverse side

of the board shall be painted black. The board shall be fixed on left hand side wall facing approaching train, 30m in rear of commencement of restriction. This indicator shall be provided both for permanent and temporary speed restrictions.

Fig,201(2) (i)
CAUTION BOARD

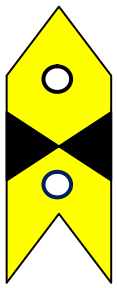


Fig.201 (2) (ii)
SPEED BOARD

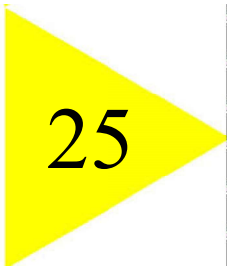
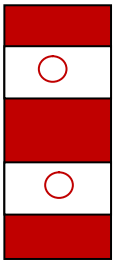


Fig.201 (2) (iii)
TERMINATION BOARD



Fig.201 (2) (iv)
STOP BOARD



C H A P T E R – VIII

POWER SUPPLY AND TRACTION

CURRENT ARRANGEMENTS

202. Switching 'off' traction current.- (1) Traction current will ordinarily remain 'on' unless needed to be switched 'off' either due to emergency or for any other purpose in accordance with instructions issued in this regard by the Chief Electrical Engineer.

(2) When it is necessary for traction current to be switched 'off' during traffic hours in emergencies like,-

(a) to stop serious arcing or fusing;
(b) to stop train in unusual circumstances ; and
(c) When the flood water overflows the central drain;

for a specified third rail section while the rest of the section remains 'on' the same shall be switched 'off' by the Traction Power Controller or through his authorised staff in the sub-station immediately after informing the Traffic Controller. The Traffic Controller shall also inform all concerned Metro Railway employees to ensure that there is no train movement over the affected section. The Traction Power Controller will issue emergency power block as per prescribed procedure to the authorised person who has informed him of the emergency.

(3) When the cause of 'switching off' is over, the person who has taken emergency power block will inform the Traction Power Controller to that effect and cancel the emergency power block. The Traction Power Controller will switch 'on' the power is accordance with the instructions issued in this regard by the Chief Electrical Engineer.

203. Switching 'on' traction current.- (1) When traction current has been 'switched off' the current shall be 'switched on' in accordance with instructions issued in this regard by the Chief Electrical Engineer.

(2) Before the switching 'on' the current, the Traction Power Controller shall obtain the permission of Traffic Controller.

(3) In all cases where possession of track has been taken for any purpose, the traffic controller shall give said permission under sub-rule(2) after receiving a certificate from the engineering official in charge that running line is safe and free from all obstructions.

(4) Before resumption of traffic, the Traffic Controller shall obtain a confirmation from Traction Power Controller that the third rail is safe and the power has been switched 'on'.

(5) The engineering official in charge nominated for the supervisory works over the section shall issue a certificate under sub-rule (3) after complying with procedure under special instructions.

SR 203 (5) Switching on the traction current instructions as per SR 71 (2) to be followed.-

PART-III

(TRAIN WORKING UNDER CBTC SYSTEM)

(AUTHORITY- Para D of Addendum and corrigendum No.01 dated 10.04.2023)

CHAPTER -1

RULES APPLYING TO METRO RAILWAY SERVANTS GENERALLY

204. Access control.– (1) All Metro Railway servants, in addition to identity cards, shall be provided with access control cards or authorisation signed by their controlling officers to allow them to visit places of Metro Railway system with restricted access in line of their duties.

(2) The following places in particular, shall have restricted access in addition to other places as notified from time to time by the order of authorised Officer, namely,-

(a) Guide ways, viaducts and tunnels ;

(b) receiving sub-station ;

(c) traction substation;

(d) auxiliary substation;

(e) signaling equipment room;

(f) telecommunication equipment room;

(g) uninterrupted power supply room;

(h) station control room;

(i) operations control centre;

(j) back-up control centre, where provided; and

(k) depot control centre.

SR (2) (a) Guide ways herein means, walkway.

CHAPTER –II

SIGNALS AND CONTROL

205. General.– (1) The following signals shall be used for controlling the movements of trains on the Metro Railway, namely,-

(a) cab signals;

(b) fixed signals; and

(c) hand signals.

(2) The aspects displayed by fixed signals are the same by day and by the night, in open and in tunnels.

(3) A fixed signal be placed, where practicable, on the left hand side of the track to which it refers, unless authorised otherwise under special instructions, and shall be visible from such a distance as will enable a Motorman to brake a train from twenty five kilometer per hour speed to stop before reaching the fixed signal and a repeater signal shall be provided at locations where due to obstructions such visibility is not available, except in depot. This signal sighting distance shall be specified under special instructions.

SR 205 (3) Location of fixed signals other than on the left hand side to the track - A fixed Signal shall be placed on the

left hand side of track with respect to direction of traffic. But when such placement of signal becomes inconvenient for train movement, it may be placed on the Right hand side or overhead (Motorman's eye level), as decided by the signal sighting committee comprising Sr. Supervisors of Traffic department, S&T department and Electrical department and finally approved by the Competent Authority. Normal movement of trains is governed by Cab Signals, but when such movements take place in degraded mode of operations (ROS/RM/Cut Out mode) the signal sighting distance shall not be less than 75 meters. A Repeating Signal shall be placed at the location from where visibility of signal is not available due to curvature or any obstruction.

206. Description of signals.– (1) Cab Signals,-

(a) Train movements on running tracks shall normally be governed by the Automatic Train Protection system which displays to the Motorman in the operating console,-

(i) actual speed of the train;

(ii) the maximum permitted speed at each point travel;

(iii) the distance the train is currently authorised to travel (where provided);

(iv) system alarms; and

(v) Messages.

(b) if the target speed indication and the target distance indication, where provided, are greater than zero, the indication is referred to as "PROCEED" indication;

(c) if either of these indications is "0", the indication is referred to as "STOP" indication;

(d) The Motorman is authorised to drive his Train up to the indicated speed as far as authority has been given for such purpose.

(2) **Fixed Signals,-** (a) on main lines, fixed signals are color light signals, either showing two aspects or three aspects; (b) two aspects fixed signals, where provided, shall be capable of showing a 'red' or a "white or violet" aspect, namely,-

(i) a "red" aspect indicates that a train must be brought to STOP short of the signal; and

(ii) a "White or violet" aspect indicates that the route is set and locked but may not be fully clear up to the next fixed signal and a train operating under cab signals may proceed underthe authority of the cab signals but a train operating on the sole authority of line side signals must stop and seek instructions from the Traffic Controller;

(c) three aspect signals, where provided, shall be capable of showing a "red", "white or violet" or "green" aspect, namely,-

(i) a "red" aspect indicates that a train must be brought to STOP short of the signal;

(ii) a "white or violet" aspect indicates that the route is set and locked but may not be fully clear up to the next fixed signal and a train operating under cab signals may proceed under the authority of the cab signals but a train operating on the sole authority of line side signals must stop and seek instructions from the Traffic Controller;

(iii) a "green" aspect indicates that the route is cleared to the next fixed signal and the train may proceed as far as the next fixed signal;

(d) when a fixed signal is not in use, the aspect shall be covered and the cover shall display two crossed white bars on a black background, the bars being not less than thirty centimeter long and ten centimeter wide.

(3) Depot Signals,- (a) in depots, fixed signals may be colour light or position light type Colour light type using red and yellow aspects should be used in the manner as specified below,-

(i) a "red" aspect indicates that a train must be brought to STOP short of the signal; and

(ii) a "yellow" aspect indicates that the route is set, locked and clear and a train may proceed in "Restricted Manual" mode as far as the line is clear and the Motorman must keep a good look out for any obstruction;

(b) in position light type signaling,-

(i) two white lights displayed horizontally shall mean that a train must stop; and

(ii) two white lights displayed at an angle shall mean that a train may proceed in Restricted Manual mode as far as the line is clear and the Motorman must keep a good lookout for an obstruction;

(c) the depots and stabling lines shall be isolated from the running line through an approved means.

SR 206 (2) & (3) Fixed Signal:- On main line fixed signals are provided with two aspects colour light having Red and Violet or three aspects colour light having Red, Violet and Green.

207. Provision of Signals,- (1) Fixed signals shall be provided on running lines at the approach to all points and crossings of interlocked areas and located in such a way that trains will stop at a safe distance from any fouling movement or location.

(2) All depot tracks and any other tracks not equipped with Automatic Train Protection shall be controlled by fixed signals for both entry to and exit from the main line.

(3) All single ended tracks shall be provided with at least one permanent red aspect light to indicate the point beyond which train shall not proceed.

(4) Stopping markers shall be provided at all platforms to indicate where a train of a given length will stop for the convenient detraining and entraining of passengers:

Provided that where trains of varying lengths may operate, separate markers will be provided for trains of each potential length, and for bi-directional running.

208. Working of Signals and points.- (1) Control of signals and points shall be from a route setting panel or work-station, and complete routes, points and signals, will be cleared by a single set of operations under normal conditions.

(2) Any failure of vital equipments shall cause the signaling system to display the most restrictive indication.

(3) Any route which has been cleared for a train shall not be cancelled until it is cleared by the train entering the route except,-

(a) in case of emergency; and

(b) in case where operating conditions require that an alternate route be cleared and in this case, the alternative route shall not be made available for clearance until the pre-set time, defined under special instructions, has elapsed from the time the original route was cancelled.

(4) In conditions of failure of route setting controls, points can be set individually from Operations Control Centre, Station Control Room or locally as may be necessary.

SR 208 (3) (b) Working of Signals and points -In case where operating conditions require that an alternate route be cleared and in this case, the alternative route shall not be made available for clearance until the preset time for 90 seconds have elapsed from the time the original route was cancelled in case of Main Line and Test Track and lapse of 45 seconds for Depot Lines. The route will be cleared immediately when the approach track is free.

209. Control of Signaling.- (1) (a) Main line signaling is controlled from an Operations Control Centre and operates normally under automatic control with routes being set and train intervals regulated by computer control;

(b) Signaling system will permit more than one train at a time in one Tunnel Ventilation Section. This can be restricted to one train in one Tunnel Ventilation section in case of emergencies, and in a case the Traffic Controller decides to send additional trains in a Tunnel Ventilation section already occupied by a train, he shall set the route manually for additional trains and shall advise Motormen about this before authorising them to proceed;

(c) the Traffic Controller, if required, may hand over control of the signals of a specific station to the Station Shift In-

charge and a local control panel or work-station shall be provided at the station for this purpose;

(d) in case of complete failure of control from Operations Control Centre, the entire control may be transferred to a standby backup control centre, if provided at an alternate location, which may be at separate locations for traffic control and control of traction power;

(e) the Traffic Controller shall have control of all routes on and to the main line as specified; and

(f) train movement shall normally be under computer control but the Traffic Controller has the capability of setting routes manually and of setting individual points, if necessary.

(2) **Safety Communication**,- All communication between Operations Control Center and Motormen, Station Shift In-charge, maintenance staff of electrical, rolling stock, signal and telecommunication and track structures department and other pertaining to movement of trains shall be recorded with time stamping, and preserved for incident analysis and training and the mode of preservations and its duration shall be specified in special instructions,-

(a) the Metro Railway servants shall initiate and acknowledge radio messages in a manner that ensures establishment of communication only between intended parties;

(b) messages affecting train movements shall be addressed by the Traffic Controller to only one train at a time:

Provided that in an emergency, a blanket message may be sent by the Traffic Controller to all trains in or approaching a particular area, which must be acknowledged individually by all concerned Motormen provided further that in an emergency, such message may be given by the Station Shift In-charge, if authorised by the Traffic Controller in this behalf.

(3) Running Lines,– (a) the Signaling system on the running line shall be an Automatic Train Protection system;

(b) if the speed which permits a train running on Automatic Train Protection to stop under normal braking within a limit of safety, is exceeded, and the Motorman fails to take corrective action on the alarm generated, an irrevocable emergency brake shall automatically apply which ensures that the train does not proceed beyond the safe limit;

(c) normal operation of the train running on Automatic Train Protection is monitored from indication on the Motorman's console and each main running line is duly signaled for operation;

(d) certain lines are equipped for automatic train operation with provision for the Motorman to assume manual control of the train if required;

(e) in the event of failure of the Automatic Train Operation equipment and on lines not so equipped, Motorman shall control their train up to the speed indicated on the console;

(f) where no cab indication is available, train shall be automatically restricted to a maximum speed of twenty five kilometers per hour; and

(g) fixed signals are provided at approach to all points and crossings of the interlocked area, and certain other locations.

(4) (a) Station Shift In-charge's control panel or work-station shall have the capability of setting routes within the area of control, and of setting individual points when necessary; and

(b) on each platform, and in station control room, there shall be emergency stop plunger, which when operated shall cause any approaching train to stop before it enters the platform. In this situation any train entering, stationary or leaving the platform shall experience a full irrevocable emergency brake application.

(5) (a) The depot tracks may not be equipped with full complement of Automatic Train Protection and trains shall be automatically restricted to a maximum speed of twenty five kilometers per hour and the Motorman may further restrict the speed of the train in the depot lines to a lower value as provided in the special instructions;

(b) movements within depots shall be controlled by fixed colour light signals or position light type signals;

(c) control of movements within the depot shall be exercised by a Depot Controller from a control panel or work-station located within the depot or at some other suitable location;

(d) the Depot Controller shall use a control panel or work-station for setting and clearing of routes within the depot;

(e) instructions to Motormen as to which siding they shall drive or give permission to depart may be given by train radio on a dedicated depot channel distinct from that used by Operations Control Center;

(f) in the event of the failure of the radio, a Public Address system may be used;

(g) a verbal instruction as well as proceed indication from the fixed signals shall be received before a train may move into a depot from main-line; and

(h) both verbal instruction and proceed indication from the fixed signals shall be received before a train may move into main line from a depot.

(6) (a) Local operation of points on running lines as and when required may only be undertaken by a Station Shift In-

charge with the permission of the Traffic Controller. Such transfer of control should be acknowledged by the Station Shift in-charge before the local control can be activated;

(b) the crank handle used to manually operate the points is interlocked through a key which, when released by the Station Shift in-charge, shall inhibit setting of routes over the points concerned; and

(c) some points in depots may be trailable. In the event of a route failure they need not be correctly set before a movement is authorised over them in the trailing direction. The non trailable points shall be protected by fixed signals or stop boards. Backing of trains over trailable points is strictly prohibited.

(7) (a) Where Some lines of the network are equipped with Automatic Train Operation, the Motorman shall close the train doors and start the train from a station and monitor its functioning;

(b) all Passenger trains shall be equipped with Automatic Train Protection equipment and can be driven manually under the control of the Automatic Train Protection system;

(c) if Automatic Train Protection information is not available from the track side equipment, the train can be driven with Traffic Controller's permission in "Run On Sight"

mode, or in "Restricted Manual" Mode, where the train is not equipped with Run On Sight mode, in which the on board Automatic Train Protection equipment restricts the speed of the train to twenty five kilometers per hour and when the Automatic Train Protection information is again available from the track, the mode automatically upgrades to Coded Manual mode;

(d) if the Automatic Train Protection is not available from the track or loco or cab side equipment due to fault or otherwise, the train may be driven with Traffic Controller's permission in 'Restricted Manual' mode, and in this mode the on board Automatic Train Protection equipment restricts the speed of the train to twenty five Kilometers per hour, this mode shall be used in depots and exceptionally on running lines when authorised by the Traffic Controller; and

(e) if the on board Automatic Train Protection equipment is also defective, the train may be driven in High Speed Cut out Mode, where available, or Low Speed Cut out Mode, as authorised by Traffic Controller and when so authorised by the Traffic Controller, the Motorman may open and operate a sealed switch and drive the train without Automatic Train Protection and in this mode the Motorman hall limit the speed of the train at forty kilometers per hour in High Speed Cut Out Mode, where available, and twenty five kilometers per hour in Low Speed Cut Out Mode and be responsible for safe movement of the train.

SR 209 (2) Safety Communication-All communication amongst Operations Control Centre, Motormen, Station Shift In-Charge, Maintenance Staff of Electrical, Rolling Stock, Signal and Telecommunication, Engineering department and others pertaining to movement of trains shall be recorded and preserved for incident analysis and retained for a period of minimum 7 days for normal operations.

However, in case of any unusual incident and special occurrences the recordings for the period as instructed by the Chief Controller, shall be retrieved and preserved in the form of a removable electronic media. Such retrieved data shall be under the exclusive custody of nominated telecom official for a period of 5 years. Such records shall not be made public by any Metro Railway official unless approval from the competent authority is obtained for such publication.

SR 209 (5) (a) The depot tracks may not be equipped with full complement of Automatic Train Protection and trains shall be automatically restricted to 25 kmph and the Motorman may further restrict the speed of the train in the depot lines to follow any caution already imposed or to stop the train short of any obstruction.

SR 209 (7) (e) In case the on board Automatic Train Protection equipment is defective, the train shall be driven in Cut out Mode, as authorised by Traffic Controller and when so authorised, the Motorman shall drive the train without Automatic Train Protection and in this mode the Motorman shall drive the train at a speed not

exceeding twenty five kilometers per hour and be responsible for safe movement of the train.

210. Train detained on Line.- (1) if a train operating under Automatic Train Operation or cab signals comes to a stop on a running line and does not receive a proceed code within sixty seconds, the Motorman shall inform the Traffic Controller by the radio and ask for instructions.

(2) The Traffic Controller shall check his indications and if he is satisfied that there is no train ahead, he may instruct the Motorman to proceed in Run On Sight mode or Restricted Manual Mode, as the case may be, exercising utmost vigilance so that he may stop short of any obstruction.

(3) If, after travelling some distance, a proceed indication is received by the train, the train shall automatically upgrade to the Coded Manual mode of control and the Motorman shall again inform the Traffic Controller. If the train is fitted with Automatic Train Operation, Automatic Mode of the control may be selected.

(4) If the cause of the problem is confirmed as a track side equipment malfunction, the Traffic Controller may instruct subsequent trains without waiting for the Motorman to seek instructions provided the preceding train has passed through the affected section and reported resumption of Coded Manual mode.

(5) A train operating without receipt of proceed code shall stop at fixed signals irrespective of their aspect, and the Motorman shall contact the Traffic Controller by the radio and ask for instructions.

(6) If a train operating under the authority of line side signals only stops at a fixed signal at danger and it does not clear within sixty seconds, the Motorman shall inform to the Traffic Controller by radio and ask for instructions.

(7) The Traffic Controller shall consult the concerned Station Shift-In-charge in control of the signaling and decide whether or not the train may proceed.

(8) If there are no points in the route ahead, the Traffic Controller may instruct the Motorman to proceed as far as the next fixed signal at a reduced speed, not more than twenty five kilometers per hour, such that he can stop short of any obstructions and if after travelling some distance a proceed indication is received by the train running on Restricted Manual mode, or Run On Sight Mode, the train shall automatically upgrade to the Coded manual mode of control and the Motorman shall again inform the Traffic Control; and if the train is fitted with Automatic Train Operation, Automatic Mode of the control may be selected.

(9) If there are points in the route, the Traffic Controller and the station controller shall examine the indication of the

points and if indications at the station and the Operations Control Centre agree that all points are set correctly and locked, the Traffic Controller may instruct the Motorman to proceed as far as the next fixed signal at a reduced speed such that he can stop short of anyobstruction and if after travelling some distance, a proceed indication is received by the train running on Restricted Manual mode or Run On Sight Mode, as applicable, the train shall automatically upgrade to the Coded manual mode of control and the Motorman shall again inform the Traffic Controller; and if the train is fitted with Automatic Train Operation, Automatic Mode of the control may be selected.

(10) If points are not indicated as set and locked, the Traffic Controller shall instruct the Station Shift in-charge to examine the concerned points. If they are lying in the incorrect position, he shall manually set the points from the station control room with the crank handle interlocked through a key which, when released, will inhibit setting of routes over the points concerned, and the points shall be secured with a clamp and padlocked and the train instructed by hand signal to proceed.

SR 210 (2) "utmost vigilance" here means "utmost caution"

211. Absence of cab signaling.- (1) Failure of the cab signaling shall initiate an irrevocable emergency brake application.

(2) The Motorman shall report the occurrence to the Traffic Controller and seek instructions.

(3) The Traffic Controller shall verify as far as practicable from indications on his diagram that the problem is not caused by a track side fault or another train and if no cause is apparent, he shall instruct the Motorman to select the Restricted Manual mode or Run On Sight mode, and try to move ahead exercising utmost vigilance so that he may stop short of any obstruction.

(4) If the train still does not move, the Traffic Controller shall authorise the Motorman to operate the Cut Out switch and to proceed in Cut Out mode of control to a suitable station, exercising utmost vigilance so that he may stop short of any obstruction. At the next station, passengers shall be detrained and the train worked to depot or a suitable siding.

SR 211 (3) & (4)" utmost vigilance" here means "utmost caution".

212. Failure of fixed Signals.- (1) If a Motorman observes that a fixed signal is not displaying any aspect, he shall stop his train and seek instructions from the Traffic Controller by radio.

(2) All, concerned staff shall then follow the provisions of sub-rules (7) to sub-rule (10) of rule 210 and rule 211.

213. Failure of route setting.-(1) If a route through an interlocked area cannot be set automatically or by manual control from the Operations Control Centre, the control of the area shall be passed to the local Station Control Room.

(2) If the route cannot be set from the Station Control Room signaling control panel or work-station, the Traffic Controller shall instruct the Motorman to secure his train and wait for instructions.

(3) The Traffic Controller and the Station Shift In-charge shall examine the indications for the points and if indications at the station and at Operations Control Centre agree that all points are set correctly and locked, the Traffic Controller may instruct the Motorman to select Run On Sight mode or Restricted Manual mode, as the case may be, and proceed at reduced speed such that he can stop short of any obstruction. Once cab signals show a proceed indication, Coded Manual mode shall be resumed; and if the train is equipped with Automatic Train Operation, then Automatic Mode may be resumed.

(4) If any point indication is missing or shows the points set for the wrong direction, or there is a discrepancy between the indications at the station and in Operations Control Centre, the Station Shift In-charge shall examine the position of the points himself. If they are lying in the wrong direction,

he shall manually set the points with the crank handle from the station control room and the points shall be secured with a clamp and padlock and the train instructed by hand signal to proceed, and if after travelling some distance, a proceed indication is received by the train running on Restricted Manual mode, the train shall automatically upgrade to the Coded manual mode of control and the Motorman shall inform the Traffic Controller. If the train is fitted with Automatic Train Operation, Automatic Mode of the control may be resumed.

(5) The Station Shift In-charge, after examining the position of the points under sub-rule (4), shall then return to the station and report to the Traffic Controller that the route remains secured and any subsequent train may be instructed by radio to proceed.

(6) In depot, the Depot Controller may instruct the Motorman by radio to proceed if,–

(a) point indications for all facing points in the route show the points as set and locked in the correct position;

(b) any points not showing an indication shall be traversed in the trailing direction only if the points are trailable; and

(c) If points for which indications are not available, have to be traversed in the facing direction, the Depot Controller shall ensure that the points are set manually and secured in correct position with the clamp and padlock before authorizing the train to proceed.

CHAPTER-III

SPEED AND WORKING OF TRAINS

214. Service Regularity.– (1) Every effort shall be made by Operations Control Centre Staff, station staff and train staff to ensure that scheduled intervals between trains are maintained.

(2) the Traffic Controller shall be responsible for maintaining the services at the scheduled level as far as practicable and for restoring the train services following a delay or disruption.

(3) the Traffic Controller at the Operations Control Centre may adjust the timetable and may intervene manually to set and clear routes if the timetable needs to be varied or in the event of a major disruption.

(4) Each Motorman shall start his train from terminal station as soon as he gets the Departure Order Indication.

(5) Each Motorman shall start his train from each intermediate station at the time indicated by the Departure Order Indication.

(6) Each Motorman shall follow any instruction from the Traffic Controller which varies the scheduled timings of his train.

215. Speed of trains.– (1) Every train shall be run on each line of the Metro Railway within the limits of speed as specified in the approved special instructions.

(2) The speed of the trains in Automatic Mode shall be automatically controlled by the Continuous Automatic Train Control system.

(3) In Coded Manual mode, the Motorman shall regulate the speed of trains according to the cab signals, the maximum permissible speed shall not be exceeded and the speed of the train shall be such that it can be stopped within the distance indicated, as being the limit of safety, and the failure to do so shall result in irrevocable application of emergency brakes which shall be viewed as a failure on the part of the Motorman.

(4) In Restricted Manual mode or Run on Sight Mode, as the case may be, the maximum speed of the trains shall be automatically regulated to twenty five kilometer per hour and the Motorman shall further restrict the speed as required by special instructions.

(5) In Cut out mode, the speed of train shall be manually regulated by the Motorman as required and the power to the train propulsion system shall be cut off above twenty five kilometer per hour in case of Low speed cut out mode and forty kilometer per hour in High speed cutout mode. The Motorman shall further restrict the speed as required by special instructions.

(6) The maximum train speed, when passing through a station platform, shall be as per the Approved Special Instructions, and in case it is not possible to close any platform screen door or platform edge door, where provided, while receiving, dispatching or passing any train, the speed of the train shall be restricted to twenty kilometer per hour and an audible warning shall be sounded while entering or leaving the platform.

(7) The maximum speed of trains in shunting shall not exceed the speed limit as prescribed in the Approved Special Instructions in case of main line, and special instructions on other lines.

(8) The speed of train in condition of poor visibility while operating in Restricted Manual Mode or Run on Sight Mode or Cut Out Mode shall be governed by special instructions.

SR 215 (4) The speed of trains in Restricted Manual mode, Run on sight mode and Cut out mode shall be restricted to 25 kmph. However, the speed shall be further restricted in the following circumstances:-

(1) In case of imposition of caution over the section being lower than 25 kmph.

(2) If the maximum permissible speed imposed for any Rolling stock is less than 25 kmph.

SR 215 (5) sub rule **(7)(e)** of SR 209 shall be followed.

SR 215 (7) The maximum speed of trains while performing shunting on other than the main line shall not exceed 10 kmph. The shunting speed shall further be reduced while coupling of such vehicle, so that there is no damage caused to the shunted vehicle.

SR 215 (8) In case of poor visibility and train in RM/ROS/Cut Out mode, Motorman shall be cautious and train speed will be such that the train can be stopped short of any obstruction.

216. Caution Order.– Whenever in consequence of the track, works or traction equipment being under repair, or for any other reason, special precautions are necessary, a caution Order detailing the kilometers between which such precautions are necessary, the reason for taking such precautions and the speed at which the

train shall travel, shall be handed over to the Motorman at the stopping station short of the place where such precautions are necessary or at such other stations or work place and in such a manner as specified under special instructions and in addition, the Traffic Controller and the Station Shift In-charge shall ensure that the caution order for speed restriction has been suitably incorporated in the Continuous Automatic Train Control system or Communication Based Train Control System.

SR 216 Caution Orders -(1) Procedure for imposition/alteration and cancellation of Temporary Speed Restrictions (TSRs) - (a) All requests for Imposition, alteration and cancellation of Temporary Speed Restrictions on the section shall be submitted to the Traffic Controller. The request for Temporary Speed Restrictions for a planned work will normally be submitted before 17:00 hrs of the previous day. Any Temporary Speed Restrictions request due to emergency or failure shall be taken up immediately. The Traffic Controller shall be responsible for coordination of all Temporary Speed Restrictions on the main line and serving of caution order (O&M/T-2) through depot control. In case there is no TSR in the section, Nil caution order (O&M/T-2A) will be served to the Motorman through depot control.

(b) All requests of Temporary Speed Restrictions shall be submitted by authorized personnel not less than Junior Engineers (J.E).

(c) All requests for Imposition, alteration and cancellation of Temporary Speed Restrictions within the depot shall be submitted to the Depot Control Center (DCC) who will be responsible for co-ordination of all Temporary Speed Restrictions and issue of caution orders in the depot.

(d) The requests for imposition, alteration and cancellation of Temporary Speed Restrictions shall include the following information:

(i) Requested Date and Time of imposition/alteration

(ii) From Km to Km

(iii) Line: East West Corridor

(iv) Direction: East Bound / West Bound

(v) Temporary Speed restriction in Kmph

(vi) Reasons for imposition

(vii) Expected Date and Time of cancellation

(viii) Name, designation and signature of the official imposing Temporary Speed Restrictions.

(e) Traffic Controller shall maintain a record of accepted Temporary Speed Restriction requests. Temporary Speed

Restrictions shall be effected through Automatic Train Supervision system over affected track section with specific indication of kilometerage and permissible speed.

(f) Traffic Controller shall incorporate the required Temporary Speed Restrictions in the system and relay this information to the Station shift-in-charges of special class station, where point & crossing have been provided.

(g) In case of imposition of emergency caution over the section, Motorman will be informed by Traffic controller by exchange of private number over TETRA.

217. Train Staffing.–(1) Each train shall be manned by only one Motorman.

(2) No person shall be allowed to travel in the Motorman's cab except a cab authorised trainee or apprentice Motorman, a Loco inspector and other authorised person as laid down in special instructions.

(3) Each Motorman shall, at all times when on duty, be in possession of**,-**

(a) a Motorman's handbook containing the General Rules and special instructions and the operating and troubleshooting procedures for the train;

(b) two pairs of such spectacles he is required to wear under medical advice;

(c) a tri-colour torch or hand lamp capable of showing red, green and white aspects; and

(d) a watch.

(4) Each Motorman when reporting for duty shall examine any notice issued for his guidance and in particular those which require his special attention on the specific day and line.

(5) The Motorman shall undergo breathalyzer test at the time of sign-on and sign-off.

(6) The Motorman or Shunter shall check continuity and adequacy of brake power and air pressure or pneumatic pressure before taking the train out of depot and conduct brake power feel test at the first available opportunity.

(7) In the event of a Motorman becoming incapacitated while driving a train, he shall, if capable, inform the Traffic Controller who shall inform the Station Shift in-charge at the next station,-

(a) If the train is under Automatic Train Operation control, it shall arrive at the next station under automatic

control and the Motorman may be relieved at that station for medical attention;

(b) If the train is under manual control, it may get stopped between stations and in this case, the Traffic Controller immediately advice crew control for arranging relieving Motorman and considering duration of train detention and availability of relieving Motorman, evacuation process shall be initiated as per special instructions; and

(c) On arrival of train at next station, the relieving Motorman shall inform Traffic Controller that the following train may now be authorised to resume the normal working.

SR 217 (2) Authorization to travel in the Motorman's Cab- (a) No person other than Motorman is authorized to travel in Motorman's cab unless he is in possession of a valid Cab Pass issued by the competent authority.

(b) Not more than two authorised persons other than the Motorman shall normally travel in the Motorman's cab at a time, except while travelling in Pilot train which is run before the introduction of commercial services.

SR 217 Train Staffing : (3) (a) A copy of General Rules, Subsidiary Rules, Working Time Table, Accident Manual, Third Rail Earthing

Device (TRED) and troubleshooting kits shall be in possession with the Motorman on duty.

SR 217(7) (b)Evacuation procedure, in the event of Motorman becoming incapacitated to drive the train will be as under-

(1) Train is at a station. - (a) If the relief Motorman is brought by a train in the same direction, the train shall travel up to the nearest location protected by ATP in ATP Mode. If ATP Mode is not possible, the train will be driven cautiously in degraded mode (ROS/RM/ Cut out Mode) and stopped at about 50 meters short of obstruction and the relief Motorman shall be detrained. The relief Motorman shall walk on the walkway and take charge of the stranded train.

(b) When the relief Motorman is brought by train from the opposite direction on the adjacent line, the relief Motorman shall get down at the station and take charge of the stranded train.

(2) Train is in mid-section-(a) If the relief Motorman is brought by a train in the same direction, the train shall travel up to the nearest location protected by ATP in ATPM. If ATPM is not available, the train will be driven cautiously in degraded mode (ROS/RM/Cut out Mode) and stopped at about 50 meters short of obstruction and the relief Motorman should be detrained. The relief Motorman shall walk on the walkway and take charge of the stranded train in mid-section.

(b) When the relief Motorman is brought by train from the opposite direction on the adjacent line or by road the relief Motorman shall get down at the nearest station and walk up to the stranded train through the appropriate walk way and take charge of the stranded train.

(c) If relieving Motorman is not available, the immediate following train shall be stopped at the station in rear. Passengers of the train shall be detained by giving proper intimation. After vacating and securing the train the Motorman of the train will proceed to the stranded train over the walk way and act as reliving Motorman to assist the incapacitated Motorman under the guidance of Traffic Controller.

(d) The section afterwards will be cleared by a competent Metro official under advice of Traffic Controller.

218. Train Defects.–(1) No train with defective safety equipments, cab signaling, leading cab controls, interior lighting, ventilation, brakes or doors shall remain in passenger service, and it shall be removed from service at the earliest opportunity.

(2) (a) If traction power is lost on any car bogie, the train need not be withdrawn from service, if power is lost on more than one car bogie and the reduction in speed causes delay to following trains, the passengers shall be detrained at the station and the train worked empty, otherwise, the train

may remain in passenger service until it can be replaced by a serviceable train;

(b) in the event of a mechanical defect in the traction motor or drive which causes the wheels to lock, the train shall be stopped immediately and shall not be moved until clearance has been given by a Rolling Stock Engineer;

(c) if a Motorman finds that the train cannot be driven or braked from the leading end cab, passengers shall be detrained as per the provisions referred in clauses (d) and (e) of this sub-rule;

(d) such an occurrence may usually happen at a station and a terminal in which case the passengers shall be discharged at the station itself and to dispatch the train to the depot, the Station Shift In-charge shall board the train and act as look out in the leading cab while the Motorman drives from the rear cab in Cut Out mode Information on signals and cleared routes shall be passed by cab to cab telephone and train speed restricted to a maximum of ten kilometer per hour; and

(e) In the unlikely event that the defect causes a train to stop between stations, the Traffic Controller shall arrange another Motorman to drive the train to reach the failed train and drive the train from rear cabin Cut Out mode with leading

cab Motorman acting as look out and the information on signals and cleared routes shall be passed by cab to cab telephone or radio and train speed restricted to a maximum of ten kilometer per hour. Alternatively, the failed Train can be rescued by assisting train or shunting vehicle as per rule 232.

(3) (a) Upon failure of any train control system, which shall be indicated on the Train Control and Monitoring System or Train Integrated Management System, whatever nomenclature given, the Motorman shall bring the train to a complete stop, if the train can still be operated by applying suitable isolations in the train control system, the Motorman shall consult Traffic Controller and seek further instructions, in consultation with Rolling Stock Engineer; and

(b) when such failure of the traction control happens on a running line and renders the train inoperative even by applying appropriate isolations in the Train Control and Monitoring System or Train Integrated Management System, the Motorman shall inform the Traffic Controller that his train is stalled and requires assistance to move and in this case the train shall be dealt with in accordance with rule 232.

(4) (a) Failure of brakes to apply or to release shall be indicated on the Train Control and Monitoring System or Train Integrated Management System panel;

(b) If brakes on any car bogie fail to apply, the brake of that bogie shall be isolated manually and the normal service will be resumed. The train shall be withdrawn from service after completion of the trip;

(c) In case the brakes of more than one car bogie and upto fifty percent of the train fail to apply, the train shall be worked at speed not exceeding twenty-five Kilometers per hour upto next station and passengers must be detrained at the next station and the train worked to depot at a speed not exceeding twenty-five kilometers per hour;

(d) if brakes fail to apply on more than fifty percent of the bogies, the train shall be brought to a stop as soon as possible by application of the emergency brake and shall not proceed until authorised by a Senior Section Engineer or Junior Engineer Rolling Stock;

(e) if brakes fail to release on any car bogie, up to a maximum of fifty percent the brakes shall be isolated on the affected cars; the brakes released by local control; passengers shall be detrained at the next station and, the train worked to depot, at a speed not exceeding twenty-five kilometer per hour;

(g) if brakes fail to release on more than fifty percent of the cars, no attempt shall be made to move the train until authorised by a Senior Section Engineer or Junior Engineer Rolling Stock.

(5) (a) If doors on a train are not closed, the train shall not start from a station;

(b) If doors cannot be closed by command or manually or there is no obviously open door and the "Doors Closed" indication is still not received, passengers shall be detrained and the train shall be worked empty until it can receive attention from the Rolling Stock maintenance department;

(c) If some doors of train do not open at stations but after closing the doors all doors are indicated as closed, the train may remain in passenger service, and necessary announcement shall be made in the train and on the stations to inform the passengers; and

(d) In peak period, the extended dwell times at stations, that could result from some doors not opening, may make it desirable for the train to be withdrawn from service to avoid delaying the following trains.

(6) Failure of an air conditioning unit shall be indicated on the Train Control and Monitoring System or Train Integrated Management System panel, the Motorman shall report such failure to Operations Control Centre, so that rake receives prompt attention to relieve hardship to passengers.

(7) (a) Failure of main car lighting on one or two cars shall be reported by the Motorman to the Operations Control Centre and the train may continue in passenger service to

the end of its trip provided the emergency lighting is working satisfactorily and at the terminal it shall be withdrawn from service or replaced by good train; and

(b) if all main train lightings fail or main lighting and emergency lighting both fail, on the same car, passengers shall be detrained at the next station and the rake withdrawn from service.

SR 218 Train Defects: (2)(d) Considering the location of the train at station and a terminal in respect of depot when it becomes necessary for back driving the said train to depot another Motorman shall be arranged by crew controller under the guidance of traffic controller. The new Motorman will act as lookout in the leading cab and the Motorman of the failed train will drive in Cut Out mode at a speed not exceeding 10 kmph from the rear cab under the guidance of leading cab Motorman through cab to cab telephone or communication with TETRA.

SR 218 (3) (a) "Rolling Stock Engineer" here means "Rolling Stock Supervisor".

219. Examination of Trains.- (1) Each train shall be examined by a competent person from the Rolling Stock Maintenance department before being offered for passenger service.

(2) The examination shall ensure that all functions of the train are working correctly and in particular safety devices, such as:

(a) cab signaling;

(b) safety brake circuits;

(c) train radio communication;

(d) head, tail, flasher and marker lights;

(e) Display Panel of Train Control and Monitoring System or Train Integrated Management System, whatever name given;

(f) brake gears;

(g) isolating cock ties intact;

(h) miniature circuit breaker and safety switch seals intact; and

(i) any other item specified under special instructions.

(3) The competent staff shall sign a certificate of safety test indicating duration of its validity, which shall remain in the leading cab in the direction of departure.

(4) The Motorman or Shunter who runs the train from the depot shall check that the train fitness certificate is up to date and currently valid before moving the train and he

shall also check the head lights, the tail lights, the flasher lights, the marker lights and the speedometer of the train.

SR 219 (2)(i) Examination of Trains,- The following items shall also be checked by the SSE/RS before induction of trains for passenger service.

(a) Current Collecting Device (CCD)

(b) On-board PA system

(c) VAC

(d) Cut Out switch seal intact

(e) On-board CCTV system

(f) Opening and closing of Doors

220. Duties of a Motorman.- (1) The Motorman shall pay immediate attention and obey every signal and shall always be vigilant and cautious and keep a sharp look out.

(2) When a Motorman, not working under Coded manual mode, approaches a fixed signal at 'on' or in 'defective' position, he shall not pass a fixed signal that refers to his train, unless after bringing his train to a stop, he is either given a written authority by the Station Shift In-charge to proceed past

such signal or is authorised by the Operations Control Centre or the Traffic Controller on train radio in accordance with special instructions.

(3) The Motorman shall not operate the train at higher than the maximum permissible speed.

(4) The Motorman shall be alert for changing rail conditions, and shall exercise extra care when operating in areas which may be affected by grease, oil, water or other substance, which could cause running rails to become slippery and shall adjust the train speed accordingly.

(5) When closing the train doors, the Motorman shall observe the platform end, as far as practicable, and prevent the closing doors from striking boarding passengers.

(6) If the doors are obstructed or the 'doors closed' indication is not received, the Motorman shall re-open the doors and close them again.

(7) If trains operating under Automatic Mode, the Motorman shall start the train after closing the doors, and all further progress to the next station and the opening of doors there takes place automatically, unless manual opening of doors is selected.

(8) If trains not operating under Automatic Mode, the Motorman shall drive the train, observing and obeying cab signals, to the next station and shall stop the train at the appropriate stopping mark, and the doors of the train shall not be opened until the train has come to a complete stop and the platform screen doors, where provided, can be opened manually from the local panel provided near the cab on the platform.

(9) If a train stops short of its proper stopping place, even in Automatic Mode, the Motorman shall manually drive the train to its proper stopping place, and the doors of the train shall not be opened until the train has come to a complete stop and the platform screen doors, where provided, can be opened manually from the local panel provided near the cab on the platform.

(10) If a train stops beyond its normal stopping place but with the doors still on the platform, the Motorman shall contact the Traffic Controller to take his permission for reversing so as to align the train at proper stopping place. After reversing, the doors may be opened manually and passengers allowed alighting or boarding.

(11) If the train stops beyond the end of the platform, the Motorman shall seek instruction from the Traffic Controller and if the Traffic Controller can prevent the following train

from approaching the platform by using the signaling controls, he may do so and then authorise the train at the platform to reverse until all doors are at the platform and train is correctly positioned at stopping place. Otherwise, an announcement shall be made to the passengers and the train may proceed to the next station without opening the doors, and if the train is the last train of the day, the train may be reversed on instruction of the Traffic Controller and stopped at the normal stopping place. If the train cannot be reversed, then the passengers may be allowed to disembark from the train by opening selected doors of the train by the exterior emergency doors control.

(12) (a) If a passenger emergency alarm is operated in the train, the Motorman shall try to establish voice communication with the location by intercom or public address, and he shall try to establish the reason for the operation of alarm but, unless there is a clear and immediate danger to the train and its passengers, he shall continue to the next station before taking any action;

(b) the Motorman shall inform on radio the Traffic Controller in the Operation Control Centre and station Shift In-charge of the station at which the train stops about operation of the passenger emergency alarm; and

(c) In case of no passenger response for operated emergency alarm, the Motorman can reset passenger emergency alarm with the approval of Traffic Controller.

(13) In case of poor visibility, rendering the sighting of signals difficult, the Motorman shall advise the Traffic Controller and proceed in accordance with special instructions.

(14) Where the Train is driven manually in other than Coded Manual mode, the Motorman shall ensure that the doors on the platform side only are opened for boarding or alighting the passengers.

SR 220 (2) Duties of Motorman, Traffic Controller and Station Shift-in-charge when fixed signal is 'ON' or 'defective' and failure of coded manual mode.

The Motorman shall not pass such signal without,-

(a) bringing the train to stop dead before such 'ON' or 'defective' signal.

(b) contact the Traffic Controller on TETRA to seek permission to pass such signal by exchanging private number.

(c) Traffic Controller shall ensure the correct setting & locking of point(s) and observe clear route indication ahead through

his work station visual display on intended route and will authorise the Motorman to pass the said signal with his train by exchange of private number over TETRA.

(d) if it is not feasible to ensure correct setting and locking of point(s) by Traffic Controller, he shall advise the station Shift-in-charge to ensure the correct setting and locking of point(s) and clearance of the intended route through local workstation visual display or physical check of the point(s) as and when required.

(e) The station shift-in-charge shall ensure the correct setting and locking of point(s) on intended route and shall allow the Motorman to pass the said signal by exchange of private number over TETRA.

(f) If communication to Motorman can't be established over TETRA then the Motorman of the said train will be served with a "written authority to proceed "and the "permission to pass the signal at danger" in a combined prescribed form (O&M/T-3B) along with exhibition of green hand signal by a competent staff, when such signal is departure signal but in case of reception signal green hand signal will be exhibited from platform end nearer to the signal only.

(g) the Driving Motorman shall change the mode from ATP mode to ROS mode or RM mode or Cut out Mode to pass the signal at danger.

SR 220 (8) Normally the Motorman shall drive the train on ATP mode, observing and obeying cab signals and shall stop the train at the appropriate stopping place and open the doors for entraining and detraining the passenger.

If it is not possible to open any train door,-

(i) The Motorman will isolate the said door in closed and locked position in consultation with the Traffic Controller and accordingly make announcement for the passengers to use the adjacent door.

(ii) The Traffic controller shall inform the station shift-in-charges of all stations to barricade the corresponding PSD at their station for that train only.

(iii) The shift-in-charge will make announcement to the passengers before arrival of the said train.

(iv) The Traffic Controller will allow additional halt for passenger's convenience.

(v) On departure of the said train, barricade will be removed and Traffic Controller shall be suitable informed by station-shift-in-charge.

SR 220 (13) Operation of trains under impair visibility: (1)While driving in Automatic Mode or Automatic Train Protection modes with ATP protection, the trains shall be governed by Target speed as available and shall be cautious while entering the platform.

(2) The Motorman shall switch on the head light under poor visibility condition.

(3) While driving in degraded mode (ROS/RM/Cut out Mode), when visibility is impaired, the train will be run with utmost caution with reference to way side signal where provided and be prepared to stop the train short of any obstruction.

221. Locomotives, work trains and maintenance vehicles.– (1) Locomotives, work trains, and self–propelled maintenance vehicles equipped with Automatic Train Protection equipment shall be worked as per rules of operation for passenger trains.

(2) The operator of a self-propelled maintenance vehicle which is permitted to operate on running lines shall hold a certificate of competency as a Motorman or to be accompanied by a person holding certificate of competency and in the latter case, the person holding the certificate of competency is

responsible for the observance of these rules in respect of the operation of the vehicle.

(3) Before departing from depot, or from a work site where the Train has been uncoupled, the Motorman of the leading locomotive shall-

(a) ensure that the Train is fully coupled;

(b) carry out a continuity test of the pneumatic brake; and

(c) verify that all handbrakes have been released.

(4) Subject to sub-rule (2), the Motorman of a locomotive, work train or self-propelled maintenance vehicles, shall possess at all times, when on duty,–

(a) a tri-colour torch capable of showing a red, green and white aspects; and

(b) any special notices relating to the working of work trains.

(5) Any unpowered vehicles, stationed on a siding or on the running line, shall be secured by the application of sufficient number of handbrakes unless coupled to a locomotive.

(6) Any such vehicle or group of vehicles shall have a lamp

attached to an outermost vehicle displaying a red aspect in the direction of approaching trains and on a running line such lamps shall be placed at both the ends of the vehicle or group of vehicles.

(7) Any self-propelled maintenance vehicle which is not fitted with Automatic Train Protection equipment shall be taken on running line only if,–

(a) during revenue service period, it is coupled to a locomotive or other vehicle which is so equipped and driven at such speeds as specified in Special Instructions; or

(b) during revenue service period, it is working within the limits of Engineer's Possession; or

(c) during non-revenue service period, it is running on line of sight method at a speed not exceeding twenty five kilometers per hour or in accordance with special instructions.

(8) Shunting of vehicles to make or break work train consists shall only take place as per special instructions.

(9) The maximum speed of vehicles, not equipped with Automatic Train Protection control, shall be limited in accordance with Approved Special Instructions.

(10) Fly shunting of any vehicle is expressly prohibited at any time.

SR 221 (7) (a) "Running of non-ATP self-propelled maintenance vehicle on running lines during commercial Service coupled to an ATP equipped vehicle"- Self-propelled maintenance vehicle shall not be taken on main line during commercial services. However, in case of extreme emergencies only, if it is taken on the main line, shall be driven as under.

(1) Before such a vehicle is taken on the main line during commercial service, the Traffic Controller shall take permission from the Chief Controller or the designated Traffic officer for train operations.

(2) The Motorman/Shunter shall ensure that the vehicle displays Red light on its trailing end.

(3) Motorman/Shunter shall ensure that the coupling is intact throughout its movement.

(4) The Traffic Controller shall ensure that points are properly set and locked for the intended route till movement is completed.

(5) The Motorman of the following train shall also be advised by Traffic Controller to run at a speed not exceeding 10 kmph and the Motorman shall be in a position to stop the train short of any obstruction.

SR 221 (7) (c) Speed of a non-ATP self-propelled maintenance vehicle on running line during Non-commercial service -

(1) A non-ATP self-propelled maintenance vehicle on running line during non-commercial service period shall be run on line of sight method.

(2) The movement of non-ATP train shall be undertaken strictly under control of Traffic Controller.

(3) Speed of such non-ATP self-propelled maintenance vehicle on running line during non-commercial service period shall not exceed speeds as approved for such vehicle not exceeding 25 Kmph or subject to any caution imposed or shall be in a position to stop the vehicle short of any obstruction.

SR 221 (8) Shunting of vehicles to make or break work train consists shall only take place in depot.

CHAPTER -IV

PLATFORM DOORS

222. Kinds of Platform doors.-Platform doors, where provided**,** shall be of the following types, namely,–

(1) Platform Screen Doors,– these doors are powered doors located along the platform at the platform edge throughout

the passenger area with door locations corresponding to the train car passenger door locations;

(2) Platform Edge Doors,– these are powered doors located along the platform at the platform edge;

(3) Manual Secondary Doors,– these are manual doors located at one end of platform or both ends of platform to provide access between platform and the trackside;

(4) Emergency Escape Doors,– these doors are located around Platform Screen Doors of leading and trailing passenger cars and are meant for use in emergency situations;

(5) Fixed Panel,- platform length sections, not provided with any of Platform Screen Doors or Platform Edge Doors or Emergency Escape Doors or Manual Secondary Doors, are provided with fixed screens called Fixed Panel; and

(6) All the above doors and panels may be full height or half height as required.

SR 222 (1) & (2) platform Screen door and Platform Edge door mean equipment similar in functioning.

223. Normal working of doors.- (1) Platform screen Door,- (a) Opening or closing of the Platform Screen Doors shall be after

receipt of the doors open or doors close command signal from the signaling link, or any other suitable arrangement;

(b) Signaling link or any other suitable arrangement enables automatic operation of the Platform Screen Doors only when the train stops within ± 500 mm or the defined limit, as the case may be, of it's normal stopping position. In the event of a train stopping outside this limit, the train may be driven under Motorman's control in Cut out mode, if necessary, to reposition it, and allow normal operation of the Platform Screen Doors when correctly positioned in accordance with sub-rules (8), (9), (10) and (11) of rule 220.

(2) Platform Edge Door, – Opening or closing of the Platform Edge Door, where provided, will be by an authorised servant, after receipt of indication of the Doors Open or Doors Close command signals.

(3) Manual Secondary Door,– The Manual Secondary Door may be opened from the platform side by using a special maintenance staff key.

224. Abnormal working and emergency usages of doors.– (1) Platform Screen Door,– (a) In case any Platform Screen Door does not open automatically due to any failure, train passenger

can go to the platform after opening the Platform Screen Door by using the manual release handle located on the track side of the door;

(b) if the Platform Screen Door does not open or close automatically after Train doors opening or closing, then, the Motorman or maintenance staff may open or close all Platform Screen Doors using a local control panel located at the platform with the help of staff special key;

(c) maintenance staff can open or close each individual Platform Screen; door from platform side using staff special key, if needed;

(e) any defective Platform Screen Door may be isolated by using staff special key, if needed; and

(g) if it is not possible to close any platform screen door, the speed of all trains entering the station, leaving the station or passing through the station shall be restricted to a maximum speed of twenty kilometers per hour and in addition, an audible warning shall be sounded by all trains while entering the station Further necessary precautions may be taken as per special instructions.

(2) Platform Edge Door,– (a) If platform edge door local panel does not receive indication of the doors open or doors close command signals from the signalling link or from any other suitable arrangement, then the Motorman or

maintenance staff can provide this indication to local panel by using platform screen door local panel with the help of staff special key and after receiving open or close indication, the authorised servant can open or close the Platform Edge Doors;

(b) An authorised servant can open or close each individual Platform Edge Door using special staff key, if needed;

(c) any defective Platform Edge Door may be isolated by using staff special key, if needed; and

(d) if it is not possible to close any platform edge door, the speed of all trains entering the station, leaving the station or passing through the station shall be restricted to a maximum speed of twenty kilometer per hour and in addition, an audible warning shall be sounded by all trains while entering the station.

(3) Manual Secondary Door, – (a) In case of emergency evacuation from trackside the Manual Secondary door may be opened from the trackside by using a push bar; and

(b) The door will be designed to swing open and be held at an open position of ninety degree and the door shall automatically revert to closed and locked

position safely if it is left open at less than ninety degree without need for staff intervention;

(4) Emergency Escape Door,- (a) If train does not stop at the correct position and opened train doors are not in front of Platform Screen doors or under other specified conditions provided in special instructions, the passengers from the train can detrain to the platform after opening the emergency escape door by pressing the emergency push bar located on the track side of the emergency escape door; and

(b) the door will be designed to swing open and be held at an open position of ninety degree and the door shall automatically revert to closed and locked position safely if it is left open at less than ninety degree without need for staff intervention.

(5) Any door which has been manually released from track or platform side shall then be subjected to a gentle reclosing force, against which it can be pushed or held open, which shall ensure that the door returns safely to the closed and locked position afterwards, without need for staff intervention.

SR 224 : (1) (b) Abnormal working and emergency usages of doors,- if the Platform Screen Door does not open automatically with the opening of Train doors, the Motorman shall open all Platform Screen Doors using a local control panel located at the

platform end with the help of staff special key. Thereafter closure of all platform screen doors and execution of subsequent override option shall be carried out by Platform Supervisor/ maintenance staff by using Staff special key.

SR 224 (1)(c) & (d) Sub rule (c) and Sub rule (d) shall be read as maintenance staff can open or close each individual Platform Screen Door from platform side using staff special key, if needed;

SR 224 (1) (g)(A) If it is not possible to close any platform screen door, the station shift-in-charge will inform to Traffic controller of specific gate number to relay the same to the Motorman of the approaching train (s).

(i) "Audible warning" here mean as 'intermittent whistle'.

(ii) The speed of the train approaching the station or leaving the station or passing through the station shall not exceed 20 Kmph and Motorman shall sound intermittent whistle.

(iii) The Shift-in-charge will protect such gate till arrival and stoppage of the train at the platform either by deputing a competent staff or putting up a barricade in addition to making announcement of an approaching train for the passengers on the platform.

(B) (i) If it is not possible to open any platform screen door, the Motorman of the said train will advise the

passengers to detrain by pulling the green handles side by side to open the said PSD or use others doors by proper announcement.

(ii) The station shift-in-charge will arrange to isolate the said gate and inform Traffic Controller to relay the same to the Motorman of the approaching train(s).

(iii) The Traffic Controller shall inform the Motorman to stop the train if left from the station in rear and isolate the respective train door through train controlling and monitoring system (TCMS). Motorman shall make announcement to the passengers that such door will not open at the next station and advise passengers to use other doors.

(iv) The said PSD shall be barricaded by queue manager and 'NOT IN USE 'sticker will be pasted and appropriate announcement will be made before arrival of each train.

(v) The Traffic Controller will allow additional halt for passengers' convenience.

(vi) After proper docking of the train at the platform, the Motorman will reset isolation of the respective train door through TCMS before departure from the platform.

(vii) On rectification of defective PSD, queue manager and the sticker shall be removed and Traffic Controller shall be suitably informed. Traffic Controller will inform the Motorman accordingly.

All communication during this period will be done through TETRA.

SR 224 (4) (a) If opened train doors are not in front of the Platform Screen doors, which happens to be on closed position or for any unavoidable situation, the passenger will be advised by Motorman through PA system to detrain at the platform by pressing the emergency push bar fitted with the emergency escape door.

225. Indications.–(1) Door open indicator,– (a) when platform screen door or platform edge door is under opening and closing process, the door opening indicator flashes and chime is activated;

(b) when platform screen door or platform edge door is under fully opened position, the door opening indicator is illuminated and chime is deactivated; and

(c) when platform screen door or platform edge door is under closed and locked position, the door opening indicator is extinguished and chime is deactivated.

(2) Indicators near the manual secondary door or emergency escape door,– One each light emitting diode or other

suitable indicator is provided near each manual secondary door or emergency escape door leaf to give closed and locked indications, respectively.

(3) **Obstruction detection**,– (a)Sensors are provided to detect any person trapped between train door and Platform Screen Door at station with curved platform. When all Platform Screen Doors and Platform Edge Doors are closed by the Motorman, the sensors shall check and give following indications on Platform Screen Door local panel at both headwall and tail wall:

(i) nobody trapped – green; and

(ii) somebody trapped – Red flashing, unless sensors detect all doors clear, Platform Screen door system will not give clearance for train departure;

(b) in case of detection of an obstruction in between two leaves of a Platform Screen Door resulting in non closure of such door, the door makes further attempts to close automatically, if the obstacle is removed in these attempts Platform Screen Door closes again, if obstacle is still present, then the Platform Screen Door stops in unlocked position and is free to be pushed back by hand and once the obstruction disappears, train driver can open and close the doors again and if the problem persists, then, station staff shall attend the affected door.

CHAPTER –V

CONTROL AND WORKING OF STATIONS

226. Responsibilities of Station Shift In-charge.– Each Station Shift In-charge shall,–

(1) open the station at least ten minutes before the advertised time of the first train;

(2) carry out an inspection of the station premises, at the start of his duty period recording any defects or irregularities found and reporting the same to authorities concerned including the operations control centre for prompt rectification;

(3) be responsible for the supervision of the passenger flows, and the provisions of adequate barriers and escalator services, ensuring that all staff renders prompt assistance to passengers;

(4) be responsible for reporting any defect and failure of any equipment on the station to the appropriate maintenance department;

(5) be responsible for handling any emergency situations, and public announcements;

(6) be responsible for the training of the station staff in local rules and conditions, for monitoring of their performances, discipline and administration;

(7) observe the departure of last train and at interchange station, shall supervise the interchange of passengers between last advertised connecting train and shall inform the Traffic Controller when all interchange has been completed;

(8) inspect the station after the departure of last train to ensure that no unauthorized persons and unattended object remain on the premises and then lock all the entrances, as required;

(9) be responsible for keeping a log book which details occurrence on the station which shall include among other things, timings and reports of inspections, timing and location of maintenance activities, complaints or request from passengers, instruction from the Traffic Controller period of local control of signaling and unusual incidents; and

(10) be responsible for control and Operation of local panel and work station with the approval of the Traffic Controller

SR 226 (4) Responsibilities of Station Shift In-charge: Shall be responsible for reporting any defect and failure of any equipment on the station to the appropriate maintenance department and competent official in the OCC.

227. Responsibilities of Platform Supervisor.–The Platform Supervisor, where provided, shall,–

(1) monitor the boarding and alighting of passengers and be alert to observe any accident and report each to the Station Shift In-charge;

(2) when a dangerous situation arises, operate the emergency stop plunger to stop any train on or approaching the platform and report his action to the Station Shift In-charge;

(3) handle any malfunctioning of Platform Screen Doors, where provided;

(4) manage customer interface;

(5) monitor platform attendance;

(6) manage trolley circulation, if any; and

(7) be responsible for platform cleaning.

SR 227 Responsibilities of Platform Supervisor: The platform supervisor here means on duty RPF personnel at platform who shall: (1) Monitor passenger's movement on the platform.

(2) monitor the boarding and alighting of passengers and shall be alert to observe any accident and expeditiously report the same to the Station Shift In-charge;

(3) attend any passenger grievance and refer to station Shift-in-charge if required;

(4) manage trolley circulation, if any;

(5) operate the emergency stop plunger to stop any train on or approaching the platform when any abnormal situation so warrants and report the action to the Station Shift In-charge; and

(6) deal with any malfunctioning of Platform Screen Doors, where provided.

228. Responsibilities of Baggage Handling Supervisor.–Wherever the Baggage Handling System is provided, the Baggage Handling Supervisor shall,– (1) monitor the entire baggage handling system to ensure smooth movement of passenger baggage; and

(2) take appropriate action as provided in special instructions in case of any abnormality in the Baggage Handling System.

229. Station Working Rules.–(1) In addition to the General Rules and special instructions of the Metro Railway, each station shall be provided with the Station Working Orders applicable to the station giving details of,-

(a) the location of equipment and guidelines for their use;

(b) the emergency evacuation routes at station and with adjoining block section;

(c) the designated entrance for attendance by police, fire and ambulance vehicle;

(d) the designated entry for fire services; and

(e) list of medical facilities locally available.

(2) Copies of these Station Working Orders shall be readily available with on duty Station Shift In-charge who is required to work at the particular station.

(3) A copy of these working orders shall be kept in a special marked binder in a conspicuous place in the station control room.

SR 229 (1),(2)&(3) "Station Working Orders" here mean as "Station Working Rules".

230. Emergency Evacuation.– (1) The Station Shift In-charge shall control the evacuation from the Station Shift in-charge Room in the event of evacuation of the station becoming necessary as a result of cessation of train services, risk of fire or any other emergency, –

(a) all automatic fare collection barriers shall be set to open freely in the exit direction and the station staff deployed to assist in passenger evacuation;

(b) information and instruction shall be passed to the public by public address system and where available, visual displays;

(c) all inwards escalators may be stopped and used in the outwards direction, in accordance with special instructions;

(d) all ticket sales shall be suspended and the staff used to assist in passenger evacuation; and

(e) all station exits shall be opened.

(2) The Station staff shall verify that each area of the station has been evacuated and when areas are verified as clear of passengers, the staff shall leave the station and secure it unless otherwise instructed by the Traffic Controller.

(3) If fire or smoke is present, passengers shall, as far as practicable, be instructed to use exit routes that avoid contaminated area.

(4) If the fire is in the station, the Traffic Controller shall be informed so that he can instruct to all concerned Motormen not to stop the train at the station.

(5) If the fire is at the concourse level, the train may be stopped to allow passengers to board only, as means of evacuating the passenger's more quickly and Motorman

shall make announcements in their trains to inform passengers not to alight from the train at the affected station.

(6) If the fire is so extensive that the trains should not approach the station, the Station Shift In-charge shall inform the Traffic Controller to instruct the trains coming towards the affected station to stop at the previous stations for evacuating the passengers there and this should prevail till normalcy is restored to the affected station.

SR 230 (1) (c) When situation warrants inward escalators, shall be stopped and used in the outwards direction. Lift for any location shall be stopped and indication board "Train service temporarily suspend' shall be displayed at surface entry gates.

231. Supervision of train movements.— (1) When the station control is being exercised from the Operations Control Centre, the Station Shift In-charge shall observe the passage of trains on the monitor and be alert to take action if the train service is in any way disrupted.

(2) Any failure of any indication on the panel or work station shall be reported immediately to the Traffic Controller.

(3) Control of the panel and workstation may only be taken with the permission of the Traffic Controller and the Operation of individual routes and points shall be carried out as per the Traffic Controller's instructions.

CHAPTER –VI

(ACCIDENT AND UNUSUAL OCCURRENCES)

232. Train stopped between stations. – (1) (a) If a Motorman cannot isolate a defect on his train and is unable to move it under its own power, he shall secure the train and request the Traffic Controller for assistance;

(b) the Traffic Controller shall, if possible, instruct the Motorman of the following train to drive as close to the stalled train as possible under Coded Manual mode and at the limit of authority under cab signaling;

(c) the Traffic Controller shall then instruct the Motorman of the assisting train to change to Restricted Manual mode, and to proceed at reduced speed and stop about ten meters short of the stalled train;

(d) in case it is more convenient to provide assisting train from the leading end direction, the Traffic Controller shall instruct the Motorman of the assisting train, to detrain the passengers at the station, to change the cab and proceed in the direction of the stalled train under Coded Manual mode as far as limit of authority under cab signaling and thereafter change to Restricted Manual mode and stop short of about ten meters of stalled train;

(e) the Traffic Controller shall instruct the Motorman of defective train to secure his train, and instruct the Motorman of the assisting train to couple to the defective train by mechanical means only and to isolate all electrical connections to the defective train;

(f) once the trains are confirmed as coupled, the Traffic Controller shall instruct the Motorman of the defective train to release the brakes of his train;

(g) the Traffic Controller shall then authorise the Motorman of the assisting train, if in front, to once again change the cab and to drive forward in Restricted Manual mode at slow speed while exchanging communication with the front cab of defective train until the assisting train has completely reached on platform of the next station;

(h) The combined consist shall then be moved forward until the defective train has completely reached on platform and then, the passengers of the defective train shall be detrained at the station and the combined consist shall be moved to the depot;

(i) the Motorman of the assisting train, if in the rear, will drive the combined consist in Restricted Manual mode at a speed not exceeding ten kilometer per hour, while exchanging communication with the Motorman of the defective train

in the lead cab until the defective train is at the platform of the next station;

(j) all passengers shall be detrained from the defective train, and the combined consist shall then be moved further until the assisting train is completely on the platform; and

(k) all passengers of assisting train shall then be detrained at the station and the combined consist worked to the depot in Restricted Manual mode at a speed not exceeding ten kilometer per hour, with leading and intermediate Motorman exchanging communication on cab to cab telephone particularly if being assisted from rear.

(2) (a) If traction power is lost, all trains shall coast as far as the momentum of the train and the signaling system permit, after ascertaining from Traffic Controller that there is no defect in the third rail system. The objective is to get every train to a platform or as close to the platform as possible where passengers can be detrained if the incident is likely to be prolonged;

(b) if the traction power has not been restored within fifteen minutes, passengers shall be detrained from all trains at stations, and the process of detraining passengers from any train stopped between stations shall be initiated after switching off third rail power

supply in case of side evacuation and the Motorman shall also take suitable measures of securing his train;

(c) the Traffic Controller shall advise the Station Shift in-charges of the adjoining station to which evacuation is planned, who shall in turn make suitable arrangement for assisting the evacuation process and, if applicable, in-train baggage tagging for identification of passenger baggage later; and

(d) after evacuation of passengers, the Traffic Controller shall take appropriate action of working the stranded trains to nearest station siding or depot using other suitable shunting vehicles.

(3) (a) If a train cannot be moved as a result of derailment or a mechanical failure, leading to possible infringement, the Motorman of the stalled train shall switch on the flasher light, secure the train, and immediately inform the Traffic Controller advising him of any infringement on other track, if any and possibility of injuries to passengers among other things, and also inform him that he is unable to move his train;

(b) the Traffic Controller in consultation with the Motorman shall decide the most appropriate method of evacuation, assistance needed and working of failed train cars taking into account proximity of stations, availability

of trains and other local conditions and, advise the Motorman the direction from which assistance is to be provided and inform the Station Shift In-charge at the station to which passengers shall be evacuated;

(c) the following methods of evacuation, as the case may be, shall be followed, namely,–

(i) evacuation to a train on the same track;

(ii) evacuation to a train on an adjacent track (except in twin tunnel sections);

(iii) evacuation to train on adjacent track (in twin tunnels);

(iv) evacuation on foot to the nearest station; and

(v) evacuation by climbing down the viaduct or climbing up the evacuation shaft in tunnels.

(4) Evacuation to a train on the same track,- (a) (i) Wherever considered necessary, the traffic on the adjacent track may be stopped, as prescribed under Special Instructions;

(ii) If being assisted by an assisting train from the rear, passengers shall, if possible, be first detrained from the assisting train at station and the Traffic

Controller shall instruct the Motorman to drive in Coded Manual mode until the limit of authority under cab signaling;

(iii) the Traffic Controller shall, thereafter, instruct the Motorman to change to Restricted Manual mode and drive at not more than twenty five kilometer per hour to stop about ten meter from the stalled train; and

(iv) if assistance from the rear is not possible, assistance may be provided from the front end direction, following similar procedure once the Motorman has changed the cab for driving in the other direction as provided in the special instructions;

(b) the Motorman of the assisting train shall report to the Operations Control Centre when he has reached this location and the Traffic Controller shall then instruct him to move his train slowly and stop it ten meters short of the stalled train;

(c) the Motorman of the assisting train shall secure his train, and open the appropriate side or end door and ramps, if any and the Motorman of the stalled train shall open the corresponding door on his train and the two Motormen shall assist passenger to

shift from the stalled train to the assisting train and where applicable the assisting metro staff or the Motorman of the stalled train shall also take appropriate measures for in-train baggage tagging for identification of passenger baggage later;

(d) when all passengers have been transferred, the doors and ramps, if any, of both the trains shall be closed and secured;

(e) the Motorman of the stalled train shall remain with his train and the Motorman of the assisting train shall move to the other cab and report to the Traffic Controller that all passengers have been transferred and that his train is ready to move; and

(f) only after receiving the instructions from the Traffic Controller, the Motorman of the assisting train shall select Restricted Manual mode and drive the train to the station from which he came where passengers can be detrained.

(5) Evacuation to a train on an adjacent track (except in twin tunnel sections),-

(a) if assistance cannot easily be given by a train on the same track, a train on the adjacent track may be used;

(b) on receipt of a request for assistance, the Traffic Controller shall inform the Station Shift in-charges at the station on the either side of the location of the incident;

(c) the Passengers may be detrained from the assisting train at a station;

(d) the Traffic Controller shall instruct the Motorman of the assisting train to select Coded Manual mode and proceed towards the stalled train as near as permissible and then, select Restricted Manual mode in consultation with the Traffic Controller and drive his train to a point, near the stalled train;

(e) the Motorman of the assisting train shall secure his train and open the appropriate door of his train and report completion to the Traffic Controller.

(f) the Traffic Controller shall then instruct the Motorman of the stalled train to open appropriate door and ramp ,if any, of his train;

(g) the two Motorman shall then supervise the transfer of passengers via the ramps or step ladders and the track from the stalled train to the assisting train taking particular care to inform passengers of the dangers of tripping on rails and other equipment, and where applicable, the assisting metro staff or the Motorman of the stalled train shall also take appropriate measures

for in-train baggage tagging for identification of passenger baggage later;

(h) once all passengers have been transferred, the doors and ramps, if any, shall be secured and completion reported to the Traffic Controller by the Motorman of the assisting train;

(i) the Motorman of the stalled train shall remain with his train; and

(j) the Traffic Controller shall then authorise the Motorman of the assisting train to proceed to the next station in the normal direction of traffic, where normal service may be resumed.

(6) Evacuation to train on an adjacent track (in twin tunnels),-

(a) In twin tunnel sections, if assistance cannot easily be given by a train on the same track, a train on the adjacent track may be used;

(b) on receipt of request for assistance, the Traffic Controller shall inform the Station Shift in-charges at the station on the either side of the location of the incident;

(c) Passengers may be detrained from the assisting train at a station;

(d) The Traffic Controller shall instruct the Motorman of the assisting train to select Coded Manual mode and proceed toward the direction of stalled train as near as permissible to an appropriate Cross Passage as advised by Traffic Controller and then change to Restricted Manual mode in consultation with Traffic Controller to drive his train to a point, near a Cross Passage as advised by the Traffic Controller;

(e) The Motorman of the assisting train shall secure his train and open the appropriate door and ramp, if any, of his train and report completion to the Traffic Controller;

(f) the Traffic Controller shall then instruct the Motorman of the stalled train to open its appropriate door and ramp ,if any, as applicable, which is nearest to this Cross Passage;

(g) the two Motormen shall then supervise the transfer of passengers via the Cross Passage and the track from the stalled train to the assisting train taking particular care to inform passengers of the dangers of tripping on rails and other equipment, and the hazards of walking through the Cross Passage, and the two Motormen shall ensure that all passengers have been safely transferred and accounted for.

Where applicable, the assisting metro staff or the Motorman shall also take appropriate measures for in-train baggage tagging for identification of passenger baggage later;

(h) Once all passengers have been transferred, the appropriate doors and ramps ,if any, of assisting train shall be closed, secured and completion reported to the Traffic Controller by the Motorman of the assisting train; and

(i) the Motorman of the stalled train shall close the doors and ramps ,if any, and and return to his train cab.

(7) The Traffic Controller shall then authorise the assisting train to select appropriate mode and proceed to the next station where normal service may be resumed. Evacuation on foot to the nearest station,-

(a) In case of evacuation on foot, the Traffic Controller shall decide as to which station passengers are to be evacuated which shall normally be the nearest station subject to other factors, such as the location of the trains, ventilation consideration in tunnel sections and any damage to track, train or structures which may make it desirable to use an alternative station;

(b) the Traffic Controller shall inform the Station Shift in-charge at the station designated to receive the passengers and the Station Shift in-charge shall clear the platform concerned of waiting passengers and, if necessary, stop incoming passengers, and if a tunnel section is involved, he shall ensure that the tunnel lighting is switched on, open all emergency doors, manual secondary doors and platform screen doors, where provided, and he shall position himself and his security staff on the platform to receive the arriving passengers;

(c) the Station Shift in-charge shall prepare to render assistance or first aid to any passenger who may have had difficulty or met an accident during the evacuation;

(d) on open sections and in double track tunnels, the Traffic Controller may arrange for traffic to be suspended on the adjacent track for the duration of the evacuation, and in case of third rail Traction system instruct the Traction Power Controller to switch off the third rail power supply;

(e) the Traffic Controller shall verify with the Motorman that the train has been secured and then instruct him

to deploy the appropriate door and ramp ,if any, of the train, nearest to the designated station;

(f) passengers shall be informed of the procedures to be followed and given explicit warning on tripping hazards, where to walk, or hazards of walking on the raised walkway, not to raise any object above head level, and what to expect at the station;

(g) wherever applicable, the Motorman or assisting metro staff shall take appropriate measures for in-train baggage tagging for identification of passenger baggage later;

(h) passengers shall be detrained on the track, or on the raised walkway, as applicable, by the Motorman and directed to the station and the Motorman shall count passengers as they leave the train;

(i) the Station Shift In-charge shall count the passengers as they arrive at the platform;

(j) the Motorman shall ensure that the last passenger has left the stalled train and also check that all passengers have left the track or raised walkway, as the case may be;

(k) the Motorman and Station Shift in-charge shall check their respective count of passengers' numbers and satisfy themselves that all passengers have reached the platform and thereafter the Motorman shall return to his train and secure the end door and ramp ,if any, or the side doors, as the case may be; and

(l) the Station Shift in-charge shall record in the station log the details of the incident, in particular, the number of passengers detrained, and then report the statistics to the Traffic Controller.

(8) Evacuation on foot by climbing down on via-duct or climbing up the evacuation shaft in tunnels,-

(a) If the train is near a suitable location designated for evacuation of passengers by climbing down the via-duct or climbing up the evacuation shaft in tunnels, the Motorman of stalled train shall consult the Traffic Controller and on instructions from Traffic Controller, secure his train;

(b) the Traffic Controller shall intimate the Station Shift In-charges of adjoining stations for assisting in the evacuation, who shall depute competent metro staff and security personnel at the safe evacuation point to assist the evacuation;

(c) the assisting metro staff shall prepare to render assistance or first aid to any passenger who may have had difficulty or accident during the evacuation;

(d) the Traffic Controller may arrange for traffic to be suspended on the adjacent track for the duration of the evacuation;

(e) on the advice of the Traffic Controller, the Motorman of stalled train shall open the appropriate door or ramp ,if any, of the stalled train;

(f) passengers shall be informed of the procedures to be followed and given explicit warning on tripping hazards, where to walk and not to raise any object above head level, and what to expect at the evacuation point;

(g) the assisting metro staff or the Motorman shall take appropriate measures, where applicable, for in-train baggage tagging for identification of passenger baggage later;

(h) passengers shall be detrained on the track by the Motorman and directed to the evacuation staircase or rescue vehicle and the Motorman shall count passengers as they leave the stalled train;

(i) the passengers shall again be counted as they arrive at the safe location after evacuation by the assisting metro staff at the safe evacuation point;

(j) the Motorman shall ensure that all passengers have left the stalled train and check that all passengers have left the track;

(k) the Motorman and the assisting metro staff at the safe evacuation point or vehicle shall check their respective count of passengers' numbers and satisfy themselves that all passengers have reached the safe evacuation point or vehicle and report the same to Traffic Controller. The Motorman shall, thereafter, return to his train, secure the end door, and seek further instructions from Traffic Controller;

(l) the evacuated passengers shall be brought to nearest station; and

(m) the concerned Station Shift in-charge shall record in the station log the details of the incident, and, in particular, the number and other details of passengers detrained, and transfer of their luggage and repeat the complete incidence details to the Traffic Controller.

(9) If a train cannot be moved as a result of failure of Traction system the Motorman shall consult the Traffic Controller

who in turn shall consult the Traction Power Controller, and after ensuring that it is not possible to restore Traction power, shall arrange to cut off Traction power in the affected section and take any further measures for safety of passengers and then action, in accordance with sub-rules (5) to (8), wherever applicable, shall be taken to evacuate the passengers from the stalled train.

(10) Notwithstanding, anything contained in sub-rules (1) to (9), in the case of Third Rail Traction system, the Third Rail power supply shall be 'switched off' in all cases of evacuation in which passengers are required to come on the raised walkway or the track.

SR 232 (1)Train stopped between stations and evacuation of passenger on foot –(a)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. kilometerage, particulars of the train and his identity within one minute.

(b) 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.

(c) 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.

(d) 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 (11th) minute of occurrence. The reason for such hold up shall be suitably informed to the passengers inside the train by Traffic Controller and Motorman.

(e) In case of derailment or any other eventuality such evacuation shall be started earlier. Following procedures shall be followed for evacuation of passengers from mid-section-

(i) 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.

(ii) 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.

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

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

(v) 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.

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

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

(viii) 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.

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

(x) 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.

(xi) 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.

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

(xiii) 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 tunnel section or any structural obstruction.

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

(2) 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 (11th) 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.

233. Train divided.– (1) If a train is stopped by an irrevocable emergency brake application and cab signaling indications are normal, the Motorman shall examine the Train Control Monitoring System panel, or Train Integrated Management System panel, as the name given, to ascertain the cause, if indication of faults in multiple circuits affecting the whole train or rear cars of the train are present, the train shall not be moved until, it has been verified that the train is complete and coupled.

(2) After the verification about complete arrival and the integrity of the train is completed under subrule (1), the Traffic Controller may authorise the Motorman to make appropriate isolations and proceed. If the train is not divided, but is still unable to move on its own, the train shall be worked in accordance with sub-rule (1) of rule 232.

(3) If the train is found to have parted, the Motorman shall first satisfy himself that no passenger has been injured or has fallen from the train, and then, -

(a) the passengers shall be cleared of the open ends of the train and train re-coupled with the help of assisting staff as per special instructions, if possible, in consultation with Traffic Controller and Rolling Stock Supervisor; and

(b) if the Motorman has successfully re-coupled the train, he shall return to the leading cab, report the circumstances to the Traffic Controller and seek permission to proceed to the next station following the instructions given by the Traffic Controller.

(4) The train shall be withdrawn from passenger service at the next station and worked to depot for investigation of the incident.

(5) If train cannot be re-coupled, the Motorman shall inform the Traffic Controller and the Traffic Controller shall then inform the Station Shift In-charge at the previous station to detrain passengers from the following train if possible, and use it to go to the site and take at least two staff with him.

(6) The Motorman of the following train shall drive his train in Coded Manual mode as far as the signaling permits, thereafter the Traffic Controller shall instruct the Motorman to drive the train under Restricted Manual Mode and proceed at reduced speed as near to the divided train as possible and stop, and the Station Shift In-charge and the staff shall then leave the train from the front, or from the side, as applicable, and board the parted train.

(7) The staff shall be positioned at the rear of the front portion of the train and the Motorman of the divided train shall

return to the leading cab, make the necessary isolation and seek permission from the Traffic Controller to proceed.

(8) The Traffic Controller shall instruct the Motorman to proceed at a speed not exceeding ten kilometer per hour as far as the next station and to stop at the far end of the platform.

(9) The other staff shall be positioned at the front end of the rear divided train portion and the assisting Station Shift in-charge shall, then, drive the rear portion of the train from the shunting position of the assisting train with utmost caution, and with the staff keeping a look out at the front, maintaining continuous communication with the Traffic Controller and the train shall be driven to the next station at a speed not exceeding ten kilometer per hour in any case.

(10) On arrival of the train at the station, passengers shall be detrained.

(11) The two portions of the train shall then be worked under the supervision of rolling stock Engineer in Restricted Manual mode, if possible to the nearest depot or siding at a slow speed.

(12) The assisting train shall proceed once the cab signaling displays a proceed code and shall entrain passengers at the next station and resume normal working.

(13) In case of depot being in the direction opposite to the direction of working of the divided train, the rear portion of the divided train shall first be worked toward the nearest station in the direction of depot after positioning a security staff at the divided train portion in the rear, after the Motorman has changed his cab in the leading direction of movement, in consultation with the Traffic Controller.

(14) The other parted portion of the train shall then be worked cautiously in the shunting mode after appropriate isolation, at a very slow speed after positioning the other security staff at the divided end keeping a close look out at the front and maintaining continuous communication with the Traffic Controller.

(15) After reaching the station, the assisting train can resume normal operation.

(16) The parted portions of the divided train shall be worked to depot under supervision of rolling stock supervisor in Restricted Manual mode, if possible.

(17) In case it is not possible to move any parted portion of the divided train on its own power, it shall be worked to the depot using another suitable train under instructions of the Traffic Controller.

SR 233 Train divided - (1) If a train is stopped by an irrevocable emergency brake application and the Motorman has confirmed through the Train Control Monitoring System (TCMS) panel, or Train Integrated Management System (TIMS) panel that Train has parted, the Motorman of the said train shall inform Traffic Controller immediately.

(2) The Traffic Controller shall instruct the Motorman of the parted train to wait till further advice and to make announcement for the passenger about the situation.

(3) The Traffic Controller shall inform all the Motormen of following trains as well as all Station Shift-in-charges about the incident. The Traffic Controller shall instruct the station Shift-in-charge and Motorman of immediate following train to stop at station and detrain all the passengers at the rear station.

(4) The Traffic Controller shall advise the Motorman of the said empty rake to proceed cautiously along with two competent station staff from that station.

(5) The Motorman of the immediate following train shall proceed cautiously and stop 10 meters in rear of the divided train. The Motorman shall secure the empty train and inform the Traffic Controller

(6) The Motorman of immediate following train will communicate with the Motorman of of the divided train. One station staff shall be positioned at the rear of the front portion of the divided train and Motorman of the divided train shall make necessary isolation and seek permission from Traffic Controller to proceed.

(7) The Motorman shall proceed at a speed not exceeding 10 kmph as far as the next station maintaining continuous communication with the Traffic Controller and shall stop at the far end of the platform. On arrival of the train, passengers shall be detrained.

(8) The other station staff shall be Positioned at the front end of the rear segment of divided train and the Motorman of the following empty rake shall drive the train from the trailing end of the divided train with a speed not exceeding 10 kmph and with the station staff keeping a look out at the front, maintaining continuous communication with the Motorman and the Traffic Controller.

(9) The train shall be driven from rear cab to the next station and on arrival of the train, passengers shall be detrained.

(10) Two segments of the train shall be cautiously worked under the supervision of Rolling Stock Supervisor to the nearest depot or siding.

(11) Traffic Controller shall then arrange a Motorman for driving the empty rake to clear the section and after reaching the station the train shall work as per instruction of Traffic Controller.

(12) In case it is not possible to move any parted segment of the train on its own power passengers shall be evacuated as per rule laid down in Sub rule (1) of SR-232. After completion of the evacuation it shall be worked to the car-shed using assisting train under instruction of the Traffic Controller.

234. Unusual occurrences.– (1) All Metro Railway servants shall be conversant with the location and use of fire alarms and firefighting equipment at their place of work.

(2) All Metro Railway servants observing the smoke or fire shall raise the alarm by means of the equipment provided or by informing the Station Shift in-charge and Traffic Controller as may be most appropriate and expeditious.

(3) If smoke or fire is reported on a train between stations, the Motorman shall inform the Traffic Controller, drive his train to the next station and detrain passengers. Traction power shall then be switched off, the third rail traction territory the current collection devices of the affected train retracted, before traction power is restored to other trains.

(4) If the fire on a train or on the track causes a train to stop between the stations, passengers shall be evacuated as per the provisions specified in sub-rules (3) to (8) of rule 232, as applicable.

(5) If the incident occurs in a tunnel, the Traffic Controller shall arrange with the Integrated Station Management System Controller for the ventilation system to supply fresh air to the chosen route for evacuation before authorising detrainment of passengers.

(6) If the fire alarm on a station is actuated or a verbal report is received of smoke or fire on the station, the Station Shift In-charge shall inform the Traffic Controller and then verify for himself by closed circuit television or actual inspection whether or not the alarm is genuine.

(7) If smoke or fire is present, the Station Shift In-charge shall inform the Traffic Controller and arrange for passengers to be evacuated from the area concerned preventing further access and if necessary, the station may be completely evacuated and the Traffic Controller may be requested to arrange for trains not to stop.

(8) The Traffic Controller shall inform the Chief Controller who shall arrange for the attendance and assistance of the fire fighting services and if necessary the ambulance services.

(9) If a Motorman or Station Shift In-charge observes a fire in adjacent premises that could affect the property of the Metro Railway he shall report the circumstances to the Traffic Controller and the Traffic Controller shall inform the Chief Controller and the Security Controller and maintain normal services unless or until a local inspection confirms that a potential danger exists.

235. Other unsafe conditions.– (1) All Metro Railway servants, and, in particular Motorman and Station Shift in-charges shall keep a look out for unsafe conditions on or in the vicinity of the railway track which are as follows,-

(a) damaged or dislodged fixed equipment within the railway right of way;

(b) broken or buckled rails;

(c) displaced or damaged third rail power conductors;

(d) construction activities adjacent to the track including use of cranes which can swing within six metres of the track;

(e) road accidents which might cause or have caused damage to bridges and viaducts;

(f) road accidents which might cause or have caused vehicles or their loads to encroach on the Metro Railway right of way; and

(g) any other obstruction on the track.

(2) If the Motorman observes any unsafe condition, he shall report to the Traffic Controller immediately so that action can be taken to minimise the effect and remove the cause. In the event of an earthquake, the Traffic Controller shall instruct all trains to stop immediately and after such earthquake has subsided, the Traffic Controller may instruct each stranded Motorman to proceed in Restricted Manual mode at walking speed after examining that the track is safe for train movement and free from obstruction up to the next station:

Provided, that in such event, the normal operation of trains may be resumed if all the track and structures are examined, as per Special Instructions.

SR 235 (2) Normal operations of trains shall be resumed as per **G&SR No. 52.**

CHAPTER-VII

SYSTEMS OF WORKING

236. Continuous Automatic Train Control System.— (1) The Continuous Automatic Train Control system of working shall be adopted on the Metro Railway, for movement of trains between stations and between depot and the main line.

(2) The Continuous Automatic Train Control system works on the principle of target speed and target distance with Cab Signaling by means of continuous transmission between trackside and train through suitable approved means, ensuring safe movement of all trains under all operating conditions by continuously generating a safe operating envelope defined by the limit of movement authority and the maximum safe speed.

(3) The limit of movement authority shall be the farthest point to which the train may safely proceed taking into account margins for error in speed and distance measurement, calculating braking distances and the equipment reaction times.

(4) The maximum safe speed shall be maximum speed at which the train is permitted to travel without intervention by the train control and signaling system and it shall be continuously calculated in such a manner that permanent speed restrictions,

the speed limits for the type of train and temporary speed restrictions shall not be exceeded and the train shall always stop without passing the limit of movement authority.

(5) The Continuous Automatic Train Control system will provide the following modes of train operation, namely,

(a) Automatic Mode, where provided;

(b) Automatic Reversal Mode, if provided;

(c) Coded Manual Mode or Automatic Train Protection;

(d) Restricted Manual Mode;

(f) Cut Out Mode; and

(g) Run On Sight Mode, where provided.

SR-236 (5) (a) (b) Now not in existence.

237. Automatic Mode.— (1) In the Automatic Mode, the train shall operate without intervention by the Motorman except closing of train doors and starting from a station stop and it shall operate under the supervision and control of Automatic Train Protection functions.

(2) In Automatic Mode, the train control and the signaling system shall,–

(a) accelerate and decelerate the train by applying traction power, coasting and applying and releasing brakes automatically;

(b) automatically control speed, acceleration, and stop the train at stations;

(c) provide all indications necessary to operate the train;

(d) determine continuously the maximum safe speed and limit of movement authority;

(e) prevent movement of the train in excess of the maximum safe speed and limit of movement authority;

(f) open train doors on the correct side when the train is docked if permitted by the Automatic Train Protection door release and the platform screen doors, where provided, open automatically on the correct side;

(g) prevent the train from starting if train doors, or the platform screen doors where provided, are not detected closed unless isolated;

(h) train re-starting from a signal stop shall be automatic; and

(i) train starting or re-starting from a station stop shall be initiated by the Motorman

238. Automatic Reversal Mode.– (1) This mode, where provided, is used to reverse the running direction of a train automatically in areas of the section specifically defined in the special instructions which are possible only at specified track circuits of a station when train is at standstill.

(2) The transition from Automatic Mode or Coded Manual mode to Automatic Reversal mode is initiated automatically upon receiving the request for reversal operation from Automatic Train Supervision and has to be acknowledged by the Motorman by pressing the Automatic Reversal button at standstill.

(3) The on-board Automatic Train Protection unit of leading cab activates the unit at trailing end on arrival at a station if a reversal operation is requested by Motorman.

(4) The train borne Automatic Train Protection unit shall return from Automatic Reversal mode to Coded Manual mode once the reversal operation has been carried out successfully and the Motorman has unlocked the new leading cab for further running.

239. Coded Manual Mode or Automatic Train Protection Mode.- (1) In Coded Manual Mode the train shall be driven by the Motorman, obeying Cab Signals.

(2) In Coded Manual Mode, the train control and signaling system shall,-

(a) provide cab signals and all other indications necessary to operate the train including current speed;

(b) determine continuously the target speed and limit of movement authority;

(c) prevent train operation in excess of the target speed or limit of movement authority;

(d) provide audible and visual warning if the train speed exceeds the target speed or the maximum safe speed;

(e) enable train doors when the train is docked, enabling only the doors on the platform side of the train; and

(g) prevent the train from starting if train doors, and or the platform screen doors where provided, are not detected closed.

240. Restricted Manual Mode.– (1) The Restricted Manual Mode is the default mode of operation and is automatically initiated, when the automatic train control train borne equipment is first powered and it remains in operation until sufficient conditions have been met to allow for a transfer to Coded Manual Mode.

(2) The Restricted Manual Mode shall be used,-

(a) to operate trains in depots;

(b) following an emergency brake application on main line, and absence of cab signals;

(c) for entry to and up to exit from the depot; and

(d) on instructions from Traffic Controller.

(3) In Restricted Manual Mode, the train speed shall be limited to a maximum of twenty five kilometer per hour enforced by on board Automatic Train Protection equipment.

(4) All platform screen doors, where provided, will have to be operated manually by the Motorman from the local panel provided near the train cab at the platform.

(5) The Train doors on the correct side will also have to be operated manually by the Motorman.

SR-240 (4) When train runs on degraded Mode, all platform screen doors will be operated annually by the platform supervisor (RPF on duty at platform) from the local panel provided near the train cab at the platform.

241. Cut Out Mode.– (1) The "Cut Out" Mode, is intended for use in case of complete failure of train borne signaling and train control system and in such mode the train speed shall be restricted to twenty five kilometer per hour, unless special provision is made as under,

(a) Low Speed Cut Out Mode – this is the default mode of operation in Automatic Train Control Cut-out condition, in which the propulsion system would cut out traction of the train above twenty five kilometer per hour speed and the Motorman shall manually drive the train in accordance with the line-side signals and shall monitor and limit the speed of the train if it exceeds twenty five kilometer per hour speed, by service brake or emergency brake application; and

(b) High Speed Cut Out Mode – this mode, where provided, shall be employed only under specific instructions from the Operations Control Centre, in which the operation in Automatic Train Control Cut-Out condition the propulsion system would cut out traction of the train above forty kilometer per hour and the Motorman shall manually drive the train in accordance with the line-side signals and shall monitor and limit the speed of the train if it exceeds forty kilometer per hour, by service brake or emergency brake application.

(2) In Cut Out modes, the train shall be operated by the Motorman in accordance with line side signals and on Radio verbal instructions from the Traffic Controller.

(3) Running of trains on mainline in Cut Out Mode is permitted only under instructions of the Traffic Controller.

(4) All platform screen doors, where provided, shall have to be operated manually by the Motorman from the local panel provided near the train cab at the platform.

(5) The train doors on the correct side shall also have to be operated manually by the Motorman.

SR-241 (4) when train runs on degraded Mode, all platform screen doors will be operated manually by the platform supervisor (RPF on duty at platform) from the local panel provided near the train cab at the platform.

242. Run on Sight Mode.– In Run on Sight Mode, which only operates in the absence of Automatic Train Protection signals from the track or wayside equipment, the train is driven manually on line of sight and the speed is limited by Automatic Train Protection system to a maximum of twenty five kilometer per hour. When Automatic Train Protection signals from track or wayside equipment are received, this mode automatically changes to Coded Manual Mode.

243. Communications-based train Control .- (1) In Communications-based train Control systems the trains continuously calculate and communicate their status via radio to the wayside equipment distributed along the line. This status includes, among other parameters, the exact position, speed, travel direction and braking distance. This information allows calculation of the area potentially

occupied by the train on the track. It also enables the wayside equipment to define the points on the line that must never be passed by the other trains on the same track. These points are communicated to make the trains automatically and continuously adjust their speed while maintaining the safety requirements. So, the trains continuously receive information regarding the distance to the preceding train and are then able to adjust their safety distance accordingly.

(2) In Communications-based train Control system, position of the train and its braking curve is continuously calculated by the train borne equipment, and then communicate via radio to the wayside equipment. Thus, the wayside equipment is able to establish protected areas, each one called Movement Authority Limit, up to the nearest obstacle ahead. The occupancy calculated in these systems must include a safety margin for location uncertainty added to the length of the train. Both of them form what is usually called 'Footprint of the Train'. Thus as the train ahead moves forward, the movement authority limit of the following train also moves resulting in a moving block system of working.

(3) The Communications-based train Control system will also provide the same modes of train operation as in Continuous Automatic Train Control system in rule 237, 238, 239, 240, 241 and 242.

CHAPTER-VIII

SINGLE LINE WORKING

244. Objective of single line working.- In case of an obstruction on a portion of line between any two stations on one of the running lines, train service may be continued in the affected section on the adjacent line in both directions using single line working on the unaffected track and such single line working shall be achieved by fleeting of trains in groups in one direction at intervals decided by the Traffic Controller followed by an equivalent group of trains in the other direction.

245. Implementation.– (1) The Traffic Controller, shall after consultation with the chief controller, decide to implement the single line working.

(2) The Traffic Controller, shall before the train passes in the reverse direction, inform to the Station Shift In-charge at each of the stations in the single line section.

(3) The Station Shift In-charges shall also closely monitor crowding on the platform in use and prepare to close entrances to the station if overcrowding becomes dangerous.

(4) The Station Shift In-charges at these stations shall inform passengers by visual and audible announcement and take any other measures necessary to direct passengers on the correct platform.

(5) The Traffic Controller shall inform the Motorman of all trains of the location and direction of the single line working.

(6) Trains shall work under normal signalling including Automatic Train Operation in the normal direction of travel. In the reverse direction of travel, If signalling system permits, the train shall normally work under Automatic Mode or Coded Manual Mode. Other Modes like Restricted Manual Mode, Run On Site Mode or Cut Out Mode may also be used for train operation in the reverse direction of travel, under Special Instructions.

(7) When normal working is to be restored, the Traffic Controller shall inform the Station Shift In-charge at each station of the single line section, of the last train to pass the section in the reverse direction after which normal station operation shall be restored.

SR 245 (6) The purpose of these instructions is to detail the procedures for train operation in reverse direction of travel during single line working.

(a) Single line working shall be introduced only between the stations having crossovers between UP/DN lines and provided with signals.

(b) Automatic Route setting will not be possible for single line working. Cycle cannot be set in the reverse direction of

travel. Hence the route will be set manually by Traffic Controller. Trains can move in the set direction in fleet mode.

(c) Before single line working is introduced, the Traffic Controller shall ensure that there is no train in the proposed single line section.

(d) The Traffic Controller shall establish the direction of Traffic and set the route accordingly.

(e) The trains shall be allowed to run on ATP mode as long as the system permits and at the permissible speeds of the section.

(f) The Traffic Controller shall inform the Station Shift-in-charge of the receiving station about the particulars of last train dispatched from the dispatching station like Rake number, Train No. and ensure that the last train has cleared the section before reversing the direction of traffic.

(g) In case ATP mode is not functional, RM/ ROS/Cut Out mode shall be resorted and the Motorman shall proceed with the train cautiously with speed not exceeding 15 kmph in the reverse direction.

(h) If it is not feasible to run the single line working, the Traffic Controller shall introduce "one train only system" to run over the unaffected line between two stations as shuttle train.

246. Signaling Failures.-In the event of a failure of a track side signaling equipment which makes Restricted Manual operation necessary on all trains, single line working shall be suspended immediately and if necessary, train may still pass through the section in the normal direction of travel and after defect is repaired; single line working may be resumed.

CHAPTER -IX

PERMANENT WAY AND WORKS

247. Works at Stations.- (1) No maintenance work, affecting safety of train operation, shall be carried out at any station without Engineer's Possession and until permission has been granted by the Station Shift in-charge.

(2) All works in public areas shall be securely fenced to prevent access by the public.

(3) The maintenance staff shall inform to the Station Shift in-charge before starting work and again before leaving the work site within the station premises and Station Shift in-charge shall record the time and location of their work so that they be warned of any emergency arising on the station.

(4) Any maintenance work on a station which requires fire alarm or fire suppression equipment to be isolated shall be done only with the permission of the Station Shift in-charge.

(5) The maintenance staff shall be responsible for their own protection and for raising the alarm in case of fire in the area which has been isolated and shall also be responsible for restoring normal function to the isolated equipment informing the Station Shift in-charge on completion of their work.

(6) Maintenance work which requires the complete shutdown of the fire alarm or fire suppression systems of public areas shall preferably be taken up during the hours in which the station is not open to the public.

CHAPTER - X

POWER SUPPLY AND TRACTION ARRANGEMENT

248. Switching on, and off, of traction and power supply distribution.–

(1) All traction and power distribution systems shall remain live at all times and shall only be switched off when necessary for maintenance of the equipment or protection of other maintenance activities.

(2) Traction supplies shall be switched on and off as per instructions of the Traffic Controller:

Provided that in case of emergency after giving information to the Traffic Controller, Traction Power Controller shall be authorised to switch off the power.

(3) All traction and power distribution systems which have been switched off shall be adequately earthed before any maintenance or repair work is undertaken.

(4) All maintenance work on high tension distribution network shall be undertaken with the permission of the Traction Power Controller who shall ensure maintaining adequate power supplies for the operation of the Metro Railway network under the condition prevailing at that time.

(5) Emergency Trip System, where provided,–

(a) The Emergency Trip Switches will be used for switching off the traction power supply on the line of the particular sections near the Emergency Trip Switch in case of any emergency; and

(b) The Emergency Trip System switches are installed at each end of platform in stations, at station control rooms and at cross passages in tunnels. After activating an Emergency Trip System an individual signal is sent to Supervisory Control and Data Acquisition system, and according to a tripping scheme and logic provided, the Supervisory Control and Data Acquisition system shall switch off relevant circuit breakers and send signals to indicate that the track section is de-energised.

249. Access.– (1) All points of potential access by the metro railway servants or public to high voltage equipment shall be kept locked and suitable warning notices displayed therein.

(2) All switch gear and other high voltage equipment shall be fenced off and shall be accessible only to authorised staff and access to the live equipment shall only be permitted when the equipment has been switched off and earthed as laid down under special instructions.

(3) No person shall work on high voltage equipment, or DC traction equipment or switch such equipment by local control unless he is properly trained and certified to perform such duties and possesses a valid certificate of competency and he shall also obtain the permission of the traction power controller before undertaking such work and the procedure for obtaining; granting and cancelling of such permission shall be laid down in special instructions.

(4) No person shall work closer than two meters to a live conductor.

SR 249 Access – (1) All points of potential access to high voltage equipment by the Metro Railway servants or public shall be kept locked and suitable warning notices shall be displayed therein.

(2) All switch gear and other high voltage equipment shall be fenced off and shall be accessible only to authorised staff and access to the live equipment shall only be permitted

by Traction Power Controller (TPC) when the equipment has been switched off and earthed.

(3) No person shall work on high voltage equipment, or DC traction equipment or switch such equipment by local control unless he is properly trained and certified to perform such duties and possesses a valid certificate of competency and he shall also obtain the permission of the Traction Power Controller before undertaking such work and the procedure for obtaining; granting and cancelling of such permission as laid down against SR71.

250. Arcing and Fire.– (1) If any member of staff observes fire, smoke, arcing or fusing in the vicinity of the third rail equipment, as the case may be, he shall inform the Traffic Controller or Station Shift In-charge as quickly as possible and request power to be switched off from the section of the line.

(2) The Traffic Controller shall instruct the Traction Power Controller to switch off the power to that section of line before taking further action to investigate the occurrence.

(3) The Traffic Controller shall also instruct the Station Shift In-charge at the nearest station to check if the fire or arcing has been extinguished.

(4) On the basis of report of investigation and confirming rectification of the fault, Traction Power Controller shall

re-energise the section and may advise the Traffic Controller to resume train services.

SR 250 (3) The Traffic Controller shall also advise Station Shift In-Charge of the nearest station to obtain line safe certificate from a competent third rail supervisor not below the rank of JE after fire or arching has been extinguished and inform the Traffic Controller for resumption of train service.

251. Sectioning and siding switches.- (1) Sectioning and siding switches installed in the Traction system shall be operated only by such officials as are authorised to do so by the in-charge of the Traction system.

(2) No switch affecting the feed to main running line or loop line shall be closed or opened without permission of the Traction Power Controller and the detailed procedures for opening and closing of sectioning and isolating switches shall be as per the Metro Railway Traction Manual.

(3) All operations of section or isolating switches, when completed, shall be reported to the Traction Power Controller in all cases.

CHAPTER- XI

OTHER SYSTEMS OF WORKING

252. Application of Special Procedure. - Notwithstanding anything contained in these rules, special procedures framed under approved special instructions shall apply to the initial stage of operation or whenever such a condition arises on any section of the Metro Railway.

Explanation— For the purposes of this rule, the expression "initial stage" means the period in which any section of the Metro Railway shall be opened without Automatic Train Protection, or when signalling and Train Control is not available from the Operations Control Centre.

253. Driverless Train Operation.– (1) The Driverless Train Operation will provide the following two modes of train operation, namely,-

(a) driverless train operation where an authorised servant is onboard the train, but normally not in the driving cab, and he will have no responsibility for train operation except for failure recovery; and

(b) unattended train operation where no authorised servant is onboard the train.

(2) An Authorised servant will be onboard the train, who is termed as Roving Attendant, and will perform the following duties,-

(a) be present in the train and be watchful;

(b) be on general lookout from front window of the cab occasionally;

(c) report any unusual occurrence to the Traffic Controller; and

(d) do any other duty as assigned by general or special order of the Metro Railway Administration.

(3) The rules provided in these General Rules relating to the duties of Motorman, Operation Control Centre and Depot Control, shall not apply to the Driverless Train Operation. Either Approved Special Instructions shall be issued or separate Rules shall be notified for this purpose.

SCHEDULE I

[See rule 73] (For 750 V DC traction)



[File No. 2015/Safety(A&R)/19/10]

(GIRISH PILLAI)
MEMBER TRAFFIC
RAILWAY BOARD

Appendix - 1

From: O&M/T-1

Sl. No.

KOLKATA METRO RAILWAY

Authority to move from depot to running line/running line to depot.

Station..... Carshed……

Sl. No……..... Date.....

Time..... hours..... minutes.....

To Driving Motorman/Shunter of train/Rake No……

- You are hereby authorized to proceed from the depot and enter the running line.
- You are hereby authorised to proceed from the running line to the depot line.

Signature of Motorman/Shunter

Date……

Time……....

Station Panel Operator /Rolling Stock Supervisor/Station/Car Depot (Stamp)

Note : Strike off the clause which does not apply

Appendix - 2

From O&M/T-2

KOLKATA METRO RAILWAY

CAUTION ORDER

SL.No……

(Driving Motorman /Conducting Motorman/ Station Record)

Station…… Date…….....

To,

The Driving Motorman of Train No……....(Description)……

You are hereby instructed to exercise the following speed restriction observing engineering indicators :-.....……(in figures)……(in words).

Sr. No.	Station Between		Kilometerage		Speed Kmph.	Cause/ Remarks
	From	To	From	To		

Time……. Signature of Panel Operator

Station Stamp

Signature of Driving Motorman……...……... Date……

Signature of Conducting Motorman……... Date……

Appendix - 3
From O&M /T-2A

KOLKATA METRO RAILWAY
Caution Order

SL. No……

(Driving Motorman /Conducting Motorman/ Station Record)

Station……..... Date……..... 20……
To,
The Driving Motorman of Train No……... (Description)……

Caution Order
NIL

On section Between ……. and…….on UP/DOWN Line

Signature of Panel Operator
Station Stamp
Signature of Driving Motorman…….....… Date……...
Signature of Conducting Motorman……... Date……..…

Appendix - 4

From O&M /T-3A

Sl. No.....

KOLKATA METRO RAILWAY

Authority to pass Semi Automatic/Manual operated signal(s)

UP/Down

(Driving Motorman /Conducting Motorman/ Station Record)

Station : Date :

Time : hours : minutes :

To

The Driving Motorman of train No. ..... UP/Down

Automatic signalling has failed and you are, hereby authorised to pass Automatic signal (s) ..... between.....station and ..... station. In addition, you are also authorised to pass Semi Automatic/manually operated signal No. ..... and line clear has been received from .....station under his private number (in wards) .....(in figures) .....

You shall proceed cautiously (speed not exceeding 25 kmph) and bring your train to stand outside the reception signal (semi automatic /manual) there after you will be admitted in at the station by taking "off" the signal or "calling on" signal or piloted in by displaying a green hand signal by a competent Railway official of that station.

Signature of Panel Operator
Station Stamp

I have understood the contents of this authority

Signature of the Motorman
Date:
Time:

Appendix - 5

Form No – O&M/T – 3B

Sl. No

Metro Railway Kolkata

Authority to pass Semi Automatic / Manually Operated Signal

UP/Down

(Motorman/ Station Record)

Station : Date :

Time: hours : minutes:

The Driving Motorman of train No.————UP/Down

Semi Automatic / Manually Signal No.....
…….. has failed. You are hereby authorized to pass the signal and proceed cautiously up to the next Semi Automatic / Manual/ Automatic Signal No…….and be guided by its aspect.

Signature of Panel Operator

Station Stamp

I have understood the contents of this authority

Signature of the Motorman

Date

Time

Appendix - 6
From: O&M /T-4
SL. No……

KOLKATA METRO RAILWAY

AUTHORITY TO SHUNT ON THE RUNNING LINE INVOLVING BLOCK SECTION

(Motorman/ Station Record)

The Driving Motorman of Train No/Rake No . .....
Date……Time….....

You are here by authorised to terminate your train at ..... station. Shunt your train/rake from ..... line to .....line via 'Y' siding/Cross over. You will be thereby guided by shunt signal or hand signal. After placing the Rake No ..... at the UP/Down Line at .....Station, the same Train/ Rake will work as ..... up to ..... station.

Note: Strike off the clause which does not apply.

Signature of Motorman — Signature of Panel Operator
Date……..Time…….. — Station Stamp

Appendix - 7
From O&M /T-5
SL. No.

KOLKATA METRO RAILWAY

Block Line Ticket
(Motorman/ Counter Foil)

Station…….....….....Date……..... Time……
Provisions of GR 162 are hereby suspended on section between ……and …….previous train No…… having…….assisting train is now permitted to proceed to Kilometers between.....……..…..and ……under G&SR 163 Special instructions are given in the Caution order attached herewith.

....
Driving Motorman of Assisting train Panel Operator on duty

Note: Counter foil should be signed by the Driving Motorman. Block Line ticket must be returned to the issuing Panel Operator, except when orders have been given to the Driving Motorman to proceed to the station at the other end of the block section.

Signature of Driving Motorman Signature of Panel Operator
Date….....…Time…….. Station Stamp

Appendix - 8

From O&M /T-11

SL. No.

KOLKATA METRO RAILWAY

Signal Failure Memo

(SSE, JE/ Counter foil)

Station……. Date……

To

SSE/JE (Signal) ESM/MSM

.....Point(s)/Signal(s)/Gear(s) failed at ..... hrs. on ..... Central Control office (OCC) has been informed over phone at .....hrs. on .....

Please attend and rectify the failure.

....

Signature of SSE/JE (Signal) ESM/MSM Signature of panel operator Stamp

Time..... Time .....

Date……... Date……..

Appendix - 9

From O&M/T-7A

Serial No……

Metro Railway Kolkata

Authority to Proceed without line Clear in Double Line Section

UP

Date……...Time……..…Hrs……..…Minutes……

From Panel Operator of ……

To Driving Motorman.

Train No……(UP)

You are hereby authorised to Proceed cautiously without line clear from……..Station to……..Station with Your train on UP/DN Line. You shall bring your train to a stand outside the Home Signal of ……..Station and thereafter be guided by instruction from the Panel Operator of that Station. Train No…….was the last train over the section. It left here at…. … circumstance under which this order is given :-

a) Failure to Signals & Communications between block Station and with control.

Signature of Panel Operator

I have understood the contents of this

Signature of Driving Motorman Signature of Conducting Motorman

Appendix - 10

From O&M/T-8A

Serial No……

Metro Railway Kolkata

Authority to Proceed without line Clear in Double Line Section

DOWN

Date……..…..Time……...…...…Hrs……Minutes……

From Panel Operator of ……

To Driving Motorman.

Train No……(DN)

You are hereby authorised to Proceed cautiously without line clear from……...Station to……...Station with Your train on UP/DN Line. You shall bring your train to a stand outside the Home Signal of ……..Station and thereafter be guided by instruction from the on duty Panel operator of that Station. Train No……was the last train over the section. It left here at…. … circumstance under which this order is given :-

a) Failure to Signals & Communications between block Station and with control.

Signature of Panel Operator

I have understood the contents of this

Signature of Driving Motorman Signature of Conducting Motorman

Appendix – 11
From O&M/T-10 (1)
Serial No……

Metro Railway Kolkata

PTW/1

(Requisition for permit to work)

Requisition No..... Date.....

To
SSE/JE Power Distribution (3rd rail)
Metro Railway, Kolkata.

Please issue permit to work for .....
.....
from ..... hrs of .....
(date) to .....hrs of .....(date).

The third rail parameters and rail bonds will be distributed/ not distributed after completion of work.

(a) Entry.....
(b) Nature of work.....
(c) Contractors' Name.....
(d) No. of workers .....

(Signature of staff placing requisition) Received permit no.....
Time ..... Date ..... Time ..... Date .....

Signature of SSE/JE
Name.....
Designation.....
Department.....

Signature of SSE/JE
Name.....
Designation.....
Department.....

Appendix – 11

From O&M/T-10 (2)

Serial No……

Metro Railway Kolkata

PTW/2

(permit to work)

Permit No ..... Date .....

To Departmental Supervisor Private No. .....

You are permitted to work on .....

.....from .....hours of .....

(Date) to.....Hours of .....(Date).

Please complete your job by .....Hours of .....and cancel permit to work removing men, materials and all infringements and earthing devices.

Please note that conductor rails of tracks, wither deleted or not mentioned, or equipment not mentioned are energized with 750 DC.

Name of Contractor .....

No. of workers .....

Signature .....

Name .....

Designation of SSE/JE(PD/3rd Rail)

Appendix – 11
From O&M/T-10 (3)
Serial No……

.

Metro Railway Kolkata

PTW/3

(Cancellation of permit to work)

Memo No. ..... Date .....

To Private No. .....
SSE/JE, PD (3rd Rail)
Metro Railway (N-S/E-W)

Reference my requisition No .....
Dated..... work has been completed at location
.....
Men, Materials and all infringements have been removed and line is fit to be charged.

Time .....
Date .....

Signature of the person cancelling the PTW
Name.....
Designation.....
Department.....
(Same SSE/JE who requisitioned the PTW should sign here)

Appendix – 11

From O&M/T-10 (4)

Serial No……

Metro Railway Kolkata

PTW/4

(Certificate on completion of Track work)

Memo No ..... Date.....

Private No. .....

Certified that the following work was done the track at location ……km to ……km between ..... station to.....station.

It is certified that the work have been restored to normal position and track is fit for the train running as well as traction current continuity.

.....

Signature of the supervisor of the concerned Department.

Time..... Name .....

Date..... Designation .....

Note : Same SSE/JE Who has requisitioned the PWD should sign here.

Appendix – 11

From O&M/T-10 (5)

Serial No……

Metro Railway Kolkata

PTW/5

(Confirmation of switching off operation)

Message No ..... Date .....

To
Traction Power Controller
Metro Railway, (N-S/E-W)

DC Power ..... Hours of ……(date) to……Hours of.....(date).

Private No. .....
Time .....

.....
Signature of PD(3rd rail) SSE/JE

.....

Received the message no..... date .....at Hours for power block for the period from ..... to ..... hours of ..... (date).

.....
(Signature of Traction Power Controller)

Appendix – 11

From O&M/T-10 (6)

Serial No……

Metro Railway Kolkata

PTW/6

(Confirmation of switching off operation)

Message No .....Date .....

To

SSE/JE, PD (3rd rail)

Metro Railway, (N-S/E-W)

Ref: Your message No.....

Dated.....

DC power to conductor Rail has been switched off for .....

……from ……Hours of ……(date) to ……Hours of .....(date)

In case power block is not granted

Switching off has not been undertaken for the reason given below:

.....

.....

Private No. .....Signature .....

Time..... (On duty TPC)

Name .....

Appendix – 11
From O&M/T-10 (7)
Serial No……

Metro Railway Kolkata

PTW/7

(Cancellation of power Block and authority for switching ON)

Message No .....Date .....

To
Traction Power Controller (TPC)
Metro Railway, (E-W/N-S)

Ref: Your Message No.....
Dated .....

All Men, Materials under my charge have been withdrawal and earthing road/cable removed. The men have been warned that it is no longer safe to work on or near the electrical equipments and conductor rail.

Please switch on the feeder feeding power to the Section.....
.....
On which power block has been imposed vide your message no.....dated ..... referred above.

Private No. .....
Time .....

Signature of SSE/JE, PD (3rd rail)

.....

Received the message no.....
..... dated ..... from Shri.....
.....

Signature of Traction Power Controller