



VICTORIAN RAILWAYS

INSTRUCTIONS

TO

**Employes Engaged
in the Operation of**

**ELECTRIC
STREET RAILWAYS**

1942

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TO

EMPLOYEES ENGAGED IN THE OPERATION
OF ELECTRIC STREET RAILWAYS.

EFFECTIVE AS FROM JUNE, 1942.

This book is issued for the use and information of employes only, and the instructions contained therein supersede all others of prior date that are contrary thereto.

Every employe who in any capacity is engaged in connection with the Electric Street Railways, and every other employe whom the Head of the Branch concerned considers should be acquainted with these Instructions, must be supplied by his superior officer with, and have with him when on duty and produce when required a copy of this Book of Instructions.

In order to expedite reference, the Instructions have been arranged in suitable divisions (see Table of Contents on next page). Every employe to whom this book is issued must make himself thoroughly acquainted with, and must comply with, every Instruction applicable to him, irrespective of the division in which it is embodied.

By order of the
VICTORIAN RAILWAYS COMMISSIONERS.

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This book is the property of THE VICTORIAN RAILWAYS
COMMISSIONERS, and is issued to—

NAME.	OCCUPATION.

who, by accepting it, agrees to return it to the proper officer
when called upon.

DEFINITIONS.

1. In these Instructions, and in any amending or supplementary Instructions that may be issued, unless there be something in the subject or context conflicting with such construction—

- (a) "Street Railways" shall mean any Electric Railway Line operated on any public roadway between St. Kilda Station and Brighton Beach, Sandringham Station and Black Rock, or between such other points as may be authorised under the orders of the Victorian Railways Commissioners; and
 "Tramway" shall mean any Railway Line worked under the management of the Melbourne and Metropolitan Tramways Board;
- (b) "Commissioners" shall mean The Victorian Railways Commissioners;
- (c) "Employee" shall mean any person whomsoever employed by the Commissioners who has been supplied with a copy of this Book of Instructions, whether employed in a permanent office or as a supernumerary;
- (d) "Officer-in-Charge" shall mean the officer of the Transportation Branch who is for the time being in charge of the operation of the Line;
- (e) "Motorman" shall mean the person for the time being in charge of the electrical operation of a Street Railway Car;
- (f) "Conductor" shall mean any employe acting as Conductor, Conductor in Charge, or Assistant Conductor of a Street Railway Car;
- (g) "Carmen" shall include Motorman and Conductor;
- (h) "Car" shall mean any vehicle operated on the Electric Street Railways or Tramways;
- (i) "Trolley" shall mean the car current collecting wheel which makes contact with the overhead contact wire;

- (j) "Overhead Frog" shall mean that portion of the overhead contact wire, where one line branches from another ;
- (k) "Section Insulator" shall mean a non-conducting portion of the contact wire joining two electrical sections ;
- (l) "Cut-Off-Sign" shall mean a sign displayed to denote the point at which the Motorman must cut off power and coast ;
- (m) "Coasting" shall mean running the car without power ;
- (n) "Car Staff" shall mean the metal symbol carried by the Motorman to prevent conflicting movements, on any single line section ;
- (o) "Flash Report" shall mean the preliminary information sent to the Officer-in-Charge by the senior employe at the scene of an accident ;
- (p) Words importing the singular number shall be deemed to include the plural number, and words importing the plural number shall be deemed to include the singular number ;
- (q) The term " he," " his " and " him " shall be deemed to refer to either a male or female.

GENERAL INSTRUCTIONS.

2. Every employe must devote himself exclusively to the service, and conform to all the Rules and Regulations and Instructions of the Commissioners ; he must reside at whatever place may be appointed, attend at such hours as may be required, and pay prompt obedience to all persons placed in authority over him.

3. The safety of the public shall be the first and most important duty of every employe.

4. Except where Special Instructions are issued to the contrary, every employe must, before commencing each shift or portion of a broken shift, sign his name and record the time of commencing duty in the Book, or on the Appearance Sheet, provided for the purpose, and similarly must, at the close of each shift or portion of a broken shift, sign his name and record the time at which he ceased duty.

5. (a) No employe is allowed to absent himself from duty, to alter his appointed hours of attendance, or to exchange duty with any other employe, without the special permission of his superior officer.

(b) If, due to illness or other justifiable cause, any employe be unable to attend at the appointed time for duty, he must advise the Officer-in-Charge, or see that such officer is advised, in sufficient time, to prevent inconvenience arising from such employe's absence.

6. The name and address of every person employed by the Commissioners must be registered at the Depot to which he is attached, so that, if required in cases of emergency, the employe may be readily found. Any change of address must be at once notified, in order that the record may be kept perfect.

7. No employe is allowed to leave the service of the Commissioners without giving the required notice.

8. (a) Every employe supplied with uniform dress must, when on duty, appear in it clean, neat, and complete, with the tunic (in the case of the two piece suit) buttoned up. The cap must always be worn straight on the head.

(b) Any employe who disfigures or damages any portion of his uniform through private or improper use prior to the

due date for renewal will be called upon to replace such portion at his own expense.

(c) No employe shall remove, alter, or cover his badge whilst in uniform, or wear the badge of another employe.

9. When an employe leaves the service of the Commissioners, he must immediately deliver up his uniform—if one has been issued to him—and all other articles belonging to the Commissioners. Any money that may be due for salary or wages to any employe leaving the Service will not be paid until the Clothing, Books of Instructions, Lamps, Flags, Tools, and all other articles the property of the Commissioners, which may have been supplied to him, shall have been delivered up. If not delivered up, or if any article be missing, or appear to have been damaged by improper use, the cost of such article, or of the repair of such damage, shall, unless he can give a satisfactory explanation, be a debt due from the employe to the Commissioners, and may be deducted from any pay then due, or if such pay be found insufficient to meet the claim, will become a debt recoverable by law.

10. (a) Every employe is responsible for the proper use and preservation of any article or material the property of the Commissioners that may be in his custody or care, and no employe shall sell or dispose of any such article or material without written instructions from the authorised officer.

(b) Except for departmental purposes, no employe shall take or remove from any Railway premises or have in his possession any property of the Commissioners; the fact of any such property appearing to be waste or useless will not be accepted as excusing any infringement of this Instruction.

(c) No employe shall use any article, material or thing the property of the Commissioners to make any tool, pattern or model or any article, material or thing for any purpose other than a departmental purpose.

11. The Commissioners may deduct from the salary or wages of any employe, who is a tenant of any premises vested in the Commissioners, any sums that may be due by him for rent in respect of such premises.

12. Every employe must be prompt, civil, and obliging, and must afford every proper facility for the business to be performed. He must be careful to give the correct information, and, when asked, give his name or number without hesitation. No employe shall use improper language, or enter

into an altercation with the public or a fellow employe, whatever provocation may be given. (See also clause (e), Instruction 57).

13. (a) Every Station-master, Clerk, Inspector, Foreman, Motorman, Conductor, Signalman, Porter, Shunter, Ganger, and Trackman connected with the operation of the Streets Railways, and every other employe whom the Head of the Branch concerned considers should be acquainted with these Instructions, must be supplied by his superior officer with, and have with him when on duty, and produce when required, a copy of such Instructions. (See Instruction 14).

(b) The Officer-in-Charge must see that a copy of every printed and written Notice of Signal and other alterations, as soon as possible after receipt, is supplied to each Motorman and Conductor working over the Line affected by the Notice. He must also see that the signature of every such employe is received for the same, in a book provided for the purpose. This book must be available for reference when required.

14. If any employe of the Commissioners should lose his copy of the Book of Instructions or Time Table, or other document which these Instructions require that he should have in his possession, he must immediately obtain another copy from his superior officer.

15. Every officer is responsible for each person under his control keeping the proper records, books, and accounts applicable to his duties.

16. (a) Every employe must assist in carrying out these Instructions, and shall immediately report to his superior officer any infringement thereof, or any occurrence which may come under his notice affecting the safe and proper working of the traffic.

(b) Every irregularity must be reported by the Motorman and Conductor concerned. Even a seemingly most trivial irregularity may develop into a serious matter; therefore every such occurrence should be reported and every effort should be made to obtain and furnish correct particulars.

(c) Any employe failing to report an irregularity which may have come to his knowledge, will incur the same responsibility as if he were the person in fault.

(d) In any case where any employe does not understand his duty, or is in doubt as to his duty, he must immediately apply to his immediate superior for instructions.

17. Every employe must render his best efforts to effect adherence to the public Time Table, or such special Time Table as may be provided.

18. (a) Employes must neither congregate on the footpath or roadway in front of the Depots, nor loiter in the passages or doorways. When off duty, if they remain about the premises, they are expected to occupy the rooms set apart for their use.

(b) Rooms allotted for the use of employes, and the fittings therein, must be kept tidy and clean; scraps of food, etc., must not be thrown on the floor, and all litter must be placed in the receptacle provided. Writing on the walls or fittings is forbidden, and no notices, pictures, advertisements, etc., shall be exhibited on the walls, unless authorised by the Officer-in-Charge.

19. (a) Any employe knowing of fire or of an accident or of any obstruction or defect likely to cause or contribute to an accident on the Line, must report it, or ensure its being reported at once to the Officer-in-Charge, and must perform such services as such Officer or the occasion may require.

(b) In the event of any outbreak of fire at the Car Sheds, or other departmental premises, the Fire Brigade must be immediately sent for, and pending the arrival of the Brigade, the most effective steps possible in the circumstances must be taken to deal with the outbreak.

(c) Every employe available, whether on or off duty, must render assistance, and the chemical fire extinguishers, hoses, buckets, etc., provided must always be ready for use and used as required.

Water must not be directed on any electrical wire or piece of electrical apparatus whilst that wire or apparatus is carrying an electric current.

(d) In any instance in which a Car is on fire in the Car Shed, every effort should be made to remove the car well clear of the shed, or, if this be not practicable, to clear a space around the car affected. (See also Instruction 52).

20. (a) Every employe is forbidden to partake of or have in his possession any intoxicating liquor whilst on duty or on departmental premises.

(b) If any employe in charge consider at any time that any employe under his direction or supervision is unfit to perform his duties properly by reason of being under the influence of

intoxicants, he shall suspend such employe from duty, and immediately report the matter to the Head of his Branch by or through his immediate superior.

(c) If at any time any employe should have reason to suspect that another employe on duty is under the influence of intoxicants, he must, by the most expeditious means, at once acquaint with the circumstances the person under whose supervision or direction such employe is working. (See clause (c), Instruction 33).

21. No gratuity is allowed to be taken from a passenger or other person by any employe.

22. No employe shall accept a presentation without the consent of the Commissioners.

23. No employe shall trade, either directly or indirectly, for himself or others.

24. Employes are invited to offer suggestions tending to improvement in the Service, which will be given careful consideration and recognition.

25. No employe shall take out a patent for any appliance tested or used on the Railways, without the permission of the Commissioners, and in the event of permission being given to patent any article used on the Railways, the Commissioners shall have the right to use such article without paying any royalty therefor.

26. (a) No person who is not an intending passenger shall be allowed on any car.

(b) No employe must be allowed to travel on the Railways unless provided with a proper ticket or free pass; and if an enclosed Driving Compartment be provided no employe must be allowed, unless in the execution of his duty, to ride in such compartment.

(c) No employe, travelling on a pass, must occupy any seat required for a paying passenger.

27. (a) Carmen must not allow any truck, bicycle, or other vehicle or any animal to be attached to or drawn behind or at the side of the car.

(b) No person must be allowed to ride or stand on the foot-board, step, roof or dash rail of any car, and if any person declines to move from such a position he must be removed without unnecessary force; if necessary, the assistance of the nearest Constable must be obtained.

28. (a) If side-barriers be provided on the car it will be the Conductor's duty to see that they are kept down on the "Off" side when the car is running; unauthorised persons must not be allowed to alter the position of a side barrier. (See also clause (j), Instruction **88**).

If pneumatically operated doors be provided on the car, One-man type cars excepted, the doors on the Right-hand side must be kept closed when the car is in running and the doors on the other side operated to suit weather conditions. On approaching St. Kilda station and after starting from the Stopping Place on the approach to the Tramway Intersection the doors on the Left-hand side must be closed and the doors on the Right-hand (station) side opened.

(b) In the case of a One-man type car the doors shall be operated as set out in sections (i) to (iv) hereof.

- (i) On arrival at Black Rock Terminus the centre doors on the "Up" side must be opened and the centre doors on the "Down" side of the car kept closed.
- (ii) On arrival at the Sandringham Station Terminus the centre doors on the Station side of the car and the end door on the opposite side must be opened and when all passengers have alighted the end door must be closed.
- (iii) When a car, operated under One-man conditions, is in running between Terminal Points the centre doors on each side and the rear door must be kept closed.
- (iv) When a One-man type car is in running between Terminal Points and a Conductor is employed on the car, all doors on the Right-hand side must be kept closed and the doors on the other side operated to suit weather conditions.

29. Unauthorised employees must not take charge of luggage or other articles for the convenience of passengers. All such luggage or articles must be deposited in the proper office in the regular manner.

30. (a) All lost property found on any car or on any portion of the Electric Street Railway premises or Line, must be promptly handed in: On St. Kilda-Brighton Line all articles found on Down cars and on Up cars on the Down side of the Depot shall be handed in at the Depot Office. Articles found on Up cars between the Depot and St. Kilda shall be handed

in at St. Kilda Station. On the Sandringham-Black Rock Line all articles found, shall be handed in at Sandringham Station.

Each article must be accompanied with a slip showing the name and address of the finder, the name of the employe to whom it was handed and the date, trip and number of the car or details of the place where the property was found.

No employe other than the Officer-in-Charge or Station-master, St. Kilda or Sandringham, is allowed to examine the contents of any parcel or purse, etc., so found.

Any portion of car equipment found on or in the vicinity of the track must be promptly forwarded to the Officer-in-Charge.

(b) If application should be made to any employe for lost property which for the time being is in his possession, he must inform the applicant that delivery can only be given at the Depot, or St. Kilda Station on the St. Kilda-Brighton Line or at Sandringham Station on the Sandringham-Black Rock Line.

31. (a) No person, other than an authorised employe or a person having business with the Department, must be allowed to enter the Car Sheds, Workshops or other premises of the Commissioners without the permission of the proper officer.

(b) Unless instructions are issued to the contrary any person trespassing must be requested to leave the premises, and, on complying, must be warned not to go or pass thereon again. If such person refuse to quit, he must be requested to give his name and address, which, with a report of the circumstances, must be handed to the Officer-in-Charge or other responsible officer.

(c) No employe shall bring any stranger on to the departmental premises without the permission of the Officer-in-Charge. Any visitor who may wish to interview an employe upon matters of urgency, may do so upon obtaining the permission of the Officer-in-Charge; the employe concerned must be careful to see that the interview is as brief as possible.

32. No employe shall allow himself to be canvassed for any purpose when on duty.

33. (a) In any case in which one employe is appointed to relieve another, the person about to be relieved shall not, under any pretext, leave duty until the employe appointed to relieve him arrives.

(b) On the change of duty between employes all circumstances which may have occurred out of the ordinary course of working must be communicated to the employe coming on duty, before he takes charge.

(c) No person employed in any capacity shall hand over his duties to any other person whose duty it may be to relieve him unless the person being relieved shall be satisfied of the sobriety of the person whose duty it may be to relieve him. (See also clause (c), Instruction 20).

34. All monetary transactions between employes should be avoided, but senior employes are strictly forbidden to borrow money from, or to come under any pecuniary obligation to, any junior employe.

35. The reading of books or papers on duty and smoking when on duty on cars or on departmental premises, except where specially permitted, is strictly prohibited. Motormen and Conductors are permitted to smoke whilst the car is standing at any terminus other than St. Kilda and Sandringham. All smoking material must, however, be put away immediately the car is about to start. (See also Instruction 46).

36. No employe shall publicly comment upon the administration of the Victorian Railways, or use, for any purpose other than the discharge of his official duties, information gained by or conveyed to him as an employe of the Commissioners.

37. No employe shall address any communication in connection with his public duties or position in the Railway Service other than through his immediate superior officer, or use or obtain outside influence, either directly or indirectly, to represent his requirements.

38. Any employe who has cause to complain of or make a report against any other employe, shall make the complaint or report through his immediate superior to the Head of his Branch within seven days of the occurrence.

39. No employe shall undertake any legal proceedings on behalf of the Commissioners, or on behalf of any other employe, nor shall show or produce any document or book or Instruction or copy thereof to any person not connected with the Department, nor shall directly or indirectly make any communication to any person not officially entitled thereto upon any matter affecting the Department or the business or

employees thereof, or relating to the Railway Service or his own official position or acts or upon any political question or subject whatsoever, without having first obtained authority or instructions from the Head of his Branch or from the Commissioners.

40. (a) Except as otherwise ordered, no employe under 21 years of age shall be engaged in any of the following positions:—Inspector, Motorman, Conductor, Signaller, Foreman, Ganger, Trackman, Flagman, or Pilotman.

(b) Before any employe is appointed to the position of Motorman, or Conductor, he must be examined and certified as possessing a full knowledge of the Instructions by the officer or officers authorised by the General Superintendent of Transportation. No employe shall be appointed to the position of Motorman unless also certified as competent by an officer authorised by the Chief Mechanical Engineer.

(c) Every employe must, however, be prepared for examination or re-examination at any time.

41. (a) Except as shown in clause (b) hereof, only men certified as competent by the authorised officers of the Rolling Stock and Transportation Branches must be allowed to drive cars on any part of the Running Lines or Sidings or in the Car Shed. They are each required to run the car personally, and under no circumstances must they allow any unauthorised person to operate it.

(b) The Officer-in-Charge may authorise an employe—in order that he may keep in touch with, or learn the duties of a Motorman—to accompany a Motorman, and under his supervision, drive the car. In every such case the regular Motorman will be responsible for exercising such supervision as will ensure the movements of the car being regulated in conformity with Instructions, and, if circumstances require it, he must at once take full control of the car. If the recruit should refuse to comply with the Motorman's directions, the Motorman must take control of the car and report the circumstances.

(c) Employes practising as above under the supervision of the regular Motorman are not relieved of responsibility for observance of Instructions. (See also clause (e), Instruction **47**).

(d) If for any purpose the Motorman should require to leave his compartment, he must take with him and retain his removable controller handle or handles. (See also clause (b), Instruction **83** and clause (c), Instruction **47**).

(e) The Regular Motorman must furnish a written report respecting the competency and general behaviour of each recruit under his supervision.

42. (a) The Motorman when on duty, must carry, or see that his car is equipped with, the undermentioned articles, viz. :—

(i) A copy of this Book of Instructions, a copy of the current Time-table and Run Book, a Running Sheet, a Hand Lamp (ready for use), a Point Bar, a Hand Chock, a Lifting Jack or Jacks (see clause (d), Instruction **89**), an Insulated Ground Wire, and the specified number of the Forms mentioned hereunder, viz. :—

(ii) *On Double Lines*.—Three Wrong Line Orders.

(b) In the case of a One-man type car, when operated under One-man conditions, the Motorman must be also supplied with a Revenue Journal, Running Journal, Relief Slips, Refund of Fare Forms, Ticket Punch, a Sponge Cloth and such other articles or requisites as may be ordered. (See Instructions re Fares System).

(c) The Motorman must produce all (or any) of the above-mentioned articles to the proper officer when required, and he must always have the Hand Lamp, which comprises part of the car equipment, available and ready for immediate use.

43. (a) The Conductor, whilst on duty, must have with him the undermentioned articles, viz. :—

A copy of this Book of Instructions, a Revenue Journal, Running Journal, Relief Slips, Refund of Fares Forms, Ticket Punch, a Sponge Cloth, and such other articles or requisites as may be ordered. (See Instructions re Fares System.)

(b) He must, whenever required, produce all (or any) articles supplied to him, for inspection by the proper officer, and afford any information or assistance that such officer may require in regard thereto.

44. When taking any car into service the Carmen must see that their respective Kits are complete, and unless otherwise ordered, observe the order shown on the Car Run List.

45. (a) Carmen must be with their cars at such times as are appointed, and they must satisfy themselves that their cars are in proper working order. (See Instruction **75**).

(b) Motormen, Conductors, and other employes connected with the running of cars, must, before commencing duty on any shift or portion of a shift, examine the Order Book, Car Run List and Roster and all Notices, also before running additional trips they must, when practicable, ascertain from the Notices posted for their guidance whether there is anything requiring their special attention on those parts of the Line over which they have to travel, and, when practicable, before going off duty, ascertain the time at which they are again required to resume duty.

46. The Motorman and the Conductor must co-operate to prevent accident and work in complete harmony with each other, being at all times alert and attentive to their duties; the Motorman or Conductor must not partake of meals, nor smoke, lounge or read newspapers, etc., on or about the car in running. (See also Instruction **35**).

Relief for meals, etc., must be taken as provided on the Roster.

47. (a) The Motorman must not leave the Driving Compartment nor converse with any passenger whilst the car is in motion. He must give undivided attention to the safe working of the car and, if an enclosed Driving Compartment be provided, he must not permit any passenger or unauthorised employe to enter such Driving Compartment; except in a case of emergency the Motorman and the Conductor must not converse with each other whilst the car is in motion.

If an enclosed Driving Compartment be provided, no parcel, package or goods of any description must be placed in such Compartment at either end of the car.

(b) Except where otherwise provided in these Instructions the Conductor must not ride in the enclosed Driving Compartment.

In the event of the Motorman becoming incapacitated from any cause, the Conductor must immediately assume control of the car, and provided he holds a Motorman's certificate, he must, if the circumstances warrant it, take the car on as far as the Depot; if the Conductor does not hold a Motorman's certificate, he must first secure the car by applying the Hand Brakes and (taking the removable handles of the Controller) promptly communicate with the Officer-in-Charge.

(c) Except as prescribed hereunder, no car must be left unattended on any Running Line, nor allowed to stand foul of another Line; when any car is left unattended on a Running Line it must be properly secured by the Hand Brakes or the wheels must be chocked to prevent the car moving.

- (i) Except as provided in these Instructions or in a case of special urgency, the Motorman when on duty must not leave the vicinity of his car when on any Running Line, and in the case of special urgency he must first place the Conductor or some other competent employe in charge of the car and inform him of the reasons for his absence. In every case before leaving his car the Motorman must place the Controller to the Off position, apply the Hand Brakes, open the Circuit Breaker, remove the handle or handles of the Controller and unless otherwise provided—see clause (d), section (ii), Instruction 88—retain same in his possession until he returns.
- (ii) Except as provided in these Instructions, or in a case of special urgency, the Conductor must not leave the vicinity of his car when on any Running Line, and in the case of special urgency he must first inform the Motorman of the reasons for his absence.
- (d) When starting the car the Motorman must always place one hand on the handle of the Controller and the other hand on the handle of the Brake, and, except where otherwise provided or in a case of special emergency, he must maintain this position whilst the car is in motion.
- (e) A seat is provided for the Motorman, but he must not use the seat when approaching Tramway Intersections, or where vehicular or pedestrian traffic is congested; employes learning or practising the duties of Motorman must not be allowed to use the Motorman's seat whilst driving (see Instruction 41.)
- (f) Whilst the car is in motion the Motorman must stand or sit perfectly upright. He must keep a sharp look-out all the time the car is in motion, and must pass along the proper track, which, in the case of an ordinary Double Line is the left-hand side of the Permanent-way in the direction in which the car is travelling.
48. When approaching any road vehicle that is near or foul of the track, the Motorman must sound his Gong repeatedly; he must, however, avoid all risk and must not run nearer to the vehicle than 50 feet, unless it has moved well clear of the track. If the driver of the vehicle should refuse to move clear of the track his name and address should be taken with that of witnesses and if he persists in obstructing the track the nearest

Police Constable must be informed of the circumstances and requested to take action ; in every such case the particulars must as soon as possible be reported, in writing, to the Officer-in-Charge.

49. Where any person is on, or approaching, the track or any employe is at work on, or near, the track or overhead wires, the Motorman must make use of his Gong ; the Gong must be also sounded repeatedly when passing any school or playground which children may be entering or leaving, or when any person is seen to be improperly standing on the footboard or step of an approaching car, or where an animal is on, or near, the track. The Motorman must not, however, depend entirely on the persons or animals keeping clear of the track on his sounding the Gong, but must be prepared to make an emergency stop if circumstances should render that course necessary.

50. (a) Where a procession, whether of civilians, troops or vehicles is proceeding parallel with the track the Motorman must not attempt to run the car alongside or pass the procession unless the persons or vehicles forming it are a sufficient distance from the track to ensure safety. Where there is sufficient space for the procession to move away from the track the Motorman must sound his Gong to draw attention to his desire to pass, but he must wait until all are clear and safely away from the track before passing any section of the procession.

(b) Unless Special Instructions are issued to the Contrary, when a procession is crossing the track the Motorman must stop and wait until the procession has passed, unless the procession has been stopped and the Motorman has been authorised by a police officer to proceed.

(c) **Fire Brigades, Fires, etc.**—The Motorman must give the right-of-way to Fire Engines or other Fire-fighting conveyances or apparatus. (See clause (f), Instruction 52.)

(d) **Funerals.**—Where a funeral which has to cross the track is closely approaching, the Motorman must stop to permit the Hearse and Mourning Coaches to pass.

(e) **The Governors' Cars.**—The Motorman must stop, when necessary, to give precedence to the cars of the Governor-General, the State Governor, and their escorts.

51. The Conductor, or in his absence, the Motorman or other authorised employe, must, if practicable, obtain the name and address of any person who wilfully obstructs the track and also the names and addresses of two or more witnesses, and must furnish a full report in regard to the matter to the Officer-in-Charge.

52. (a) If the Motorman should observe any object close to the track, such as a trestle, barrel, post, etc., he must satisfy himself that such object is well clear, even if such a course involve delay ; if he be not certain that the object can be passed with safety, he must not attempt to pass the obstruction, but must stop and arrange for its removal.

(b) Every instance in which any person other than a member of the Permanent-Way Staff excavates in, along, across, or under the track must be promptly reported.

(c) The Motorman must be on the look-out for articles falling from vehicles, and if he observe any such article on or close to the track on which he is travelling or on an adjacent track, he must, if it be likely to form an obstruction, stop and arrange for its removal.

(d) The Motorman must watch diligently for any sign of defective equipment in the car, such as may be indicated by unusual noises and the smell of heated insulation, and must take such steps as may be required to prevent damage to equipment.

(e) If any indication of fire be observed on the car in traffic the Trolley-pole must be lowered at once and secured clear of the Contact Wire ; the car must be stopped, all passengers must be removed and prompt action must be taken to deal with the outbreak. Water must not be directed on any electrical wire or piece of electrical apparatus whilst that wire or apparatus is carrying an electric current.

(f) The Motorman must not stop the car in front of or near to a burning building, structure, etc. The Motorman must stop when requested to do so by a Fireman ; if traffic be suspended the nearest car must be kept at least 100 yards away from the fire or crowd, and the Officer-in-Charge must be immediately notified.

53. (a) In any instance in which it is necessary, for any reason, to change over a defective car when away from the Depot, a telephone message must be sent to the Officer-in-

Charge stating fully the particulars of the failure, the number of the run, and the name of the Motorman.

(b) The Motorman must report each day, in the Trouble Card Book provided for the purpose, any faults of each car that has been under his control, and must furnish particulars of every defect.

(c) When being relieved from duty the Motorman must inform the employe relieving him of any defect or anything unusual in connection with the car.

54. The Motorman must furnish a Statement of Running, daily, on which he must fully enter the required particulars in every detail, and furnish information thereon as to any delay, the state of the weather, and any special circumstances affecting the traffic. He must show the time and place each car worked by him was taken into or out of running or changed over, so that the mileage run by each car daily may be correctly recorded.

55. The Motorman must exercise due care to avoid injuring any animal on or near the track. Where horses are crossing the track the Motorman must stop until all are clear; where cattle, sheep or pigs are crossing, the Motorman may, where the track is straight, proceed cautiously at low speed, but he must not enter on to any curve until the track is quite clear.

56. (a) When due to an accident in connection with the car, any person is injured, the nearest Doctor must be summoned if one be required, and the injured person or persons must be conveyed on the car if medical attention can be more quickly obtained thereby.

(b) The injured persons must be rendered every assistance or service possible, and if seriously injured or if unconscious or otherwise unable to take care of themselves and have no relative, friend, or Police Constable to take charge of them, they should be removed on the car (or such other suitable vehicle as can be engaged) to the nearest hospital, Doctor, or Chemist, but if the circumstances permit they should always be removed to a hospital in preference to a Doctor, or to a Doctor in preference to a Chemist.

(c) The full names and addresses of all injured persons should, if possible, be obtained and furnished with the report, but if in a serious condition an injured person must not be pressed for such particulars.

The full names and addresses of all witnesses to an accident must be obtained and inserted in the report on the accident.

(d) In case of injury or sudden illness necessitating the removal of a passenger from a car, the Conductor or other responsible official must ascertain the names and addresses of the relatives of the person so removed, and promptly communicate the particulars to the Officer-in-Charge, and the latter must, by the most expeditious means, inform the relative or the relatives accordingly.

(e) In any case of sudden illness or where any person may have sustained an injury by his or her own act (such as by alighting from or attempting to join a car in motion, or from any similar cause not in any way arising from the fault of the Department), and the services of a Doctor may be required, the Conductor, or other responsible official, in charge must be particular in such case to previously inform the Doctor called in that his services are called for and on behalf of the injured passenger, and that he must look to the passenger, and not to the Railway Department for his fee.

(f) Full reports of the circumstances must be furnished on the proper Form by the Carmen concerned.

(g) Ambulance boxes and stretchers are provided at the Depot for use when and where required, and must be kept complete, in good order, and always ready for use; the Ambulance boxes and stretchers at the St. Kilda, Brighton Beach or Sandringham Railway Stations may also be obtained if necessary.

(h) When any conveyance is engaged for an injured person, its number, description and, if possible, the name and address of the driver and owner must be obtained and furnished with the report; the driver must be referred to the Officer-in-Charge for payment, and the conveyance must be dismissed as soon as its services can be dispensed with.

57. (a) Whenever an accident occurs to any passenger or property, or the car collides with any person, animal or vehicle—other than another Railway Car, for which see clause (d)—the car must be stopped at once and, however unimportant the case may then appear, all the facts connected therewith and the full names and addresses of as many witnesses as possible (both on and off the car) one a policeman if possible, must be obtained. Should a car collide with a vehicle, the direction in which the latter was travelling must be reported,

and if the collision occur after sunset employes must note, particularly, whether the vehicle concerned carried a light and, if not, must direct the attention of another person to the fact. The report must also give the name and address of both the driver and the owner, and the registered number and any name shown on the vehicle concerned in the collision; if a horse be injured, the colour and (if possible) the brands must be stated in the report. In any instance in which an animal is killed, the Motorman must stop, and inform the first Permanent-way employe whom he meets.

(b) Witnesses, as to which particular persons, if any, are injured and to what extent, will be needed, and a few of those who are best able to give such evidence should be politely requested to give their names and addresses, in order that their statements may afterwards be obtained by the authorised officials of the department.

Sometimes people in the vicinity say that they did not see the occurrence, merely to avoid giving their names; their names should nevertheless be obtained. Even if they did not see, they may be able to give the officials the names of another or others who did see the accident, and whose name may not have been obtained. The names and addresses of drivers and owners of vehicles and registered numbers, if any, of the vehicles should be noted.

(c) If a horse fall or any vehicle should break down on the track, or an accident of any kind on another car be seen, the circumstances must be reported by the Motorman or Conductor observing it, and witnesses on their car must be obtained, if possible.

(d) In the case of one Railway Car colliding with another, or a sudden stoppage due to a sudden application of the Brakes or other circumstance, in which cases no passenger is at fault, Carmen must be cautious in making inquiries not to attract particular attention of passengers to the occurrence. If, however, the sudden stoppage or similar occurrence be due to the driver of any vehicle fouling the track or to any person falling from the car or being in danger of injury, the names and addresses of such persons and witnesses must be obtained.

(e) After an accident, employes should keep their own counsel and communicate with departmental officers only; representatives of newspapers, solicitors' clerks, and members of the Police Department should be referred to the Officer-in-Charge or to the Head Office. (See also Instruction 12).

(f) In the case of an accident, Carmen and other employees must always be on their guard against making any remarks admitting they are in fault, or blaming each other, or to the effect that the accident is due to any defect in the car, track or brakes, or to a wrong Signal.

(g) Unless authorised to do so by the Claims Agent and except when it is necessary to inform relatives of an injured person, a member of the staff must not call at the residence, or other place, of a person injured by a departmental accident.

(h) If any witnesses object to giving their names they should be courteously informed that their statements may be required if the employees in charge of the car are blamed for the occurrence, and that in the majority of such cases written statements of the facts only, are required.

(i) The district, street, and number and name or location of house should be ascertained in obtaining any address; and the name and number of any Police Constable present should also be ascertained.

58. (a) Every accident or derailment (however unimportant it may appear) must be reported by the Carmen to the first Inspector or other Officer met with, and in serious cases the Conductor (or Motorman) must as soon as possible communicate the circumstances by telephone or in person to the Officer-in-Charge, and the latter must promptly communicate the particulars to the Head Office in accordance with the Instructions under the heading of Reporting Accidents, in the General Appendix to the Book of Rules and Regulations.

Accidents to employees, however trivial, must be immediately reported to the Officer-in-Charge by employees witnessing them, and the names of other witnesses should be furnished with the report.

(b) When reporting an accident the employe must state whether he witnessed the occurrence or is reporting on information received; in the latter case he must give the name of the informant, the time, place (i.e., locality of spot measured from the nearest stop mark), trip, and car number, and, in any instance in which medical attention has been necessary, the name of the Doctor in attendance, or of the Hospital (if any) to which the injured were taken.

59. (a) In the event of any car being from any cause delayed more than three (3) minutes, the circumstances must be reported in writing, and the cause of the delay must be fully

stated in the report. In any instance in which a car is delayed at the entrance to a Single Line Section awaiting the Car Staff, the Conductor or Motorman must open the telephone-box and remain in attendance thereat; if, however, the delay is of an unusual duration, he must communicate the circumstances to the Officer-in-Charge.

(b) The Motorman must stop the car promptly when directed to do so by a Police Constable; he must not start again until authorised by the Constable. (See also clause (e), Instruction 106).

(c) In any instance of an unusual Stop, passengers wishing to alight may be allowed to do so, but in order to prevent misunderstanding, they must be informed that the car is not at the next intended Stopping Place.

60. (a) When a Conductor is employed the Motorman must not receive any fare which it is possible for the Conductor to collect, but may collect fares (during a stoppage only) in a case of emergency, and in such event he must promptly hand to the Conductor all fares which he has collected, and obtain in exchange, and destroy, equivalent cash fare tickets.

(b) On cars equipped with an enclosed Driving Compartment, the Conductor, whilst the car is in traffic, must keep drawn up any blind that screens the Motorman's rear cabin from view of passengers; and when any passenger is travelling in the rear portion of the car, the Conductor must occasionally glance through the cabin window to satisfy himself that the controlling mechanism is free from interference.

(c) The Conductor must see that the doors, windows, sunshades and ventilators of the car are arranged as may be necessary for the comfort of the passengers, and when closing any door the Conductor or Motorman must do so carefully so as not to injure any passenger or his clothing.

(d) The Conductor must furnish information required by a passenger concerning fares, routes, etc., if the requirements of safety permit, but he must not engage in unnecessary conversation with any passenger or employe whilst the car is in motion. When not engaged in collecting fares, etc., the Conductor must stand in such position as to command a view of the passengers on the car.

(e) The Conductor must devote proper attention to the care and convenience of passengers, and the collection of the due fares. He must direct intending passengers to those

portions of the car in which seats are available, and, if necessary, must politely request sitting passengers to "Make room, please," in order that the seating accommodation may be properly and fully utilised. Passengers must not be allowed to loiter in the gangways, and the Conductor must see that delay due to this cause shall not occur.

(f) The Conductor in charge must render every possible assistance to any person authorised in writing by the Officer-in-Charge to learn the duties of a Conductor, and must instruct him, particularly as to the names of the streets, fare sections, issue of tickets, receiving and remitting cash and tickets, keeping the Running and Revenue Journals, lighting the car, attending to the Trolley-pole, Brakes, and cleanliness of car, etc.

(g) The Conductor must furnish a written report respecting the competency and general behaviour of each recruit under his supervision.

(h) The Assistant Conductor is under the control of the Conductor-in-Charge, and the latter will be held responsible for the proper performance of the duties of the Assistant. The Assistant Conductor must inform the Conductor-in-Charge of any dispute (however unimportant) with a passenger as to fares, or of any accident or other unusual incident and the Conductor-in-Charge must personally investigate such occurrence.

(i) Conductors, Assistant Conductors, and Motorman in the case of a One-man type car when operated under One-man conditions, are responsible for the cleanliness and care of the cars in their charge, and as far as possible must keep such cars free from dust and dirt. Dusters and waste, when not in use, must be kept out of sight.

61. (a) Except in a case of urgency the Motorman or the Conductor, whilst on duty, must not call out to any other employee or to any person; in the event of the Motormen or Conductor of passing cars requiring to give any important official information to one another, they must stop their cars, walk up to each other and deliver the information quietly, but with reasonable despatch.

(b) Carmen must carry out their duties in such a manner as to avoid undue delay or loss of time.

62. (a) A young child, unaccompanied by an adult, must not be allowed to ride on any outside seat, neither must any child

be allowed to stand on any car seat, nor play about any car.

(b) Carmen must not take possession of, or in any way assume responsibility for, any child or any package or article which a passenger may bring on to the car.

(c) Carmen must not allow any passenger to take on the car any goods which are of a dangerous nature, such as Benzine, Petrol, Acid, etc., or a plate of glass, saws, an open pot of paint, etc., which are liable to injure the fittings of the car or the clothing of any passenger. No passenger or employe must be permitted to bring into the car any large parcel or other article that would encroach on the space required for, or which may be objectionable to, other passengers.

(d) In passing through the car Carmen must be careful not to damage any article belonging to a passenger, and must politely request the owner to remove any article that obstructs any passage.

63. (a) Smoking must not be allowed on the car except in the portion especially set apart for that purpose. When necessary, passengers must be requested to refrain from placing their feet on the seats or expectorating in the car.

(b) Carmen must not allow any intoxicated person to board or to remain on the car.

(c) Carmen must not allow, on the car, the playing of any musical instrument, the solicitation of alms, the collection for charities, the selling or sorting of newspapers or unauthorised distribution or posting of advertising notices or cards, and if any such offence be committed the offender must be warned and the particulars reported to the Officer-in-Charge.

(d) Carmen must not allow any dog to travel or be carried on the car.

64. (a) Carmen must not permit any person to behave in a disorderly manner on the car, and must furnish a full report of every occurrence of disorderly conduct. In the event of any passenger being disorderly, or annoying another passenger, the Conductor or other responsible employe must take action as follows :—

(i) The offender must be requested to cease the annoyance, and warned that he is liable to incur a penalty and to be removed from the car.

(ii) If the offender still persists in the annoyance, he must be requested to leave, and if he refuse to

do so, he must be removed, without unnecessary force. If the aid of the Police can be readily obtained, a Constable must be called in to render assistance or to take any charge that it may be necessary to prefer.

(iii) The name and address of each offender and of the person or persons complaining (if any), and also of two or more witnesses must be obtained.

(b) Carmen must, as far as practicable, prevent any passenger from damaging the car. In the event of any window, or lamp of the car being accidentally broken, the amount specified in the list of charges for such breakages, must be collected from the person responsible for the breakage; if payment for such damage be refused, or if the damage be extensive, the name and address of each passenger concerned, and of two or more witnesses, must be obtained and the occurrence reported to the Officer-in-Charge.

(c) It must be understood that payment is only to be accepted when it is quite clear that the damage has been accidental. In any case in which it appears to have been of a wilful or malicious character, the name and address in full of the person concerned, and, if possible, witnesses, must be obtained; special precaution must be taken to verify by means of the person's card, or an addressed envelope which has passed through the post, the correctness of the name and address furnished.

(d) Compensation for damage to departmental property other than that above specified will be assessed by the Head of the Branch concerned.

65. (a) Carmen must refix any advertisement that may become displaced in the car, or, if unable to do so, the advertisement must be handed to the Officer-in-Charge who must be informed of the number of the car from which it was removed.

(b) An unauthorised employe must not be allowed to fix, or interfere with, any advertisement in the car.

(c) No car must be decorated with bushes, sketches, or flags, or in any other way without special authority.

66. Discretion must be used in the enforcement of the By-laws; the attention of any person infringing a By-law must be invited thereto in such a manner as not to attract the notice of others, and under no circumstances shall any employe give cause for complaint or dissatisfaction by a discourteous word or action. Any employe who is required in

the performance of his duty to deal with a matter not governed by any Instruction, must exercise careful judgment and discretion in so doing, especially if any member of the public be concerned.

67. In the case of violation of the Railways Acts or of the By-laws of the Commissioners not affecting the safety of the public or their property, and it becomes necessary and is justifiable to use force, it must only be done when all other means fail, and then only such force or compulsion must be used as may be absolutely necessary.

68. Great caution shall be observed in detaining or giving any person, more particularly a passenger, into custody, and as the object of detaining a person or giving him into custody is only for the purpose of ensuring his appearance to answer any charge that may be preferred against him, no person should be detained or given into custody whose name and address are known either to the Conductor or other official, or to any respectable person with whom such Conductor or other official may be acquainted, or who may give a name and address and produce sufficient evidence that they are genuine.

69. If, after being warned to desist, it becomes necessary to remove any passenger and the foundation of the charge appears to be doubtful, he should be first requested to leave, and if he refuse, care should be taken not to use unnecessary force in removing him, and it is desirable that the Conductor or other official, on warning the passenger to desist, should first state to him that he is liable (if he persist in offending) to incur a penalty, and to be removed.

70. Before any person, against whom a complaint is made by passengers, is removed from a car, the Conductor, or other official, who orders his removal shall carefully ascertain the cause and nature of the complaint, and take the names, addresses, and occupations of the parties complaining, in order to prevent an unfounded charge being brought against any passenger.

71. Where the aid of police can be obtained, it is desirable to call a Constable to take any charge which it may be necessary to prefer.

72. In any case in which any of the provisions of the Railways Acts, or of the By-laws of the Commissioners, have been violated, it is desirable that the names and addresses of two or more persons present on the occasion be obtained, and reported with the name and address of the offending person.

73. Whenever any person is detained, or taken into custody, a telegraph or telephone message, stating the name, address, and occupation of such person, and the nature of the charge made against him, must be forwarded instantly to the Head of the Branch, and a written report shall also be sent as soon as practicable, stating, with the particulars of the case, where and when the charge is to be heard.

74. (a) Every employe attending in his official character under a subpoena or order to give evidence, or to produce papers in any court, shall attend such court in performance of, and as part of his official duty. He must as early as possible after the receipt of such subpoena acquaint his superior officer with the fact, and obtain his permission for absenting himself. He shall remit, or cause to be remitted, to the Head of the Branch or other employe authorised to receive such, all fees received by him for the performance of such duty, together with a statement of account and vouchers of the necessary expenses (if any) incurred by him in the performance of such duty.

(b) *Railway Employes as Jurors.*—In order to prevent the inclusion of the name of any permanent employe of the Railway Department in the lists of persons who may be called upon to act as Jurors, the Commissioners direct that in every case in which a Constable of Police or other official applies to a permanent employe for information in connection with the compilation of the Jury List, such employe shall notify the Constable or other official that he is an employe of the Victorian Railways Commissioners, and therefore entitled to exemption from service as a Juror, in accordance with Section 8 of Act 3707, and request that his name be omitted from the list.

As an additional safeguard, the Commissioners further direct that every permanent employe shall carefully scrutinise the Jury List, which is exhibited at Court Houses, Post Offices and Municipal Halls during the early portion of March each year, and in the event of his name appearing thereon, that he immediately make application to the Special Court of Petty Sessions for its removal from the list on the ground that he is exempt from service as a Juror in consequence of his being an employe of the Victorian Railways Commissioners.

If any employe be summoned he should hand the Summons to his superior officer so that the Sheriff may be notified of the employe's exemption under the Act.

WORKING OF CARS.

75. Preparing Car for Service.—(a) The Motorman is responsible for the correct manipulation of the car equipment, and must see that the car in his charge is in a fit condition for safe running. Before taking the car from the Shed he must examine the equipment to see that everything is in order, and preparatory to going into running he must carry out—assisted by the Conductor when stated—the following procedure in the order set out hereunder:—

- (i) Proceed to car, take possession of all removable handles. At the front or leading end he must see that the Hand Brake is applied, that the Point Bar is in place, that the Lifeguard is in position for running, and in the case of a Bogie Car that the Trolley-pole and its cord are secured as detailed in Instruction **79 (a)**.
- (ii) Proceed to rear of car, see that the Lifeguard is in position for running. Place the Trolley in the trailing position on the correct Contact Wire as detailed in Instruction **79 (a)**.
- (iii) See that rear Hand Brake is released, that the Point Bar is in place, inspect the Oil Lamp and test the Lighting Circuits.
- (iv) Close compressor cut-out switch and note that compressor starts up. At the front end inspect Oil Lamps and test the Lighting Circuits.
- (v) See that front Circuit Breaker is open.
- (vi) Place Controller and Brake handles in position in front driving compartment, leaving Brake Valve handle in Release position.
- (vii) Test "dead" Controller. Place the handle of the Reverser in a Running position, operate Main Controller handle to Full Parallel position. See that all notches are working freely, then return Controller and Reverser handles to the "Off" position.
- (viii) Note that an air pressure of 70 lb. per square inch is reached on the Air Pressure Gauge before the Automatic Governor cuts out.

- (ix) **One-Man Type Car.**—Charge "Safety Control Pipe" and reset Emergency Valve by depressing the Controller handle. Hold handle depressed until Emergency Valve is set and Brakes are released for normal operation and tests at front end of car have been completed.
- (x) Test front Hand Brake and leave in "Release" position.
- (xi) Apply and release Air Brake with sufficient applications to note that Compressor starts up when the Pressure Gauge registers not less than 60 lb. per square inch. Note that Brakes have Applied and Released.
- (xii) On cars equipped with pneumatically operated doors, test opening and closing of "On" side doors.
- (xiii) Close front Circuit Breaker with the Controller handle in the "Off" position.
- (xiv) Test front Foot Gong.
- (xv) Test "live" Controller, slightly move car in each direction.
- (xvi) **One-Man Type Car.**—Test Dead-Man's Device by removing hand from Controller handle. Observe that Brakes have Applied and that Circuit Breaker has opened.
- (xvii) Test Sanding Gear and apply Air Brake if not already applied. Note Air Brake Cylinder Piston travel which must not exceed three inches.
- (xviii) Place Controller and Brake handles in position in rear driving compartment leaving Brake Valve handle in Release position.
- (xix) **One-Man Type Car.**—Reset Emergency Valve by depressing Controller handle. Hold handle depressed until Emergency Brake Valve is set and Brakes are released for normal operation and tests at rear end of car have been completed.
- (xx) Test rear Hand Brake and leave in "Release" position.
- (xxi) See that rear Circuit Breaker is open.

- (xxii) Test "dead" Controller. Place the handle of the Reverser in a Running position, operate Main Controller handle to Full Parallel position. See that all notches are working freely, then return Controller and Reverser handles to the "Off" positions.
- (xxiii) Apply and Release Air Brake with sufficient applications to note that Compressor starts up when the Pressure Gauge registers not less than 60 lb. per square inch. Note that Brakes have Applied and Released.
- (xxiv) Note that an air pressure of 70 lb. per square inch is reached on the Air Pressure Gauge before the Automatic Governor cuts out.
- (xxv) On cars equipped with pneumatically operated doors, test opening and closing of "Off" side doors.
- (xxvi) Close rear Circuit Breaker, with the Controller handle in the "Off" position.
- (xxvii) Test rear Foot Gong.
- (xxviii) Test "live" Controller, slightly move car in each direction.
- (xxix) **One-Man Type Car.**—Test Dead Man's Device by removing hand from Controller handle. Observe that Brakes have Applied and that Circuit Breaker has opened. Reclose Circuit Breaker.
- (xxx) Test Sanding Gear and apply Air Brake if not already applied.
- (xxxi) After Controller and Brake handles have been removed, see that there is sufficient supply of sand in the hoppers; that the car is equipped with a Hand Oil Lamp, a Hand Chock, a Lifting Jack or Jacks (See clause (d), Instruction 89), and an Insulated Ground Wire.
- (xxxii) The Motorman must then proceed to the front end and with his Brake handle in the Release position request the Conductor to "open" the Conductor's Brake Valve where provided. (See clause (g), Instruction 91). Having noted that the Brakes have Applied, he will then request the Conductor to close the Conductor's Brake Valve and note that the Brakes have Released.

(b) Having ascertained that the car is in proper order and that the Circuit Breaker is closed, the car is then available for service ; if, however, during the process of testing, the Motorman find any defect he must at once report the particulars to the authorised shed employe for attention.

(c) If a car is being prepared away from the Depot and the Air Brake Apparatus should fail to operate satisfactorily, or the Brakes fail to Apply or Release in the respective tests, the car must be regarded as unfit for service and the Motorman must at once notify the Officer-in-Charge.

76. (a) Before moving a car under any circumstances the Motorman must sound the Car Gong to give notice. (See also clauses (b) and (e), Instruction **106**).

(b) No car shall be taken out for a trial trip unless a qualified Motorman is in charge of it, and as far as traffic will permit, every such trial shall be scheduled to suit the Tramway Foreman's requirements.

(c) When a car has been taken into Service the Motorman, on the first trip, as soon as practicable after starting, and before exceeding a speed of 10 miles per hour, shall test the Air Brake and, if provided, the Rheostatic Brake.

If when testing the Brakes as laid down above, any defect be found, the car must be regarded as unfit for service and the Motorman must at once notify the Officer-in-Charge. (See also clause (c), Instruction **98**).

77. (a) After sunset or in foggy weather, every car on a Running Line must have the necessary Head Lamps lighted, and must carry a Red Tail Light. Except where otherwise shown, the Head Lights must be White.

(b) Every car is equipped with an Oil Lamp at each end ; each Lamp is fitted with a red slide to permit of a White or Red Light being displayed as required.

(c) The Motorman must see that the proper lamps are placed in their respective positions on the car, and must test all Car-lights between 4 p.m. and 4.30 p.m. daily. The Motorman is responsible for seeing that the Head Lights and Destination Signs are showing properly, and the Conductor must see that the Red Tail Light, when necessary, is kept properly exhibited ; the Conductor must frequently look to the Red Tail Light, and must examine the lamp before leaving any terminus.

(d) The Conductor—when it becomes necessary—must light or request the Motorman to light all lamps in the car.

In any instance in which the power fails, or in which it is necessary to stop the car on the Running Line after dark and lower the Trolley-pole, or if the lights be extinguished—for any purpose—the Conductor in charge must see that the Oil Lamp at each end of the car is showing properly, and he must be on the alert to protect the car.

(e) In the case of a One-man type Car, when operated under One-man conditions, all lighting must be attended to by the Motorman.

(f) The lamps on any car running to the Shed after dark must not be extinguished until the car is inside the Shed.

78. Only the authorised fuse or lamp shall be used in any Electric Circuit on a car, and when any lighting circuit fuse is blown, the Conductor, or Motorman if no Conductor be employed, must report the matter and insert a note—stating the number of the car—in the Trouble Card Book. Every used, damaged or blown fuse and burned-out lamp must be handed to the authorised shed employe.

79. Working of Trolley-Pole.—(a) Under normal conditions when a car is in traffic the end of the cord of the Trailing Trolley-pole must be secured to the eye provided for that purpose. In a single truck car the Conductor must secure the end of the cord in the eye provided after he has reversed the Trolley-pole.

The leading Trolley-pole of a bogie car must be secured in the canopy hook and the slack cord must be gathered up and carefully fastened to the eye provided so that it cannot blow out and cause trouble.

(b) The Motorman must not attempt to apply power unless the Trolley is on the proper Contact Wire, and whenever he becomes aware that the Trolley has left the Contact Wire he must at once place the Controller handle to the “Off” position and except in the case of Instruction **111**, he must apply the Brake to stop the car. In cases where the Trolley repeatedly leaves the Contact Wire, the Motorman must make an entry of the circumstances in the Trouble Card Book, and if it occurs at one position of the overhead, the locality should be accurately recorded. If the Trolley comes off frequently or sparking occurs the Motorman must communicate the particulars to the Officer-in-Charge as soon as practicable.

In any instance where the Trolley-pole or cord fouls the overhead or wires of any Corporation, full particulars with the

date, time and location of the incident must be forwarded, in writing, to the Officer-in-Charge as soon as possible.

(c) The Conductor must see that the Trolley is on the proper Contact Wire; if, however, the Trolley be observed to be on a wrong Contact Wire whilst the car is in motion it must be immediately stopped and the Trolley placed on the proper wire.

(d) Except as prescribed in Instruction 111 or where specially authorised no car must be run with the Trolley off the Contact Wire. In the event of the Trolley leaving the Contact Wire, the Conductor must signal at once to the Motorman to stop, and attempt by means of the Trolley-cord to keep the Trolley-pole and wheel clear of all overhead equipment until it can be replaced on the Contact Wire.

The attention of the Carmen is directed to Instruction 111 respecting the working of Trolley-poles during repairs to the overhead electrical equipment.

(e) In order that a Motorman may maintain full control of the car, the Trolley, except as prescribed in Instruction 111, must be kept on the Contact Wire when descending any gradient.

(f) Except in the case of a One-man type car operated under One-man conditions, the Conductor must hold the Trolley-cord taut, when leaving the Shed and when changing lines at a Crossover Road, so as to prevent the Trolley-pole from fouling any portion of the overhead equipment should the Trolley become displaced. (See also clause (j)).

(g) It is the duty of a Conductor on a Single Truck Car, which has only one Trolley-pole, to reverse the Trolley-pole at each terminus; after sunset he must not remove the Trolley from the Contact Wire until all passengers have alighted. (See clause (k), Instruction 88).

(h) On a Bogie Car, which is provided with two Trolley-poles, the trailing Trolley alone, except as shown in clause (i) hereof, must be used. This Trolley must be placed on the Contact Wire by the Motorman, but under no circumstances should the two Trolleys of a car be both placed on the Contact Wire, if by so doing the Trolleys would be one on each side of a Section Insulator. Before changing ends the Conductor must lower the Trolley-pole that will be leading, place it in the hook provided for that purpose, and secure it in that position by means of the Trolley-cord. (See clause (a)).

(i) In the event of a Trolley or Trolley-pole being damaged it must be lowered and properly secured. The leading Trolley may then be used in the trailing position provided its cord is properly secured. (See also clause (m)).

(j) (i) No car must be run with a Trolley-pole in the facing position except for a short distance in case of emergency and then only when the track is straight. In every such case the Conductor must hold the Trolley-cord taut, and be on the alert to promptly signal to the Motorman to stop the car should the Trolley leave the Contact Wire.

(ii) Where it is necessary to move a car backward, this must be done slowly and cautiously and the Conductor must keep a sharp look-out at the rear and be prepared to signal to the Motorman to stop where necessary.

(iii) In the case of a One-man type Car, when operated under One-man conditions, and no competent employe is available to act as laid down for the Conductor in either section (i) or (ii) hereof, the Motorman must reverse the Trolley-pole and drive the car from the leading end in the direction of the movement.

(k) When altering the position of a Trolley-pole, Carmen must exercise care to avoid damaging any light cluster, business sign, etc., or striking the pole against a verandah or the roof of the car.

(l) In the event of it being necessary to adjust the Trolley tension when the car is in traffic:—

(i) The Trolley-pole or its base must not be touched unless the Trolley is removed from and secured clear of all overhead electrical conductors, otherwise a serious shock may be received. Trolley tension adjustments must only be performed by the authorised Shed employe.

(ii) When the Trolley has been secured as set out in section (i) hereof it must only be replaced on the Contact Wire by the Shed employe concerned.

(m) Should a Trolley-cord become detached or broken when the car is in traffic, the Carman must, before repairing the cord, lower and secure all trollies on the car. Carmen are warned that when a Trolley is on the Contact Wire, the Trolley-

poles and bases are alive. Care must therefore be taken when lowering a Trolley to use non-conducting material. No unauthorised person shall be permitted to interfere with a Trolley-pole.

(n) Unless otherwise provided a Trolley or Trolley-pole must not be left in contact with the Contact Wire or with any "live" or "earthed" metal, when in the Shed.

(o) When, from any cause, the Trolley is removed from the Contact Wire, the car must be stopped to permit of the Trolley being replaced.

80. The Motorman must shut off power when passing under any place marked by a Cut-off-Sign. On the South side of Fitzroy Street, in addition to the Cut-off Sign, a line of metal studs is placed on the road surface. (See also clause (e), Instruction 87).

BRIEF DESCRIPTION OF ELECTRICAL SYSTEM.

81. (a) Power is generated at Newport Power Station by means of steam-driven Turbo-Alternators.

(b) The Alternators generate electrical energy as Three-phase Alternating Current which passes into the Switch-house, where by means of switches any Alternator may be connected to or disconnected from the Main Busbars; from these Busbars the current at 20,000 volts is transmitted to the various Substations by means of underground cables.

(c) At each Street Railway Substation the 20,000 volt current is first stepped down to a voltage suitable to operate Rotary Converters, which convert the Alternating Current to 600 Volts Direct Current; the Direct Current is then transmitted to the overhead Contact Wire suspended over the track or tracks from wood poles erected at the sides of the roadway.

(d) From the Contact Wire, the current passes to the Trolley then through the Circuit Breaker, the Controller and the Motors, then via the Motor Cases, axles and wheels to the track rails—the rails being bonded together throughout and connected to the Negative Busbar of the Rotary or Rotaries at the Substation.

82. The Circuit Breaker.—(a) This is a single-pole Switch fixed above the Controller at each end of the car, and when closed it supplies current to the Controller. The

Circuit Breaker is provided with an operating handle and the alternate positions ("On" and "Off") are marked on the apparatus; when the car is in Service the normal position of the Circuit Breaker is "On," i.e., Closed.

(b) The Circuit Breaker may be opened by hand according to requirements, but in the event of excess current which may be caused by an overload or a short-circuit the Circuit Breaker opens automatically and thus protects the electrical apparatus of the car.

In the event of the Circuit Breaker opening automatically more than twice during the course of a round trip, the Motorman must report the fact on the first occasion thereafter that he arrives at the Depot. (See clause (c), Instruction 84).

Carmen must not interfere with the adjustment of the Circuit Breakers.

(c) Before closing the Circuit Breaker the Motorman must, under all circumstances, see that the handle of the Controller is at the "Off" position.

(d) The Circuit Breaker at each end of the car must be kept closed except when the car is stabled in the Car Shed, or when in case of a defect or other emergency it becomes necessary to examine or adjust the contacts of the Controller, or to inspect the undergear of the car; before attempting any such work or inspection the Motorman must open the Circuit Breakers. (See clause (h), Instruction 84).

83. The Controller.—(a) The Controller regulates the supply of current to, and alters the connections of, the motors—thus controlling the speed of the car. One Controller is fitted in each of the driving compartments of the car.

It consists, essentially, of a Vertical Drum, rotated by the Main Controller handle; to this Drum a number of Contact Segments is fixed; when the Drum is rotated these Contact Segments connect with Spring Contacts (called fingers) on the stationary portion of the Controller.

It must be borne in mind that with a Trolley on the Contact Wire the internal parts of the Controller are alive when the Circuit Breaker is closed. (See clause (a), Instruction 82). **The interior of the Controller is normally covered by a movable Shield called the Controller Apron, and in no circumstances must this apron be removed from its normal position unless the Circuit Breaker is open.**

(b) Two handles are furnished on the top of the Controller, viz., the Main Controller Handle and Reverser Handle. On the One-man type cars both handles are removable but on other cars the Reverser Handle only can be removed.

(i) The Main handle, which is the handle of the Controller, is for starting or regulating the speed of the Car by controlling the supply of power from the Circuit Breaker to the motors; eight notches are marked on the top of the apparatus to indicate the various positions to which the Controller Handle may be placed.

(ii) The smaller handle (on the right hand side) is the handle of the Reverser; it is provided for reversing the direction of current through either the "armature" or "fields" of the motors—thus reversing the direction of the motion of the car. The handle of the Reverser has three positions, viz.:—

For Forward Running—The handle turned towards the front of the car.

For Reverse Running—The handle turned towards the interior of the car.

Neutral or "Off" Position—The handle placed midway between the Forward Running position and the Reverse Running position.

When the handle of the Reverser is in the "Off" position the electrical circuit is open, which prevents current passing from the Controller to the motors. This is the only position from which the Reverser handle can be removed.

(c) There are two types of Controllers in use, viz.:—

The B. 18 Controller and the K. 35 Controller, the differences in construction being as shown in sub-clauses (i) and (ii) hereunder:—

(i) "B. 18 Controller"—On this type of Controller there are eight Power notches on the left of the handle of the Controller and six Rheostatic Brake notches on the right-hand side; these Power notches are arranged in two groups, viz., Series and Parallel, each group containing four notches. The first three notches of the First or Series Group and the first three notches of the Second or Parallel Group are Resistance notches; these notches are

only for the purposes of acceleration and must not be used as Running positions on this type of Controller.

The Fourth Series and Fourth Parallel notches are the only Running positions on the "B. 18" type of Controller and with the Controller handle in these notches the steady running speeds that a car with a normal load will attain on a straight level track are approximately thirteen (13) and twenty-two (22) miles per hour respectively.

- (ii) "K. 35 Controller"—On this type also there are eight Power notches but no Rheostatic Brake notch is provided. The Power notches are divided into two groups, viz.:—Five Series and three Parallel with a space between each group. The first four notches in the First or Series group and the first two notches in the Second or Parallel Group are Resistance notches; these notches are only for the purpose of acceleration and must not be used as Running Positions on the "K. 35" type of Controller. The Fifth Series and the Third Parallel notches are the only running positions.

On the One-man type cars the "K. 35" Controller is fitted with a "Dead-man's" handle which must be held depressed, when the car is in operation, except when the Air Brake has been applied.

(d) The handle of the Controller is so interlocked with the handle of the Reverser that the former cannot be operated whilst the latter is at the "Neutral" position; and the handle of the Reverser cannot be operated unless the handle of the Controller is at the "Off" position.

(e) When starting the car, and before moving the handle of the Controller from the "Off" position the Motorman must see that the Circuit Breaker is closed and that the handle of the Reverser is set in the required position. The handle of the Controller must then be turned over the Power notches and the finger of the handle must be allowed to rest at each notch until the car has attained the speed that the motors can develop under the conditions of load and grade; if the handle be advanced too rapidly before the car has picked up speed

the acceleration will be jerky and power may be wasted—unskilful manipulation of the Controller may cause the Circuit Breaker to open automatically involving loss of time. The Motorman must, however, move the handle smartly between one notch and the succeeding one; a slow hesitating movement between notches tends to draw an arc between the fingers and segments, and seriously affects the working of the Controller.

(f) The handle of the Controller must not be allowed to remain between the Series and Parallel positions when applying or shutting off power; neither must the handle be kept longer than is necessary at the Resistance or Acceleration notches, otherwise time may be lost, power will be wasted and the equipment may be damaged. If, however, it be necessary to operate a Car with a portion of the motor equipment cut out, the handle of the Controller should be allowed to rest a little longer than is usual at each notch, but in such case, the handle must not be advanced beyond the full Series position.

For general description of the Air Brake and Rheostatic Brake, see Instructions 90 to 98.

(g) The handle of the Controller must not, in any circumstances, be turned backwards by one or more notches in order to reduce the car speed; if the Motorman should require to run on an earlier notch than that on which he is operating, he must place the handle to the "Off" position by a quick movement and then advance it to the required notch as if he were starting.

(h) The handle of the Controller or Air Brake must not be used for any other than its regular and authorised purpose.

(i) The Motorman must, as far as possible, avoid waste of electrical energy, but this economy must always be subordinate in importance to Safety and Dispatch.

(i) Coasting on any falling grade is prohibited, unless power from the Contact Wire is at the same time available.

When coasting, the Trolley must, except as prescribed in Instruction 111, be kept on the Contact Wire with the Main Controller handle held at the "Off" position.

(ii) With a view to economy in the Consumption of current, the Motorman must, subject to sub-clause (i) take

advantage of opportunities for coasting ; and to minimise unnecessary wear in the running gear and Brakes, he should, if time permit, when stopping for passengers shut power off as far as possible from, and coast to, the Stopping Place. (See also clause (e), Instruction 86.)

84. Faults Likely to Arise in Electrical Equipment.—

(a) In the event of a car failing to start when the handle of the Controller is operated in a proper manner, the Motorman must follow the procedure set out hereunder :—

- (i) See that the Trolley makes contact with the Contact Wire.
- (ii) See that the Circuit Breaker is closed. In the case of a One-man type car, the opening of the Circuit Breaker may have been caused by the Emergency Valve operating, resulting in an irregular application of the Air Brakes. The Motorman must close the Circuit Breaker and with the Controller in the " Off " position and the Air Brake handle in the Release position hold the " Dead-man's " handle depressed for about 40 seconds.
- (iii) Ascertain whether power is on the overhead conductors by switching on the car lights ; if the lights do not appear the Motorman must arrange for a good electrical contact, between the rail and a rear wheel of the car, by means of the Motorman's Insulated Ground Wire being made. (See also clause (d), Instruction 100). If the lights then appear the Motorman must operate the Controller in the ordinary manner, and if the car should still fail to move, it must be regarded as disabled and dealt with accordingly ; if, however, the lights do not appear, it may be assumed that power is off the overhead Conductors, and the Motorman must allow the Lighting Switch to remain On and wait until the power is restored.

(b) In the event of the car becoming temporarily charged with electricity, owing to a dirty rail, no passengers must be permitted to alight from or board the car until it has safely passed over such rail, and action must be taken to prevent intending passengers or others from touching any portion of the car, as an Electric Shock may be received.

If the car has become permanently charged, the Trolley-pole must be lowered at once, and secured clear of the overhead equipment; the passengers must then be requested to proceed by another car, and the empty car must be returned to the Car Shed as soon as possible.

(c) A defective motor or Controller may cause the Circuit Breaker to open. A "short circuit" on No. 1 motor of a Single-truck Car, or on No. 1 group of motors on a Bogie Car, will open the Circuit Breaker before the last Series position of the Controller is reached, but a "short circuit," on No. 2 motor on a Single-truck Car or on No. 2 group of motors of a Bogie Car may not open the Circuit Breaker until after the first Parallel notch of the Controller is passed; if, due to this cause, the Motorman cannot move the car, he must proceed to locate and cut out the defective motor, or group of motors, or Controller, as follows:—

- (i) See that the Controller is at the "Off" position.
- (ii) Open the Circuit Breaker.
- (iii) Open the Controller apron and cut out the motor or group of motors that are considered defective.
- (iv) Close the Controller apron and the Circuit Breaker and try to start the car in the usual manner.

(d) If, after the above procedure, the fault should still exist, the Motorman must again connect the motor or group of motors in circuit, and then proceed as before to cut out the other motor, or group of motors, and again try to start the car. If the fault remain, it is probably in the Controller, and the Motorman must endeavour to start the car from the Controller at the rear end of the car. (See clause (g)). If, however, the fault still remain, try each motor or group of motors separately with the rear Controller; if the car will not then start it must be considered as disabled, and dealt with accordingly.

(e) **Power off Overhead.**—In the event of the power failing or its being cut off, THE MOTORMAN MUST PLACE THE CONTROLLER HANDLE TO THE "OFF" POSITION, stop the car, switch on the Lighting Circuit, and watch for the lights to appear.

(f) When power is restored, the Motorman must make every endeavour to avoid throwing too great a load upon the Sub-station, as this may cut the power off again and cause

further delays. With a view to avoiding this liability, Motormen of Up Cars only may take power at once; Motormen of Down Cars must wait thirty (30) seconds before starting.

(g) **Defective Controller.**—If the handle of the Controller should become jammed in any attempt to place it to the "Off" position, the Motorman must at once open the Circuit Breaker and apply the Brake to stop the car; he must then open the apron of the Controller and the Arc Shield, and search for, and remedy any loose finger, loose segment, or loose screw that may be found, and before closing the Circuit Breaker the Motorman must replace the apron of the Controller, and see that the Controller is at the "Off" position. (See Instruction 82.)

(h) In the event of the front Controller becoming defective the Motorman must turn the handles of this Controller to the "Off" positions, open the Circuit Breaker at that end, and, after seeing that the Circuit Breaker at the opposite end of the car is closed, place the Reverser to the Reverse position and proceed to drive from the Controller at that end of the car.

In every case in which it becomes necessary to drive a car from the rear Controller the Motorman must first arrange for the Conductor to ride in the front cab, and the Conductor must protect traffic by ringing the Gong as prescribed for the Motorman, and transmit the necessary Bell signals to the Motorman; the speed of the car must not exceed a rate of ten (10) miles per hour. In the case of a One-man type car, arrangements must be made for a competent employe to accompany the car and act as laid down for the Conductor.

(i) **Thunderstorms.**—Where a Thunderstorm is in proximity to the track the Motorman must, if the electric lamps are not alight, close the Lighting Switch in order to minimise risk of damage to the car or equipment.

Except in a case of extreme urgency the Circuit Breaker must not be opened by hand when in the vicinity of a thunderstorm, and in the event of the Circuit Breaker opening automatically, the Motorman must at once close it.

85. Speed of Cars.—(a) The Motorman must regulate the running of the car so as to maintain the Time-table, and as far as practicable he must avoid extremes in speed.

(b) The maximum rate of speed, i.e., the highest rate of speed allowed for any car on the Electric Street Railways or

on any mile or portion of a mile thereof, is 25 miles per hour ; but at the localities mentioned hereunder the speed must not exceed the rate specified for each particular place :—

LOCALITY.	Maximum Rate of Speed
ON ANY LINE—	
When entering or leaving the Car Shed ..	} 5
When entering, leaving, or on, any Crossing Loop, Turnout or Cross- over road ..	
When passing over any Tramway intersection ..	
When passing over Points in the vicinity of the Car Shed ..	
When testing the Brakes on taking a Car into Service ; see clause (c), Instruction 76 ..	
	10
ST. KILDA-BRIGHTON LINE—	
When passing in either direction around the following curves, viz. :—	
Grey Street and Barkly Street ..	} 10
Barkly Street and Mitford Street ..	
Mitford Street and “ Broadway ” ..	
“ Broadway ”—Ormond Road ..	
Ormond Road—St. Kilda Street ..	
Between Young Street and Grosvenor Street on St. Kilda Street, and on Down side of Canterbury Street ..	} 15
On any curve not specified above ..	
When descending the grades on—	
Grey Street, between Fitzroy and Inkerman Streets ..	10
SANDRINGHAM-BLACK ROCK LINE—	
When passing around any curve ..	10

(c) The Motorman must not take his car within 100 yards of a preceding car, unless the speed of his car be such as to enable him to stop clear of the preceding car by means of the Hand Brake only.

(d) The Motorman must approach every Tramway Intersection or Terminus at such a rate of speed as will enable him, if necessary, to stop at the proper place by means of the Hand Brake only. (See also clause (e), Instruction 86).

(e) During and after heavy wind or rain the Motorman must be on the look out for Stones, Gravel, Sand, etc., which may have drifted on to the track and must reduce speed where necessary to ensure safe and smooth running ; where the car

has to pass over water or slush, the speed must be reduced. If it be practicable to coast at such places the Motorman must cut off power. (See clause (i), Instruction 83).

(f) During foggy weather when the Motorman cannot clearly see a safe distance ahead, the car must be run at such a rate of speed as will enable him to stop clear of any obstruction; the Head and Tail Lamps must be lighted and kept burning.

86. Compulsory and Conditional Stopping Places.

(a) **COMPULSORY STOPPING PLACE.**—A Compulsory Stopping Place is one at which EVERY car must be brought to a stand, irrespective of whether passengers require to board, or alight from the car.

NOTE.—It must be distinctly understood that all cars must stop at Compulsory Stopping Places.

(b) **CONDITIONAL STOPPING PLACE.**—A Conditional Stopping Place is one at which, provided the Line be clear, the Motorman must not stop except when necessary to pick up or set down passengers.

(c) Compulsory and Conditional Stopping Places are indicated by Printed Signs or by coloured lights; the respective indications are as follow:—

(i) **Compulsory Stopping Place.**—By a Sign lettered “CARS STOP HERE,” or by a Red Light.

(ii) **Conditional Stopping Place.**—By a Sign lettered “HAIL CARS HERE,” or by a Green Light.

Unless special instructions are issued to the contrary, where a Stopping Place (Compulsory or Conditional) is located at an intersection of public roadways the Motorman must (except as provided in clauses (b) and (h) hereof) bring the car to a stand in line with the buildings on the approach side of such intersection.

(d) Under ordinary circumstances, a car must be stopped for passengers at an authorised Stopping Place only. It must, however, be stopped at any time or place if necessary to prevent accident. If the car be running on time it may be stopped at any safe place to pick up an aged or infirm person, or (in wet weather) to pick up any lady except on a curve or an ascending grade.

The Motorman must not slow down to allow any passenger to board or alight from the car between Stopping Places.

A car must not be stopped to pick up or set down a passenger at any point at which the track or roadway is broken

or disturbed, or where any obstruction is near the track, or at any other place where the conditions appear to be unsafe to passenger or car. If the obstruction be at a Compulsory Stopping Place, the Motorman must not overrun the Stopping Place but must stop short and there pick up or set down the passengers.

(e) The Motorman must be careful not to overrun, or stop short (unless there is an obstruction as referred to in (d) above), of any Stopping Place; in determining when to shut off power and apply the Brakes, he must take into consideration the grade, the state of the weather, the condition of the rails, and the load. When approaching any Stopping Place occupied by the preceding car the Motorman must regulate the speed of his car so as to enable it to arrive at the vicinity of the Stopping Place as the preceding car moves away, or to be stopped clear of such car as the circumstances may require. (See also clause (i), Instruction **83** and clause (c), Instruction **85**).

In foggy weather or when from any cause a good view cannot be obtained the Motorman must always expect the preceding car to be standing at the Stopping Place, and he must have his car under control and be prepared to stop clear of the obstruction. (See also clause (c), Instruction **85**).

(f) When approaching any Conditional Stopping Place the Motorman must be on the alert to stop if required and bring the car to a stand-still so that the car entrance will be opposite the point at which passengers are waiting.

(g) Before reaching a Conditional Stopping Place, the Conductor must ascertain whether any passenger wishes to alight; if so, he must give the Motorman the "Stop at next Stopping Place" Signal (1 beat) when not less than two pole-spans from such Stopping Place; the Conductor must announce, distinctly, the name of each Stopping Place, not only when approaching it, but also when the car has stopped. When necessary the destination of the car also must be announced.

Passengers may be allowed to ring one beat on the Bell for the purpose of having the car stopped at any Conditional Stopping Place, or for any reasonable cause. The Conductor must, however, be on the alert to observe any request by a passenger to stop the car, and to cancel any improper Bell Signal given

by a passenger; he must assist any lady with children or carrying luggage, and any old and infirm person or cripple to get on or off the car.

(h) When a car is so fully loaded that it cannot accommodate more passengers, the Conductor in charge may by giving the prescribed Bell Signal (4 beats; given thus—2 pause 2) authorise the Motorman to run past **Conditional Stopping Places**; but the Conductor must exercise care to see that no passenger is over-carried; in any instance in which such course is necessary the Motorman must sound his Gong and the Conductor must call out "Full Car" when passing Conditional Stopping Places. The Motorman must promptly report every case of unusually heavy loading, so that, if necessary, arrangements may be made for dealing with the extra traffic.

(i) Except in the case of a "Through" car the Conductor must announce distinctly the name of each Street and the end of each Fare Section, and immediately after a Street has been passed, he must announce the name of the Street next in advance. In the case of a "Through" car that is scheduled to run through a **Conditional Stopping Place**, the Conductor must, on the occasion of each stoppage, announce where the next ordinary stop will be made.

87. Tramway Intersections.—(a) When approaching any intersection at which the Line crosses a Tramway track the Motorman must exercise due care to avoid over-running the Stopping Place on the approach side of the intersection.

(b) If when approaching an intersection the car should, from any cause, be stopped before reaching the Stopping Place, the Motorman, on receipt of the Conductor's Signal to start, must go slowly forward and bring his car to a Stand at the Stopping Place.

(c) When a Railway Car and a Tramway Car arrive at an intersection at or about the same time, precedence must be given to the car that is first ready to pass over the intersection. The Motorman must not attempt to start from the Stopping Place unless the proper signal is given for his car to proceed.

(d) After starting from the Stopping Place on the approach to any Tramway Intersection, the Motorman must exercise care, operate his Car across the Intersection at reduced speed (not exceeding five (5) miles per hour), and be on the alert to stop immediately in case of emergency.

(e) The Motorman must shut off Power whilst the Trolley is passing under the Overhead Intersection, and likewise when passing under any Section Insulator. (See also Instruction 80).

88. Shunting, etc., at Depots, Car Sheds and Reversing at Termini.—(a) Before any Shunting Operation is commenced, due care must be exercised to see that all Facing Points are properly set. Each vehicle being shunted must be so controlled as to stop it clear of any obstruction and to avoid accident. Care must also be taken to see that the car is not left where it will foul other movements or any Stop-block or other appliance used by the Shed Staff. When placing any car against another the employe in charge must so regulate the movement that the standing car will not be damaged or displaced.

No car must be left unattended unless it is properly secured by Hand Brakes or Chocks. The Air Brake must not be relied upon to secure a car.

(b) When any car is being taken into Service or when, for any other purpose, a car is to be taken from the Car Shed to a Running Line, care must be taken to guard against any conflicting movement. The Running Line must not be fouled after any car has arrived at the nearest Stopping Place unless the movement is protected by a Red Hand Signal in one or both directions as the circumstances may require. The Motorman must see that all Facing Points are properly set.

(c) When taking a car into the Shed the Motorman must see that all Facing Points are properly set, and as soon as the car is well clear of the Main Running Line he must secure his car and re-set the Points for the Running Line and then work his car slowly and cautiously into the Shed; unless otherwise provided, the Motorman must take the removable handles from the Controller and lay them on the top of the Controller, open the Circuit Breaker, secure the car by means

of the Hand Brake, open the Compressor Cut-out Switch and see that the Trolley is lowered clear of all overhead electrical equipment.

(d) (i) When a car is stabled on a dead-end track in the Car Shed or elsewhere it must, unless instructions are issued to the contrary, be placed as near as possible to the dead-end. The Motorman must, before leaving, test the lights to see that the contact with the rail is good.

(ii) The Officer-in-Charge must issue Special Instructions as to the disposal of the Controller, Air Brake and Door Operating Handles by the Motorman when an "Off" car is allowed to stand unattended at St. Kilda or Sandringham.

(e) Care must be taken not to reverse the position of Facing Points until the car has cleared them.

When shunting from one Line to another, the Motorman must see that the Points are properly set, and that the movement can be carried out with safety. Except in a case of emergency, a car must not be stopped on Points unless they are set for the track on which the car is running. In every instance in which a car is brought to a stand on trailing points not set for the track it is on, the Motorman and the Conductor before setting back, must see that the whole of the car is drawn over the Points or that the Points are reversed.

(f) (i) When nearing a terminus the Motorman should reverse the Destination sign for the return journey. When the car has been stopped at the terminus, the Motorman must obtain the removable handles of the Controller, Air Brake and Door Operating Valve (where provided), and unless otherwise arranged, retain them in his possession. He must then arrange the Tail Light for the return journey. He must then, subject to clause (h), Instruction **79**, place the trailing Trolley on the Contact Wire, after which he must proceed to the other end of the car, observe that the leading Trolley-pole has been lowered and secured, place the handles in position, apply the Brake at that end, see that the Head Lights, if required, and Destination sign are correctly shown and, if necessary, signal to the Conductor to release the Hand Brake in the rear.

(ii) In the case of a One-man type car the Motorman must on arrival at Black Rock Terminus open the Centre Doors on the "Up" side, the Centre Doors on the "Down" side being kept closed. On arrival at the Sandringham Station Terminus the Centre Doors on the station side of the car and the end Door on the opposite side must be opened and when all passengers have alighted the end Door must be closed. (See also clause (b), Instruction 28).

(g) Before leaving a terminus the Motorman must carefully feel the axle bearings for any sign of abnormal heating, and, in the event of abnormal heating, must telephone to the Officer-in-Charge for instructions; he must report any instance of hot bearings on the first occasion on which he arrives at the Depot.

(h) The Motorman must see that the Lifeguards are in the correct position before starting from any terminus, and must avoid running over any obstruction which is likely to cause them to fall unnecessarily; the Lifeguards must not be lashed up whilst in service, and any car having a damaged or incomplete Lifeguard must be changed over as soon as possible. (See also Instruction 53). Every instance in which a Lifeguard falls whilst a car is in service must be reported by the Motorman.

(i) On arrival at a terminus, the Conductor must carry out the following duties, and as far as practicable, in the order mentioned:—

- (i) Announce the name of the terminus and next destination.
- (ii) Arrange the front Oil Light and front and side Destination signs for the return journey.
- (iii) Reverse the Trolley-pole of a single truck car or lower the Trolley-pole that will be leading on a Bogie Car. (See clause (h), Instruction 79 and clause (k) hereof).
- (iv) Enter up the Running Journal.
- (v) Release rear Hand Brake (if applied) upon receiving signal from Motorman. (See clause (b), Instruction 106).
- (vi) Signal to Motorman to proceed in sufficient time to enable him to start, if practicable, at the scheduled time. (See clause (g), Instruction 106).

(j) The Conductor must not leave his car at a terminus until every passenger has alighted, and when reversing the side barriers, if provided, he must be careful not to touch, obstruct, or inconvenience any passenger.

(k) To avoid extinguishing the car lights—in the case of a car with two Trolley-poles, the trailing Trolley should be placed on the Contact Wire before the leading Trolley-pole is lowered, if by so doing the Trolleys do not make contact one on each side of a Section Insulator. If a Section Insulator be present one Trolley must be lowered before the other is raised. If during a period of darkness any passenger attempt to board the car whilst the lights are extinguished, the Conductor or Motorman must call out “Wait for the Lights, please.” (See clause (k), Instruction 79).

(l) Between sunset and the time of departure of the last Up car, Carmen must see that the lights are displayed at the Compulsory and Conditional Stopping Places. (See clause (c), Instruction 86). Should any light become extinguished when its use is required, the Carman observing it must promptly report the fact to the Officer-in-Charge.

89. Car Stopped by Accident, Failure, etc.—(a) Should an accident cause a car to foul, or to be dangerously close to any adjacent Line, immediate steps must be taken by the Motorman to have such Line protected by sending a competent employe forward at least 150 yards to stop the first car approaching on such Line.

In the case of a One-man type car, when operated under One-man conditions, and no competent employe is available to protect the adjacent Line, the Motorman himself must perform such protection. (See also clause (c), Instruction 47).

(b) When an accident occurs the senior employe present at the scene must send a “Flash” report of the occurrence to the Officer-in-Charge by the most expeditious means available; the Flash message should state concisely the character and locality, and whether any injuries or damage have been caused.

Reports relating to derailments must state the number of the car, the time, place, speed, cause of derailment (if possible), whether No. 1 or No. 2 end of the car was first derailed, whether leading or trailing, whether on a curve or at Points, and the extent of damage, if any, caused to rolling-stock.

The employe receiving a Flash message must at once communicate the particulars to the Officer-in-Charge, and as soon as possible the particulars available must be sent to the Metropolitan Superintendent, District Engineer, Overhead Superintendent, and (as laid down in the General Appendix Instructions for Reporting Accidents) to the Head Office, Spencer Street.

The Officer-in-Charge must proceed to the scene of accident by the most expeditious means and supervise arrangements.

(c) In any instance in which a car is disabled or unsafe to run, the passengers (if any) must be removed and transferred to another car as circumstances permit. Any car which has been derailed must be changed over for examination when it next arrives at the Depot.

(d) Two Lifting Jacks, with the necessary blocks, are provided on each Bogie Car, and one on each Single-truck car, for use as may be required in case of accident or emergency.

The jacks, which are portion of car equipment, are numbered to correspond to the distinguishing number of the car to which they are allotted, and, immediately after use, must be replaced on their proper car. Each Motorman must inspect, daily, the jacks on his car, and report any shortage or defect.

No time must be lost in re-railing a derailed car, but jacks must not be used if the car can be drawn or worked, without damage, on to the track.

(e) Every employe who is available, whether on or off duty, must render prompt assistance in the event of an accident. In any case in which a car is derailed or disabled, the Officer-in-Charge must make the necessary arrangements regarding relief of employes.

(f) In the event of a car becoming disabled on a Double Line and requiring the assistance of another car from the rear, the Motorman must instruct his Conductor to stop such car and verbally instruct the Motorman thereof to proceed to the disabled car and push it to the nearest Depot or other place where it can be shunted out of the way; the speed must not exceed 10 miles per hour while the car is being pushed. The Motorman of the disabled car must ride in front of his car and signal to the Motorman of the assisting car by means of the rear bell.

(g) If Relief can be more readily obtained from the advance, the Motorman of the disabled car must fill in a "Wrong Line Order," Form (as per specimen at end of this instruction),

and hand it to his Conductor, with instructions to proceed to the first cross-over road in advance and hand the "Wrong Line Order" to the Motorman of the car which is to be used for Relief purposes, and to accompany such Motorman to the point at which the disabled car is standing. The Relief Car must be operated at reduced speed and must carry a Red Head Light at night. The Motorman of the Relief Car must keep a sharp look-out for the disabled car.

The "Wrong Line Order," when properly filled in, is sufficient authority for a Motorman to run his car in the Wrong direction from the nearest cross-over ahead of the disabled car for Relief purposes.

The Motorman of the disabled car must see that, at night, a Red light is exhibited on the front and rear of his car.

(h) In the case of a One-man type car, when operated under One-man conditions, the Motorman, after securing his car (see clause (c), Instruction 47) must act as laid down for the Conductor in this instruction.

(i) The Motorman of the disabled car must not allow his car to be moved until the Relief car arrives, unless satisfactory arrangements have been made to prevent the Relief Car from coming to his assistance, and when a written order has been issued, until the man to whom the order was given has returned and handed the order back to the Motorman.

Specimen Wrong Line Order Form referred to in clause (g) of Instruction 89.

ELECTRIC STREET RAILWAYS.

MOTORMAN'S WRONG LINE ORDER.

To the Motorman of car at.....
My car is disabled at.....and
I require your car to come to my assistance on the Wrong
Line. I will not allow my car to be moved until the
arrival of your Relief Car.

(Signed).....Motorman of Disabled Car.

Car Number.....

(Date).....19..... (Time issued).....

Countersigned.....Motorman of Relief Car.

Date..... Time Order Received.....

AIR AND BRAKE APPARATUS.

90. The Air and Brake Apparatus covers the Hand Brake, Air Brake, Sander, Windscreen Wiper, and in certain cars, the Door and Circuit Breaker Operating Mechanisms.

91 (a) The arrangement of the Air and Brake equipment for Cars other than the One-man type is shown on diagram No. 2, and the chief appliances are as specified hereunder:—

Compressor Cut-out Switch and Fuse.

Compressor Governor.

Air Compressor and Motor.

Main Reservoir and Safety Valve.

Pressure Gauge.

Motorman's Brake Valve.

Conductor's Brake Valve.

Brake Cylinder.

Sanders.

Windscreen Wipers.

(b) Compressor Cut-out Switch and Fuse.—This is a single-pole switch connected in the power circuit on the Trolley side of the Circuit Breaker, and when closed, it supplies power to the Compressor Motor, provided the contacts of the Compressor Governor are closed.

The Fuse is provided for the protection of the electrical equipment of the Compressor Circuit in the event of a short circuit or an excessive load. Under normal Conditions the Compressor Cut-out Switch must be kept closed. (See Diagram No. 1).

(c) Compressor Governor, Air Compressor, Motor and Main Reservoir.—The Compressor Governor is an air-operated electrical switch connected between the Compressor Cut-out Switch and the Compressor Motor. It automatically controls the operation of the Compressor Motor, and thus governs the working of the Air Compressor. When owing to an application of the Air Brake or due to leakage, the Air-pressure in the Main Reservoir falls below a predetermined limit. (60 lb. per square inch) the contacts of the Compressor Governor close automatically and thus complete the electric circuit through the Compressor Motor and start the Air Compressor. When by the operations of the Air Compressor the pressure in the Main Reservoir is increased to 70 lb. per square inch, the

contacts of the Compressor Governor open automatically, de-energise the Compressor Motor and stop the Air Compressor.

(d) **Main Reservoir and Safety Valve.**—The **Main Reservoir** is for the storage of air compressed by the Air Compressor. Connected to the Main Reservoir is the **Safety Valve**—The function of the Safety Valve is to prevent the pressure in the Main Reservoir from exceeding a predetermined maximum in the event of the Compressor Governor or Compressor failing to cut-out automatically. The Safety Valve is provided with means for adjustment in order that the Blow-off pressure may be varied according to requirements; under normal conditions the adjustment is set so that when the pressure is excessive the Safety Valve will open, and thus limit the pressure in the Main Reservoir.

(e) **Pressure Gauge.**—The Pressure Gauge, one of which is fixed in each Driving Compartment, indicates to the Motorman the pressure of air in the Main Reservoir.

(f) **Motorman's Brake Valve.**—The operating handle of this Valve has four separate positions, viz. :—

(i) Service Application; (ii) Emergency Application; (iii) Neutral Position and (iv) Release Position.

(i) **Service Position.**—When the handle is in the Service position, a small Air port admits air from the Main Reservoir to the Brake Cylinder, producing a gradual application of the Brake for an ordinary stop. (See Instruction 96).

(ii) **Emergency Position.**—When the handle is placed to the Emergency Application Position, a large port is opened, and the air passing from the Main Reservoir to the Cylinder, applies the Brake almost immediately. For other forms of Emergency Braking, see Instruction 97.

(iii) **Neutral or Lap Position.**—When the handle is at the Neutral Position all air ports are closed, and there is no communication between the Main Reservoir, the Brake Cylinder and the atmosphere. If compressed air is admitted to the Brake Cylinder and the Motorman's Brake Valve is then moved to the Neutral Position, the Brake will be held on until such time as the compressed air escapes by leakage.

(iv) **Release or Running Position.**—When the handle is placed to this position a port is opened through which the compressed air exhausts from the Brake Cylinder to atmosphere, and the Brake is thus released. This is the normal position whilst running.

(g) **Conductor's Brake Valve.**—The Conductor's Brake Valve is provided on Bogie Cars only, except the One-man type. By opening this Valve an Emergency Air application is produced. It must not be opened whilst the car is in motion, except the Conductor become aware that the Motorman is from any cause incapacitated, or any similar case of emergency. (See also clause (b), Instruction 97).

(h) **Sanders.**—To operate the Sanders, air is taken from the Main Reservoir through an isolating valve and a reducing valve to the Sanding Air Pipe Reservoir. The Air is then taken to each end of the Car and thence through operating valves to the Sanders.

(i) **Windscreen Wipers.**—The air supply to the Windscreen Wipers is taken from the Main Reservoir Pipe and the action of each Wiper is controlled by an operating valve.

(j) **Pneumatic Doors.**—In addition to the above equipment some bogie cars are provided with pneumatically operated doors under the control of the Motorman. (See Diagram No. 4).

By means of a four position Rotary Valve with removable handle the Motorman is able to open the two "On" side doors, the two "Off" side doors, or all doors as required. To prevent the escape of air at the non-driving end when air is admitted to the Door Engines, a double Check Valve is installed in the piping to each pair of doors. Each Valve consists of a Piston in a Cylinder which is forced over when air is admitted to one end of the Cylinder, thus allowing air to pass to the Door Engines by way of a central port but preventing air passing through the Cylinder to the other end.

A Door Engine is mounted over each of the four doors and consists of a Piston in a long Cylinder. To one end of the Cylinder, through which the Piston rod extends, air at Main Reservoir pressure is always applied. The Piston rod is attached to the top of the door so that the movement of the Piston in the Cylinder operates the door.

When the Motorman desires to close the doors he admits air to the other end of the Cylinder by an operation of the Rotary Valve. As the area of the Piston in contact with the air is greater on this side than on the side which has air pressure constantly applied, the Piston is forced over to the "door closed" position. To open the doors the Motorman must return the Rotary Valve to the "door open" position, thus opening a port which exhausts the air from one end of the Door Engine Cylinder to atmosphere. The air pressure on the other end of the Cylinder then forces back the Piston to the "door open" position.

92. Air and Brake Equipment of One-man Type Cars.—See Diagram No. 3.—(a) In addition to the Air and Brake equipment, as described in Instruction **91** (a) to (i), One-man type cars have the following equipment:—

- Dead-man's Device on Controller.
- Double Check Valve.
- Pilot Cut Off Valve.
- Emergency Valve.
- Circuit Breaker Cylinders.
- Door Operating Valves.
- Door Selection Cocks.
- Valve Pullers.
- Door Engines.
- Doors and Steps.

(b) **Dead-man's Device.**—This is incorporated in a special cover substituted for the cover employed on the K. 35 type Master Controller. It embodies an Air Valve operated by depressing the Controller handle against the action of a return spring. Air from the Main Reservoir Pipe passes through the Valve to the Safety Control Pipe when the handle is depressed and air from the Safety Control Pipe is exhausted to atmosphere when the handle is released.

It is necessary for the Motorman to hold the Controller handle depressed except when the Air Brake has been applied.

(c) **Double Check Valve.**—The function of this Valve is to isolate the Safety Control Pipe at the end from which the car is not being operated and so prevent it being exhausted to atmosphere at the Controller at that end. It consists of a

Piston in a Cylinder to which the Safety Control Pipe is connected at both ends—one pipe going to No. 1 end of the car and the pipe at the other end of the Cylinder going to No. 2 end. A pipe at the top of the Cylinder is taken to the Pilot Cut Off Valve.

When the Controller handle is depressed after the Motorman changes ends, air at Main Reservoir pressure is admitted to one side of the Piston of the Double Check Valve, forcing it over and permitting the air to pass through the top port to the Pilot Cut Off Valve. At the same time the Safety Control Pipe leading to the other end of the car is isolated from the top port.

(d) **Pilot Cut Off Valve.**—The function of this Valve is to allow the Motorman to remove his hand from the Controller handle if the Air Brake has been applied. It consists of a spring loaded Valve which is operated when air pressure is admitted to the Straight Air Pipe by the operation of the Motorman's Brake Valve. The operation of the Pilot Cut Off Valve prevents the passage of air between the Emergency Valve and the Double Check Valve, thus permitting the Safety Control Pipe to be exhausted, when the Air Brake has been applied, without exhausting air from the Emergency Valve and causing the latter to operate.

(e) **Emergency Valve.**—The Emergency Valve consists of a Piston, a Slide Valve operated by the Piston, and also a Relay Valve. Air from the Main Reservoir is admitted to the back of the Piston and also to the top of the Slide Valve. From the front side of the Piston the Emergency Pipe is taken for the operation of the Pneumatic Doors.

Within the Emergency Valve a port leads from the Emergency Pipe Port to both ends of the chamber in which the Relay Valve is situated. A port also connects the pipe from the Pilot Cut Off Valve to this chamber. From below the seat of the Relay Valve a pipe is taken to the Circuit Breaker Cylinders.

The Slide Valve connects ports from the Straight Air Pipe and Brake Cylinder Pipe when the Piston is in the normal position and when it is in the Emergency position air from the back of the Piston is connected to the port leading to the Brake Cylinder Pipe. The operation of this Valve is as follows:—

When the Controller handle is depressed by the Motorman

and the Motorman's Brake Valve placed in the Release position, the Safety Control Pipe is charged with air at Main Reservoir Pressure which enters the Emergency Valve and passes to the top of the Relay Valve Piston which is forced on to its seat against a spring and closes the port which connects the Emergency Pipe to the Circuit Breaker Cylinders. Air then flows through a groove alongside the Relay Valve into a port leading to the Emergency Pipe which is gradually charged with air. This air pressure is also applied to the front of the Emergency Valve Piston which has air direct from the Main Reservoir always at the back of it in the chamber in which the Slide Valve is situated.

When sufficient pressure has built up in the front of the Piston, it throws and uncovers a port which connects the Main Reservoir to the front of the Piston and thence to the Emergency Pipe. At the same time the Slide Valve is operated and connects the Straight Air Pipe to the Brake Cylinder so that normal operations of the Brake can be performed by the manipulation of the Motorman's Brake Valve. When, however, air pressure is reduced in the Safety Control Pipe the Relay Valve operates and uncovers the port which exhausts the Emergency Pipe to atmosphere via the Circuit Breaker Cylinders. Pressure is thus reduced on the front of the Emergency Valve Piston which throws and carries with it the Slide Valve thus connecting the air at Main Reservoir Pressure in the Slide Valve chamber to the port leading to the Brake Cylinder Pipe.

In order to prevent a drop in pressure in the Emergency Pipe, and consequent operation of the Emergency Valve, when two or three door engines are operated at the same time a small Air Reservoir is placed in the Emergency Pipe Line.

(f) **Circuit Breaker Cylinders.**—One cylinder is located adjacent to each Circuit Breaker handle. When the Emergency Valve operates, the air from the Emergency Pipe is admitted to each Circuit Breaker Cylinder, thus forcing forward a Plunger which hits against the Circuit Breaker handle causing power to be cut off from the Controller. When the Plunger is extended the air is exhausted to atmosphere.

(g) **Door Operating Valves.**—Foot operated Valves are installed at each end of the car. They consist of two Plungers (one of which is removable) placed side by side. Pressing down

one Plunger permits air from the Emergency Pipe to pass to the pipe leading to the door engine Valve Pullers. Pressing down the other plunger exhausts the pipe from the Valve Pullers to atmosphere.

(h) **Door Selection Cocks.**—The valve puller for the door to the left of the Motorman is permanently connected to the door operating valve at that end of the car. The two centre doors can be isolated or selected by cocks placed in the pipe lines leading to these doors.

(i) **Valve Pullers.**—Each Door Engine is equipped with a Valve Puller which determines to which side of the Door Engine Piston, air is admitted.

The Valve puller consists of a Spring loaded Piston in a Cylinder to which air is admitted by means of the Door Operating Valve. The air pressure forces over the Piston against the compression of the spring. The resultant movement of the Piston Rod is transmitted by a connector link to the arm of the Door Engine Rotary Valve. When air is exhausted by further operation of the Door Operating Valve the spring returns the Piston carrying with it the connector link and the operating arm of the Door Engine Rotary Valve.

(j) **Door Engines.**—The Door Engine consists of two Pistons rigidly connected by a shaft in which teeth are cut to form a rack which engages a quadrant attached to the lever operating the doors. The Pistons are situated in opposing Cylinders to which air is admitted as determined by the position of a Rotary Valve.

When air is admitted to the Valve Puller the resultant movement of the Rotary Valve arm causes air from the Emergency Pipe to pass through the Rotary Valve to one Cylinder, forcing over that Piston and the racked shaft. The quadrant is thus rotated and the doors open.

When air is released from the Valve Puller the Door Engine Rotary Valve is operated causing air to be exhausted from the Cylinder previously charged and air admitted to the other Cylinder causing that Piston to be forced over reversing the movement of the quadrant, and the doors close.

If air be exhausted from the Emergency Pipe by an operation of the Emergency Valve no air is available for the Door Engine which is then in a state of balance and the doors can be operated by hand.

Isolating Cocks are provided on each Door Engine to cut off the supply of air from the Emergency Pipe when the Door Engine is defective. The defective door can then be operated by hand.

(k) **Doors and Steps.**—The operation of the Door Engine causes a shaft to revolve to which the folding doors are secured thus causing the doors to operate. The shaft is extended below the doors so that its movement will operate a folding step.

93. (a) There are several forms of braking available for controlling a car, viz. :—

- (i) The Hand Brake.
- (ii) The Air Brake.
- (iii) The Rheostatic Brake.
- (iv) The Reserve Power Brake.

(b) **The Hand Brake** operates on the car wheels through the brake shoes and is applied by turning the hand wheel at either end of the car. It is held in position by a foot operated locking device.

The Motorman must Signal the Conductor to apply the Hand Brake where necessary when the car is in motion. Except when necessary to prevent accident, the Conductor must not apply the Hand Brake unless he receive the signal from the Motorman to do so. (See clause (b), Instruction **106**).

The Motorman must, by means of the Hand Brake, counteract unsteadiness due to defective Rheostats, but must not, otherwise, start the car whilst the Brake is on.

(c) **The Air Brake** operates by air pressure upon the car wheels and through the same brake shoes as the Hand brake. Details of the Air Brake mechanism are given in Instructions **91** and **92**.

When from any cause the Air Brake is inoperative, the speed of the car must be limited to a rate at which the car may be controlled, or, where necessary, stopped by means of the Hand Brake alone ; in such circumstances the Hand Brake will form the Service Brake, but in cases of emergency the Motorman must make use of the Emergency Brake. (See Instruction **97**).

The handle of the Controller must always be at the " Off " position when a Service Brake is applied.

The Air Brake must not be relied on to secure a car on any gradient.

(d) **The Rheostatic Brake** is operated by converting motors into generators and dissipating the energy by heating the Rheostats in the electrical circuits.

(e) **The Reverse Power Brake** can only be employed on the single truck—two motor—equipment and is operated as detailed in clause (e), of Instruction 95.

94. Bogie Cars.—(a) In the Bogie and One-man type car equipments the separate forms of Braking are as shown hereunder :—

- (i) **Service Brake.**—By an ordinary application of the Air Brake or (if the Air Brake be inoperative) Hand Brake. (See clause (b)).
- (ii) **First Emergency Brake.**—By Air Emergency Application. (See clause (c)).
- (iii) **Second Emergency Brake.**—(One-man type cars only). By Dead Man's Device. (See clause (d)).
- (iv) **Third Emergency Brake.**—By using the Motors as Generators. (See clause (e)).

(b) **Service Brake.**—This application, which is used for general purposes, consists of an ordinary application of the Air Brake Apparatus. To apply the Brake the Motorman, after placing the Controller to the Off position, must turn the handle of the Brake Valve to the Service Application position, and when the desired effect has been produced, he must turn the handle to the Neutral position; if the Motorman find that his application is insufficient he must make another, but lighter, application, and again turn the handle to the Neutral position. These operations must be repeated until sufficient pressure has been applied to gradually bring the car to a stand; the Air Brake must be released before the car is actually stopped. (See also Instruction 96).

(c) **First Emergency Brake.**—The First Emergency Air Brake is applied by placing the handle of the Brake Valve to the Emergency Application position, and applying sand to the rail. (See Instruction 99).

(d) **Second Emergency Brake.**—The Second Emergency Brake on One-man type cars is applied by removing the hand

from the Main Controller Handle. This applies the Main Reservoir air pressure directly to the Brake Cylinder.

(e) **Third Emergency Brake.**—The Third Emergency Brake can only be applied by means of the “K35” type of Controller. The Motorman must place the handle of the Controller to the Off position and then place the handle of the Reverser to the position in which an application of power will oppose the motion of the car; the handles must be left in above-mentioned reversed positions until the car has been stopped.

This application is not dependent on the supply of power from the Trolley, and, as it is likely to damage the electrical equipment, must not be used except in cases of extreme urgency.

95. Single-truck Cars.—(a) In the Single-truck car equipment the separate methods of braking are as shown hereunder:—

- (i) **Service Brake.**—By an ordinary application of the Air Brake or (if the Air Brake be inoperative) Hand Brake.
- (ii) **First Emergency Brake.**—By Air Emergency Application.
- (iii) **Second Emergency Brake.**—By Rheostatic.
- (iv) **Third Emergency Brake.**—By Reversing.
- (v) **Fourth Emergency Brake.**—By using the Motors as generators.

(b) **Service Brake.**—This application, which is used for general purposes, consists of an ordinary application of the Air Brake Apparatus. The Motorman, after placing the Controller to the “Off” position, must turn the handle of the Air Brake Valve to the Service Application position, and, when the desired effect has been produced, he must turn it to the Neutral position; if the Motorman find that his application is insufficient, he must make another, but lighter, application and again turn the handle to the Neutral position. These operations must be repeated until sufficient pressure has been applied to gradually bring the car to a stand; the Air Brake must be released before the car is actually stopped. (See also Instruction 96).

(c) **First Emergency Brake.**—The First Emergency Air Brake is applied by placing the handle of the Brake Valve to

the Emergency application position, and applying sand to the rail. (See Instruction 99).

(d) **Second Emergency.**—To use the Second Emergency (the Rheostatic Brake) the handle of the Controller must be turned backwards from the "Off" position to bring the braking notches into action; the movement of the handle of the Controller to the first braking notch couples the motors so as to act as generators and short circuits them through the Rheostats which are gradually cut out by the handle being moved to the full braking notch. This produces a considerable braking effect whilst the car is moving rapidly. This application is not dependent on power from the Trolley, and may, therefore, be used even if the Trolley-pole be lowered, and it will operate (though less effectively) when one motor is cut out. When applying this Brake, the same care must be exercised when passing over Brake Notches as when passing over the Power Notches, and the handle of the Reverser must be set for the direction in which the car is running; the handle of the Controller must not, however, be moved too rapidly, as such a course may cause damage to the equipment, or skid the wheels.

(e) **Third Emergency.**—To apply the Third Emergency Brake, the Motorman must perform, in the order named, the following operations:—

- (i) Place the handle of the Controller to the "Off" position.
- (ii) Place the handle of the Reverser to the position at which an application of power will oppose the motion of the car; and
- (iii) Turn the handle of the Controller to First Series, and, if necessary, to (but not beyond) the Second Series notch.

If the Controller be turned beyond Second Series notch the Motors may lose their braking power, and the equipment may be damaged.

This application, whilst dependent for its action on power from the Trolley, will operate (though less effectively) when one Motor is cut out.

(f) **Fourth Emergency.**—To apply the Fourth Emergency Brake the Motorman must perform, in the order named, the operations specified hereunder:—

- (i) Place the handle of the Controller to the Off position.

- (ii) Place the handle of the Reverser to the position at which an application of power will oppose the motion of the car; open the Circuit Breaker; and
- (iii) Turn the handle of the Controller to the Full Parallel position, and hold it at such position until the car has been stopped.

This Application is not dependent on the supply of power from the Trolley; nevertheless its action is likely to cause serious damage to the electrical equipment, and it must not be used except in a case of extreme emergency.

96. Service Braking.—Due care must be exercised in operating the Service Brake, which, for an ordinary stop, must be applied gradually and released. To avoid causing discomfort to passengers, and unnecessary strain on the equipment or needless loss of compressed air, a light application should be made at a sufficient distance before reaching the stopping place; when the car has been brought nearly to a stand the Air Brake should be released, and, where necessary, the Hand Brake must then be applied. (See also clause (e), Instruction 86).

97. (a) Emergency Braking.—There are various forms of Emergency Braking, which, when used, must be applied in the order set out in Instruction 94 or 95.

(i) On Bogie Cars, there are two and on One-man type cars three separate forms of Emergency Braking.

(ii) On Single-truck Cars, there are four distinct forms of Emergency Braking.

(b) If all the methods of Emergency Braking fail the Motorman must, except on the One-man type of car, signal to the Conductor to open the Conductor's Brake Valve. (See clause (b), Instruction 106, and clause (g), Instruction 91).

(c) When an Emergency Brake is used, the hand Brake must not be applied until the car has almost stopped; excessive braking causes the wheels to skid, which defeats the object in braking.

(i) An Emergency Brake may not stop a car on a gradient, but it will reduce the speed of the car to a low rate. If the Hand Brake be defective, the Motorman must take the necessary steps to scotch the wheels, or arrange for his Conductor to do so, where it is desired to bring the car to a stand.

- (ii) The Motorman must furnish a report to the Officer-in-Charge, as soon as possible in every instance in which he uses an Emergency Brake. This clause will not, however, apply to the testing operations prescribed in clause (c), Instruction 76.

98 (a) Falling Gradients.—When descending any gradient the speed of the car should be controlled by applying and retaining sufficient air in the Brake Cylinder to prevent the car from accelerating beyond the prescribed rates of speed. (See Instruction 85).

(b) Skidding or Slipping.—The Motorman must endeavour to avoid skidding the wheels of the car. If the wheels slip whilst power from the overhead is applied, the Motorman must place the Controller to the "Off" position and apply power again in the regular way.

The best effect in checking the speed is produced by retarding the rotation of the wheels without skidding.

If the wheels skid whilst the Brake is applied, he must apply sand to the rail, release the Brake sufficiently to allow the wheels to revolve, and again apply the Brake in such a way as to avoid skidding. (See also Instruction 99).

If, when the Conductor applies the Hand Brake, the wheels skid, he must release the Brake and, if necessary, apply it again.

(c) Brake Defects.—The Motorman must devote attention to the condition of the Air Brake, and at once investigate any indication of defect in any portion of the Apparatus. In the event of any defect in the Air Brake, Rheostatic, or Hand Brake equipment, the particulars must be communicated to the Officer-in-Charge as soon as possible. If the Brakes on any car in traffic are unserviceable, the Carmen must arrange for all passengers to alight and to proceed to their destination by the next following car; the defective car must be run empty to the Car Shed.

The Motorman must, on each trip, frequently observe the indication on the Pressure Gauge.

- (i) If at any time the pressure has fallen below 55 lb., the Motorman must bring the car to a stand clear of Crossings and carefully note whether the Compressor is operating, and if the Compressor be working and the Pressure Gauge is not affected thereby, the Air

Brake Apparatus must be regarded as unserviceable ; if, however, the Compressor be not operating the Motorman must see whether the Compressor Cut-out Switch is open and, if so, close it and note whether the Compressor is then actuated. If although the Compressor Switch is closed the Compressor is not working the Motorman after opening the Compressor Cut-out Switch, must renew the Fuse in the Switch, and, if the second and a third Fuse blow, the Air Brake Apparatus must be deemed to be unserviceable.

Note.—The Compressor Cut-out Switch (see Diagram No. 1) must always be opened—i.e., placed to the “Off” position—before attempting to examine or change the Fuse.

- (ii) If at any time the pressure rise above 75 lb. the Motorman must Stop the car, and by applying and releasing the Brake endeavour to reduce the pressure in the Reservoir, and, if by these operations, the pressure be sufficiently reduced, he must before starting, note whether the Compressor operates ; if when the Air Pressure is reduced, the Compressor starts, but the Compressor is not automatically cut out when a pressure of 70 lb. is restored, the Motorman must open the Compressor Cut-out Switch and regard the Air Brake Apparatus as unserviceable.

99. Use of Sand.—The Motorman must frequently stir up the sand in the boxes, see that the sand gear works properly, and keep a sufficient supply of sand in the boxes whilst the car is in traffic. Any defect of the sand gear must be noted in the Trouble Card Book ; baskets, cans, etc., must not be carried in the sandboxes. In any instance in which it is necessary to use sand for Emergency Braking purposes, the Motorman must start the sand before applying the Brakes.

The Motorman should not use sand on or near any points unless such a course be necessary.

PREVENTION OF ACCIDENTS.

100. (a) Employes must exercise care in the performance of their duties to prevent accidents or injury to themselves or others, and must spare no opportunity of warning those who neglect to take proper care.

Reckless exposure of himself or others to danger on the part of any employe will be treated as an offence against these Instructions.

Before using tools or appliances of any kind, employes should make sure that they are in a safe position to perform the service required.

Foremen and Gangers must satisfy themselves that the men concerned understand what is required to prevent accident to themselves or others.

(b) The Conductor, when alighting from the car, must always face the direction in which the car is travelling; he must not unnecessarily lean out of, or alight from, the car on the side for which the barrier is in use.

When cars are passing through the gate-ways of the Car Sheds, the Conductors must remain inside the cars. If it be necessary to adjust destination signs or other outside equipment before a car goes into service, this duty must be performed whilst the car is stationary.

(c) Every employe must exercise proper care in getting between vehicles for the purpose of coupling or uncoupling them, and in the performance of any other duty that necessarily exposes him to danger or risk of personal injury.

Except where instructions are issued to the contrary, any employe who may have occasion to go under a car on a Running Line must previously obtain one handle of the Controller from the Motorman and see that both Hand Brakes are fully applied so as to be quite sure that the car will not be moved until all is clear. Immediately after the work has been completed, the handle must be returned to the Motorman.

(d) When it is necessary to use the Motorman's Insulated Ground Wire the employe concerned must be particularly careful to first make good contact with the rail with one end of the wire before placing the other end of the wire on the rear wheel of the car. The wire must be held by the insulated portion and when the contact has been made the employe concerned must turn his head so that if arcing occur his eyes will not be affected.

(e) Employees are warned of the risk of electric shock or burning which might be incurred by tampering with any electrical apparatus, overhead connections, or dangling wires. They must always bear in mind the danger of touching, or allowing any conducting substance with which they are in contact to touch any Transmission or Contact Wire, or other "Live" material. It must, however, be borne in mind that under certain conditions the same danger exists, in the handling of ladders, etc. Each employe must, therefore, be on his guard to avoid exposing himself or others to this risk, particularly those engaged on the roofs of vehicles, buildings, or verandahs, or on or under overhead structures or over-line bridges. (See also clauses (l) and (m), Instruction 79.),

Any employe who is required to handle a Live Wire must avoid risk by using some dry non-conducting material. Employes must make proper use of articles or appliances provided for their safety and convenience.

Employes must make themselves familiar with the instructions under the heading of Directions to be observed in cases of Electric Shock. (See end of this book).

(f) Any employe who observes any damage or irregularity connected with the overhead equipment must do all in his power to prevent injury to any person or damage to property, and must warn pedestrians and drivers of vehicles to keep clear of the equipment. He must take immediate steps to stop any cars that may foul the damaged equipment, and as quickly as possible report the derangement, or ensure its being reported, to the Officer-in-Charge, stating the extent, locality, and whether the Up or Down Line is, or both Lines are, affected. The time the trouble was observed, and its nature and consequences so far as can be ascertained must be also given. (See also Instruction 124).

If the employe observing the irregularity consider the conditions dangerous, he must remain at the site and perform such services as the occasion may require until the danger is removed, or he has been released by the Officer-in-Charge.

The Officer-in-Charge or other official receiving the report of any fault or irregularity in the overhead construction must immediately report the particulars to the Overhead Depot, Batman Avenue. The Officer-in-Charge must proceed to the scene by the most expeditious means available.

(g) An unauthorised person must not open, close or otherwise interfere with any overhead switch or feeder.

(h) No employe shall, under any circumstances, operate appliances or machinery except in the authorised manner, and all are cautioned against interfering with any apparatus in such a way as to prevent its legitimate action.

Carmen must not needlessly remove the apron of any Controller or the door of any Motor Case, and must not interfere or permit any unauthorised person to interfere with the adjustment of any Circuit Breaker or other electrical equipment.

101. (a) Most accidents are due to some form of inadvertence. Sometimes the Carmen are at fault, but most accidents are due to a lack of care on the part of others. Wherever the fault lies, it is the most earnest wish of the Commissioners to minimise, and if possible eliminate the risk of accident.

(b) Each Instruction contained in this book is based on an established principle for avoiding some particular form of accident or irregularity, and if any employe wilfully ignore an Instruction or permit it to be ignored, he courts a recurrence of the unsafe conditions that the Instruction is designed to prevent. Remember always the cardinal principle "SAFETY FIRST."

(c) Every employe is enjoined to study and strictly observe all Instructions, including special or local Instructions and Notices that have any bearing on his duties. He should possess a thorough knowledge of what each particular Instruction prescribes or implies, and thus be prepared to act accordingly when the occasion and the requirements of safety demand it.

(d) When the car is in motion, responsibility for safe running rests mainly on the Motorman. Appliances are provided for quickly and effectively controlling the car, and by a strict observance of Instructions and orders, the exercise of vigilance, good judgment, and proper care, the risk of accident will be reduced and the interests of the Carmen and the department will be conserved.

(e) **Motormen : Note.**—A likely irregularity calling for prompt action is a vehicle suddenly emerging at an excessive rate of speed from a side or cross street and attempting to cross the track whilst your car is approaching. Although the Driver of the vehicle is required to look for your car, you must regard him

as unaware of its approach ; therefore sound the Gong when approaching any side or cross street and continue to sound it ; if necessary, slacken speed and be ready to stop and do not attempt to pass any vehicle unless certain that there is ample room.

Be especially cautious when approaching any wagon laden with long timber or other projecting material ; always remember that a wagon or other vehicle conveying such loading, forms a large arc when turning—when the front of the wagon is being turned away from the track the rear portion of the load turns towards, and may foul, the track. If in doubt, stop ; do not accept any risk or leave anything to chance.

Always slow down and proceed cautiously when approaching or passing a restive horse ; horses when frightened may back towards your car instead of moving away from the track.

(f) Conductors : Note.—Some persons who are injured when attempting to board or alight from a moving car may claim that the car was started whilst they were in the act of boarding or alighting, and that you are responsible for the occurrence.

When you see any person about to board or alight from the moving car ; shout to them ; warn them of the danger—hold them if practicable, but Call out—“Wait till the car stops.” By thus shouting a warning you will also attract the attention of other passengers to the danger, and, if an accident occur, witnesses will be available to prove you are not to blame.

In the event of any passenger falling from a car whilst it is in motion, the car must be stopped at once and all necessary assistance must be rendered.

NOTE.—Attention is also directed to Instructions Nos. 2, 3, 13, 16, 19, 20, 27, 28, 33, 40, 41, 42, 45, 46, 47, 48, 49, 50, 51, 52, 53, 55, 62, 75, 76, 77, 79, 82, 83, 84, 85, 86, 87, 88, 89, 96, 97, 98, 99, 102, 106, 107, 108, 111, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125.

SIGNALS.

102. Carmen must obey all Signals relating to the movements of a car.

103. (a) Hand Signals will be made with Flags by day, and with Lamps by night or in foggy weather. A Red Light or a Red Flag is a signal of "Danger," i.e., "Stop"; in the absence of a Red Light, any light waved violently denotes Danger.

(b) Except where they are employed for the purpose of marking the actual point of obstruction, Hand Lamps and Flags, when used as signals, must always be held in the hand, and not placed upon, or stuck into, the ground, or fixed elsewhere.

(c) Hand Signal Lamps and Flags must be kept clean and ready for immediate use. Flags which have become so worn or soiled as not to be readily distinguished at a proper distance, must be replaced.

104. In the absence of Hand Signal Lamps or Flags, Hand Signals, as described below, may be used by employes when engaged in the working of cars.

(i) Both arms raised above the head denotes "Danger—Stop."

(ii) One arm held in a horizontal position denotes "All Right."

105. A Green Hand Signal waved slowly from side to side by trackmen indicates that cars must reduce speed to five (5) miles an hour, or such other speed as may be prescribed, over the portion of the Line protected by such Green Signal. (See Instruction **115**).

106. (a) **Gong and Bell Signals.**—All Signals given by the Motorman or Conductor must be correctly and clearly sounded.

(b) The Signal Code for the Motorman and the Conductor is as specified hereunder :—

See Instruction	SIGNAL	Beats on Gong	How to be given
76 (a)	<i>By Motorman—</i> Before moving the Car under any circumstances	2	This Signal must be given by two consecutive beats, and must be continued or repeated as circumstances may require ; but the Motorman must be prepared to stop the Car if his Warning Signals are not obeyed, or if he should have reason to apprehend danger
107	When meeting another Car and when passing a standing Car		
107	When passing around a street Corner		
107	When approaching any Street where the view is obstructed		
49	To warn employes or other persons, or drivers of vehicles on or close to the Line ; or to drive animals clear of the Line		
111 (c)	Lower the Trolley ..	1 Beats on Bell	Consecutively
—	For Conductor to come through	1*	
97 (b)	For Conductor to open Emergency Brake Valve	3*	
93 (b)	Apply Hand Brake ..	6*	
88 (i)	Release Hand Brake ..	3*	
86 (g)	<i>By Conductor to Motorman—</i> Stop at next Stopping-place ..	1	Consecutively 1, pause 1
106 (e)	Proceed ..	2	
86	Stop for over-carried Passenger	2	
106 (d)	Danger Stop (Emergency Stop signal)	3	Consecutively
86 (h)	Car full. Do not stop to pick up Passengers, applicable to Conditional Stopping-places only	4	2, pause 2

* These signals by the Motorman, must be given by means of the rear Bell.

(c) The signals by the Conductor to the Motorman must be given on the front Bell. The use of any unauthorised communication by the Bells or Gong is strictly forbidden.

(d) Except in the case of the Emergency Stop Signal, the Motorman must acknowledge each Bell Signal by repeating it on the Gong—on receipt of the Emergency Stop Signal, the Motorman must, as quickly as possible, stop the car.

(e) When for any purpose the car has been brought to a stand on a Running Line, whether at an authorised Stopping Place or elsewhere, the Motorman, except in the case of a One-man type car when operated under One-man conditions, must not move the car until he receives the Proceed Signal from the Conductor or other authorised person; if such signal be not given distinctly, the Motorman must not start until the signal is repeated clearly. In every case before starting, he must see that all is clear by looking in each direction. (See also Instruction 87). In every case the Motorman must, before starting, give two sharp and distinct strokes on the Gong. Before acting on a Proceed Signal the Motorman must make sure that the signal refers to his car.

(f) In any instance in which on receipt of the Bell Signal the Motorman does not promptly proceed, he must, before starting, look back and await a repetition of the Proceed Signal.

(g) When giving the Proceed Signal, the Conductor must be in a position from where he can see the Exits and Entrances of the Car. He must allow each passenger sufficient time to join, or alight from, the car; he must not accept a signal from the Motorman, but must himself see that each passenger enters or leaves safely. He must not ring the Bell for the purpose of hurrying up any intending passenger, but must respectfully call out, "Hurry on, please!" He must not touch the bell-strap until he is satisfied that each intending passenger has entered, or each alighting passenger has alighted from the car.

107. The Motorman must sound the Gong when approaching any street corner, or before crossing any side or cross street at which the view is obstructed, or when approaching any stopping place, or when approaching any other car, or when passing a standing car, he must, however, avoid unnecessary sounding of the Gong, particularly when passing any place where Divine Service is being held.

108. Carmen must keep themselves conversant with, and strictly observe, all signals displayed by members of the Police

Force or other authorised officials regulating traffic at intersections or elsewhere. Authorised illustrations of the signals and the instructions applicable must be always exhibited in the Rooms and Order Books provided for Motormen and Conductors.

USE OF SIGNALS DURING OBSTRUCTION OR DEFECT ON, AND REPAIRS OR ALTERATIONS TO PERMANENT WAY OR OVERHEAD EQUIPMENT.

109. A Red Flag or Light exhibited on or near the track, or on the overhead equipment, indicates that the Motormen must stop clear of the spot at which the signal is exhibited. (See also Instruction **111**).

110. Unless otherwise arranged, Permanent Way Signals must be displayed by hand.

111. (a) In the event of the track or overhead equipment being obstructed by repair work or when it is necessary to carry out work involving an obstruction to traffic, the employe in charge of such work must, before permitting any such obstruction, see that a Red Danger Signal is plainly exhibited at a sufficient distance from the obstruction until the track and overhead are again safe for traffic. On a Single Line, or where both tracks of a Double Line are affected, the Danger Signal must be exhibited, as prescribed above, in both directions.

(b) If, owing to defect or obstruction in the overhead equipment, it should become necessary for a car to coast with the Trolley pole lowered when passing over a portion of the track, the Danger Signal must be exhibited as prescribed in clause (a) hereof, and the Motorman must be informed of the circumstances.

(c) Where, as prescribed in clause (b) hereof, it is necessary for a car to coast with the Trolley pole lowered, the Motorman must, before starting, have a clear understanding with his Conductor in regard to the portion of track over which the car is to run with the Trolley pole lowered.

The Motorman must, before starting, see that no passenger is about to alight from or board the car, and the Conductor must request passengers to keep their seats. After having attained the rate of speed required for coasting, the Motorman

must cut off Power and, by one beat on the Gong, give the "Lower the Trolley" signal. On receipt of such signal, the Conductor must lower the Trolley and hold it clear of the overhead equipment according to the requirements. When the car has reached the point of clearance the Motorman must stop the car and the Conductor must then replace the Trolley on the Contact Wire.

In the case of a One-man type car, when operated under One-man conditions, arrangements must be made for a competent employe to accompany the car, over the area affected, for the purpose of lowering the Trolley and otherwise to act as laid down for the Conductor.

112. When owing to a defect or to urgent repair work, the track or overhead equipment is likely to become obstructed, the provisions of Instruction **111** must be promptly carried out; but where such repair work is not of an immediately urgent character, or in the case of alterations to tracks, Points, or overhead equipment, and the performance of such work or alterations may incur serious interruption to the Car Service, the Ganger or Foreman must, unless the work has been previously arranged for between the Branches concerned, and the necessary notice issued by the General Superintendent of Transportation, communicate with the Officer-in-Charge, who will make any special arrangements that may be necessary in connection with the working of the traffic during the time such repairs or alterations are being effected.

Except in cases of urgency, the ordinary working of the Points must not be altered, unless by previous arrangement with the General Superintendent of Transportation.

PERMANENT WAY AND WORKS AND OVERHEAD EQUIPMENT.

113. The Ganger must keep a register of the names and places of residence of all the men employed under him, so that in case of accident he may be enabled to summon them immediately to assist in any way that may be required. Should any obstruction take place, or other sudden emergency arise, he must immediately collect the number of men required.

114. Each gang of Trackmen or Labourers working on or adjacent to the Running Line must be supplied by the Road Foreman with a Permanent-way Gauge, two Red Flags, two Green Flags and two Hand Signal Lamps. The Ganger will be held responsible for having the Hand Signals constantly in proper order and ready for use. The Flags must be used where necessary during daylight, and the Lamps after sunset and in foggy weather.

115. The Red Signal indicates Danger, and must be used when it is necessary to stop Traffic. The Green Signal waved slowly from side to side by Trackmen indicates that cars must reduce speed to five (5) miles an hour, or such other speed as may be prescribed, over the portion of the Line protected by such Green Signal.

116. (a) In any instance in which the track or overhead equipment is obstructed or unsafe, or in which it is necessary to carry out track or overhead repair work that will involve an obstruction to traffic (in which latter instance, due notice must be given to the Officer-in-Charge) the Ganger must arrange for the Danger Signal being plainly exhibited at a sufficient distance from the obstruction in one or both directions, as the case may require, until the obstruction is removed or the defect remedied.

(b) Any repairs which involve the stopping of cars must, as far as is practicable, be carried out at such time or times as will cause the minimum interference to traffic.

(c) In the event of a Hand-signalman being stationed near the obstruction, he must be informed of its nature, and must protect the traffic until the obstruction has been removed.

For precautions to be adopted, and use of Permanent-Way Signals during alterations or repairs, see Instructions 109, 110 and 111.

117. (a) When a car is approaching, employes at work on the Permanent-way must not remain on or between any Running Lines, but must at once move clear of all Lines, unless they can distinctly see that they are in a position of safety, and in no danger from another car or traffic approaching them unobserved.

(b) In any instance in which overhead Repair-men or Trackmen are working at a place at which the approach of cars cannot be heard or observed in sufficient time to ensure safety, the Ganger, or other employe in charge of the work, must station a Hand-signalman, in each direction where necessary, to give the necessary warning of approaching traffic.

(c) Alterations or Repairs that may affect any of the rail-bonds of the Permanent-way must not be carried out unless the Ganger or other responsible employe has arrived and authorised such work.

(d) During foggy weather a rail must not be displaced, neither must any other work that may obstruct the passage of traffic be performed, unless it is essential to safety.

(e) In any instance in which, during alterations or repairs, it is necessary to use fire or lights, due care must be exercised to avoid any risk to the track, equipment, Rolling-stock, or adjacent property.

(f) Whenever the surface of the roadway is removed, proper signals must be exhibited to warn vehicular and foot traffic; in addition, any necessary crossing places must be provided for street traffic, and every effort made to ensure the safety and convenience of the public.

(g) Disused material must be removed from the Running Lines as soon as possible and placed clear of the public roadways, and, unless otherwise ordered, it must be removed before sunset to the Depot or other prescribed storage place.

(h) Tools, implements, sleepers and pieces of iron, wood or other materials not actually in use must be kept clear of the tracks, and not within two feet of the nearest rail.

The Ganger is responsible for the custody and safety of all Permanent-way material.

All tools and implements provided for repairs and renewals must, when not in actual use, be locked away in the building, truck, or box provided for such purpose, and the Ganger is responsible for its security.

118. (a) The track must be patrolled and examined from end to end on every week day. The Ganger should patrol the track personally but may, if he cannot conveniently undertake the duty, appoint a trustworthy Trackman to perform it. The Ganger must, however, examine the whole of the track personally at least once a week. The patrolman must note every irregularity in a pocket book provided for the purpose. The Ganger must present such book regularly to his superior officer, who must personally examine and initial it, and give directions as to the carrying out of the ordinary repairs according to their order of importance, etc.; repairs that require urgent attention must, however, be promptly attended to by the Ganger.

(b) The Ganger must see that broken rails, sleepers, or other defective materials are removed from the track with the least possible delay, and that sound materials are substituted. Every instance of a broken rail must be specially reported to the Road Foreman so that, if necessary, investigation may be made as to the cause of the breakage.

119. (a) The Ganger must see that the rails do not stand above the paving, particularly at Points, Crossings, or Curves, and that the surface of the track between the rails, or immediately outside them, is not raised so high as to interfere with the mechanism of the cars.

(b) The authorised super-elevation must be maintained on the outer rail of every curve.

120 (a) The Ganger must see that every drain, rail, and rail groove is kept clean and free from obstruction, and must give special attention to this duty during and after any storm.

(b) In the event of heavy or continuous rain, he must examine carefully the action of the water through the streets, culverts, etc., and on the track, and arrange for the track gang to clear the grooves of any rails which have a tendency to silt up. In any instance in which the Ganger apprehends danger to the Permanent-way, he must immediately signal cars to proceed cautiously or to stop, as necessity may require, and at once inform the Officer-in-Charge, by telephone or other means, and take all precautionary measures for securing the stability of the Permanent-way.

121. Any ladder, guy, scaffolding, or trestle, etc., must be kept at a proper clearance from the track during the erection or repair of any building, etc.

122. In any instance in which the Ganger notices any blasting or excavation which may be likely to interfere with the stability of the track, he must demand that such operations shall be at once suspended, and immediately report the matter to the Officer-in-Charge.

123. The Ganger must see that all Points are cleaned and oiled every morning (Sundays excepted) by a member of the track force. The employe who attends to this duty must examine the Points carefully to ensure that they are in good order and that they have not been damaged by the passage of cars or other vehicles. He must also test the Points occasionally by moving them to and fro, being careful to leave them set in the normal position. An obstruction between the Point blade and the rail must not be removed by the fingers.

124. The following are specified as some of the faults or irregularities likely to arise in the overhead equipment and which should be reported by the most expeditious means to the Officer-in-Charge.

- (i) Wires hanging loose, that is, wires which are broken or appear to be out of position.
- (ii) Any article hanging on the overhead conductors.
- (iii) Excessive flashing at any particular point or at switchgear.
- (iv) Fittings or guards displaced.
- (v) Broken Insulators or brackets carrying Insulators.
- (vi) Loose parts in Section Insulators.
- (vii) Displaced or broken poles or pole extensions.

125. (a) Any employe who observes any damage or irregularity connected with the overhead equipment must do all in his power to prevent injury to any person or damage to property, and must warn pedestrians and drivers of vehicles to keep clear of the equipment. He must take immediate steps to stop any cars that may foul the damaged equipment, and, as quickly as possible, report the derangement, or ensure its being reported, to the Officer-in-Charge, stating the extent, locality, and whether the Up or Down Line is, or both Lines are, affected. The time the trouble was observed, and its nature and consequences so far as can be ascertained must be also given.

If the employe observing the irregularity consider the conditions dangerous, he must remain at the site and perform such

services as the occasion may require until the danger is removed or he has been released by the Officer-in-Charge.

(b) The Officer-in-Charge or other official receiving the report of any fault or irregularity in the Overhead construction must immediately report the particulars to the Overhead Depot, Batman Avenue. The Officer-in-Charge must proceed to the scene by the most expeditious means available.

(c) An unauthorised employe must not open, close or otherwise interfere with any overhead switch or feeder.

126. Whenever any accident occurs the Ganger must at once report to his superior officer, as fully as possible, by telephone or other means, the extent and nature of the accident. The Ganger and his men and the Overhead Equipment Staff must obtain all the information possible, and subsequently submit a full report, in writing, to the proper officers.

WORKING TRAFFIC OF A DOUBLE LINE OVER A SINGLE LINE OF RAILS DURING REPAIRS OR OBSTRUCTION.

127. When it is necessary during repairs or owing to an obstruction of any kind, to work the traffic in both directions over a Single Line, the Officer-in-Charge will institute and supervise the Single Line Working in accordance with the directions shown in the Book of Rules and Regulations. The Forms referred to in such Regulations, altered, in ink, as required, may be used for the Electric Street Railways; a sufficient supply of such Forms and a Pilotman's Badge must be kept on hand at the Depot and at Sandringham Station by the Officer-in-Charge.

WORKING OF SINGLE LINES OF RAILWAYS BY CAR STAFF SYSTEM.

128. (a) The object of the Car Staff System is to prevent Cars travelling in opposite directions on any Section of the Single Line at the same time.

(b) The Car Staff, which consists of a metal symbol, stamped No. 1 SECTION and lettered "SANDRINGHAM—CAR SHED," is provided for the Staff Section, which Section is the Single Line between Sandringham Station and the Junction of the Single and Double Lines opposite the Car Shed, and except as shown in clause (c), and in Instruction **134**, no car is allowed to enter on the Staff Section, from either end, unless the Motorman is in possession of the Staff.

(c) (i) Two or more cars may run in the same direction on, or through, the Section before a car travels in the opposite direction; in such a case the Motorman of each of the cars, except the last, shall sight the Staff for the Section, and the Motorman of the last of the series of cars shall carry the Staff and on its arrival at the other end of the Section, the Staff will be available for one or more cars to enter the Section from that end. (See also clause (c), Instruction **85**).

(ii) The Motorman of any car which is to be followed through the section by another car must see that the proper Staff for the Section on which his car is to travel is in the Staff Box, and he must sight the Staff and securely re-lock it in the Staff Box before proceeding into the Section.

(iii) Should it become necessary for a Motorman to foul the Single Line Section, at either end, for Shunting purposes, in the absence of the Staff, he must first arrange for, and see that the Conductor or some other competent employe is stationed a sufficient distance out, to stop any car which may approach on the Line about to be obstructed.

129. At the entrance to the Section, a Staff-box in which the Staff is secured, is fixed on a post designated the Staff Post. The Staff-box is fitted with a Special Lock of which each Motorman is provided with a key.

130. (a) Except where Special Instructions are issued to the contrary, the Motorman is responsible for the Staff Working and is the sole person authorised to deal with the Staff, or open any Staff-box.

(b) The Motorman must in every instance consult his Run Book and ascertain whether he should travel on the Staff or leave the Staff for a following car.

131. (a) When a car is ready to proceed into the Section and no other car is intended to follow before the Staff will be required for a car in the opposite direction on the Section, the Motorman must obtain the Staff for the Section and keep it under his observation on the car bulkhead, until he arrives at the other end of the Section, and except as shown in clauses (b) and (d) hereof he must lock the Staff in the Staff-box at that end of the Section.

(b) If when the Motorman arrive at the other end of the Section the Staff is immediately required by the Motorman of a car about to proceed in the opposite direction, the Motorman arriving with the Staff may hand it to the Motorman of the other car, but this will not relieve the latter of responsibility for compliance with clause (b) of Instruction **130**.

(c) Before disposing of the Staff as laid down above, the Motorman must see that the full number of vehicles comprising his load has arrived complete.

(d) The Motorman of the last car to pass over the Section at night, must not leave the Staff in the Staff-box, but must deposit it in the authorised receptacle for safe custody overnight; the Motorman of the first car in the morning must obtain and place the Staff, having due regard to the proper running of cars.

132. (a) The Motorman must not overcarry the staff beyond the Staff Post at which, ordinarily, it should be left, and any breach of this Instruction will be considered as serious neglect.

(b) In the event of a Motorman overcarrying a Staff beyond the Staff Post at which, ordinarily, it should have been left, he must immediately communicate with the Officer-in-Charge for instructions; if, however, he is unable to gain the attention of the Officer-in-Charge, he may hand the overcarried Staff to the Motorman of a car proceeding in the opposite direction and draw special attention to the overcarried Staff before handing it over, and both Motormen must report the circumstances.

The Motorman in whose charge the overcarried Staff has been placed must not enter the Section to which the overcarried Staff applies, until instructed to do so by the Officer-in-Charge.

133. If on arrival at a Staff Post the Motorman should find that the Staff for the Section is not at the Staff Post when, according to the Schedules, the Staff should be available for his Car, he must at once communicate with the Officer-in-Charge. (See Instruction **137**).

134. Car Staff Lost.—If the Staff for the Section should be lost, or the Staff has been overcarried beyond the Staff Post and there are no means of returning the Staff in time to avoid serious delay, arrangements must be made to work the traffic over the Section by Pilotman. The Officer-in-Charge will institute and supervise the Working by Pilotman in accordance with the directions contained in Rule 14 of Appendix II, Book of Rules and Regulations; the Forms referred to in such Rule, altered, in ink, as required, may be used for the Electric Street Railways. A sufficient supply of such Forms must be kept on hand at Sandringham Station for use as required.

135. Disabled Car.—(a) In the event of a car that is carrying the Staff breaking down between the Staff Posts, the Motorman must (if the disabled car can be moved by another car) hand the Staff to his Conductor and instruct him to take it in the direction whence Relief can most expeditiously be obtained. If relief be not available at the end of the Section to which the Conductor proceeds the Staff must, if necessary, be transferred to the opposite end. The Conductor must fully explain the circumstances to the Motorman of the Relief Car, hand him the Staff, and ride with him to the point at which the disabled car is standing.

(b) (i) If the Motorman of the disabled car be not in possession of the Staff, he must arrange Relief by sending his Conductor back to stop the next following car.

(ii) If the following car be intercepted in the Single Line Section and the Motorman of such car be not in possession of the Staff, the disabled car may be pushed clear of the Section. Should the circumstances necessitate the disabled car being

hauled back to the Staff Post in the rear the Motorman of the Relief Car must first obtain possession of the Staff.

- (iii) Should the Conductor arrive at the Staff Post in the rear before the next following car arrives, he must obtain possession of the Staff and, if relief cannot be obtained from that end of the Section, he must transfer the Staff to the opposite end.

(c) In the case of a One-man type car, when operated under One-man conditions, the Motorman must, after securing his car (see clause (c), Instruction 47), act as laid down for the Conductor in this Instruction.

(d) The motorman of the Relief Car, when proceeding on the obstructed Section, must proceed cautiously. The Motorman of the disabled car must communicate the circumstances to the Officer-in-Charge as soon as practicable, and receive instructions as to the disposal of the disabled car.

(e) At night or during foggy weather the Motorman of the disabled car must see that a Red Light is showing on the front and rear of his car.

(f) After sending for relief the Motorman of the disabled car must not allow his car to be moved until the Relief Car arrives, unless satisfactory arrangements have been made to prevent the Relief Car from coming to his assistance, and in addition, he must have possession of the Car Staff for the Section.

136. Section Obstructed.—(a) If, due to an accident, repairs, or obstruction, traffic is likely to be stopped for a considerable time, arrangements must be made for working cars between the point of obstruction and the Staff Post on the Down side. No car must be allowed to enter on the obstructed line unless the Motorman is in possession of the Staff.

(b) During any period of darkness or fog, the person in charge of the obstruction must see that a Red Light is exhibited on each side of the obstruction.

137. Car Staff at Wrong End of Section.—In any instance in which the Staff for the Section is at the opposite end to that from which a car is required to be despatched, the Motorman of the car that requires to be so despatched must inform the Officer-in-Charge and the latter must arrange for the Staff to be transferred.

UNIFORM TIME, ETC.

138. (a) Motormen and certain other employes are supplied with departmental watches, which they must always have with them, when on duty.

(b) Every employe supplied with a departmental watch who is transferred from his position in the Electric Street Railway Service, or who has been granted extended leave of absence, shall hand the watch to the Officer-in-Charge before leaving, or commencing the leave of absence (as the case may be); and any such employe who, after absence from duty for a period of one month owing to illness or injury, is still unable to resume, shall return the watch to the Officer-in-Charge as soon as practicable.

A departmental watch supplied to an employe must not be transferred without the authority of the Officer-in-Charge, and must be produced whenever demanded by him.

(c) When from any cause a departmental watch becomes unreliable, the employe in possession of it must at once report the circumstances to the Officer-in-Charge.

(d) When commencing duty Motormen must compare and, if necessary, set their watches with the Depot or Station Clock; other employes supplied with departmental watches must set them with the Depot or Station Clock or by a Motor-man's watch, but a car must not be stopped for that purpose.

(e) (i) The winding (and, as far as possible, the regulating) of all the clocks at the Station or Depot must be done by, or under the personal direction, of the Station-master or Officer-in-Charge, whose duty it will be to keep the keys, and see that the clocks are wound either daily or weekly, as may be required, and that the correct time is shown.

Where it is not practicable for the Station-master or Officer-in-Charge to personally attend to the winding and regulating of clocks, he must appoint an adult member of his Staff to perform that duty, which must always be performed by the same person.

(ii) A set time for winding the Clocks must be determined by the Station-master or Officer-in-Charge, who must see that the duty is performed with due regularity.

- (f) (i) When erecting a Clock, a solid dry wall, free from vibration, should, if possible, be chosen. The Clock should be hung on a screw or strong nail, the head of which should point upwards at an angle of approximately 45 degrees; if the wall be of brick, a wooden plug should be driven firmly in, and a screw inserted at the required angle.
- (ii) When the Clock is in position, the pendulum should be carefully placed on the brass bracket at the back of the works, the steel pin connected with the Clock should work in the slot in the pendulum, and care should be taken to avoid bending the brass wire carrying the steel pin as any permanent deflection of it will cause bad time-keeping.
- (iii) The top of the ball of the pendulum should be in line with a mark on the pendulum rod before it is placed in the Clock; correct time should be obtained at that mark. The pendulum needs only a very slight swing to start the Clock; a violent swing may produce a permanent deflection in pendulum connections, and adversely affect time-keeping.
- (iv) The Clock must be wound slowly and smoothly, and if, when starting it, the beats be uneven, it must be moved slightly until it is plumb and beating evenly. When it is seen that the Clock is working satisfactorily, a pencil line should be drawn on the wall on each side of the Clock case as a guide in the event of it being accidentally moved when the clock is being wound.
- (v) To regulate the Clock, the nut at the bottom of the pendulum should be screwed upward to make the Clock go faster, and screwed downward to make it go slower. When setting the Clock to time always turn the minute hand; do not touch the hour hand, as any force exercised on this hand may damage the clock-gear.
- (vi) The rims holding the glass, and also the doors of the Clock, must, ordinarily, be kept secured in the closed position. Employes must not write or make any mark on the Clock dial.

- (vii) If, after having been fixed and adjusted as prescribed in the foregoing instructions, the Clock should fail to keep correct time, the circumstances must be promptly reported by the most expeditious means to the Chief Electrical Engineer and the Clock and Watch Repairer advised; but if a Clock stops, and it be one by which the running of cars is regulated, a telegram stating the Clock has failed must be immediately sent.
- (g) (i) All matters relating to the mechanism of Clocks and Watches will be dealt with by the Chief Electrical Engineer.
- (ii) Clocks and Watches requiring repairs must be sent to the Officer-in-Charge, Clock Repair Shops, Spencer Street, who should also be advised of the character of the defect, if such be known; advice of despatch must be, also, forwarded to the Chief Electrical Engineer.
- (iii) When forwarding a Clock to the Repair Shops the pendulum must be removed and secured to a piece of wood to prevent damage during transit; and to ensure its being delivered with the Clock, the pendulum must be packed and placed inside the Clock case. Due care must be taken to avoid damaging the pendulum rod, and the name of the forwarding Station must be clearly shown.
- (iv) If from any cause a Departmental Watch becomes unreliable, the employe in possession of it must at once report the circumstances to his superior officer. When a Departmental Watch is forwarded for repair a memorandum must be sent stating the reasons for forwarding, also the full name and title of the employe to whom the watch was issued, and where stationed.
- (h) The mechanism of Departmental Clocks and Watches must not be interfered with by unauthorised persons.

TELEPHONES.

139. (a) Service telephones, connected with the Traffic Office at the Depot on the St. Kilda-Brighton Line and with Sandringham Station on the Sandringham-Black Rock Line, are provided at several points on the side of the public roadway. Carmen must keep themselves conversant with the positions of these telephones.

(b) Unless special Instructions are issued to the contrary, each telephone must be tested daily by the Motorman of the first car. The Motorman, after pressing the telephone button, must place the receiver to his ear, and listen attentively for the employe in attendance at the Traffic Office or Station to speak. If the attendant can be heard distinctly, the testing employe must say, "Can you hear me?" and if the answer is satisfactory he must then give the location of the telephone being tested and report anything requiring attention.

(c) Every telephone message from the running staff must be recorded in the Traffic Office diary, and each entry must show the name of the sender, the name of the receiver, and the date and time that the message is received; the receiver must repeat each message back to the sender, and give his own name.

(d) Every telephone failure must be reported to the Officer-in-Charge by the first Motorman or other employe who observes it.

(e) In any case in which a departmental telephone is out of order, the necessary message must, if practicable, be transmitted by means of a private telephone.

On the St. Kilda-Brighton Line the procedure for obtaining connection with the Depot by a private telephone is to dial MY210 and ask for 1790.

On the Sandringham-Black Rock Line dial XW1154 for the Station, or dial MY210 and ask for Harmonic 149Y for the Car Shed, or 149X for the Station.

(f) Employes engaged in overhead or Substation repairs must be given priority in the use of Service telephones for the transmission of important messages in connection with such work.

FARES SYSTEM.

Note.—For the purposes of these Instructions the term “Conductor” will also be deemed to refer to the Motorman of a One-man type car when such car is operated under One-man conditions.

140. (a) Revenue Journal and Supply of Tickets.—The Conductor shall be supplied with the necessary stock of tickets in a case and bag and the numbers of such tickets shall be entered by the office staff on a Revenue Journal, the duplicate of which shall be supplied to the Conductor who shall carry it during the whole of his shift.

(b) Upon receipt of his bag and ticket case the Conductor shall, at once, check the tickets supplied to him against the entries therefor on the Revenue Journal and, if correct, he shall sign the original Revenue Journal and also the duplicate as having received the tickets.

(c) Upon completion of his shift the Conductor shall enter on the copy of the Revenue Journal issued to him the closing numbers of all sectional tickets and, in addition, on the St. Kilda-Brighton line he shall enter the total number unsold of each issue of combined tram and rail tickets, and on the Sandringham-Black Rock line the total number unsold of each issue of rail tickets.

(d) A Conductor shall make application when necessary for additional supplies of tickets.

(e) Every additional supply of tickets handed to a Conductor during his shift shall be entered in ink on the original of the Conductor's Revenue Journal held in the office and also on the duplicate presented by the Conductor. The entries shall be made at the counter where the Conductor may see them and the duplicate Revenue Journal shall be returned at once to him, together with the additional tickets.

(f) Tickets on issue shall, at all times, be carried by the Conductor in the case or bag provided for the purpose.

141. Supply of Change to Conductors.—Each Conductor before commencing his shift shall be supplied at Elwood with £1 and at Sandringham with 10/- in suitable denominations for change purposes. This amount will be entered on the Conductor's Revenue Journal.

The Conductor shall check the change in the presence of the Clerk and sign the original Revenue Journal and also the "duplicate" as having received such change.

The Conductor must keep himself supplied with a sufficient quantity of small change.

142. Conductor's Ticket-case.—(a) An employe who is regularly employed as a Conductor must always have the use of the same particular Ticket-case; an employe engaged occasionally as Conductor must be provided with an emergency Ticket-case. Should it become necessary, during a shift, to transfer a Ticket-case from one Conductor to another the contents must be carefully checked by a responsible clerk before the Ticket-case is re-issued.

(b) Each Conductor shall for his sole use be allotted a locker bearing a number corresponding to that shown on his Ticket-case. When, on account of broken shifts, etc., it is necessary that a Conductor should leave his Ticket-case, Cash-bag, and cash at the Office, he must place and secure them in the Locker allotted to him.

143. Conductor's Cash Bag.—(a) The Conductor must carry all cash, the property of the Commissioners, in the departmental Cash-bag provided for that purpose. He must not place any private cash into the departmental Cash-bag.

(b) The Conductor must wear his Cash-bag suspended in front of his body and within reach of his hands.

144. Running Journal.—(a) When commencing duty, the Conductor must enter distinctly in the proper column of his Running Journal the commencing numbers (in full) of all Sectional tickets contained in his Ticket-case, and immediately on arrival at each terminal he must enter the commencing numbers of tickets of all Sections of the next trip; to ensure correctness he must in every case check the entries with the tickets.

At each terminal the last three figures only of the commencing number may be entered unless a new block of tickets is started, in which case the complete number shall be entered.

(b) No erasure of any kind shall be made on a Running Journal. Every error shall be rectified by drawing a pencil line through the incorrect entry and writing the correct entry above it.

(c) Conductors must be prepared to promptly submit their Ticket-cases or Cash-bags or journals to the Examining Officer or other authorised official for examination when so required, and must give any necessary information or assistance, but after having given them to the authorised official the Conductor must not collect any fares in advance of such official unless directed by him to do so.

145. Assistant or Relief Conductors.—When a Conductor is relieved during a trip, or has assisted in the collection of fares for only a portion of a journey, he shall furnish the relieving Conductor or Conductor-in-Charge with the authorised Form properly filled in to show distinctly the commencing numbers of all his tickets, and to ensure correctness, the entries must be checked with the tickets; the Form must be handed in to the office with the Conductor's Running Journal.

146. Collection of Fares, etc.—(a) When starting with passengers from a terminus, the Conductor must commence to collect the fares in the rear portion of the car and work forward; if an assistant Conductor be with the car he must commence at the front of the car and work towards the Conductor-in-Charge. After the first check, the Conductor must collect each fare and examine each Free Pass as soon as practicable after the passenger boards the car.

(b) The Conductor must ask for fares in a clear and respectful manner, saying "Fares Please"; when collecting a fare he must ascertain the destination of the passenger and collect the fare for the full journey that the passenger intends to travel. He must not collect more than one fare at one time, except when one passenger is paying for another, in which case he must ascertain definitely for whom the additional fare is being paid.

The Conductor shall name the amount received from the passenger before placing it in the Cash-bag and specify the amount of change before handing it to the passenger.

(c) (i) When collecting each fare the Conductor must hand the passenger a Ticket applicable to the journey covered by the fare collected. The Ticket is only available for the date and trip on which it is issued.

(ii) The Conductor must date Combined Tram and Rail Tickets, also Rail Tickets issued by him.

(iii) Sectional Tickets must be punched in the margin on the "up" or "down" side according to the direction passenger is travelling. The punch mark must be made on the numbers denoting the section or sections for which the Ticket is available.

(d) If a passenger on alighting pay the fare to the Conductor but does not wait to receive the ticket, the Conductor must issue a Ticket for the amount of the fare, and tear the Ticket into pieces and discard it.

(e) If the passenger on alighting hand the fare to the Motorman, the latter must at once deliver it to the Conductor, who must issue a ticket for the amount of the fare to the Motorman, who must tear it into pieces and discard it.

(f) Except in the case of a disabled car or other similar emergency, the Conductor must not accept from any passenger a ticket issued by the Conductor of another car.

(g) The Conductor must not moisten his finger with saliva for the purpose of detaching tickets. Rubber grips may be obtained for such purpose.

147. (a) The Conductor shall issue Sectional Tickets in their numerical order. A Sectional Ticket must be neatly detached from the block and handed complete to the Passenger.

The Conductor shall maintain a check of the consecutive numbering of sectional tickets by sighting the next number in the block when issuing a ticket to a passenger.

Should any error in the successive numbering of a block of sectional tickets be detected, the block must be promptly surrendered at the office, and a new block obtained to replace it.

(b) In the event of any Sectional Ticket becoming loose or being detached from the block in error, or being defaced or torn, or should any error or misprint be detected in the number of a sectional ticket, it must not be issued to a passenger, but must be at once cancelled by the Conductor, writing the word "Cancelled" across the face of the ticket and initialing and dating it. The particulars of the cancelled ticket must be entered on the Refund of Fares Form by the Conductor, who must show thereon the reason for the non-issue of the ticket, and bring the matter under the notice of the Ticket Examiner at the first opportunity.

- (i) The Ticket Examiner must at once investigate the circumstances, and, if satisfied, endorse, accordingly, the Refund of Fares Form, which he must initial and return to the Conductor.
- (ii) The Refund of Fares Form, together with the non-issue ticket or tickets, must be handed to the Office Clerk by the Conductor when the Ticket-case is passed in at the close of the shift.
- (iii) Every Conductor must carry a supply of Refund of Fares Forms when on duty.

(c) Should the circumstances be such that all the tickets have been withdrawn from a block which was known to have contained a faulty number, the butt of the block is to be handed to the Officer-in-Charge with a report of the discrepancy.

(d) Conductors are strictly prohibited from having used or nipped (except duly cancelled) tickets in their bag or case, or upon their person.

(e) Used tickets, when being cleared from the cars, shall be torn through and placed in the receptacles provided.

148. (a) If a fare due for a previous journey on any car be tendered, the Conductor must accept it, but, before accepting the fare, he must obtain and record the full name and address of the person on whose behalf the fare is being paid. He must issue a ticket covering the amount of such fare and furnish a written report to the Officer-in-Charge.

(b) In any instance in which the Conductor is satisfied that a passenger is unable (owing to unforeseen circumstances) to pay the proper fare the Conductor must politely request the passenger's full name and address and request that the fare be forwarded as early as possible, addressed to the Officer-in-Charge, Elwood, or Station-master, Sandringham, as the case may be. The Conductor must not issue any ticket to such passenger, but must furnish a written report, stating the name and address of the passenger, the journey travelled, and the fare due.

(c) If the Conductor have substantial cause to believe that the reasons put forward for non-payment of a fare are not genuine, he must politely request the passenger to leave the car, and, if necessary, the assistance of a Police Constable must be obtained for the purpose. If a Ticket Examiner or other

official be on the car his attention must be directed to the circumstances, and if necessary he must assist the Conductor in inducing the passenger to leave the car. Courtesy and tact must be exercised in dealing with all cases of non-payment of fares.

149. (a) Children under the age of four years, accompanied by an adult may ride free, but not more than one child for each adult of the same party shall be entitled to travel free; any child travelling free may be placed on a seat unless, or until, the car is full, when the Conductor must politely request the person in charge of the child to remove it from the seat, informing such person that otherwise a fare must be paid for the child.

(b) Children four years and under fourteen years shall be charged half-fare—subject to a minimum of one penny.

(i) Any child travelling in the smoking compartment must be charged full fare, unless such child moves into the ordinary portion of the car upon being requested to do so.

(ii) In any instance in which the Conductor is in doubt as to the age of a child he must politely inquire the age. If the Conductor have substantial reason to believe that the child is above the prescribed age, he must accept the word of the child or its guardian, but must report the matter on the prescribed form.

150. (a) The Conductor must examine the coins and bank notes that are tendered for fares, and exercise care to avoid acceptance of any foreign, spurious, or defaced coin or bank note; he must not give change from departmental cash for any cheque.

(b) In any instance in which the Conductor cannot immediately give the correct change to a passenger, he must issue the proper ticket for the journey, retain the money handed to him for the fare, obtain the correct change, and hand it to the passenger at the first opportunity.

(c) If from any cause the Conductor find that he will be unable to collect all fares before reaching the terminal he may arrange for the speed of the car to be reduced, or stop the car for a short period; this course must not, however, be adopted

except in a case of urgency, and every such instance must be reported in writing to and investigated by the Officer-in-Charge.

(d) On the production of a permit signed by the General Passenger and Freight Agent, the Conductor must allow one blind person and one attendant to travel together on payment of one full single fare.

151. The Conductor shall examine the ticket or pass held by each passenger and shall see that each passenger is provided with a valid ticket or pass. The Conductor must not accept a mutilated or defaced ticket from any passenger.

152. If the Conductor should have reason to doubt whether a passenger has paid the proper fare, or believes that one has travelled beyond the point covered by his ticket, he should politely ask to be shown the ticket held by such passenger, but in order to avoid attracting particular attention to such passenger the Conductor must also examine other tickets at the same time.

If any passenger should travel beyond the point covered by his ticket, the Conductor must collect, and issue a ticket for, the additional fare due.

153. The Conductor must obtain the name and address of any passenger who attempts to travel on a ticket that is not in order, and, before leaving duty, he must furnish a full report of the circumstances to the Officer-in-Charge.

154. The Conductor must not accept any Duty Pass except when the holder is travelling "On Service," nor unless the Pass is endorsed as available for the Section. If the Conductor have reason to believe that the holder of the Pass is not on duty he must obtain his name and address, and, before leaving duty, report the circumstances to the Officer-in-Charge.

155. Periodical Tickets.—(a) On presentation of a periodical ticket whether for sectional travel or for combined tram and rail travel, the Conductor shall punch the ticket in the space provided and in numerical sequence. Each ticket is available for a fixed period of time or of journeys, whichever first expires, and on presentation for the last journey for which it is available a periodical ticket, available on the trams only, shall be collected and a non-value check shall be issued and punched to indicate the section to which it is available.

(b) At the close of his shift the Conductor shall hand in, together with his cash, all expired periodical tickets collected by him during his shift.

(c) In the event of the number of expired periodical tickets handed in by a Conductor at the close of his shift being less than the number of non-value checks issued by him, debit shall be raised against the Conductor for the difference in the numbers at the prescribed amount for each non-value check in excess.

156. Paying in of Cash by Conductor.—Before going off duty the Conductor shall fill in the "Pay-in Slip" portion of his Running Journal, showing details of and total amount of cash to be paid in, and he shall also enter on the Running Journal the closing numbers of Sectional tickets in his case and shall enter on his Revenue Journal the total amount of cash collected, the closing numbers of sectional tickets, the number of Combined daily tickets on hand unsold, and the number of expired periodical tickets collected by him.

Before going off duty the Conductor shall hand his Running Journal and all cash received by him to the Officer appointed to receive them who, after checking, shall initial the cash entry on the Conductor's Running Journal, in his presence and shall immediately enter the amount of cash received in the Cash Book, opposite the Conductor's name and number.

Before going off duty the Conductor shall hand to the Clerk his Revenue Journal, case and tickets. He shall not balance his cash with the sales nor compute the value of the tickets sold, but must not leave duty until the Clerk has checked the closing numbers of Sectional tickets, the number of unsold through tickets and rail tickets and has initialled the Revenue Journal in his presence.

157. Conductor's Cash Shortages.—(a) A record of every shortage in the Conductor's Cash sales of Tickets shall be made in the Conductor's copy of the Revenue Journal by the Clerk, who must also supply the details on the proper form to the Officer-in-Charge.

(b) (i) Deficiencies in a Conductor's cash shall be set off against surpluses on the 15th and at the end of each month, and any shortage on the bi-monthly

balance shall be paid in by the Conductor concerned, and any surplus paid into revenue, with the exception that a shortage on the daily balance in excess of 2/6 shall be immediately paid in by the Conductor and excluded from consideration in the bi-monthly balance.

- (ii) The Conductor will be also required to make good any deficiency due to his having accepted any spurious coin or note.
- (iii) When the amount of deficiency has been paid by the Conductor, the payment must be at once entered on the credit side of the proper Form by the Cash Clerk who at the same time must enter the amount in the Cash Book. The Conductor shall, on demand, be given a receipt for such payment.

158. Conductor's Surplus Payments.—Surplus cash paid in by Conductors in accordance with clause (b) of Instruction 157 shall be brought to debit as surplus cash in the proper book and shall be at once entered in the Cash Book by the Clerk.

159. Accounting Instructions.—Instructions on the system of accounting and prescribing the duties of officers and other employes engaged in such work are issued in the Station Accounts Instruction Book. A copy of such Instructions must be always readily available in the office, and the Officer-in-Charge will be responsible for seeing that the office staff (permanent or temporary) are familiar with the Instructions relating to, and are competent to efficiently perform, their particular duties.

RAILWAYS (BOARD OF DISCIPLINE) ACT.

160. Appeals to the Board of Discipline.—(a) It is prescribed under the provisions of Section 163, Sub-section 3, of the Railways Act (No. 3759-1928), that every appeal by employes against punishment imposed upon them by the Head of a Branch shall be lodged with the Secretary for Railways within **seven** days after the date of the decision which is appealed against. Every such appeal—

- (i) must be in writing ;

(ii) must specify the punishment appealed against, the officer by whom, and particulars of the charge in respect of which such punishment was imposed ;
and

(iii) be signed by the Appellant with his personal signature.

(b) In every instance in which an employe may appeal against any punishment imposed upon him by the Head of his Branch, it will be necessary for such employe to lodge an intimation to that effect within **seven** days of the date on which the notification of the decision of the Head of the Branch has been delivered to him, **otherwise the appeal will be disallowed**, unless satisfactory proof be furnished that the non-delivery of the Notice of Appeal within the prescribed time was unavoidable.

The time lost in connection with an appeal will not be paid for if the appeal be dismissed, and, in addition, if the Board should consider the Appeal to be frivolous the appellant may be ordered to pay portion, or the whole, of the cost of the Appeal.

(Specimen Form of an Appeal to the Board of Discipline).

Station.....
Date.....

To the Secretary for Railways,

Sir,

I beg to appeal to the Board of Discipline against the decision of the General Superintendent of Transportation that I be fined the sum of £3 for that I upon the 22nd day of April, 19...., without obtaining leave, did absent myself from duty between the hours of 2 and 6 o'clock p.m.

Signature.....
Grade.....

161. Appeals to the Commissioners.—An appeal lies to the Commissioners from any decision of the Board of Discipline whereby punishment involving dismissal, or reduction of rank, position, grade, or pay is imposed. Every such appeal—

- (i) must be in writing ;
- (ii) must specify the decision appealed against ;
- (iii) must be signed by the Appellant with his personal signature ; and
- (iv) must, within seven days after the date on which the person bringing the appeal was notified of the decision appealed against, be delivered to the Secretary for Railways. See specimen form of appeal hereunder.

(Specimen Form of an Appeal to the Commissioners).

Station.....
Date.....

To the Secretary for Railways,

Sir,

I beg to appeal to the Commissioners against the decision of the Board of Discipline that I be dismissed the service, for that I, upon the 22nd day of April, 19...., without obtaining leave, did absent myself from duty between the hours of 2 and 6 o'clock p.m.

Signature.....
Grade.....

DIRECTIONS TO BE OBSERVED IN CASES OF ELECTRIC SHOCK.

In many cases, after a person has received an Electric Shock and is apparently dead, animation may be restored if proper efforts for resuscitation are promptly adopted, in accordance with the following directions:—

1. **First Step.**—(a) Protect yourself as set out in Sections (i) and (ii) hereof before attempting to release the victim from the Live Wires or other Live Conductors.

(i) Insulate yourself from the Earth; stand on some non-conductor, such as dry wood, dry folded paper, dry rubber, dry linoleum, dry glass, dry bricks, dry cloth, dry hay or straw—these substances resist the flow of the electric current.

(ii) Avoid personal contact with the Live Conductors, or with the victim, or any articles, etc., that he may be holding—even personal contact with loose parts of his clothing is dangerous.

Protect your hands from contact with the victim or the Live Conductors by using dry articles of clothing—a rubber tobacco pouch, or a cap, or folded newspaper would serve to protect the hands; if no means of insulating the hands be available, pull the victim away by means of a loop of dry rope, or a crook'd stick—*not an umbrella*.

(b) Release the victim, and whilst doing so make every effort, by calling out, to have the electric current cut off, and for a doctor to be summoned.

2. **Second Step.**—(a) As soon as victim is clear of the Live Conductors, feel, rapidly, with your finger in his mouth and throat, and remove any substance such as tobacco, artificial teeth, etc.

Do NOT give the victim any fluid, until he is fully conscious.

(b) Don't stop to loosen his clothing at this stage; every moment of delay is serious. Commence artificial respiration at once and as follows:—

3. **Third Step.**—Quickly apply the Schafer (see 3a), or the Silvester (see 3b) method of artificial respiration, whichever is the more suitable according to the condition of the victim.

3a. **Schafer Method of Artificial Respiration.**—(a) Lay the victim on his belly, with his arms extended forward as straight as possible and his head turned to either side, so that nose and mouth will be free for breathing. (See Fig. 1).

(b) Kneel at one side of the victim facing his head and sitting on your heels. Place your hands on the small of the victim's back, their lower edges just clearing the top of the pelvis, the wrists nearly touching, the thumbs as near each other as possible, without strain, and the fingers passing over the loins on either side, and pointing towards the ground, but not spread out.

(c) Keep your arms quite straight; lean your body forward, slowly applying firm, but not violent pressure (Fig. 1), straight downwards. This drives the air out, and the movement should take two seconds.

(d) Draw back your body quickly, and relax the pressure, but do not remove your hands. This produces inspiration, and should take three seconds.

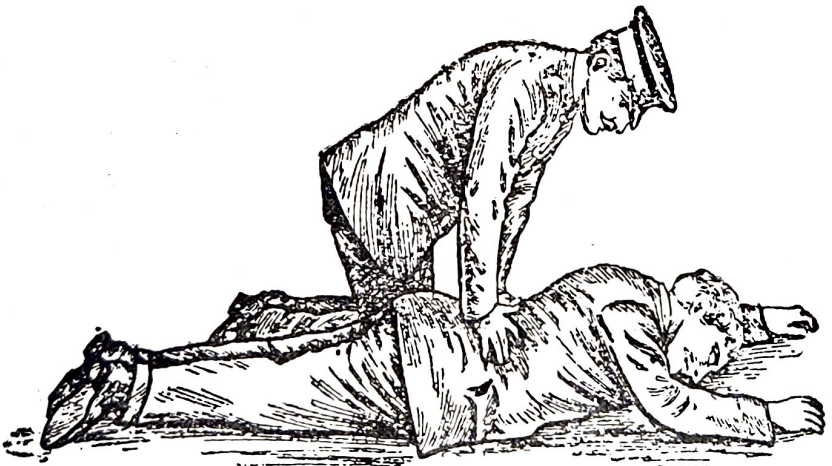


Fig. 1.



Fig. 2.

(c) Alternate movements (c) and (d) twelve times per minute.

(f) As soon as artificial respiration has been started, and whilst it is being continued, an assistant, if one be available, should loosen any tight clothing about the victim's neck, chest, and waist.

(g) Continue the artificial respiration (if necessary two hours or longer), without interruption, until natural breathing has been restored. When natural breathing begins, regulate the movements of artificial respiration to correspond with the natural breathing.

3b. **Silvester Method of Artificial Respiration.**—(a) Adjust the victim's position—Immediately, place the victim on his back on a flat surface, and if possible, inclined from the feet upwards; raise and support his shoulders on a small firm cushion or folded garment placed under the shoulder-blades.

(b) Release all tight clothing from about the neck and chest and bare the front of the body as far as the pit of the stomach; unfasten the braces and top button of trousers in men, and the corsets in women.

(c) Maintain a free entrance of air into the windpipe—an assistant must draw forward the victim's tongue as far as possible, and secure it in that position—in the absence of forceps, a tie (or other) clip may serve this purpose; unless this be done there is great danger of obstruction of the wind-pipe. (Compare Figs. 3 and 4).

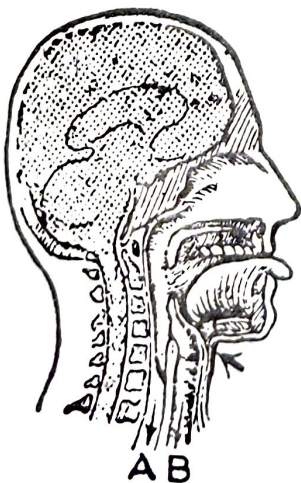


Fig. 3.

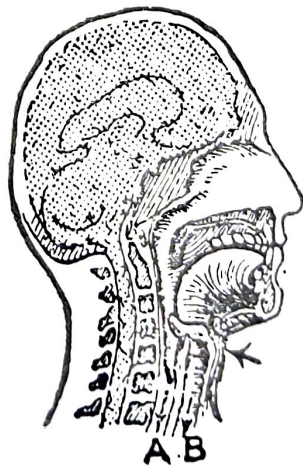


Fig. 4.

"A"—Gullet.

"B"—Windpipe.

(d) Imitate the Movements of Breathing.

- (i) **TO INDUCE INSPIRATION.**—Kneel at a convenient distance behind the victim's head, and, grasping his forearms just below the elbows, draw the arms upwards, outwards, and towards you, with a sweeping movement, making the elbow touch the ground; the cavity of the chest is thus enlarged and air is drawn into the lungs. (See Fig. 5).
- (ii) **TO INDUCE EXPIRATION.**—Bring the victim's arms slowly forward, downwards, and inwards, press the elbows firmly on the chest on each side of the breast-bone; by this means air is expelled from the lungs. (See Fig. 6).

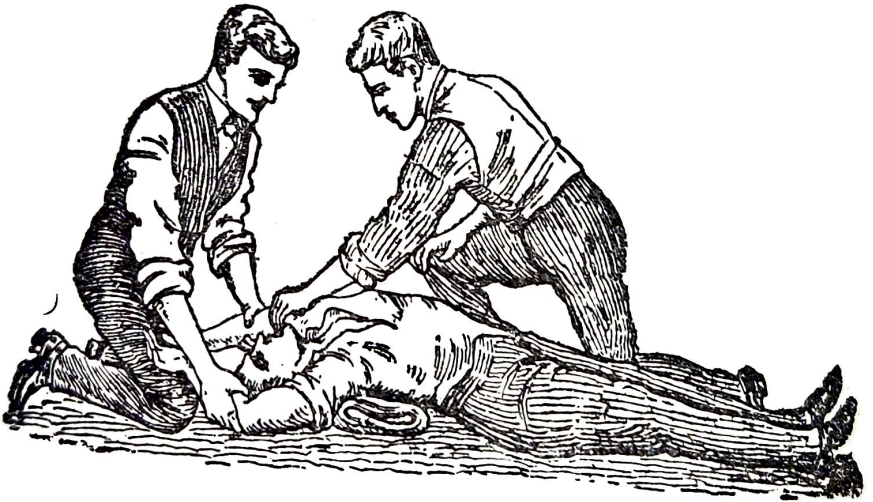


Fig. 5. Inspiration.

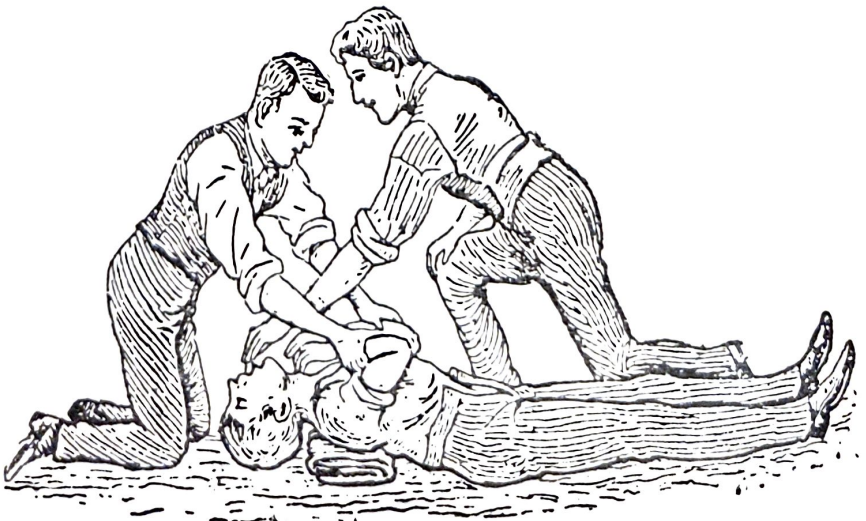


Fig. 6. Expiration.

Repeat these movements alternately, deliberately, and perseveringly about twelve times per minute. The Rhythm is—pressure two seconds and relaxation three seconds. Continue the artificial respiration (if necessary two hours or longer) without interruption until natural breathing has been restored. When natural breathing begins, regulate the movements of artificial respiration to correspond with the natural breathing.

3c. **Excite Respiration.**

- (i) Whilst artificial respiration is being performed, other useful steps may be employed such as applying smelling salts, or snuff to the nostrils.
- (ii) When natural breathing has been restored, promote circulation by rubbing the limbs vigorously towards the heart and apply warmth.
- (iii) Watch the victim for some time to see that natural breathing continues. If the breathing cease or become weak, perform artificial respiration again.

4. **Treatment of Burns.**—In all cases, burns caused by contact with a Live Conductor should be immediately covered. Lint, gauze or clean linen, soaked with “Picric Acid” solution or “Tannafax” applied on lint, gauze or clean linen, should be placed over the burnt surface as soon as possible and covered with cotton wool and a light bandage.

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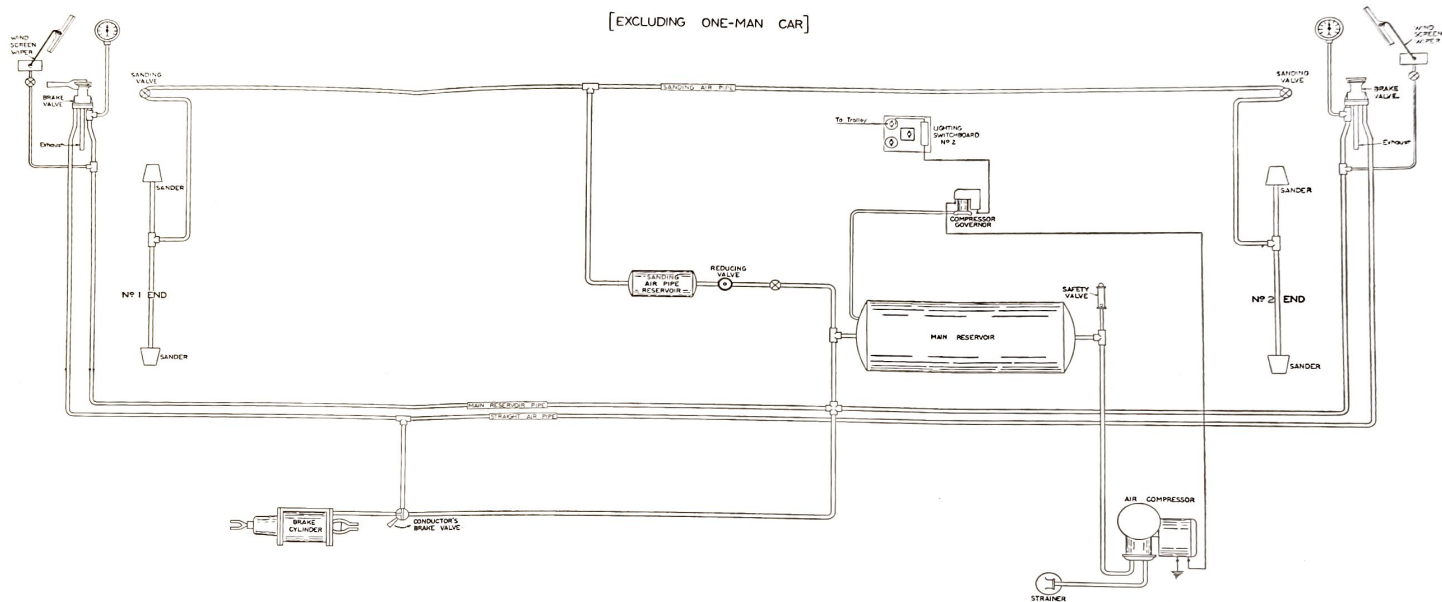
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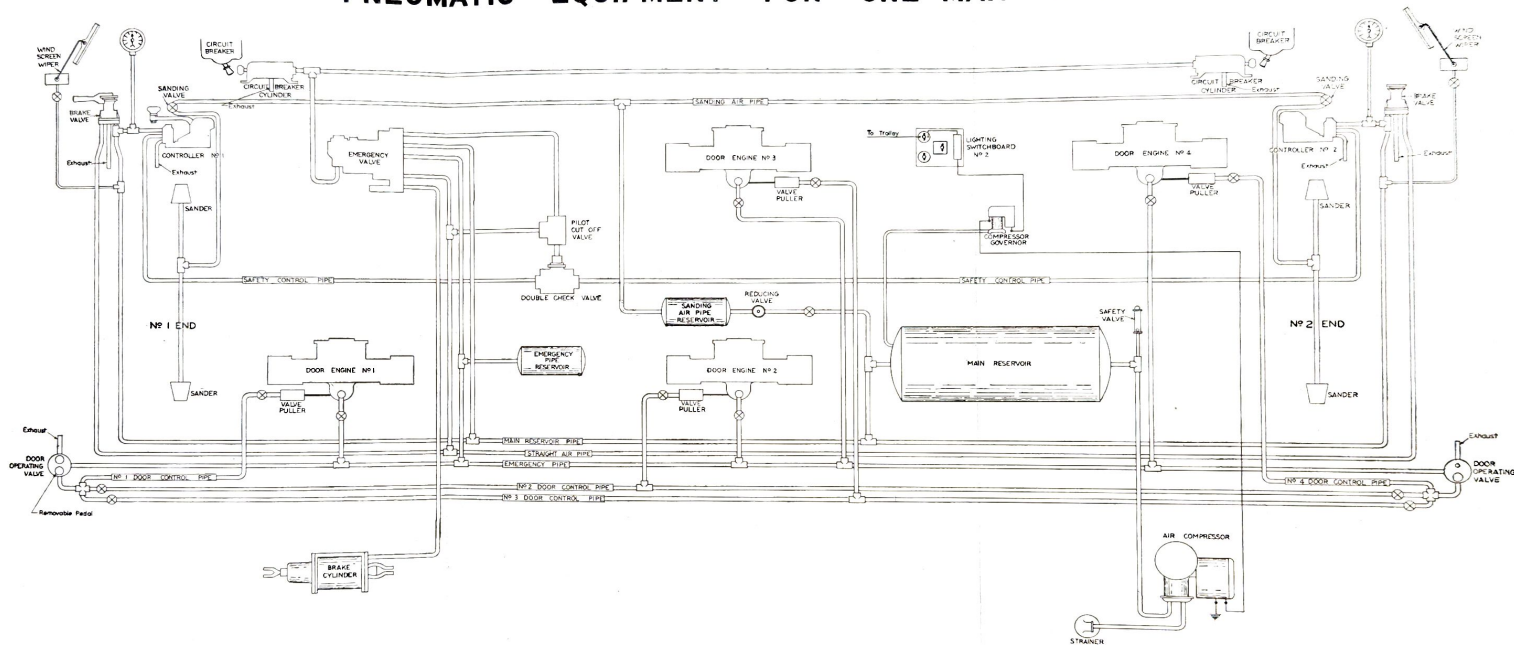
AIR AND BRAKE EQUIPMENT

[EXCLUDING ONE-MAN CAR]

No 2.



PNEUMATIC EQUIPMENT FOR ONE-MAN CAR



PNEUMATIC DOOR EQUIPMENT

№ 4.

CARS № 52,53,54.

