

A. T. Williams

COMMONWEALTH RAILWAYS.

GENERAL APPENDIX.

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AMENDMENTS TO GENERAL APPENDIX.

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COMMONWEALTH RAILWAYS.

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GENERAL APPENDIX

TO THE

Book of General Rules,

AND TO THE

Working Time Table.

Every employee connected with the safety of the line or the working of the traffic, and every other employee whom the Head of the Branch considers should be acquainted with the instructions contained herein must be supplied by his Officer-in-charge with, and have with him or within reach when on duty, a copy of this Appendix.

Every employee supplied with this book must make himself thoroughly acquainted with its contents, and will be responsible for a knowledge of, and compliance with the whole of the instructions contained herein.

Provision has been made at the front of this Appendix for a record to be maintained of all amendments that may be issued from time to time.

This record will act as a check on the receipt of amendment slips, and it is the duty of every employee to keep the record up to date.

Amendment slips must be neatly inserted in their appropriate positions in the Appendix.

Inspecting Officers, when visiting stations and depots must examine the books, and satisfy themselves that these instructions are being observed.

Instructions appearing in the Book of General Rules, Working Time Table, Goods Rates Book, Passenger Fares and Coaching Rates Book, Accounts Instruction Book, Staff By-law and Book of Instructions to Train Conductors and Dining Car Attendants, and other instruction books in so far as they apply are to be read in conjunction with the instructions appearing in this Appendix.

In the event of any employee losing or damaging, or failing to return when called upon, copy of General Appendix, he will be debited with the cost as laid down in Rule 13, Book of General Rules.

Instructions herein contained supersede all others of a prior date conflicting therewith.

BY ORDER OF THE COMMISSIONER.

1st August, 1932.

DEFINITIONS.

In this book unless the contrary intention appears—

- (a) "Commissioner" shall mean Commonwealth Railways Commissioner, and shall include a Deputy Commissioner and an Acting Commissioner.
- (b) "Head of Branch" shall mean the head of any branch or the deputy of such head appointed by the Commissioner.
- (c) "District Officer" means any officer, under the control of the head of a branch, in charge of the operations of a district.
- (d) "Employee" shall mean any person whomsoever employed by the Commissioner who has been supplied with a copy of the Book of General Rules and General Appendix whether employed in a permanent office or otherwise.
- (e) "Stationmaster" shall mean the person in charge for the time being of a station, goods shed, depot, siding, or other transportation premises.
- (f) "Train Examiner" shall mean an employee appointed to examine all classes of vehicles on a train, except locomotives.
- (g) "Signalman" shall mean an employee in charge of the working of signals or of an interlocking apparatus.
- (h) "Officer-in-charge" shall mean stationmaster, roadmaster, foreman, or other person who is responsible for the operations at the station, depot, or other place.
- (i) "Shunter" shall mean any employee who for the time being is in charge of or conducting shunting operations.
- (j) "Guard" shall mean any employee who for the time being is in charge of a train.
- (k) "Engine-driver" or "Driver" shall mean any employee for the time being in charge of a locomotive.
- (l) "Fireman" shall mean any employee for the time being engaged firing on the locomotive and otherwise assisting the driver.
- (m) "Department" or "Service" means the Railways Department or Service controlled by the Commissioner.
- (n) "Railways" or "Commonwealth Railways" means any railway vested in the Commissioner, including the Federal Territory Railway, so far as these regulations are applicable.
- (o) 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.
- (p) The terms "he," "his," and "him" shall be deemed to refer to either a male or a female.

- (q) "Signal-box" shall mean the place where signal levers are fixed; or, where no fixed signal is provided, the place where the safe working appliances are located.
- (r) "Engine" shall mean locomotive, and as far as it may apply, shall include motor rail car or steam motor.
- (s) "Train" shall include motor rail car and light engine, and inspection or motor section car worked as a train under the safe-working regulations.
- (t) "Goods Train" shall include any train except passenger or mixed train, unless the context otherwise requires.
- (u) "Ballast Train" shall mean any train employed by the Way and Works Branch in delivering or collecting ballast or other material.
- (v) "Breakdown Train" shall mean any train by which breakdown van, breakdown crane, or hospital car is proceeding to or returning from the scene of any accident.
- (w) "Running Line" includes the main line and crossing loops.

NOTE.—Reference in these instructions to the position or office of a Head of a Branch or of a District Officer is to be regarded as referring to the position or office of the Manager, North Australia Railway, insofar as the instructions are applicable to the North Australia Railway.

GENERAL INSTRUCTIONS.

1. SAFETY FIRST.

Employees must constantly bear in mind that the first essential in railway work is the safety of the public and of the line.

2. WORKING TIME TABLES.

The working time-tables are printed in book form, and any amendments thereto will be notified by circular from the office of the Chief Traffic Manager, and will be printed in the following issue of the General Notice.

The amendments notified from time to time must be duly recorded in the Working Time-table, and Stationmasters must ensure that this is promptly done by all staff under their control.

Stationmasters and other officers in charge must bring under notice any inaccuracies in or necessary amendments to the time-tables.

3. GENERAL NOTICES.

The General Notice is issued from the office of the Commissioner.

A copy is to be received by each Stationmaster, Guard and other employees of the Transportation Branch as decided from time to time by the Chief Traffic Manager, and by each member of the Locomotive Running Section, and also each Foreman, and by each Ganger in charge of a Maintenance length.

Copies are to be carefully filed and complete sets maintained in each office, at each Depot, station and Goods Office, and by each Maintenance Ganger.

Stationmasters must keep a complete set available in a conspicuous place to which each member of the station staff has access, and individual members of staff will be held responsible for making themselves thoroughly conversant with the instructions contained therein.

Copies of each issue are to be posted in the Workshops for the perusal of the Workshops employees.

Copies will be issued to such other members of the staff as decided from time to time by the Head of the Branch.

Copies of General Notices issued to Guards will be regarded as part of their Guard's kit, and when it is necessary for them to hand over their Guard's kit, the complete set of General Notices issued to them must be included.

Copies of General Notices will be issued to Stationmasters for inclusion in each spare Guard's kit held, and they must see that the spare kits are kept complete in this respect.

The copies of General Notices issued to Stationmasters will be regarded as part of office equipment at their stations, and must be carefully filed and always available for reference.

At stations where only one copy of each General Notice is supplied, they must be made available for perusal by traffic employees temporarily or permanently located there.

Copies of General Notices supplied to Senior Waiters and Senior Conductors must be available at all times for perusal by other members of their crews.

The Traffic Inspector will examine sets of General Notices from time to time and bring under notice any cases where these instructions are not being strictly complied with.

4. REPORTS CONCERNING UNUSUAL OCCURRENCES.

In the event of any unusual occurrence taking place, the stationmaster, roadmaster, foreman, or other employee concerned must ascertain as far as practicable, by personal inquiry, the actual facts of the case, and send report to his superior officer as early as possible, giving all particulars obtainable.

5. TRAINING OF EMPLOYEES.

Responsible officers are expected to see that juniors and other employees under their control are afforded opportunities of acquiring such experience in practical railway working as will increase their usefulness to the Department, and qualify them for higher positions in the service.

6. INTOXICATING LIQUOR.

No Stationmaster, Driver, Fireman, Guard, or other employee connected with the working of trains, will be allowed to continue on duty if, in the opinion of a responsible officer, he is under the influence of intoxicating liquor.

The drinking of intoxicating liquor on duty is absolutely prohibited. See General Rule 10.

7. ADDRESSES OF EMPLOYEES.

Officers-in-charge must keep an up-to-date register of the addresses of the employees under their control. All employees must advise their superior officers promptly of any change of address.

8. NEW ROADS NOT TO BE BROUGHT INTO USE WITHOUT AUTHORITY.

No new loop, siding or other road is to be brought into use without authority from the Chief Traffic Manager. Before such authority is given a certificate must be obtained from the Chief Engineer of Way and Works that the road is fit for traffic.

9. TRAIN ACCIDENTS INVOLVING SERIOUS DERAILMENT OR INJURIES TO PASSENGERS.

1. By a strict regard for the safe-working regulations on the part of all associated with the running of trains, a rigid observance of signals on the part of enginemen, by the exercise of care by all members of the staff whose duties are connected with moving vehicles and by their being alert when walking across or along the line, employees can do much to reduce accidents to a minimum.

2. Prompt Action Necessary in case of Accidents.—It is the duty of each Stationmaster and employee who may be called upon to deal with accidents to rehearse continually in his mind the details of action which should be taken in certain eventualities, and he should impress on his staff the importance of being similarly prepared. By these means the best course will, in the event of the necessity arising, be adopted with a minimum loss of time.

3. Protection of Trains.—When not protected by fixed signals, the train or vehicles must be protected in accordance with the regulations.

4. Medical Assistance.—In the case of an accident involving injury to passengers, particularly injuries which are likely to prove fatal, no effort or expense is to be spared to provide for the needs of the injured persons. Prompt action should be taken to call medical assistance.

In the case of injury to a passenger due to his own act, the doctor should be notified that the fee is payable by the person injured.

5. Telegraphic Advice to be Sent.—Telegraphic advice must be sent to the Heads of Transportation and Engineering Branches, and should include any telegraphic addresses from which assistance is required.

This telegram should be sent by the Stationmaster or other officer first receiving particulars of the accident. The first and most important particulars to be telegraphed will be the nature of the assistance required. Particulars of persons injured, probable cause of the accident, and other details not essential in connexion with the despatch of breakdown vans, hospital vans, doctors and nurses, may be deferred for inclusion in subsequent telegraphic advice, which must be despatched at first opportunity.

6. **Particulars to be Telegraphed in case of Accident.**—It is important that full information be given in the telegram. Although the whole of the particulars given below will not be necessary in every case, Stationmasters or other persons forwarding the telegram should be careful to include as much detail as the nature of the occurrence appears to warrant, e.g.—

- (a) The location of the occurrence, giving the particular portion of the station-yard, or, if on the main line, the exact mileage.
- (b) Time and date of the occurrence.
- (c) Particulars of persons injured, in accordance with the regulations herein contained.
- (d) If hospital car, medical assistance, ambulance men, or ambulance equipment required.
- (e) In cases of derailment, sufficient particulars should be given to enable decision to be reached as to whether breakdown crane and accident van are required.
- (f) If main line blocked.
- (g) The particular wheels off the road, and the position of the derailed vehicles; also particulars of any broken axles.
- (h) If breakdown gang is not required, the time it is anticipated re-railment can be effected should be indicated.
- (i) Description of the part of the line where the accident occurred, e.g., on embankment, in a cutting, at a bridge or culvert, or at points.
- (j) Extent of damage to rolling-stock and to permanent way.
- (k) Probable cause of the accident.

7. **Particulars to be given regarding Injuries to Persons.**—Telegraphic notification of injuries to persons should state full names, nature of injuries sustained, occupations, postal addresses, and condition of the sufferers.

8. **Chief Traffic Manager to be in Charge.**—The arrangements for working the traffic and the conduct of operations generally in connexion with the accident will be undertaken by the Chief Traffic Manager, or in his absence, the next senior transportation officer.

9. **Full Report to be Furnished.**—Full particulars should be despatched by letter at the first opportunity, the representatives of each branch forwarding reports of all employees under their control who were connected with the accident.

If full information cannot be obtained in time for despatch by first train, the available information should be sent on, the other data being despatched with a later communication.

10. **Sketch of Vicinity.**—Rough sketch of the vicinity of the accident or derailment should accompany report.

11. **Report Forms.**—Report should also be forwarded on form "Report of Accident or Irregularity," and separate form "Report of Casualty to a Person" furnished in respect of each person injured.

12. **Attendance at Telegraph or Telephone.**—Arrangements should be made by the Stationmaster at the station nearest to the scene of the accident for a competent employee to be in continuous attendance on the telegraph or telephone instrument, and the Stationmasters, Port Augusta, Parkeston, Quorn, or Darwin, as the case may be, must similarly arrange.

13. **Accident to a Train by which Explosives or Dangerous Goods are Carried.**—In the event of any accident to a train by which explosives or dangerous goods are conveyed, it is most important that precautions be taken to prevent an outbreak of fire.

Before beginning to clear away any wreckage in which a vehicle containing explosives is involved, all unbroken packages should, if practicable, be removed to a place of safety, and as much of the contents as possible of any broken package or packages gathered up and likewise removed and the rest saturated with water. This work must be carried out by as few men as possible, under careful supervision, and all persons not engaged in the work must be kept at a safe distance.

It should be borne in mind that some explosives are readily fired by a blow, and all explosives by the spark produced when two pieces of metal, or a piece of metal and a stone, come violently together; therefore if there be reason to believe, when clearing away wreckage, that there is any explosive amongst it, care must be taken to avoid the possibility of producing sparks.

The particular attention of all concerned is called to this matter, as it is specially necessary that the *utmost care* be taken when dealing with explosives or dangerous goods under these conditions.

14. **Joint Inquiry.**—When considered necessary by Heads of Branches or district officers, a joint inquiry will be held to ascertain the cause of the accident, the procedure being as described under the regulations relating to Joint Inquiries.

10. BREAKDOWN VANS.

1. **Mechanical Engineering Branch Officer to Take Charge.**—A responsible officer of the Mechanical Engineering Branch must accompany the breakdown train and take charge of operations for clearing the line.

2. **Where Located.**—Breakdown vans are located at the under-mentioned depots:—

Tarcoola ..	..	1 breakdown equipment van (4-wheeled). and 1 accommodation van (4-wheeled).
Rawlinna..	..	1 bogie breakdown equipment and accom- modation van.

3. **Vans to be Ready for Immediate Use.**—The Mechanical Engineering Branch employee in charge of the depot at which breakdown vans are located will be responsible for the care of the vans and equipment. He must see that the vans are placed in a suitable position, readily accessible to the main line in case of emergency, but so placed that they will not be unnecessarily moved about.

He must also keep the vans in good order ready for instant use, and take all possible precautions to keep axle-box bearings lubricated and packed ready for the road so as to avoid delay to the breakdown train through hot boxes. In the event of a hot box occurring, it is to receive necessary attention before the van is again stabled at the depot, and a trial run given after box has been repaired.

4. **Care of Equipment.**—None of the equipment is to be used except for the purpose for which it is provided, that is, in case of accident or derailment.

The vans are to be kept locked and the keys held by the employee in charge of the depot. A caretaker is to be appointed to keep the van tidy and see that all equipment is kept in its place and ready for immediate use. Hydraulic jacks, when not in use, must be kept pumped up against a suitable clip, or bracket, drinking water changed, flare lamps tested, &c. The employee referred to must accompany the van when required for use on the road or at the depot, and will be responsible for checking all equipment taken out and returned to the van.

An up-to-date list of equipment is to be kept in the office of the Chief Mechanical Engineer, one copy in the office of the employee in charge of the depot, and a copy posted in the van.

The employee in charge of the depot must check the equipment every three months in the presence of the attendant, and forward certificate to the district officer that it is complete and in good order.

In the event of the employee in charge leaving the Service, or being transferred to another station, the equipment is to be inspected in the presence of the officer who relieves him, and joint certificate as to correctness of equipment forwarded to the Chief Mechanical Engineer. A similar certificate is to be forwarded by the officer-in-charge in conjunction with the relieving officer prior to and after return from leave.

5. **Provisions.**—At depots where departmental provision stores are located, food for the breakdown gang is not to be kept in the van, but a list of necessary items is to be kept by the employee in charge, and also by the employee in charge of the provision store, the former being responsible for the provisions being placed in the van before going into traffic. The list is to be modified should this appear advisable in view of the anticipated duration of absence from the depot. The employee in charge will see that only necessary items are included, and that any surplus is returned.

Should the van be stationed at a depot where no departmental provision store is located, certain items of food, as approved by the Chief Mechanical Engineer, must be included in the equipment.

6. **Breakdown Gang.**—In case of emergency, the officer-in-charge is to select a suitable gang from the employees available.

11. BREAKDOWN CRANE.

1. **Care of Crane and Equipment.**—The officer-in-charge of the Loco. Depot at which a breakdown crane is located must make himself thoroughly conversant with the mechanism and movements of the crane, and see that it is kept in first-class working order and ready for use in case of emergency, particular care being taken with regard to axleboxes. He will be responsible for seeing that at least one employee stationed at his depot is familiar with the operation of the crane, and available should occasion arise.

Breakdown cranes are located at the undermentioned depots on the Trans-Australian Railway.

Port Augusta ..	..	30 tons capacity.
Parkeston ..	..	30 " "

The officer-in-charge will be responsible for seeing, when in use under his direction, that care is exercised in anchoring the crane and fixing foundations for supporting beams for making heavy lifts, and that the load to be lifted is not excessive for the conditions under which the crane is to be operated.

A full equipment of tools and lifting gear must be kept on the crane or its attendant match truck.

Unless the crane is in constant use, steam must be got up once a month, and the crane put through its various movements by the employee for the time being allotted to this work.

2. **Preparation for Trip.**—Before permitting the crane to leave the depot for running on main line, the employee in charge of the crane will be responsible for seeing that—

- The crane and its attendant match truck are in proper working order and in fit condition to run.
- That the jib is lowered and resting on a suitable trestle on the attendant match truck or other vehicle specially provided for the purpose, that the ropes are slightly slack so as to be relieved of the weight of the jib, and that the rear end of the superstructure is securely locked in position by the cams provided.

- (c) That the top part of the chimney is lowered and fastened in position, that the propelling pinion is securely locked out of gear, and that the relieving screws are secured in position to allow free play of the bearing springs.
- (d) That the draw-beams are securely locked in position and all working parts or loose parts arranged in a suitable manner for safe running on the main line.
- (e) That the boiler shows three-quarters of a glass of water, and that the water tanks and coal bunkers are full and in readiness for use.
- (f) That all axle-boxes and other moving parts are properly lubricated, and that a sufficient supply of oil is carried for use whilst away from the depot.

3. **After Leaving the Depot.**—The maximum speed at which the 30-ton crane may be permitted to run on the main line is 25 miles per hour.

Steam may be raised, if necessary, whilst the crane is in motion.

The person immediately in charge of the operation of the crane will be responsible for seeing that, when working on the main line, or when the jib or other portion of the crane is liable to foul the main line, provision is made for protection of the crane in both directions in accordance with rules and regulations. He must also see that the jib or other part of the crane does not, during any of the movements, foul telegraph lines, signal posts, or other structures.

12. HOSPITAL CARS.

1. One hospital car, fully equipped with surgical instruments, medicines, &c., is stationed at each of the following locations:—

Tarcoola	} On the Trans-Australian Railway.
Rawlinna	
Quorn	On the Central Australia Railway.

A Hospital Car is to form part of a casualty train, and is to be used only in case of serious accident involving personal injury.

2. The Hospital Car is under the care of the Stationmaster, who must personally see that—

- (a) The car interior and windows are cleaned once per week.
- (b) The kerosene lamps are fully charged.
- (c) The fresh water tanks are run out, cleaned, and refilled.
- (d) The keys of the car, with identification labels attached, are hung in the office in a safe but conspicuous place.
- (e) After cleaning, the windows are made secure from the inside, and the doors properly locked.
- (f) With the exception of Heads of Branches, the Traffic Superintendent, and officers delegated by the Chief Traffic Manager to inspect, also District Lineman testing portable telephone, no person other than himself (Stationmaster), and the employee who attends to the cleaning, is allowed to enter the car.

(g) If the appearance of the car indicates that it has been interfered with, an examination is made and full particulars of any damage, loss, &c., immediately telegraphed to the Chief Traffic Manager.

- (h) Every six months (1st June and 1st December) the whole of the cupboards are opened, and contents checked with lists posted in the car and a report is submitted as to whether or not the equipment is complete. If it should not be complete, full particulars are to be wired to the Chief Traffic Manager, as referred to in the previous paragraph.
- (i) Rugs, sheets, &c., are taken out of the cupboards on first day of each month, aired and examined for silverfish, &c. Should first day of the month fall on a Sunday, the work may be done on the following or preceding day.
- (j) Requisition is submitted as may be necessary (on quarterly requisitions) for a supply of moth balls for placing in the rugs, &c.
- (k) Should an accident require the car to be used, a check is made as soon as possible thereafter, and particulars of items required to bring the equipment up to standard telegraphed to the Chief Traffic Manager, and a memorandum in confirmation of the wire sent by first train.
- (l) The Chief Traffic Manager is advised promptly after the first day of each month that the car has been attended to, as required by the above instructions.

3. The complete equipment of the car is indicated on lists which are posted therein, and a subsidiary list is affixed to each cupboard, &c., showing contents thereof. The cupboards are sealed with truck seals (the numbers of which are to be recorded by the Stationmaster), and if these seals are intact and in good order the cupboards need not be opened except as provided for in sub-clause 2 (h) above.

4. The Stationmaster will be responsible for seeing that the car is located in suitable position for ready access to the main line, and the Shed Foreman will be responsible for seeing that vans are in good order ready for the road, special precautions being taken with regard to the axle-boxes as prescribed in the instructions relating to break-down vans.

5. Whilst the car is illuminated with kerosene lamps, it has been wired so as to permit of current being obtained from an electrically lighted vehicle, when such can be marshalled next to it. The necessary connecting flex is in the car.

6. The District Lineman is to carry out a practical test of the portable telephone in the car once a month, and to satisfy himself it is in good working order.

13. DERAILMENTS AND ACCIDENTS NOT INVOLVING THE AID OF BREAK-DOWN VAN OR HOSPITAL VAN.

1. **Derailments.**—As soon as possible after a derailment an inspection should be made to ascertain the point where the flange mounted the rail and where the wheel dropped on to the sleepers. The road should be gauged at the point of derailment and as far back as may be considered necessary. The wheel flanges should be inspected, gauged and trammelled as may be deemed necessary. Inspections and tests should, if practicable, be jointly carried out by representatives of both the Transportation and Engineering Branches.

Before traffic is resumed, a qualified employee of the Way and Works Branch must pass the road as fit for traffic, and a qualified employee of the Chief Mechanical Engineer's Branch must certify as to the condition of the rolling-stock. A sketch of the vicinity is to be made and reports promptly forwarded by all concerned.

2. **Accidents to Persons other than Employees.**—Prompt assistance must be rendered to injured persons, and particulars of the injuries telegraphed as provided in the instruction regarding train accidents, &c. Medical examination must be arranged where possible, and statements obtained from at least two passengers, or members of the public, who witnessed the accident. It is obvious that discretion must be exercised when taking evidence from any person not connected with the Department. Form "Report of Casualty to a Person" must be forwarded in respect of each person injured, together with full report concerning the occurrence.

3. **Accidents to Employees.**—All accidents to employees, however trivial, must be immediately reported to the Officer-in-charge, and irrespective of whether the employee loses time from work or not, form "Report of Casualty to a Person" must be filled in and kept on record, together with written statements from witnesses.

When an employee is seriously injured whilst engaged in the actual discharge of his duties, the nearest medical practitioner must be sent for to attend to the immediate necessities of the injured person, and in such cases the fee for the first attendance will be paid by the Department.

Every employee injured must, where practicable, report to his superior officer, before leaving the Railway premises, that he has been so injured, and give names of all those who witnessed the occurrence.

14. AMBULANCE ARRANGEMENTS.

1. **Equipment.**—The principal items of Equipment are—

- (1) An Ambulance Chest.
- (2) An Ambulance Box.
- (3) A Stretcher.

2. **Description of Equipment.**—(a) *Ambulance Chest.*—The standard Ambulance Chest is 20½ inches x 15½ inches x 15 inches in size, and is painted black. Each chest is numbered consecutively, and marked on facing side, "FIRST AID."

The contents consist of—

- 24 roller bandages.
- 20 triangular bandages.
- 2 packets cyanide gauze.
- 4 oz. tincture of iodine.
- 2 lb. cotton wool.
- 1 card safety pins (12).

- 1 tabloid hypodermic case and products.
- 1 pair torsion forceps.
- 1 pair scissors.
- 6 surgeon's needles (assorted).
- 1 tin horsehair.
- 3 reels plaster.
- 1 bottle mercuric pot. iodide (poison).
- 1 bottle chloroform (hermet. sealed).
- 1 4-oz. bottle spirits ammonia (sal. volatile).
- 1 tank catgut.
- 1 enamelled basin.
- 3 kidney basins.
- 6 drinking mugs (enamelled).
- 1 8-oz. bottle carron oil.
- 2 4-oz. packets lint.
- Quantity of splints (assorted sizes).
- 1 tin boracic acid.
- 6 forms of requisition (T.105).
- 1 note-book for recording particulars of cases treated and material used.
- 1 card showing contents of chest.

(b) *Ambulance Box.*—The standard Ambulance Box is 18 inches x 9 inches x 6 inches in size, and is painted black. Each box is numbered consecutively on right-hand top corner, and marked on facing side, "FIRST AID."

The contents consist of—

- 6 triangular bandages.
- 6 roller bandages.
- 1 set arm splints.
- 1 pair scissors.
- 1 card silk.
- 1 packet surgeon's needles.
- 1 dozen safety pins.
- 1 reel plaster, 1 inch.
- 1 packet cyanide gauze.
- 1 packet borated wool, ½ lb.
- 2 oz. tincture of iodine.
- 1 bottle sal. volatile, 2 oz.
- 1 bottle liquid ammonia, 2 oz.
- 1 bottle mercuric potassium iodide (poison).
- 1 first-aid book.
- 1 2-oz. packet boracic acid.
- 1 4-oz. bottle carron oil.
- 1 4-oz. packet of lint.
- 1 enamelled mug.
- 1 tourniquet.
- 6 forms of requisition (T.105).
- 1 note-book for recording particulars of cases treated and material used.
- 1 card showing contents of box.

(NOTE.—A number of "Ambson" and "Ridgway" first-aid boxes have been supplied. These are to be used as circumstances require.)

(c) *Stretchers*.—Stretchers are of wooden side rods, with telescopic handles and brown canvas covering. There are four legs, two at each end, with a running roller, so that stretcher may be easily moved without raising it off the ground. When opened stretcher is 6 feet long by 23 inches wide, and when folded 6 feet long by 10 inches wide.

In opening stretchers care must be taken to raise the head-rest to the vertical position, so as to permit the extension bar to be opened.

Stretchers when folded must be placed with the canvas portion uppermost.

3. *Seals*.—Every ambulance chest or box is to be secured with a seal, of a type similar to that used for sealing trucks. Each seal bears a distinctive number, and spares will be issued to the employees, who, as provided in section 6 of this Instruction, are responsible for the care of equipment other than that supplied to brake vans.

4. *Responsibility for Supply and Maintenance*.—Officers appointed by Heads of Branches are responsible for seeing that chests (or boxes) and stretchers are supplied to stations and depots under their control, and Stationmasters at stations from which trains commence must see that brake vans are properly equipped before departure of the trains.

5. *Location of Equipment*.—(a) *Chests*.—An ambulance chest must be provided—

In the brake-van of each passenger train.

In the brake-van of each mixed train, except Nos. 9 and 6 Trans-Australian Railway.

At the locomotive work-shops.

At each quarry when being worked.

At each ballast pit when being worked.

At any place, other than a station, where 50 or more men are employed.

At any other place as may be decided by the Head of the Branch concerned.

Should for any reason a chest be not available, then one or more boxes are to be supplied until such time as a chest is available.

(b) *Boxes*.—An ambulance box must be provided—

In the brake-van of each train other than those specified in (a) above.

At each station.

At each locomotive depot.

(NOTE.—At depot stations, a complete box for each spare brake-van is also to be held.)

As part of the equipment—

(1) To any fettling gang not located at a station in the case of hand section car lengths, and

(2) To all fettling gangs using motor section cars.

On any motor section car used for inspection or other purposes.

At each place other than a station where the number of men employed is 20 or over, but less than 50, and

At any other place as may be decided by the Head of the Branch concerned.

In the case of fettling gangs using motor section cars—the box must be taken on the car when leaving camp for each day's work.

Drivers of motor section cars used for inspection or other purposes must see that the ambulance box is placed on the car before commencement of the journey.

(c) *Stretchers*.—A stretcher must be provided—

In the brake-van of every train,

At each place where a chest is located, and

At any other place as may be decided by the Officer concerned.

When a brake-van is removed from one location to another, the ambulance box and stretcher must also be forwarded by the same train, accompanied by a G.L.10 waybill. The Chief Traffic Manager must be notified promptly particulars of boxes, &c., removed to another location under these circumstances.

(NOTE.—At depot stations, a stretcher for each spare brakevan is also to be held.)

6. *Responsibility for Equipment*.—The following employees shall be responsible to their respective superior officers for the care of equipment and the maintenance of the chest (or box) up to its standard requirements:—

Other than on Trains.

- | | |
|--|--|
| 1. At locomotive depots where first-aid man is appointed .. | } The employee appointed as first-aid man. |
| In fettling gangs where first-aid man is appointed .. | |
| At locomotive work-shops .. | |
| 2. In fettling gangs where first-aid man has not been appointed .. | Ganger in charge. |
| 3. At stations | Employee in charge. |
| 4. At locomotive depots where first-aid man has not been appointed | Employee in charge. |
| 5. In other cases | As arranged by the Head of the Branch concerned. |

Stationmasters will be responsible for each chest and box under their charge being opened monthly, materials checked, and dust removed. A record of this is to be made in the note-book contained in the chest or box.

The Stationmaster, Parkeston, will be responsible for this being done in respect of chests supplied to Trans-Australian Railway passenger trains, the Stationmaster at Port Augusta in respect of spare chests in his charge, and the Stationmaster, Quorn, in respect of chests and boxes supplied to Central Australia Railway.

On Trains.

The equipment in the brakevan of a train is in the care of the guard. On taking over a train, it will be the duty of the guard to—

1. See that his brakevan is equipped with a chest (or box) and stretcher.
2. Record on his running statement whether a chest (or box) and stretcher are in the brakevan.
3. Record on his running statement the number of the seal, and whether intact or otherwise.

If the brake-van of a train leaving Port Augusta, Parkeston, or any other station where spare equipment is on hand, is found to be short of chest (or box) or stretcher, the Guard must immediately bring the matter under notice of the Stationmaster, who will require to complete the equipment before the train departs.

At stations where no spare equipment is held, particulars are to be telegraphed to the Chief Traffic Manager, and action taken by the guard to complete the equipment at the first station in advance where spare equipment is held.

Should the seal of the chest (or box) be not intact, the Guard, in addition to endorsing his running statement accordingly, must immediately make a report to the officer in charge of his home station, giving the following particulars:—

1. Number of chest or box involved.
2. Point of taking over the train.
3. Number of brakevan.
4. Number and destination of train.

7. **Equipment Used.**—*Other than on Trains.*—The employees shown in the preceding section shall be responsible for seeing that—

1. Materials are legitimately used,
2. A requisition (on Form T.105) is promptly forwarded for items required to bring equipment up to the standard, as a result of treating a case of injury, &c., and
3. The following particulars of every case are properly recorded in the book provided in chest (or box) for the purpose:—
 - (a) Date.
 - (b) Name of person attended to.
 - (c) Nature of injuries.
 - (d) Items used in treatment.

Forms (T.105) used for the purpose of requisitioning equipment must contain the information referred to in (a), (b), (c), and (d) in the preceding paragraph. Should such requisitions *not be properly filled in*, the equipment asked for is to be supplied without delay, but the matter is to be reported to the Head of the Branch or District Officer, as the case may be. Inquiries will then be made as to the reason why full information was not contained in the requisition.

On Trains.—When a chest (or box) provided in a brakevan is opened for the purpose of rendering first aid, the *Guard* will be held responsible for:—

1. Recording on his running statement, that seal was broken, number of such seal, and number of chest (or box).

2. Entering in the book provided in the chest (or box) the date, name of person treated, nature of injuries, and materials used in treatment.
3. Reporting the fact in writing to the employee in charge of the station at which materials to replenish the chest (or box) are obtained.
4. Telegraphing the Stationmaster, Port Augusta, Tarcoola, Cook, Rawlinna, Parkeston, Quorn, Marree, Oodnadatta, or Alice Springs (i.e., the station most convenient) on the Trans-Australian and Central Australia Railways, particulars of articles required to replenish the chest (or box), e.g. in the case of Up Through Trans-Australian railway passenger trains, if equipment be used after departure from Tarcoola, the Guard is to telegraph to Stationmaster, Port Augusta.
5. On arrival at the station concerned (as referred to in 4) handing in a requisition (Form T.105) covering the items telegraphed for and supplied.

In the event of the Guard signing off duty at a station prior to the train reaching the station at which the chest is to be replenished, he must inform the relieving Guard of the circumstances, and hand to him the report referred to in paragraph 3, and a requisition (T. 105) covering the items telegraphed for. The relieving Guard will then be held responsible for handing in the report and requisition (T.105) at the station concerned, and for seeing that the chest is replenished.

6. The employee in charge referred to in the preceding sub-clause 3 must—
 1. See that the proper record has been made in the book by the Guard.
 2. Re-seal the chest (or box) in the presence of the Guard.
 3. Forward the Guard's report to the Chief Traffic Manager by first train, endorsing on it the number of the seal used for re-securing the chest (or box).

8. **Replenishment of Equipment at Stations and Depots.**—Except that emergency equipment will be available at Tarcoola, Cook, Rawlinna, Parkeston, Quorn, Marree, Oodnadatta and Alice Springs, for the purpose of replenishing items used *on trains only*, spare equipment will be held by the Stationmaster, Port Augusta, for the Trans-Australian and Central Australia Railways, and by the Stationmaster, Darwin, for the North Australia Railway.

Items for replenishment of equipment must be obtained from these officers by requisition (Form T.105.)

The Stationmasters, Tarcoola, Cook, Rawlinna, and Parkeston will requisition in the most expeditious manner for articles taken from the spare chest to replenish items used on trains.

The Stationmaster, Port Augusta, and any other officer responsible for holding reserve stocks, will be responsible for seeing that a sufficient quantity of equipment, including a stock of items necessary for the replenishment of chests and boxes, is maintained. It shall be their duty to see that the reserve equipment is stored in such a manner as to avoid deterioration and dust as far as possible. They will requisition in the usual way for all materials which are necessary.

9. Repairs to Equipment.—When a chest (or box) requires to be repaired, the employee responsible for it must requisition for another to replace it, and after receipt of the empty chest (or box) he must transfer the equipment and forward the damaged article to the Chief Engineer of Way and Works, advising his superior officer how and when sent. Consignment Note Waybill (G.L.10) is to be used.

Stretchers requiring repairs are to be similarly treated.

Should a chest (or box) require repainting only, the matter is to be brought under the notice of the Head of the Branch, who will advise as to the action to be taken.

10. Cleaning of Stretchers.—When necessary, the canvas of stretchers must be cleaned in the following manner:—

- (1) If practicable, the canvas must be detached from the bearers and thoroughly washed in boiling water.
- (2) If it be impracticable to remove the canvas from the bearers, it must first be well brushed and then washed over with a solution of phenyle by means of a scrubbing or other hard brush.

Every person in charge of a stretcher must see that the canvas of such stretcher is cleaned whenever necessary. Every stretcher must be clearly marked to indicate the station or place to which it belongs, and if it reaches any other station or place it must be promptly returned.

11. Record of Equipment.—Each District Officer must arrange to keep an accurate record of the equipment available at each point under his control. In addition, the Chief Traffic Manager will be responsible for the maintenance of a complete record showing the equipment available at *all points*, and the materials issued each month to replace those used for legitimate purposes.

To enable these records to be complete in every detail, each of the employees specified in section 8 of this Instruction will require to advise his District Officer not later than the 5th of each month the following information in respect of the preceding calendar month:—

1. Equipment supplied to any new location.
2. Any alteration in the location of existing equipment.
3. Equipment requisitioned for and supplied to replenish chests or boxes.

The District Officer will in turn advise the Chief Traffic Manager not later than the 15th of each month the above information in respect of his branch.

12. General.—The Traffic Superintendent and Traffic Inspector, when on visits of inspection must examine the seals of the chests and boxes provided in brakevans and at stations, and, where circumstances permit, check the contents.

He must see that—

1. The seals are intact before inspection;
2. On inspection the equipment is complete and in good order;
3. The equipment used has been accounted for in the prescribed manner;
4. The stretchers are in good order and condition.

The Superintendent of Locomotive Running, Travelling Foreman, Superintendent of Maintenance, and other responsible officers must from time to time examine the seals of boxes and chests at points under their control.

If any seal is discovered broken, necessary inquiries are to be made and the matter reported in the usual way.

It is to be specially noted that in obtaining supplies of Ambulance Equipment for replenishment purposes, standard articles only, as described herein, are to be procured.

Equipment no longer required at any point is to be returned to one of the employees specified in section 8, and a memorandum advice giving particulars is to be forwarded at the same time.

15. CORRECT TIME TO BE KEPT.

1. Time Signal.—The time signal will be given as under:—

Trans-Australian Railway.—Daily (Sundays excepted) by Port Augusta at 12 noon, Adelaide time.

Central Australia Railway.—Daily (Sundays excepted) by Quorn at 12 noon, Adelaide time.

North Australia Railway.—Daily (Sundays excepted) by Pine Creek at 1 p.m., Adelaide time.

Where telegraph working is in operation, the operator at the station from which the time signal is to be despatched will at two minutes to 12 noon claim circuit, and from that time until the passage of the signal the line is not to be interrupted. At two minutes to 12 the preamble of the signal will be made by a series of dots at intervals of about 10 seconds, and at 12 noon (time signal) a succession of rapid dots will be sent.

The signal, of course, being only acceptable by telegraph stations, Stationmasters at these stations must arrange to transmit the correct time by telephone to any non-telegraph station connected with them.

Where telegraph working is not in operation the signal is to be transmitted by telephone.

Immediately the signal is received, the Station clocks must be looked to, and synchronized with the signal.

When ordinary hours of duty do not require that the station be attended at 12 noon (Adelaide time), Stationmasters at these points are not required to specially attend for the purpose of receiving the signal, but immediately on taking up duty they must arrange to ascertain the correct time from a station which was in attendance when the signal was despatched, and adjust the clocks as may be necessary.

It is essential that this instruction be adhered to, so as to permit of standard time being recorded by all stations and by the running staff.

The reception of the time signal by those stations which are required to be in attendance at 12 noon (Adelaide time) must be recorded in the Train Register Book, and the variation, if any, between the station clock and the signal must be entered in that book. Those stations which are not in attendance at 12 noon (Adelaide time), and who, under this instruction, ascertain the correct time when coming on duty subsequent to the transmission of the signal, must similarly record in the Train Register Book any variation of the station clock from standard time.

TRANS-AUSTRALIAN RAILWAY.

2. (a) **Zone Times.**—The undermentioned zone times are to be observed:—

Adelaide time.—Port Augusta to Tarcoola, inclusive.

Central time.—($\frac{3}{4}$ -hour behind Adelaide time). The section between Tarcoola exclusive and Rawlinna inclusive.

Perth time.—($1\frac{1}{2}$ hours behind Adelaide time). Rawlinna exclusive to Kalgoorlie inclusive.

Clocks and watches of station staff are to be regulated accordingly, and watches and clocks on trains entering these zones must be promptly put back or forward as required to coincide with the time for the zone in which the train is running.

(b) **Drivers, Guards, and Others Booking on and off Duty.**—A uniform method in regard to zone times must be adopted by employees booking on and off duty. The time shown on drivers' time-sheets must conform to the zone time of the station at which they are signed on and off duty respectively, e.g., the driver of No. 1 Down ex Tarcoola must sign on duty at that station by Adelaide time, and off duty at Barton by Central time.

16. DEPARTMENTAL WATCHES AND CLOCKS.

1. Departmental watches are issued to guards and shunters in charge of engines; senior conductors, also employees acting in these positions; workshop foremen, shed foremen, engine-drivers (including regular acting drivers), stationary engine-driver at workshop powerhouse, chargemen, travelling foremen, traffic inspectors, and roadmasters. Watches are not to be issued to other employees except in special cases, for which approval of the Commissioner must be obtained.

2. Watches are numbered consecutively, and a careful record must be kept in the office of the Head of the Branch or District Officer, showing name of the employee holding each watch, and the watches on hand and under repairs. Receipts must be obtained from the employees to whom watches are issued, and carefully filed. An employee leaving the Service must return the Departmental watch held by him.

3. For loss of a watch or for non-return on leaving the Service, the employee to whom it was issued will be required to pay the cost of replacing it.

4. The attention of all concerned is drawn to the fact that in some instances Departmental watches and clocks returned for repairs, &c., have been tampered with, the various parts being interfered with by pricking with pins or sharp instruments. Oil has also been traced in internal workings.

5. Departmental watches or clocks must not be taken to outside watchmakers for attention, and, if defective, must be handed to the employee's immediate superior officer for despatch to the District Office.

6. All employees in possession of Departmental watches are enjoined to treat them with the utmost care.

7. Wall clocks are issued to Stations, Offices, Workshops, &c., as approved by the Head of the Branch. They should be hung on a perfectly flat wall and then moved at bottom either to right or left as required until an even beat is obtained. The clock should then be either fastened to the wall, or a mark made to denote correct position.

8. When despatched by train through the post, watches are to be suitably packed with soft wrapping, such as tissue paper, and forwarded as a Value or Registered Parcel. In the case of wall clocks, the pendulum bob and rod should be gently lifted off the hook from which suspended and securely fastened to the clock case to avoid possible injury.

17. STORES AND MATERIAL.

1. **Economy.**—Employees are to note that strict regard is to be paid to economy in the use of departmental stores and material.

Stationmasters, gangers, foremen, and others controlling staff must personally satisfy themselves that material placed on requisition is necessary, and wherever practicable material already available is to be used in preference to obtaining from stock.

2. **Advice of Despatch of Material.**—An employee despatching material or stores either to the main depot or to any other location is responsible for seeing that it is properly consigned and addressed, and that advice is forwarded to the consignee giving the date sent, number of the train, number of truck, and the reason forwarded.

3. Record of Non-consumable Plant.—A record of non-consumable plant is to be kept in the Head Office of each branch showing the equipment held by the branch, including office furniture and apparatus, machinery, tools, and all other material of a permanent nature.

Stationmasters, shed foremen, gangers, and others in charge must have a record of all equipment under their control, which is to be kept up to date. They must every three months forward a return showing items added to or deleted from the list.

The Superintendent of Locomotive Running, Traffic Superintendent, Superintendent of Maintenance, and other responsible officers must, when on inspection, occasionally check the plant on hand at different locations with the records, and take necessary action in regard to any items missing. Employees in charge at stations or depots should submit prompt advice to the district office when non-consumable plant is handed over to another branch or despatched to another location, and necessary arrangements must be made in the office where the record is kept to ensure all new equipment issued to stations and depots being added.

4. Stores and Material to be Used for Departmental Purposes Only.—Departmental stores and material must be used for departmental purposes only, and any employee appropriating it to his private use or allowing it to be illegitimately used will render himself liable to dismissal from the service.

5. Tools and Equipment to be Branded.—All tools and portable equipment are to be suitably branded "C.R.", and the Storekeeper will be responsible for having this done before issue. Officers-in-charge having unbranded equipment in their charge must notify the Head of the Branch or District Officer, so that necessary arrangements may be made for branding.

6. Material found on Line.—Parts of rolling-stock or other material found along the line by gangers, fettlers, or other employees, must be forwarded without delay to the nearest station, with label attached, stating the exact location where picked up, and if possible the train from which it fell, and the Stationmaster will despatch to the nearest depot, at the same time sending written advice to the Office-in-charge of the depot, stating how and when sent.

7. Material as Stores Stock.—Coal, wood, and permanent-way material (which should be clearly marked with correct classification colour), such as rails, fishplates, bolts, sleepers, &c., are located at different points along the line as part of Stores stock, and no portion of this material is to be removed without advice being despatched in the required way, so that clearance may be recorded in Stores ledgers. If uncertain as to the proper procedure, or in doubt as to whether stock belongs to Stores or to the branch, the employee should refer to his immediate superior officer for direction.

8. Empty Tins, Cases, &c., to be Returned.—The following, when empty, must be returned to the Storekeeper:—

- Kerosene and benzine tins and cases.
- Explosive boxes and barrels.
- Oil barrels.
- Chaff, bran, and cement bags.
- Carbide drums.
- Ink bottles.

The employee in charge of the station, depot, or pumping plant will be responsible for seeing that packages or bundles of empty cases, &c., are systematically returned. The receptacles mentioned should not be unnecessarily damaged, lids should be replaced on cases, and all such material should be properly cared for until returned as instructed.

9. Damage to Tools and Equipment.—Employees are to take every reasonable care when using departmental tools and equipment. In the event of damage through negligence, an employee may be called upon to defray the whole or part of the cost.

10. Surplus Material.—Officers-in-charge and other employees having on hand disused material such as burst Westinghouse hoses, worn and broken axle-box brasses, worn shovels, picks, or any other material which is unfit or unsuitable for further use at its particular location, or which is in excess of requirements for a reasonable period, must communicate with District Officer or Head of the Branch, so that it may be returned to the main depot or otherwise disposed of.

11. Sale of Material.—Departmental material is not to be sold without approval, and inquiries regarding purchase of surplus plant or equipment should be promptly submitted to the Head of the Branch or District Officer, with careful description of the article referred to and its condition. Where any sales are effected they will be made by the Comptroller of Stores. The material shall have, if practicable, a distinguishing brand placed thereon.

12. Equipment Requiring Repairs.—All departmental plant and equipment must be kept in proper repair, and stationmasters, foremen, gangers, and other members of the staff having equipment in their care are responsible for seeing that prompt steps are taken to have defects promptly remedied.

13. Stationery.—Stationery requisitions are to be forwarded quarterly, and will be due in the offices of Heads of Branches in the first week of March, June, September, and December, so as to permit of issue in the first week of each quarter. Only in special and unforeseen circumstances are they to be submitted at other times. Strict economy is to be exercised in the use of stationery, books, and all other office requisites. Forms are not to be used where plain or scrap paper is suitable, and are only to be used for the purpose for which they were printed.

14. Disused Stationery.—Completed returns, books, and other office records at all offices and stations are to be carefully placed away in chronological or other order, and the officer-in-charge is responsible for seeing that this is systematically and tidily done. These records are to be preserved for stipulated periods as instructed by the Head of the Branch, after which they are to be destroyed.

STATIONS.—The following instructions are to apply so far as stations are concerned:—

To be kept indefinitely—

Miscellaneous Debit Books.
Cash Books.
General Notices.
Ledgers (all kinds).
Inventory Books.

To be kept 6 years—

Ticket Stock Registers.
Receipt Books.
Accounts Current.
Attendance Books.
Time sheets.
G.C., T.C., and O.C. Circulars.

To be kept 3 years—

Train Registers.
Consignment Notes.
Way-bills (all kinds).
Abstracts (all kinds).
Summary of Cash Remittances.
Outstanding Returns.
Ordinary routine correspondence.
Book Record of Goods Damaged, Short, &c.
Unentered Traffic Book.
Ticket Requisition Books.
Delivery Docket Book.

To be kept 2 years—

Requisitions for Live Stock Wagons.
Special Train (S.) Notices.
Truck Record Book.
Correspondence *re* Stores and Stationery.
Tally Books and Tally Slips.
Weighbridge Books.
Reports *re* Goods and Parcels Damaged, Short, &c.
Record of Tarpaulins and Lashings.
Collected Ticket Returns.

To be kept 6 months—

Used truck labels.

LOCO. DEPOTS.—

To be kept indefinitely—

Receipts for Circulars, L.10.
General Notices.

To be kept 6 years—

Attendance Books.
Blocks of Pass Books.
G.C., T.C., and O.C. Circulars.

To be kept 3 years—

Drivers Repair Books, L.8.
Roster Sheets, L.3.
Packing and Wash-out Books, L.4.
Consignment Notes, G.L.10.

NOTE.—In the case of books, the number of years shown in the heading is to count from the date of the last entry. Any fronts and backs of files should be removed for further use, and the backs of any forms which are suitable for inter-station correspondence should be utilized. Particulars of records it is proposed to destroy should be forwarded to the Head of the Branch to ascertain if they can be made use of.

18. HANDLING, STORAGE, AND CONSUMPTION OF COAL.

1. Responsibility for Maintaining Stocks.—The Comptroller of Stores is responsible for maintaining adequate coal stocks at the various coaling stations, and the Mechanical Engineering Branch for the receipt, safe custody, and economical use of coal. Should a consignment of coal not arrive within a reasonable time after receipt of advice of despatch, the Officer in charge of the Loco. Depot concerned must communicate with the Storekeeper.

2. Coal Handling.—Unnecessary handling of coal must be avoided. Wherever possible coal must be taken direct from wharf to the consuming depot.

Every reasonable care must be taken in handling to prevent breakage and consequent formation of slack.

3. Stacks not to exceed 15 feet high and to be kept Dry.—Coal stacks must not be built higher than 15 feet. If this is exceeded, the coal is liable to ignite spontaneously. As moisture increases, the tendency to spontaneous combustion increases, and all coal-off-loaded on ground must be stacked in dry, well-drained situations.

4. Coal to be kept Free from Sand.—In sandy locations the coal off-loaded on ground must be stacked on sleeper beds to minimise the quantity of sand finding its way into fireboxes and forming clinker.

5. Stages to be kept Tidy.—Stages must be kept tidy, and the coal stacked in a safe manner. A wall of large lumps must be built along the open side to the required height. The ground and tracks at places where coal is handled must be kept tidy and free from coal. Ashpits must be kept clean to avoid risk of fire.

6. Theft to be Prevented.—Proper precautions must be taken by the employee in charge to prevent theft or wrongful use of Departmental coal. Any cases of theft or misuse must be immediately reported.

7. Passenger Engines to be Supplied with Best Coal.—Passenger engines must be supplied with the best coal available.

8. **Coal Stack Fires.**—Should a coal stack become ignited, every effort must be made to immediately isolate the burning portion by removing adjacent coal.

9. **Weekly Coal Statements.**—At each depot where coal is stacked, weekly returns of receipts, issues, &c., are to be prepared and submitted as provided in Regulation 19A.

10. **Coal and Water Returns, Trans-Australian Railway.**—At stations where coal is stacked, the Stationmaster must submit at the close of each week to the Chief Traffic Manager particulars as under:—

- A. Quantity of coal on stage and in stack.
- B. Quantity of coal on trucks.
- C. Quantity of coal in transit (*i.e.*, coal for which advice of despatch has been received).
- D. Quantity of water in overhead tanks.
- E. Quantity of water in sump.
- F. Quantity of water in water wagons.
- G. Nos. of engines coaled and watered.

This statement is distinct from the returns provided for in Regulation 19A of this Appendix.

11. **Coal Consumption.**—Engine-drivers and firemen must exercise every possible economy in the use of coal, remembering that one shovelful used unnecessarily on each shift will result in a heavy extra annual expenditure. Engine-drivers are expected to instruct their firemen in economical methods of firing.

Drivers must indicate on their L.1 running time sheets the reason for any undue consumption of coal on any particular trip.

Shed Foremen, when certifying to these sheets, must note any excessive consumption of coal and follow up the matter with a view to having any possible defects in locomotives remedied as early as possible.

12. **Coal not to be Thrown from Tenders.**—Cases have come under notice where enginemen have deliberately thrown coal from tenders, and any case of such wanton waste coming under notice will be very seriously viewed.

Fuelmen and others coaling tenders must see that the coal is carefully placed so as to avoid, as far as possible, coal falling off on the road.

13. **Trimming.**—Coal is to be trimmed on trucks before leaving ship's side at Port Augusta (or coal bin if loaded there) and Darwin, as a safeguard against coal falling off during shunting operations, or whilst *en route* to Line Stations.

19. ECONOMY IN USE OF LUBRICATING OILS ON LOCOMOTIVES AND AT DEPOTS.

1. The oil allowances to Enginemen for the various runs will be as laid down in Regulation 19A of this appendix.

2. All tanks in oil stores are to have covers, and tops of tanks are to be kept free from dirt.

All tanks must be cleaned out annually.

Drip pans are to be placed under all oil taps.

3. Outsides of barrels are to be cleaned before the barrels are placed over oil tanks for emptying.

Each barrel is to drain for at least ten (10) hours.

Oil in barrels is not to be left standing in the sun.

4. Enginemen's oil bottles are to be washed out periodically to keep them free from grit, &c., and they are to be provided with stoppers.

5. Where necessary wool waste is to be placed in oil wells on engine, tender, and bogie boxes to prevent oil from splashing out of the boxes, and to ensure the oil syphoning regularly through trimming.

6. Oil cup is not to be over-filled, as when cork is fitted the oil flows around oil cap and is wasted, and results in oil being splashed about running gear.

7. Air vents are to be made in all corks fitted to oil caps.

8. Spring feeders are to be used for side rods and motion.

9. The engineman handing engine over to relief crew at intermediate point or sub-depot is to be careful to leave sufficient oil on engine to enable relief driver to complete journey in safety, and he will be personally responsible for so doing.

10. Before oiling boxes on car and wagon stock, train examiners must first push waste away from front of box towards underneath of journal, and then place a small quantity of oil in front of box. It is estimated that 1 pint of oil is sufficient to lubricate from six to eight boxes. Passenger-train vehicles must be oiled at commencement of each trip. Goods vehicles must be oiled every two months.

11. The oiling of vehicles at each depot is to be performed by one examiner set aside for this work. He is to plainly chalk on vehicle the last date oiled, and he is to show on his daily time-sheet the number and class of each vehicle oiled, and the total quantity of oil used during the shift. Shed Foremen must keep a check on same.

12. Dust shields found to be badly worn are to be renewed as soon as possible. Employees in charge at out-depots are to give particular attention to dust shields on vehicles such as water wagons, &c., running regularly in their districts.

19a. STORES INSTRUCTIONS.

The following instructions are to be observed in conjunction with the instructions contained in Regulations 18 and 19 concerning the Handling, Storage and Consumption of Coal, Firewood, Oil, and other Running Supplies:—

1. **Returns.**—The returns showing receipt, issue, movement, and consumption of coal, firewood, oil, and other running supplies, and stocks on hand are important and are required to indicate clearly what quantities of coal and other running supplies have been received, moved, issued, and/or consumed each week or four weeks as the case may be at each coaling place, and each running supply depot to locomotives, pumping plants, stationary engines, steam cranes, &c. Copies are to be retained in each instance.

Statements indicating consumption of coal and other running supplies and cost of materials used are tabulated regularly, and unless accurate and complete information is given in every instance, the returns and statements are misleading.

The following instructions are issued so that all employees handling coal and other running supplies will know what is required of them, and may understand that it is absolutely essential that such instructions are closely observed. Specimens of forms to be used are shown at the end of these instructions.

2. **Coal and Firewood.**—(a) Weekly returns on Form Q.22 are to be submitted to the Comptroller of Stores, Port Augusta, by—

- (i) Shed Foreman at Port Augusta, Tarcoola, Cook, Rawlinna, Parkeston, and Quorn.
- (ii) Fitter-in-Charge at Edwards Creek.
- (iii) Stationmasters at Pimba, Kingoonya, Barton, Loongana, Zanthus, Hawker, Parachilna, Beltana, Copley, Farina, Marree, Oodnadatta, Rumbalara, and Alice Springs.
- (iv) Gangers at Ooldea and Hughes.

(b) Employees of Mechanical Engineering and Way and Works Branches at stations shown in clause 2 (iii) must, unless otherwise directed, submit returns through the local Stationmaster, who will be responsible, where practicable, for checking the returns to ensure accuracy.

Fitter-in-Charge, Edwards Creek, is to ascertain from Pumpers and submit returns of coal and firewood dealt with at Alberrie Creek, Beresford, William Creek, and Anna Creek. Similarly Stationmasters at Hawker, Oodnadatta, and Rumbalara will be responsible for submitting returns for Mern Merna, Mount Dutton, and Abminga respectively.

The Locomotive Foreman, 2½ miles, Stationmasters at Pine Creek and Katherine, and the Ganger at Birdum, on the North Australia Railway, are to submit returns on Q.22 forms to the Manager, Darwin.

(c) The following procedure is to be adopted in checking stocks of coal and firewood weekly:—To the stock on hand at the close of the preceding week add the quantity received during the week and from the total so obtained deduct the total issues for the week as shown in Q.21 forms; the difference will represent the book balance.

If any large discrepancy occurs between this figure and the quantity actually on hand as ascertained by measurement the matter is to be brought under the notice of the Comptroller of Stores.

The same procedure is to be adopted in the case of other supplies, except that the check of stocks shall be made four-weekly.

Particular attention must be paid by Shed Foremen, Fitters-in-Charge, Stationmasters, Drivers, Firemen, Fuelmen, Pumpers, and others concerned to the handling and recording of coal and firewood placed on engine tenders and/or otherwise used or issued. When coaling is done direct from wagons, and the weight of coal therein is known, the amount placed on the tenders must be closely approximated. Where coal baskets are used, the average weight per basket (full) is to be taken as 97 lb. for Southern coal and 71 lb. for Maitland coal. Where shovels are used, six (6) of No. 5 shovels (full) may be reckoned as 1 cwt.

As far as practicable, coal or firewood off-loaded from wagons on to stages (or to ground where permissible) must be kept in separate heaps, with a record of the actual weight in each heap, so that when tenders are coaled and/or engines are lit up from the different stages, a close approximation of the weight of coal or firewood placed on each engine or tender can be obtained, and there will be no difficulty in stating the exact quantity of coal or firewood in any such heap that has not been drawn upon for issue.

All coal and firewood in stacks on ground, in storage bins, and on stages, must be measured weekly at the time the return is compiled. A record must be kept in a suitable book showing the result—based on 44.5 cubic feet for all coal at Line stations, 41 cubic feet for South Coast coal, and 44.5 cubic feet for Newcastle coal per ton at Port Augusta and Quorn. The quantity of coal and firewood on hand under load in wagons at the time for the coaling place concerned must also be shown, but coal and firewood "in transit" for another station are not to be shown. Firewood is calculated at 128 cubic feet to the cord.

The record of measurements must include the length, width, and height of each stack, also the shape, whether triangular, square, oblong, &c.

Coal on stages and on ground must be kept trimmed so that at the close of each period the measurement can be readily and accurately determined.

At Marree the coal in the overhead bin must be levelled over each week so that the measurements will be reasonably accurate.

(d) It must be realized that special attention on the part of all concerned is necessary to ensure that the risk of any over or under-estimation of coal placed on tenders, of firewood used on engines, or otherwise issued will be minimized.

(e) Shed Foremen are responsible for the accuracy of the returns submitted by them. Stationmasters who submit returns must, where practicable, confer with Fuelmen and Pumpers in regard to measurement and record of stocks, issues of coal and firewood, compilation of returns, &c., to ensure accuracy.

(f) Owing to the difficulty of obtaining accurate measurements of irregular stacks of coal in the large storage bin or dump at Port Augusta, special arrangements will be made periodically to estimate the quantity of coal therein.

3. **Oil and Boiler Compound.**—(a) Stocks of the various oils and boiler compound are maintained by the Comptroller of Stores at the following depots, bulk supplies to the depots being arranged periodically according to requirements:—

Port Augusta, Tarcoola, Cook, Rawlinna, Parkeston, Quorn, Marree, Edwards Creek, and Alice Springs.

(b) Shed Foremen at all depots, the Fitter-in-Charge at Edwards Creek, and the Stationmasters at Marree and Alice Springs are responsible for arranging supplies of C. and W. oil to the Examiners in their respective sections, and for provision of oil, waste, &c., on trains where instructed.

(c) Supplies of oil for pumping plants are arranged on being requisitioned for in the ordinary way.

(d) Locomotive bearing and cylinder oils are issued to Enginemen by the Shed Foremen at depots, by the Fitter-in-Charge, Edwards Creek, and the Stationmaster, Marree, as appropriate.

(e) Boiler compound is issued to Enginemen by Shed Foremen, and by the Fitter-in-Charge, Edwards Creek, as required.

(f) Returns, on Form Q.23, showing the receipts, issues, and stocks of oil and other running supplies (except coal and firewood, which are provided for in (1) and waste, which is requisitioned and charged out direct) are to be promptly rendered to the Comptroller of Stores by the Officers referred to above, at the close of each four-weekly period. Oil issues to Enginemen are to be made in accordance with the schedule hereunder:—

	Bearing Oil.	Cylinder Oil.
	Pints.	Pints.
TRANS-AUSTRALIAN RAILWAY.		
"G" Class Working—		
Port Augusta-Tarcoola	6½	2½
Tarcoola-Cook	6½	2½
Cook-Loongana	5	2
Rawlinna-Loongana and return	5½	2
Rawlinna-Kalgoorlie	6	2½
"K" or "KA" Class—		
Port Augusta-Tarcoola	7	4
Tarcoola-Cook	7	4
Cook-Loongana	6	3
Loongana-Rawlinna (single journey either way)	3	1½
Rawlinna-Kalgoorlie	7	4
CENTRAL AUSTRALIA RAILWAY.		
Section to be Run—		
Port Augusta-Quorn and return	2	1
Quorn-Hawker and return	3	1½
Quorn-Beltana and return	7	3½
Quorn-Farina and return	10	5
Quorn-Marree and return	12	6
Quorn-Coward Springs and return	17	8½
Quorn-William Creek and return	20	10
Quorn-Warrina and return	24	12
Quorn-Mt. Dutton and return	26	13
Quorn-Oodnadatta and return	27	14
Quorn-Edwards Creek and return	24	12
Edwards Creek-Alice Springs and return	22	11

Issues for other runs are to be on the basis of 3 pints of bearing oil per 100 engine miles and 1½ pints of cylinder oil per 100 engine miles.

Shunting engines are to be issued 1½ pints of bearing and 1 pint of cylinder oil for each eight-hour shift.

Enginemen must use every endeavour to keep the oil consumption down to a minimum, and extra oil is only to be obtained in cases of emergency, such as hot bearings, &c.

4. **Receipts for Supplies Issued.**—(a) A proper receipt must be obtained for all running supplies and materials issued, and in future Form Q.21 (in triplicate) must be used by Shed Foremen, Fitters-in-Charge, Stationmasters, Fuelmen, Gangers, and others concerned for obtaining receipts from Drivers, Firemen, Pumpers, and Examiners, and others to whom coal, firewood, oil (car and wagon, bearing, saturated cylinder and superheater cylinder), anti-prime, fuel oil, lime, barium carbonate, and other Running Supplies are issued from Stores Stock.

(b) where it is practicable to do so, receipt must be obtained from the employee actually receiving the material for use; in other cases the Shed Foreman, Stationmaster, or other employee arranging the supply will be responsible for seeing that a proper receipt is obtained. For instance—

(i) At depots where engine tenders are coaled in the absence of the Driver, the Fuelman, Pumper, or other employee doing the work must give a receipt (on Q.21) to the Shed Foreman, Stationmaster, or other responsible officer, who will in turn arrange for the duplicate to be handed to the Driver concerned with his time-sheet.

A similar procedure is to be followed in the case of firewood, oils, and anti-prime compound.

(ii) At places like William Creek where—in a case of emergency—coal is taken by the Driver, and there is no one there to obtain a receipt, the Driver must give a receipt to the Officer-in-Charge at the next locomotive coaling place.

(iii) As regards fuel oil, lime, and barium carbonate, the employee using these materials must send to the Comptroller of Stores a Q.21 receipt attached to Q.23 return at the close of each period. Where a check can be imposed, as by the Stationmaster at Kingoonya, this must be regularly observed.

(c) It must be distinctly understood that all locomotive coal and firewood (until placed on an engine tender, or used at a pumping plant, &c.), and all bulk supplies of oils, &c., as indicated above, are under the control of the Comptroller of Stores, until actually issued to the respective users, who would ordinarily requisition in the authorized manner for Stores. It will thus be seen that bulk supplies are maintained at out depots for convenience only and remain Stores Stock pending issue. At the end of each period all Running Supplies issued will be covered by formal requisition from the Chief Mechanical Engineer.

(d) Receipts given on G.L.10 by Shed Foremen, Stationmasters, and others for bulk supplies of coal, oil, &c., received, are not sufficient clearance under the Stores Instructions, but receipt on Q.21 must be obtained for each issue therefrom.

(e) Q.21 forms are numbered in triplicate, and double-sided carbon paper must be used in compiling receipts, duplicate to be attached to his time-sheet by the employee actually receiving the coal, oil, or other running supplies, the original to be forwarded to the Comptroller of Stores by the Shed Foreman, Stationmaster, or other employee responsible for the weekly (Q.22) or monthly (Q.23) return as appropriate, and the triplicate to remain at the station or depot for record and check purposes. Particular care must be exercised in neatly and accurately compiling these forms and preserving them in accordance with these instructions.

5. General.—Travelling Foremen, Traffic Inspectors, Shed Foremen, and others concerned must, when on visits of inspection or other official duties, inspect and check stocks and records of Coal, Firewood, Oil, and other Running Supplies to ensure that the arrangements are on a proper footing, promptly reporting any instances where the instructions are not being closely observed.

COMMONWEALTH RAILWAYS.

RECEIPT FOR SUPPLIES ISSUED.

No. Q.21.

By Stores Agent at.....Station.

Original.—To be attached to weekly (Q.22) or 4-weekly (Q.23) returns, and forwarded promptly to the Comptroller of Stores, Port Augusta.

Material.	Quantities.			Purpose Used For.
	Tons.	Cwts.	Qtrs.	
Coal (Newcastle)				
Coal (other collieries)				
Firewood (Loco. use)	Cords.	Feet.		
Firewood (other purposes)				
Oil, Car and Waggon	Gals.	Pts.		
„ Loco. Bearing				
„ Sat. Cylinder				
„ Super. Cylinder				
„ Fuel				
Compound, Anti-prime	Lb.			
Lime (Treatment Plants)				
Barium Carbonate (Witherite)				

Issued by—

Received by—

.....SignatureSignature
DesignationDesignation
DateDate

COMMONWEALTH RAILWAYS.

RECEIPT FOR SUPPLIES ISSUED.

No.

Q.21.

By Stores Agent at.....Station.

Duplicate.—To be handled to employee receiving supplies for attaching to time-sheet.

Material.	Quantities.			Purpose Used For.
	Tons.	Cwts.	Qtrs.	
Coal (Newcastle)				
Coal (other collieries)				
Firewood (Loco. use)	Cords.	Feet.		
Firewood (other purposes)				
Oil, Car and Waggon	Gals.	Pts.		
„ Loco. Bearing				
„ Sat. Cylinder				
„ Super. Cylinder				
„ Fuel				
Compound, Anti-prime	Lb.			
Lime (Treatment Plants)				
Barium Carbonate (Witherite)				

Issued by—

Received by—

.....SignatureSignature
DesignationDesignation
DateDate

COMMONWEALTH RAILWAYS.

RECEIPT FOR SUPPLIES ISSUED.

No.

Q.21.

By Stores Agent at.....Station.

Triplicate.—To remain in book for record purposes.

Material.	Quantities.			Purpose Used For.
	Tons.	Cwts.	Qrs.	
Coal (Newcastle)				
Coal (other collieries)				
Firewood (Loco. use)	Cords.	Feet.		
Firewood (other purposes)				
Oil, Car and Waggon	Gals.	Pts.		
„ Loco. Bearing				
„ Sat. Cylinder				
„ Super. Cylinder				
„ Fuel				
Compound, Anti-prime	Lb.			
Lime (Treatment Plants)				
Barium Carbonate (Witherite)				

Issued by—

Received by—

.....SignatureSignature
DesignationDesignation
DateDate

Employees located between Port Augusta and Parkeston, but exclusive of those stations, will be charged as under:—

- (a) Employees occupying residences (including tent houses) to which water is laid on or served by a standpipe—6d. per week.
- (b) Where no such convenience exists—free of charge.

In connexion with the supply of water to the public, it will be necessary for the guard of the train by which the water is delivered to record on his delivery docket book the source from which the water is supplied.

Stationmasters at attended stations and Gangers at unattended stations must see that water is not taken by persons other than those authorized to do so.

Employees on the Central Australia Railway are supplied with water, free of charge, for domestic purposes, where supplies are not procurable locally.

North Australia Railway.—Employees occupying Departmental residences to which water is laid on or served by a standpipe are charged 3d. per week. Where supplies are not procurable locally, water is supplied free of charge.

21. ELECTRIC TRAIN LIGHTING INSTALLATIONS.

1. The power which generates the current is derived from the axle of the vehicle, to which is attached a pulley connected by a belt to the dynamo, which supplies the current while the train is in motion, and also stores current in the accumulators for use while the car is standing.

2. *Economy in the Use of Current.*—As the amount of energy which can be generated on rolling-stock is necessarily limited, Stationmasters, Guards, Conductors, Train Examiners, and others concerned must exercise every reasonable economy in the use of current by—

- (a) seeing that lights are not switched on earlier than is necessary;
- (b) using only "half lights" when "full lights" can be dispensed with;
- (c) switching off lamps promptly when not required;
- (d) seeing that current is switched off promptly at the terminal station when no longer necessary;
- (e) avoiding unnecessary use of lights when cars are in shed for cleaning.

Should the train be standing for a long period at a station, or due to any unusual occurrence on the main line, or when stabled on completion of the trip, it is of the utmost importance that the energy contained in the accumulators be conserved, as by its excessive use serious damage to the cells is likely to occur.

When lights are dim, the tendency to switch on extra lamps should be avoided, as, should a defect exist which can only be corrected by electricians at the main depot, it is important to dispense with as many lights as possible in order to avoid exhausting available current before reaching the terminal station.

The water service on narrow-gauge sleeping car NRC 36 is controlled by a water-raising apparatus driven by an electric motor which derives its power from the batteries of the car.

In order to prevent depletion of batteries, it is essential that close control be exercised by the employee responsible for the sleeping berth arrangements *en route*. He must charge water tanks with compressed air at the beginning of each trip by switching on the current to the motor, and standing by to switch off again as soon as the automatic switch cuts out and the motor is heard to stop. The process of charging should take from one to five minutes. The system must be charged at intervals of about four hours during the day, or more frequently if the rate at which water is being used, warrants it. It must be finally charged last thing at night, and the motor must be left switched off until the following morning.

The water-raising switch is in the Conductor's compartment, and has been painted red in order to distinguish it from others on the switch-board.

3. *Shunting of cars Fitted with Electric Light.*—Care should be taken to avoid impacts in shunting which are likely to cause accumulators to leak, resulting in damage to parts of rolling-stock and permanent way from sulphuric acid.

4. *Connecting Two Cars to One Dynamo.*—When failure of the lighting set occurs on one car current may be obtained by connecting to an adjoining car. Before doing so, care should be taken to see that the main switch of the "dead" car is withdrawn and left out the whole of the time the two cars are electrically coupled. If this is not done serious damage may be done to both lighting sets, resulting in both cars being in darkness.

5. *Defects Inside the Car.*—In the case of a burst fuse, the fault may be due to a lamp-holder terminal screw touching the case or to a lamp-holder having been improperly twisted round, thus crossing the wires leading in. All lamp fittings should be examined when re-screwing lamps to see that they are not loose, and when removing or re-screwing lamps the socket should not be allowed to turn.

6. *"Stones" System.*—In lighting sets of this type the output of the dynamo is regulated by the amount of tension on the belt. To prove that the dynamo is in working order it may be run as a motor in both directions. To make this test, slip off the belt, remove the dynamo cover, then turn the pulley in the running direction, at the same time making a connexion between the two motoring terminals with a spanner or screw-driver. To stop the machine, break the connexion between the motoring terminals.

If lights are dim when the car is running, and it is found that the dynamo windings are cool, the tension on the belt should be tested, and if the pulley can be turned easily in the belt with one hand, a little more tension should be given. Care should be taken never to adjust the dynamo beyond the horizontal position of polarity changing switch. This can be seen by taking off end of dust cover. The terminal block on the top of dynamo should also be examined to ascertain if connexions are slack.

If it is necessary to replace a lost or defective belt on the journey, the instructions regarding belt tension referred to herein should be observed. Care should also be taken to ensure that the belt is cut the correct length. The iron link which supports the dynamo should hang slightly forward towards the axle of the car.

In the event of a dynamo "motoring" while the car is stationary, it is important that belt be removed immediately and left off until the defect is remedied. If the cut-in-and-out switch cannot be caused to drop by a knock on the cover, the cover should be removed and switch pulled out.

7. "Vickers" System.—This type will be recognized by a spiral tension spring at back of dynamo. The output is not regulated by the belt, but by the automatic apparatus, which in the cars on the Trans-Australian Railway is placed in the centre lavatory.

This type of machine will nearly always motor when the belt is lost on the road, and should be stopped by pressing hard on the pulley with the hand, which should cause cut-in-and-out switch to open. In the event of the machine not being stopped by this means, it will be necessary to withdraw main fuse, which is placed on switchboard in regulator box in centre lavatory.

22. DRAW GEAR.

STANDARD GAUGE 4-FT. 8½-IN. STOCK.

1. "Sharon" M.C.B. Automatic Centre Coupler.—The coupler in use on the Trans-Australian Railway is known as the "Sharon" type of M.C.B. (Master Car Builders) Coupler.

It consists essentially of a casing or head, knuckle with tail piece combined, lock and uncoupling gear.

The knuckle is inserted through the outer face of the head and attached thereto by means of a pin, on which it swivels; the tail piece is inside the head, and is operated by the lock, which in turn is manipulated by the operating gear, the latter being attached to the vehicle headstock.

There are three positions to the coupler, namely—locked, lockset, and open. The locked position is when the coupler is closed in running position and locked by tail piece; lockset position is that when the coupler is unlocked by means of the uncoupling lever, and cannot be again locked or coupled until the vehicles have separated and the couplers are entirely disengaged. Open position is that when knuckle has been thrown open ready for coupling.

The uncoupling gear extends to the side of the vehicle and can be operated without the necessity of going in front of the vehicle and opening the knuckle by hand.

From the back of head a shank passes through the headstock of the vehicle, and to this shank are attached the draft springs either by means of a tail bolt or yoke.

2. Eccentric Knuckles.—The standard height of the coupler is 2 ft. 11 in. from the rail level to the centre of the shank. On some of the rolling-stock originally constructed with couplings to a height of 3 ft. 3 in., the draw gear has been adapted to accommodate difference in

heights by means of eccentric knuckles 11 inches long. The 2-in. extension of the lug is on the bottom of the knuckles of vehicles with a high draw gear, and on rolling-stock with draw gear of the standard height of 2 ft. 11 in. the extended lug is on the top; thus when vehicles fitted with the draw gear of the respective heights mentioned are coupled, the knuckles are in contact over a length of 9 inches. When draw gear is being fitted or knuckles renewed, care should be taken to install the type of knuckle which is applicable to the vehicle concerned.

3. Tail Bolts to Be Annealed.—Tail bolts are to be annealed as far as possible every twelve months, and a distinguishing mark consisting of a band of white paint is to be placed on the coupler when an annealed tail bolt has been fitted, the month and year to be stamped on the coupler adjacent to the paint brand.

A number of vehicles are equipped with draft yokes in lieu of tail bolts, and the former type of draft gear will be applied to new vehicles placed in service. The yoke is to be annealed as often as may be directed by the Chief Mechanical Engineer.

4. Spare Tail Bolts.—Two spare tail bolts are carried in each brake van as part of brake van equipment.

5. Draft Springs.—Draft springs are to be examined, and, if necessary, fire-worked every time the vehicle undergoes a general overhaul.

6. Condemning Size of Knuckle.—Train examiners and other employees engaged in repairing and examining rolling-stock should note the wear in the knuckle, which should be renewed when worn down to gauge which will be provided by the loco. running officer in charge of the district.

7. Eye Bolt Brackets, Chains, and Shackles Supporting and Operating Lever Uncoupling Gear.—Train examiners should see that the nut holding the eye bolt which supports the operating lever is secure, as it is liable to work off, causing the lever to fall on to the permanent way and release the coupler. Chains and shackles must be carefully watched to see that they are not in a dangerous condition due to wear. Brackets must be examined periodically to see that they are securely fastened and not dangerously worn.

NARROW GAUGE 3-FT. 6-IN. STOCK.

8. "Chopper" Centre Buffer and Draw Gear.—This type of buffer and draw gear is in use on the narrow-gauge rolling-stock, and consists of the buffer head and shank, chopper, coupling pin, chains, chopper lock pin and draft springs, draw bar nut and cotter. The principal parts to be watched are the coupling pins, choppers, draw bar nuts and cotters. One spare chopper and coupling pin must be carried in brake-van.

9. Annealing of Parts.—The buffer head, chopper, coupling pins, and draft springs should be fire-worked on each occasion the vehicle to which they are attached receives a general overhaul.

10. Breakages of Draw Gear.—Engine-drivers must report all cases of breakages of draw gear, stating probable cause. Broken parts are to be collected and delivered to the Shed Foreman or other loco. running officer-in-charge, by whom they are to be examined and retained for despatch to the Chief Mechanical Engineer if called for. Fractured ends are to be protected as far as possible from rust, dirt, grease, and moisture.

Every instance of breakage of draw gear that occurs in the yard or comes under the notice of the train examiner while on duty must be reported by him, full particulars being given as to the number and class of vehicle, kind of coupler, the nature of the damage, and whether it has been repaired or not. Names of the enginemen and shunter concerned are to be stated if known.

11. Vehicles with Damaged Coupler Gear not to be Attached to Train without Special Authority.—Vehicles with damaged or broken coupler gear must not be attached to any train without the special authority of the Chief Traffic Manager, and in the event of coupler gear being observed damaged or broken on any vehicle *en route*, that vehicle must not be allowed to continue in transit, but must either have the coupler gear repaired or replaced, or be detached at the first available station.

GENERAL.

12. Intermediate Draw Gear on Locomotives.—Shed Foremen and Enginemen are to see that intermediate wedge blocks are not worn more than 1-16 inch concave on the rubbing face, and that a minimum of $\frac{1}{8}$ inch and a maximum of 3-16 inch clearance is maintained between the tender rubbing block and the engine wedge block.

Strict attention must be paid to this instruction, and the Shed Foreman must have an inspection made of each locomotive, prior to its leaving his depot, to see that wedge block is in proper order and that the correct clearance exists.

Enginemen must report in repair book any case where correct clearance does not exist, and where rubbing block is worn 1-16 inch concave on the rubbing face.

23. LEVEL CROSSINGS.

1. Whistle to be Sounded and Enginemen to be on Look Out.—Drivers must sound the whistle one quarter of a mile before reaching a level crossing, and Enginemen must be on the look out to avoid accident through collision with road vehicles.

On the Trans-Australian Railway whistle boards are placed one quarter of a mile on either side of level crossing.

The instructions given below apply also to level crossings other than on the main line.

2. Road Vehicles Conveying Loads of Exceptional Weight, &c.—As provided in General By-law, clause 33, vehicles conveying loads of exceptional weight, or exceptional dimensions, are not to be permitted

to cross the line without 24 hours' notice in writing to the nearest Stationmaster. Stationmasters, gangers, fettlers, and other employees must be on the look-out to prevent such vehicles crossing without proper notice.

Where the crossing is within the home signals, the Stationmaster receiving the notice must arrange for the vehicle's protection by fixed signals. Where not protected by fixed signals he must see that the time stated is not within 30 minutes of the time that any train is due to pass, and arrange with the roadmaster or ganger for the crossing to be protected for the passage of the vehicle by a competent employee being sent out 1,200 yards in each direction with hand signals and detonators.

3. Obstructions through Portion of Load Falling off Road Vehicles.—Employees must as far as possible be on the look-out for obstructions at level crossings through portion of the load falling off road vehicles, and should any such obstruction be discovered prompt action must be taken to have it removed, and the line protected pending its removal.

4. Level Crossings Blocked by Shunting.—Vehicular or pedestrian traffic over level crossings must not be stopped by shunting operations longer than necessary. If the crossing is likely to be blocked for a long period vehicles must be drawn clear of the crossing to allow road vehicles or persons to cross.

5. Maintenance of Level Crossings.—Level crossings are to be maintained by fettling gangs for a distance from the centre of the track corresponding to the width of the permanent way formation.

24. ELECTRIC TRAIN STAFF REGULATIONS.

The signalling of trains on any line worked under Electric Train Staff System shall be carried out in accordance with the following Regulations, which may only be varied on the authority of the Chief Traffic Manager.

1. Object.—(a) The object of the system of Electric Train Staff Signalling is to prevent more than one train being between any two Electric Staff Stations at the same time, and, when no train is in the Section between two Electric Staff Stations, to admit of a train being started from either end. This is accomplished by every train carrying an Electric Staff, one Electric Staff only being obtainable from the Electric Staff Instruments of the same Section at the same time.

(b) The signalling of trains on the Electric Train Staff System does not in any way dispense with the use of Fixed, Hand, or Detonating Signals, whenever and wherever such signals may be necessary.

(c) Each Electric Staff is numbered, and has engraved or marked on it the name of the Electric Staff Station at each end of the Section to which it applies.

(d) The instruments and bells must be used exclusively for the purposes shown in these Regulations, and only by the Signaller or other person specially appointed for the duty.

(e) The movements on the Instruments and Bells must be made slowly and distinctly, and the pauses between the sets of beats clearly marked.

2. Mode of Signalling.—(a) The following Bell Code is to be utilized:—

See Reg. No.	Signal.	Beats on Bell.
2	*Call Attention	1
6	Is line clear for Express Passenger, Fast Passenger, or Breakdown Van or Light Engine going to assist disabled train ?	4 consecutively
12, 13	Is line clear for Ordinary Passenger or Mixed Train ?	3 pause 1
	Is line clear for Fast Goods or Live Stock ?	5 consecutively
	Is line clear for Through Goods or Ballast ?	4 pause 1
	Is line clear for Pick-up Goods ?	1 pause 4
	Is line clear for Light Engine ..	2 pause 3
	Is line clear for Goods or Ballast requiring to stop in section or for motor car ?	1 pause 2 pause 2
11	Cancel "Is line clear ?" or "Train Departure" signal	3 pause 5
2	*Train departure	2 consecutively
36	*Train Departure on Ticket No. 1	2 pause 2
	*Train Departure on Ticket No. 2	1 pause 2
7	*Train waiting	3 pause 2 pause 1
8	*Assisting Engine in front of Train or two trains coupled	2 pause 2 pause 2
9	*Bank Engine in rear of train	2 pause 1 pause 2
10, 12	*Cancel Bank Engine in rear of Train or Train on "Ballast Train Key"	4 pause 4
14	*Train Arrival or Obstruction Removed ..	2 pause 1
23	*Obstruction Danger	6 consecutively
20	Blocking back outside Home Signal	3 pause 3
19	Release Staff for Shunting	5 pause 2
19	*Shunting completed—Staff replaced	2 pause 5
29	*Stop and examine Train	7 consecutively
30	*Train passed without Tail Disc or Light	9 consecutively to Box in advance
		4 pause 5 to Box in rear
31	*Train Divided	5 pause 5
18	*Shunt Train for following Train to pass ..	1 pause 5 pause 5
32	*Train or Vehicles running away	4 pause 5 pause 5
24	*Engine of last Train broken down in Section ..	2 pause 1 pause 2 pause 1
24	*Relief Engine to remove Breakdown	4 pause 2 pause 4 pause 2
2	Testing Instruments and Bells	3 pause 5 pause 3
22	Transference of Staffs by Electrician	4 pause 4 pause 4
5	Testing Controlled Signals	5 pause 5 pause 5
2	*Speak on Telephone	4 pause 2 pause 1

(b) Except in the case of Bell Signals marked * the "Call Attention Signal" must always be given before any other signal, and must be acknowledged immediately on receipt.

(c) Unless instructions are issued to the contrary, all signals (except the "Is Line Clear?" Signal when the "Line Clear" cannot be given), must be acknowledged by repeating them, and no signal must be considered as understood until it has been correctly repeated to the Signal-box from which it was received. When the "Is Line Clear?" Signal is not acknowledged, it must be given again at short intervals.

(d) A, B, and C represent three consecutive Electric Staff Stations, and the process of signalling a train is as follows:—

(i) Prior to the despatch of a train from "A," the Signaller there, provided he has received the "Train Arrival" Signal for the previous train, and permission has not been given for a train to approach in the opposite direction, and the Indicator is in its normal position, must call the attention of "B," and, having obtained it, must give the proper "Is Line Clear?" Signal; if the Line be clear at "B" the Signaller there must acknowledge the Signal, and give the necessary permission for the train to approach. This is done as follows:—

When pressing down the key on the last beat in acknowledging the "Is Line Clear?" signal, "B" must continue to hold it down, meanwhile working the handle of the generator which will generate sufficient current to enable "A" to take an Electric Staff from the instrument at that station. The holding down of the bell key and working of the generator by "B" will cause the needle in "A's" instrument as well as his own to be deflected to a slanting position, and on seeing the needle assume that position, "A" must take out the Electric Staff and then turn the indicator to the position "Train going" holding same hard down until the needles in the instruments resume a vertical position, which will indicate to "B" that an Electric Staff has been withdrawn at "A". "B" on seeing the needle resume the vertical position will at once turn the indicator to "Train coming."

(Note.—Whenever an Electric Staff cannot be withdrawn from the instrument, when it is known, or thought, that the section for which the Electric Staff is required, is clear, that Electric Staff should be lowered in the column and another Electric Staff should be used. Occasionally the rings on the Electric Staff work loose with the result that the Electric Staff cannot be removed from the instrument. In every case where a defective Electric Staff is detected a report should be made immediately to the Chief Traffic Manager.)

(ii) The Signaller at "A" may then, if the line be clear, hand the Electric Staff to the Engine-driver, and lower his Signals for the train to leave "A."

(iii) On the train leaving "A," the Signaller there must send the "Train Departure Signal" to "B," and the Signaller at "B" must acknowledge the Signal.

(iv) Shortly before the arrival of the train at "B," the Signaller there must (if the last train leaving his station for "C" has been signalled in there, and he has not given permission for any train to approach from "C") call the attention of "C," and having obtained it, he must give the proper "Is Line Clear?" Signal to him. On obtaining an Electric Staff from "C," "B" may lower his signals for the train to enter his station and proceed to

"C." On the arrival of the train at "B," the Signalman there must obtain the Electric Staff from the Driver, and when he is satisfied that the last vehicle of the train has arrived, with Tail Disc or Light attached (as per Regulation 10), he must insert the Electric Staff in his Instrument, and give the "Train Arrival Signal" to "A," and the Signalman at "A" must acknowledge the Signal. Both "A" and "B" must then adjust the indicators of their instruments to the normal position.

(e) The number of each Electric Staff issued and received must be recorded in the Train Register Book.

(f) *Time Signal.*—Signalmen will be held responsible for keeping their clocks properly regulated, and must, if necessary, at once report any defects in their working. If the Time Signal is not regularly received, the matter must be reported to the Chief Traffic Manager.

As soon as practicable after coming on duty, Signalmen must compare their clocks with the clocks in the Signal-Boxes on each side, and record a note of the circumstances in the Train Register Books.

(g) *Recording Time when Signals are Forwarded and Received.*—The times at which all Signals are forwarded and received must be made legibly with a pen in the Train Register Book ("*Speak on Telephone Signal*" excepted), and the Signalman on duty must place his name immediately under the last entry made by him at the expiration of his hours of duty.

If an incorrect entry be made, a line must be drawn lightly through it, and the correction made above or below it, so that the original entry made may be clearly seen.

In recording the times Signals are received and forwarded, fractional parts of a minute less than half-a-minute must not be counted, and the half-minute and fractional parts more than half-a-minute must be reckoned as a minute, thus:— $15\frac{1}{2}$ minutes must be entered as 15 minutes only, and $15\frac{1}{2}$ minutes as 16 minutes.

(h) *Testing Instruments and Bells.*—This Signal must be used to ascertain whether the bells and instruments are in perfect order, and only when no train has been signalled. The test is to be made each working day, and an entry showing the time of test is to be made in the Train Register Book. The Officer-in-charge will be responsible for seeing that the test is regularly made and recorded.

An Electric Staff must also be withdrawn and replaced by the Signalman at each end of the Section.

(i) *Telephone Signal.*—This signal is used to call attention when the use of the telephone is required.

(j) *Mixed Trains* conveying passengers and goods must be signalled and dealt with as Passenger Trains.

3. *Engine-drivers not to start without Electric Staff and proper Signals being exhibited.*—(a) Except as provided in Regulations 12, 24, 34, and 35 hereof, an Engine-driver must not leave an Electric Staff Station without the Electric Staff for that Section of the line over which he is about to run, or unless it has been shown to him as required by the following paragraph, and by Regulations 8, 9, and 10 hereof.

(b) Except where instructions are issued to the contrary, when a train has more than one engine, or when two or more light engines, or two trains, are coupled together, the Electric Staff must be shown to each Engine-driver, and delivered to, and carried by, the Driver of the last engine.

(c) After receiving the Electric Staff, the Engine-driver must not proceed until all the necessary Fixed or other Signals are exhibited at All Right. He must keep the Electric Staff under his own charge (except as explained in Regulations 21, 24, and 36 hereof) until he reaches the end of the Section, or has returned to the Station from which it was issued, when he must give it up to the Signalman or other duly authorized person.

(d) The Engine-driver must not take the Electric Staff beyond the Station at which it ought to be left.

(e) Drivers must reduce the speed of their trains when passing an Electric Staff Station at which they are not timed to stop, so as to admit of delivering and receiving the Electric Staff, which must not be thrown on the ground.

4. *Custody and transference of Electric Staff.*—(a) Except as provided in Regulation 22 hereof the Signalman or other person in charge of the Electric Staff-working for the time being is the sole person authorized to take an Electric Staff from, or place it in, the Instrument.

(b) Except where some other person is specially appointed to the duty, the Signalman is the sole person authorized to receive an Electric Staff from, and to deliver it to, the Engine-driver, who, while it is in his charge, must carry it in the socket or other place provided for the purpose. Under no circumstance, except as provided in Regulations 24, 30, 34, 35, 37, and 40 hereof, must an Electric Staff be transferred from one train to another without being passed through the Instrument, and dealt with in accordance with these Regulations.

(c) The same Electric Staff must not be used for the next train proceeding over the same section in the opposite direction.

5. *Fixed Signals.*—(a) The Danger Signal must always be kept exhibited at all the Fixed Signals at Electric Staff Stations, except when it is necessary to lower or turn them off for a train to pass; and before any Signal is lowered or turned off, care must be taken to ascertain that the Line on which the train is about to run is clear, and that these and other regulations have been duly complied with.

(b) At places which are not Electric Staff Stations, the "All Right" Signal must, unless special instructions to the contrary are issued by the Chief Traffic Manager, be kept exhibited at all the Fixed Signals (where such Signals are provided) except when required to be placed at "Danger," or unless the Signals have been thrown out of use and distinguished as per General Rule 32 (d).

(c) Unless special instructions are issued to the contrary by the Chief Traffic Manager, the employee who works the Electric Staff Instruments must also work the Fixed Signals.

(d) When trains which have to cross each other are approaching an Electric Staff Station at the same time in opposite directions, the Signals in both directions must be kept at Danger, and

when the train which has to be first admitted into the Station has been brought quite or nearly to a stand at the Home Signal applicable to such train, such Home Signal may be lowered to allow the train to draw forward to the Station or to the Starting Signal; and after it has come to a stand, and the Signaller has seen that the line on which the other train will arrive is quite clear, the necessary signals for that train may also be lowered. If there is no Home Signal for the road on which the train requires to travel, it must be admitted in accordance with General Rule No. 40.

(e) At an Electric Staff Station, if the Electric Staff has not been obtained for the Section in advance for an approaching train, all fixed Signals applicable to the line upon which such train has to run must be kept at Danger until the train has passed the Distant Signal, in accordance with General Rule No. 37, and is approaching the Home Signal, when the Home Signal may, if necessary, be lowered to allow the train to enter the station. At Terminal stations, both the Home and the Distant Signals may be lowered, provided the line protected by the Home Signal is clear.

(f) Where Starting Signals or Advanced Starting Signals are provided, except in the cases referred to in Regulations 12, 24, 26, 34, 35, 37, and 40 hereof, and General Rule No. 45, the Starting Signal or the Advanced Starting Signal must not be lowered until an Electric Staff has been obtained for the train to proceed to the Electric Staff Station in advance.

(g) Testing Controlled Signals.—Signals which are controlled from another Signal-box must be tested as soon after the Signaller change duty as the running of the trains will permit. The Signaller in charge of the Controlled Signal, after releasing the lever so far as he is concerned, must give fifteen beats on the bell (5-5-5) to the Signaller at the Signal-box from which the Signal is controlled. This must be repeated, and the Signal lever worked three times slowly. Each signaller must make an entry in his Train Register Book of the transaction.

6. Line Clear or giving permission for a Train to Approach.—(a) Except as provided for in Regulation 20 hereof and unless special instructions are issued to the contrary, the "*Is Line Clear?*" Signal must be acknowledged, and permission given for a train to approach in accordance with Regulation 2 above, as follows:—

- (i) At a Station which is not a Crossing-place, if the line be clear for at least a quarter of a mile beyond the Home Signal.
- (ii) At Crossing, Terminal, or Junction Stations, if the line on which the approaching train has to run be clear to the Home Signal.

(b) After permission has been given for a train to approach, in accordance with Regulation 2 above, no obstruction of the line, outside the Home Signal, on which such train requires to run must be allowed, unless the "*Cancelling*" Signal has been received from the Electric Staff Station in the rear.

(c) If the line be not clear, or if from any other cause the Signaller be not in a position to give permission for the train to approach when the Signaller in the rear forwards the "*Is Line Clear?*" Signal, that Signal must not be acknowledged until the Signaller to whom the Signal has been sent is prepared to receive the train, when he must give permission for it to approach in accordance with the prescribed Regulations.

7. Train Waiting Signal.—This Signal must be given to the Electric Staff Station in advance under the following conditions:—

- (i) When a train is waiting to proceed, and the "*Train Arrival or Obstruction Removed*" Signal is not received within a reasonable time, or after the "*Blocking Back*" Signal has been received and acknowledged;
- (ii) When some time elapses after the "*Is Line Clear?*" Signal is sent, and the acknowledgment of such Signal is delayed.

8. Assisting Engine in Front, or Two Trains Coupled.—(a) After the "*Train Departure*" Signal has been given to the Electric Staff Station in advance for a train that is assisted by an engine in the front or two trains coupled, the "*Assisting Engine in Front or Two Trains Coupled*" Signal must be given to the Electric Staff Station in advance, to indicate that an engine is assisting the train in the front, or that two trains are coupled. The "*Assisting Engine in front or Two Trains Coupled*" Signal must be acknowledged by being repeated, and a note of the Signal must at once be made in the Train Register Book at both Electric Staff Stations, and the "*Train Arrival*" Signal must not be given until the train which is assisted by an engine in the front, or the two trains coupled, have arrived complete.

(b) An assisting engine must not in any case leave the train it is assisting, neither must coupled trains be uncoupled, except at an Electric Staff Station.

9. Bank Engine in Rear of Train.—(a) After the "*Train Departure*" Signal has been given to the Electric Staff Station in advance, and acknowledged by the Signaller there for a train that is assisted by an engine in the rear, the "*Bank Engine in Rear of Train*" Signal must be given to the Electric Staff Station in advance to indicate that an engine is assisting the train in the rear. The "*Bank Engine in Rear of Train*" Signal must be acknowledged, and a note of the Signal must at once be made in the Train Register Book at both Electric Staff Stations, and the "*Train Arrival*" Signal must not be given until the assisting engine has arrived.

(b) A bank engine must not in any case leave the train it is banking, except at an Electric Staff Station, unless authorized by the Chief Traffic Manager under special Regulations.

NOTE.—The use of Bank engines must be specially authorized by the Chief Traffic Manager.

10. Engines Coupled Together.—(a) When it may be necessary to detach one engine from another on a Running Line, the Driver of each engine requiring to be detached must, unless instructions are issued to the contrary, before uncoupling, verbally communicate with the

Signalman and make him clearly understand what is about to be done, and in what direction the uncoupled engine or engines are required to proceed.

(b) When two or more engines are coupled together, the first one must be signalled as a Light Engine, the "*Is Line Clear?*" Signal (2-3) being given and accepted in the ordinary way, and after "*Train Departure*" Signal has been given, the other engine or engines must each be signalled by the "*Bank Engine in Rear of Train*" Signal (2-1-2), the Signal for each engine being acknowledged. The "*Cancel Bank Engine in Rear of Train*" Signal (4-4) must be used to cancel each engine not going forward attached to the first engine after having been signalled. If it is necessary for all the engines to be cancelled, the "*Cancelling*" Signal (3-5) must be used. Both Signalmen must record the number of engines coupled together.

11. **Cancelling Signal.**—Should it be necessary to cancel the "*Is Line Clear?*" or "*Train Departure*" Signal, the Signalman must restore the Electric Staff to the Instrument and send the "*Cancelling*" Signal to the Electric Staff Station in advance, which Signal must be acknowledged; an entry must be made in the Train Register Book recording the fact of the Signal having been cancelled. The "*Cancelling*" Signal must not be used unless the "*Is Line Clear?*" or "*Train Departure*" Signal has been acknowledged or accepted, and must be used only in cases where a train has been signalled to the Electric Staff Station in advance, and it is found that such train will not proceed in the usual course.

12. **Working by Ballast Train Key.**—(a) To facilitate the working of Ballast Trains, the use of the "Ballast Train Key" may be authorized by the Chief Traffic Manager in any particular electric staff section. At stations where this is authorized, an Electric Switch Lock will be attached to the Electric Staff Instrument and controlled by a Special Key called the "Ballast Train Key," which, when withdrawn from the Switch Lock, disconnects the electric staff circuit of the Electric Staff Instruments, so that no Electric Staff can be obtained nor communication made between the two stations on the instruments controlling the section concerned until the Key has been returned and the Electric Switch locked. At the same time a wall telephone is connected to the Electric Staff wires by the withdrawal of the "Ballast Train Key," so that direct telephone communication is established between the stations at each end of the section, and in cases of emergency communication may be obtained by portable telephone with these stations from the Ballast Train working in the section. The name of the station from which the Ballast Train Key is issued must be shown on the Key.

(b) The train which precedes the Ballast Train must carry an Electric Staff and be signalled in the usual manner.

(c) After the "*Train Departure*" Signal has been sent and acknowledged for the first train to leave, the signal "*Is Line Clear for Goods or Ballast requiring to stop in Section*" (1 pause 2 pause 2) must be sent.

(d) If, from any cause, the ballast train, after being signalled, does not proceed, the "*Cancel Bank Engine in rear of Train or Train on Ballast Train Key*" Signal (4 pause 4) must be sent.

(e) On arrival of the first train at the other end of the section, the Electric Staff must be at once placed in the column in accordance with the regulations, and the "*Train Arrival*" Signal given by telegraph, or by wall telephone, as soon as the circuit has been restored by the replacement of the Ballast Train Key.

(f) The Ballast Train Key must be delivered by the Signalman to the Driver of the Ballast Train, and will be the Driver's authority to occupy the section.

(g) A train travelling on the Ballast Train Key must not depart less than 15 minutes after a Goods or Mixed train or less than 30 minutes after a Passenger train.

(h) After the completion of its work in the section, the train must return to the station at which it entered the section, and the Driver must hand the Ballast Train Key to the Signalman there. The latter will at once replace the key in the Switch Lock and give the "*Cancel Bank Engine in rear of Train or Train on Ballast Train Key*" Signal (4 pause 4). The Ballast Train Key must not be used when a train requires to run through to the other end of the section.

(i) The Ballast Train Key must not be used nor taken out of the Switch Lock for any other purpose than as set out herein.

(j) Should an Engine travelling on the Ballast Train Key fail, the driver and guard must prepare the form prescribed for use in the event of a train breaking down in the section (Form T.84), the contents of which must be telephoned by the guard. On receipt of telephone message—which must be written out in full and repeated back to the guard so as to ensure its accuracy—the Officer-in-charge at the station receiving the message will advise the station at the other end of the section by telegraph and make arrangements to procure a relief engine from the most convenient end. The Officer-in-charge at the end of the section to which the first train was proceeding on Electric Staff must see that there is no Electric Staff out of the instrument before despatching the relief engine from his station, should that be the most convenient place from which to afford relief. The officer from whose station the relief engine is despatched must advise by telegraph the station at the other end of the despatch of the relief engine. On receipt of this advice, the latter officer must cancel the Trainmen's authorization held by him writing the word "cancelled" across the face. The relief engine will travel on the telephone message countersigned by the Officer-in-charge of the station from which it departs. The Driver must exercise care in running to the disabled train, and must have his engine sufficiently under control to enable him to stop short of the obstruction. On arrival at the disabled train the driver of the relief engine must collect the Ballast Train Key from the driver of the disabled engine, and on arrival of the train complete with the relief at the Electric Staff Station he must hand up the authorization form together with the Key to the Officer-in-charge there.

(k) When the Key is replaced care must be taken to fully turn it in the lock.

(l) All forms used in connexion with this working are to be sent to the Chief Traffic Manager.

(m) If the Ballast Train Key be lost or damaged, this method of working must be suspended. The Chief Traffic Manager must be immediately advised, and he will arrange to restore connexion, or he may, if an electric staff is out of the instrument, authorize working in accordance with Regulation 34 or, if there be no electric staff out of the instrument, in accordance with Regulation 35 hereof. A fresh Key may be provided only when authorized by the Chief Traffic Manager.

13. Ballast Train requiring to Stop in Section.—(a) When a Ballast Train has to stop in an Electric Staff Section for permanent-way purposes, the Signalman must give the prescribed "*Is Line Clear?*" Signal and the Signalman at the Electric Staff Station in advance must, if the Section be clear, give permission for the train to approach. When a Ballast Train which has been signalled as a through Ballast Train requires to stop in the Section for permanent-way purposes, and comes to a stand at an Electric Staff Station to enable the Guard to inform the Signalman that his train is going to stop in the Section in advance, the Signalman must restore the Electric Staff to the Instrument and give the "*Cancelling*" Signal, and when the signal has been acknowledged he must signal the train as a Ballast Train requiring to stop in the Section.

(b) The Engine-driver of a Ballast Train that has to do work on the line must be told, when receiving the Electric Staff, to which end of the Section it has to be taken, and at what time it is to be there, in order to clear the line for the next train.

(c) Should the Guard of the Ballast Train require his train to return to the Electric Staff Station in the rear instead of going through to the Electric Staff Station in advance, he must obtain the permission of the Signalman before the train enters the Section. When the train has arrived back complete and the line is again clear, the Signalman must restore the Electric Staff to the Instrument and give the "*Cancelling*" Signal to the Electric Staff Station in advance.

(d) When a Ballast Train has to return to the Electric Staff Station in the rear, no shunting outside the Home Signal at that end of the Station must be allowed until a man with Hand and Detonating Signals has been sent out to protect such shunting. He should be stationed not less than 100 yards outside the Distant Signal, or if no Distant Signal is provided, not less than 1,000 yards from the Home Signal.

(e) When a Ballast Train in possession of the Electric Staff is at work on the line, it will not be necessary to send out Flagmen to protect it.

14. Train Arrival.—Trains must be considered out of Section and the "*Train Arrival*" Signal given to the Electric Staff Station in the rear as under:—

- (i) At a Station which is not a Crossing-place, when the last vehicle (with Tail Disc or Red Tail Light attached) has passed at least a quarter of a mile beyond the Home Signal.

- (ii) At a Crossing, Terminal, or Junction Station, when the last vehicle of the train (with Tail Disc or Red Tail Light attached) has arrived within the Home Signal.

Note to (ii).—When the last vehicle of a train does not pass the Signal-box before it has been shunted into a Siding, or when a train has been brought to a stand within the Home Signal, and it is necessary to give the "*Train Arrival*" Signal before the train passes the Signal-box, the Signalman must, before giving such signal, ascertain from the Guard or Shunter in charge of the train that the whole of the train (with Tail Disc or Red Tail Light attached) has arrived, and the Guard or Shunter will be held responsible for giving this information to the Signalman, the Fireman being similarly responsible in the case of a light engine.

15. Train an Unusually Long Time in Section.—When a train is an unusually long time in a Section the Signalman at each end of the Section must take action to ascertain the cause and immediately communicate with the Stationmaster.

16. Train Staff Stations which are not Crossing-places.—In the case of an Electric Staff Station which is not a Crossing-place, situated between two Electric Staff Stations, both of which are Crossing-places, the Signalman must not allow a train to approach from the Station on each side of him at the same time.

17. Crossing Trains out of Course.—(a) If one of the trains which have to pass each other at a Crossing-place is late, the train which arrived first must be sent on to the next Crossing Station in advance if it will be advantageous to do so, having regard to the class of trains affected.

NOTE.—Generally a Through Passenger Train should not be delayed by a Goods Train; and a Ballast Train should not be delayed by a Goods Train, where the delay to the Ballast Train would result in a large number of men being idle.

(b) The Signalmen at both ends of the section must confer as to the working to be adopted; and must keep themselves advised as to the running of all trains before they approach their sections, so that the best results may be obtained.

(c) Any officer in doubt as to what course to pursue in any contingency should submit the matter for the ruling of the Chief Traffic Manager, so that he will know what to do when the occasion arises.

18. Shunt Train for following Train to pass.—This signal must be used to prevent important trains being delayed by less important trains. When, before the "*Train Arrival*" Signal has been received from the Electric Staff Station in advance for the last train, the Signalman receives a signal from the Electric Staff Station in the rear for a more important train, the "*Shunt*" Signal must be sent to the Electric Staff Station in advance, and the Signalman there, on receiving this signal, must, if the circumstances justify it, take the necessary measures to clear the line so as to prevent delay to the second train. The Signalman forwarding or receiving the "*Shunt*" Signal must make a note of it in his Train Register Book.

19. Release Staff for Shunting.—(a) To obtain an Electric Staff for shunting, the Signalman must send the "Release Staff for Shunting" Signal to the next Electric Staff Station, and the Signalman there must, provided he is in a position to accept such signal, acknowledge it, and give permission for an Electric Staff to be withdrawn.

(b) When it is necessary to work an intermediate Station or Siding between two Electric Staff Stations and the train requires to return to the Station from which the Electric Staff was obtained, the Engine-driver must be told when receiving the Electric Staff at what time he must return in order to clear the line for the next train.

(c) When the shunting is completed, and the single line is again clear, the Electric Staff must be replaced in the Instrument, and the "Shunting Completed—Staff Replaced" Signal sent to the next Electric Staff Station.

20. Fouling Single Line for Station Work.—(a) Except as shown hereunder, the single line outside the Home Signal must not be fouled after permission has been given for a train to approach from the opposite end of the section, nor may permission be given for a train to approach therefrom where there is any obstruction on the single line outside the Home Signal.

(i) Should shunting require to be performed outside the Home Signal in a section from the other end of which a train is due, or nearly due, to depart, and provided that no Electric Staff for the section in which such shunting operations are to be performed is out of the instrument, the Signalman at the station at which the shunting is to be carried out will act as follows:—

(a) Inform the Signalman at the other end of the section in which shunting is about to be performed of what it is proposed to do.

(b) Hand to the Engine-driver written order (Form T.122) authorizing him to shunt outside the Home Signal but within the Distant Signal, and informing him of the fact that the section in which he is to shunt may be occupied, during the period he is so shunting, by a train approaching from the other end, and directing him as to the time at which he is required to return within the protection of the Home Signal.

(NOTE.—The Driver and Signalman must compare times before Driver commences to shunt.)

(c) See that no vehicle remains outside the Home Signal after the time shown in the order or any extension thereof authorized by him, and in any case see that all vehicles are brought within the protection of the Home Signal not less than thirty (30) minutes before the time at which the approaching train is due to arrive.

(d) Before filling in the time (Form T.122) at which the vehicles are to be brought back within the protection of the Home Signal, confer with the Signalman on duty at the station at the other end of the section and ascertain the time at which the train will be leaving

there, so that in the event of the tabled allowance for the section not being required on account of shortage of work or otherwise due consideration can be given to this.

(ii) (a) The Signalman at the station from which the train is due to enter the section in which shunting operations are being carried out and who has obtained an Electric Staff for that section must fill in a form (T.121) which is to be handed to the Engine-driver with the electric Staff. This form will warn the Engine-driver of the shunting operations outside the Home Signal at the other end of the section and of the need for approaching the other station carefully, and for stopping at the Distant Signal until authorized to pass it. This form is to be seen by both Engine-driver and Guard, and to be signed for on the block retained by the Signalman.

(b) If the train is travelling on ticket portion of divided Electric Staff and is delayed at the Distant Signal, the Guard must protect his train in accordance with General Rule 37.

(iii) (a) The above regulation is made to permit of the avoidance of considerable delays only. Consequently unless a delay of thirty (30) minutes or more will be avoided it is not to be availed of. Thus, if only fifteen (15) minutes' shunting work is necessary this must be performed either before the section is fouled from the other end or after the arrival of the train therefrom.

(b) Shunting outside the Home Signal under the above regulation can be done only—

1. At stations where there is a Distant Signal.
2. After sunrise and before dusk (except that when necessary, No. 9 mixed may be shunted outside the up Home Signal at Tarcutta after dusk).
3. When all concerned have been fully notified as set out above.

(iv) (a) In cases where the above arrangement is availed of a record as under must be made by each Signalman:—

Time.

Conferred re shunting outside Home	
Signal	
Issued Form T.121 (or T.122, as the	
case may be)	

(b) A report is to be submitted to the Chief Traffic Manager by the Officer-in-charge at the station at which shunting is performed outside the Home Signal under this regulation, setting out the reason for such shunting and the time saved thereby. Form T.121 is to be obtained by him from the Engine-driver of the approaching train and cancelled, and this, together with Form T.122, also obtained and cancelled by him, is to be forwarded with his report.

T.121.	T.121.
[To be retained by Signalman.] Commonwealth Railways. ELECTRIC STAFF SYSTEM.	Commonwealth Railways. ELECTRIC STAFF SYSTEM.
.....Station. .....19	.....Station. .....19
Received notice that shunting operations are being carried on outside the Home Signal but within the Distant Signal at Station, and that I am to carefully approach the Distant Signal and bring my* { train engine to a stand-still at that signal, and not pass that signal until authorized to do so by its being lowered, or by the exhibition of a green flag.	To the Engine-driver of No. * { Train. Engine.
Time	You are hereby notified that shunting operations are being carried on outside the Home Signal but within the Distant Signal at Station. You must approach that station carefully and bring your train to a stand-still at the Distant Signal, and not pass that signal until authorized to do so by its being lowered, or by the exhibition of a green flag.
..... Signature of Driver.	.....Signalman.
..... Signature of Guard by whom notice must be seen.	Driver.....
..... * Cross out one not required.	Train.....
	Time.....
	[To be retained by Driver.]
	* Cross out one not required.

T.122.	T.122.
[To be retained by Signalman.] Commonwealth Railways. ELECTRIC STAFF SYSTEM.	Commonwealth Railways. ELECTRIC STAFF SYSTEM. ORDER TO SHUNT OUTSIDE HOME SIGNAL.
..... Home Signal at.....	.....Station. .....Date. .....Time.
Received Order (T.122) authorizing me to proceed outside the Home Signal for shunting purposes and warning that the section may be occupied by an approaching train whilst such shunting is being performed, and that I am therefore required to be back within the protection of the	To the Engine-driver of No.
..... Signature of Driver.	You are hereby authorized to proceed outside the Home Signal, but within the Distant Signal, for shunting purposes. The section may be occupied by an approaching train whilst such shunting is being performed, and you are therefore required to be back within the protection of the Home
..... Station.	Signal at.....
Signature of Guard or Shunter by whom Order must be seen—	.....Signalman.
..... Date.	
..... Time.	

(b) (i) If permission has not been given for a train to approach from the opposite end of the Section, the Signalman may, if necessary, allow the Single Line to be fouled, but before doing so he must send the "Blocking Back" Signal, which signal must be acknowledged and the Driver must be given a written order (see sample below) authorizing him to go outside the Home Signal. The order must be collected from the Engine-driver either immediately the work is completed, or when the Signalman desires to withdraw it. Before the order is withdrawn the whole of the train must be again brought within the protection of the Home Signal. When the order is withdrawn, the word "Cancelled" must at once be written across the face of it.

When the Single Line is again clear, he must send the "Obstruction Removed" Signal, which must also be acknowledged.

(ii) The Single Line outside the Home Signal may, if necessary for Station Work, be fouled at both ends of the same Section at the same time, provided no train is approaching in the Section, and that the "Blocking Back" Signal has been given to, and acknowledged by, the Signalman at the opposite end of the Section.

(iii) When a Signalman gives the "Blocking Back" Signal for the purpose of asking permission to occupy the line outside the Home Signal, and the Signalman at the Electric Staff Station in the rear is not in a position to give such permission, he must not repeat the "Blocking Back" Signal, or acknowledge it in any way, and until the signal has been acknowledged, the line must not be occupied.

(iv) This method of working will apply only where specially authorized by the Chief Traffic Manager.

T.	
COMMONWEALTH RAILWAYS. ELECTRIC TRAIN STAFF SYSTEM. Order to go Outside the Home Signal.	
To the Engine-driver of .....Train.	
You are hereby authorized to go outside the Home Signal as far as is necessary for Station work in accordance with Regulation 20, Electric Train Staff System.	
Time.....	.....Signalman.
Date.....19	.....Station.

(c) Where auxiliary Home Signals are provided an Engine-driver may, upon being directed to do so by the Signalman, either verbally or by a hand signal, go outside the Home Signal for station work as far as the Auxiliary Home Signal without an Electric Staff or an order; but he must not go outside the Auxiliary Home Signal unless he is in possession of the Electric Staff or an order.

(d) (i) If a train is travelling in the Section away from the station at which shunting operations have to be performed, and it is necessary to foul the Single Line outside the Home Signal, this may be done; but immediately the "Train Arrival" Signal has been received for that train, the Signalman must if the Single Line outside the Home Signal is still

fouled, give the "*Blocking Back*" Signal to the Electric Staff Station at the opposite end of the Section and after it has been acknowledged, and the line is again clear, he must send the "*Obstruction Removed*" Signal.

(ii) If the train in the section ahead is a Ballast or other Work Train working in the section, and is intended to return to the station without going to the station in advance, or is a train working under the Ballast Train Key Regulations (see Regulation 12), shunting outside the Home Signal must not be permitted until a man with Hand Signals and Detonators has been sent to protect such shunting.

(e) Unless special permission is given by the Chief Traffic Manager no train or vehicle not attached to an engine must be placed outside a Home Signal where the line is on a falling gradient towards the Electric Staff Station in the rear, and then only if there is a man in the leading vehicle in a position to prevent a runaway by using the brakes.

(f) A train or vehicle must not be placed beyond the sight of the Signaller, nor outside the Distant Signal.

(g) When the obstruction has been removed and the Main Line or Lines are again clear, the "*Obstruction Removed*" Signal must be given to the Electric Staff Station in the rear.

(h) The Signaller forwarding and receiving the "*Blocking Back*" Signal must make a note of the circumstances in their Train Register Books.

During foggy weather shunting outside the Home Signal is prohibited, except when the Driver is in possession of the Electric Staff.

21. Controlling Sidings by means of the Electric Staff.—(a) Points giving communication between the sidings and the running line controlled by the Electric Staff cannot be opened except with the Electric Staff for that Section of the line where the siding is situated, and the Electric Staff cannot be removed until the points have been placed in the proper position for trains to pass upon the running line, and securely locked so as to prevent vehicles passing from the running line on to the siding.

(b) On arriving at a siding, the points of which are controlled by the Electric Staff, the Engine-driver must hand the Electric Staff to the Guard or man in charge of the siding to enable the points to be unlocked. When the necessary shunting has been completed, and the points have been placed in the proper position for trains to pass upon the running line, the Guard or man in charge of the siding must return the Electric Staff to the Engine-driver, and the latter must not proceed on his journey until he has obtained possession of it. Guards and others must in all cases, after shunting operations are complete and the Electric Staff has been withdrawn from the lock, try the point levers to ensure that points are securely locked.

(c) In cases where a train is travelling on an authorization order or by special permission without an Electric Staff, and requires to shunt at an intermediate electric staff-locked siding the Station Master at the preceding attended station, or the Guard must, if possible, get in touch with the Ganger, and the Guard must present his copy of the authorization order (Form T.85) or other authority to the Ganger, who will

then, if necessary, disconnect the electric staff lock. When an electric staff lock has been disconnected as above, the Guard must see that it is properly reconnected by the Ganger before the train leaves.

(d) (i) Should it be impossible for the Station Master or Guard to get in touch with the Ganger for the purposes indicated above, he must arrange for the driver to disconnect the Electric Staff lock, and they must see that it is properly reconnected before their train leaves.

(ii) The Guard (or Fireman) must advise the Officer-in-charge at the nearest attended station of what has been done, and the latter (if the Ganger has not in the meantime advised that the electric staff lock is in proper order) advise the Driver and Guard of any train proceeding to the unattended station of the circumstances, and instruct them to stop and examine the electric staff-locked points before passing over them. The District Lineman must also be advised at first opportunity.

22. Balancing of Electric Staffs.—(a) On Electric Staff Sections where a greater number of trains are run in one direction than in the other, causing the Electric Staffs to accumulate at one end of the Section, the Electric Staffs must, when necessary, be transferred by the District Lineman from the Electric Staff Instrument at which the Electric Staffs accumulate to the Instrument at the other end of the Section. Before taking out the Electric Staffs, the District Lineman must advise the Signaller at the other end of the Section that he is about to do so by sending the prescribed signal. The individual numbers of the Electric Staffs removed by the District Lineman must be recorded by him in the Train Staff Register and in his own Electric Staff Register, and the Signaller must sign the entries and insert the time at which the transaction takes place; the District Lineman must retain in his possession the whole of the Electric Staffs he has withdrawn until he has placed them in the Instrument at the other end of the Section.

(b) The Signaller at the Electric Staff Station to which the Electric Staffs are transferred must, after having obtained the Electric Staff from the Engine-driver of the train and placed it in the Instrument, immediately compare the numbers recorded in the District Lineman's Register with the numbers of Electric Staffs received, and when he has satisfied himself that the number is correct, and that the whole of the Electric Staffs have been deposited in the proper instrument, he must record the individual numbers of the Electric Staffs received in his Train Register and must sign both it and the District Lineman's Electric Staff Register, and insert the time at which the transaction takes place.

(c) On automatic sections the number of the Electric Staffs withdrawn or placed in instruments must be recorded by the District Lineman, if no Traffic Employee is available to do this.

23. Obstruction Danger Signal.—(a) Should it be necessary, in consequence of obstruction or other cause, for an approaching train to be stopped at the Electric Staff Station in the rear, the "*Obstruction Danger*" Signal must be forwarded to that Station, and the Signaller receiving such Signal must immediately exhibit the "*Danger*" Signal and take the necessary measures to stop the approaching train; he

must not allow the train to proceed until he has received from the Electric Staff Station in advance the "Obstruction Removed" Signal, nor until the proper Signals have been sent and acknowledged.

(b) If necessary, the Signaller must send the "Obstruction Danger" Signal in both directions.

(c) The Signaller forwarding the "Obstruction Danger" Signal must also place or maintain his Signals at Danger to protect the obstruction.

(d) Should a Signaller receiving the "Obstruction Danger" Signal succeed in stopping a train for which the "Is Line Clear?" Signal has been accepted by the Signaller at the Electric Staff Station in advance, he must at once restore the Electric Staff to the Instrument, and advise the Signaller at that Station by giving the "Cancelling" Signal.

(e) Should a Signaller receiving the "Obstruction Danger" Signal not be able to stop the train for which the "Is Line Clear?" Signal has been accepted by the Signaller at the Electric Staff Station in advance, he must at once send the signal—"Train or Vehicles Running Away," viz.: fourteen beats (given thus: 4-5-5)—and the Signaller receiving the latter Signal must immediately use all the means at his command to stop the approaching train, afterwards acknowledging the Signal.

(f) When the obstruction has been removed and the main line or lines are again clear, the "Obstruction Removed" Signal must be given to the Signal-box in the rear.

24. Obstruction on Line.—(a) In the event of a break down within a Section and communication can be established by means of the portable telephone on the train, the following instructions will apply in cases in which their observance will avoid serious delays. In the event of an engine becoming disabled between two Electric Staff Stations and unable to work the train, the Engine-driver must send his Fireman to the Guard of the train to inform him of the position. The Guard must then prepare the form shown hereunder, which must be signed by himself and the Driver, and he should telephone its contents (by means of the portable telephone on the train) to the stations at each end of the section.

Time.....	Date.....	T.84.
To the Officer-in-Charge at and The engine of the Train of which we are Guard and Driver and which is travelling on Staff No. is disabled at in the Section and Arrange for relief, and we will not allow the engine or any part of the train to be moved until the relief engine arrives.		
(Signed) Guard.		(Signed) Driver:

The Guard and the Fireman must arrange to protect the train by placing detonators as follows:—

One at 400 yards from the train.

One at 800 yards from the train.

Three at 1,000 yards from the train (10 yards apart).

The Guard will protect at the brake-van end, and the Fireman at the engine end.

In the case of a light engine, the form will be signed by the Driver alone, and the Driver and Fireman will protect the light engine by placing detonators, as above, the Driver at the rear and the Fireman in front, unless the Driver cannot leave his engine, in which case the Fireman must protect in both directions.

Detonators should be removed from the line before the journey is resumed.

On receipt of the telephone message, which must be written out by them in full, and repeated back to the Guard so as to ensure its accuracy, the Officers-in-charge will make arrangements to procure a relief engine from the most convenient end. On its arrival at the station from which it will enter the occupied Section, or if already at that station on its being ready to depart, the Officer-in-charge there will hand the telephone message countersigned by himself to the Driver, whose authority it will be for entering the Section without being in possession of the Electric Staff, and he will take a receipt for it from the Driver. The Officer-in-charge must advise the station at the other end of the Section of the despatch of the relief engine by giving the Signal "4-2-4-2." On receipt of this Signal, the latter officer must cancel the Trainmen's authorization held by him, by writing the word "Cancelled" across the face. The Driver of the relief engine must exercise care in running to the disabled train, and must have his engine sufficiently under control to enable him to stop short of the obstruction. The disabled train may be removed to the most convenient end of the Section. On arrival at the disabled train, the Driver of the relief engine must collect the Electric Staff from the Driver of the Disabled engine; and on arrival of the train complete with the relief engine at the station, he must hand up the indorsed message to the Officer-in-charge, together with the Electric Staff; if it be necessary to make a second trip into the Section for the purpose of removing the disabled train, the endorsed message only must be surrendered, and the Electric Staff must be retained as the authority to occupy the Section.

Should the Guard of the disabled train be able to communicate with only one of the officers controlling the Section, that officer may proceed to make the necessary arrangements for relief, and a relief engine may be despatched from his station, even though the officer at the other end of the Section has not been communicated with. It is essential, however, that both officers shall be advised, if possible, and that they should confer fully with one another.

Should it be possible for the disabled engine to work under its own steam to one end of the Electric Staff Section while the relief engine hauls the train to the other end of the Section, this may be arranged if circumstances render this course desirable. In such event the train engine will travel on the Electric Staff, while the disabled engine will travel on the Form T.84 brought by the relief engine.

The Officers-in-charge at each end of the Section must communicate the arrival of the train and the disabled engine, but the Electric Staff is not to be placed in the instrument and "Train Arrival" Signal given until both have cleared the Section.

The Form T.84 is to be collected and cancelled by the Officer-in-charge of the station to which the disabled engine proceeds.

If possible this method of working must be agreed upon by the Officers-in-charge at each end of the Section, and the Guard of the disabled train, before the relief engine enters the Section. If this is not possible the arrangement may be made at the point of obstruction, but it is essential that the Officers-in-charge at both ends of the Section be consulted.

(b) In the event of its being necessary to stop the train within an Electric Staff Section and send relief to it for any other reason than that shown in Clause (a) (e.g., should it be necessary to convey a carriage to replace a disabled vehicle), then the Driver and Guard must communicate with the Officer-in-charge at each end of the Section, Form T.84 being amended to show the exact cause of stoppage. The assurance that the engine or any part of the train will not be moved must not, however, be in any way modified. The Officer-in-charge will take necessary action on receipt of Form T.84, and the Relief will be provided under the same conditions as specified in Clause (a).

(c) In cases where the engine becomes disabled adjacent to an Electric Staff Station or where communication cannot be established owing to lack of a telephone or to defective instruments or line, the following instructions are to be observed:—

- (i) The Engine-driver must send his Fireman to the nearest Electric Staff Station with the Electric Staff, and on arrival there the Fireman must inform the Signalman of the circumstances and show him the Electric Staff. The Signalman will then arrange to run a relief engine from his station or communicate with the Signalman at the other end of the section, with the object of obtaining a relief engine from that end.
- (ii) If the relief engine is supplied from the station at which the Fireman of the disabled engine has arrived, the Fireman must personally hand the Electric Staff to the Driver of the relief engine and accompany him to the place where the disabled engine was left. The Signalman, before allowing the relief engine to leave, must see the Electric Staff in the Driver's possession, and notify the Signalman at the opposite end of the section of the circumstances.
- (iii) If the relief engine be obtained from the opposite end of the section, the Signalman at the station at which the Fireman arrived must obtain the Electric Staff from the Fireman, insert it in the Instrument, and give the "*Engine of Last Train Disabled in Section*" Signal (2-1-2-1) to the Signalman at the opposite end, together with full particulars of the circumstances. This must be done in the presence of the Fireman.

(iv) The Signalman who received the "*Engine of Last Train Disabled in Section*" Signal, must obtain an Electric Staff for the relief engine by giving the "*Relief Engine to Remove Breakdown*" Signal (4-2-4-2), and the Electric Staff so obtained must be handed to the Driver of the relief engine, together with a written order stating the position of the disabled engine; the Driver must sign for the order on a copy held by the Signalman. The Electric Staff and the order must be retained until the disabled engine, or engine and train, are removed to the most convenient end of the section, or are safely secured in an intermediate siding, and the section is again clear for traffic.

(v) The Driver of the Relief Engine must exercise extreme care in running to the point of obstruction, and after removing the disabled engine or engine and train to the most convenient end of the Section, must then hand over the Electric Staff to the Signalman or other authorized person, who must, if the disabled train is taken to the Electric Staff Station in advance, place the Electric Staff in the instrument and give the "*Train Arrival*" Signal, but if the disabled train returns to the Electric Staff Station in the rear, the Signalman there must, after he has assured himself that the Section is clear, replace the Electric Staff in the instrument, and give the "*Cancelling*" Signal to the Electric Staff Station in advance. The Signalmen at both Electric Staff Stations must note the circumstances in their Train Register Books.

(vi) The Fireman, when proceeding for assistance, must place detonators on the line as directed in Regulation 24 (a) above, and the Guard must similarly protect his train in the opposite direction. Should the stoppage or failure occur to an engine not attached to a train, the Driver must place detonators at the end not protected by the Fireman, unless the Driver cannot leave his engine, in which case the Fireman must protect in both directions.

(vii) The first train passing over the Section after the line is again clear must be stopped, and the Engine-driver advised of the circumstances.

(d) Should an accident or obstruction occur and the traffic is likely to be stopped for a considerable time, special arrangements must be made for working the trains to and from the Electric Staff Station on each side of the point of obstruction. The Electric Staff must be used to work trains between the point of obstruction and the Electric Staff Station on the one side, and, on the other side, the Traffic must be conducted by a Pilotman.

(e) If the obstruction is caused by a train which has been derailed or met with an accident which prevents its being moved, or if it is prevented from proceeding on its journey by washaway, landslip, &c., then the Driver and Guard must telephone to the Officers-in-charge of the stations at both ends of the section, using Form T.84.

Immediately on receipt of this message the Officers-in-charge must confer and arrange for assistance to be sent from the most convenient end or both ends of the section. The engine or engines going to the point of obstruction to assist will travel on the Form T.84 countersigned by the Officer-in-charge who will obtain a receipt from the Driver of the relief engine. The Guard will take charge at the point of obstruction, and if it is considered necessary to work traffic on both sides of the obstruction a Pilotman must be sent out with the relief engine over the section it is intended to work with the Pilotman. On arrival of relief engine at the point of obstruction the Guard will arrange with the Officer-in-charge for the working of trains between the point of obstruction and stations at each end of the section. One side is to be worked by the Electric Staff and the other side is to be worked by Pilotman.

The obstruction must be protected in accordance with Regulation 24 (a) above.

(f) Should the obstruction be caused by a light engine, not accompanied by a Guard, the Driver must telephone the Officers-in-charge of the stations on both sides of the obstruction and protect his engine and assume the duties of the Guard as indicated in the preceding instruction.

When the line is again clear, the first through train over the section must, where possible, be accompanied by the Pilotman. Where this is not possible on account of the Pilotman being at the other end of the section, he (the Pilotman) must give a written assurance to the Officer-in-charge at that station that the line is again clear and fit for traffic, that assurance to be telephoned to the Officer-in-charge at the station from which the first through train will run, and a copy is to be handed to the Driver of that train.

(g) In cases not covered by the foregoing, the Chief Traffic Manager must be advised urgently of the position, and he will issue such instructions as will enable the traffic to be safely and promptly worked on both sides of the obstruction.

25. Pilot working is instituted in the following manner:—

(i) Before the employee who is to act as Pilotman is despatched he must be handed three of the printed forms provided for the purpose of establishing working by Pilotman during obstruction, properly filled up. One of these, signed by the Pilotman, must be retained by the Officer-in-charge; the second must be retained by the Pilotman; and the third must be conveyed by the Pilotman to the Guard or other employee in charge of the point of obstruction. When the form held by the Pilotman is countersigned by both Officers-in-charge, i.e., one officer at station and one at point of obstruction, and their forms are countersigned by the Pilotman, pilot working may be instituted.

(ii) The Pilotman must wear a distinctive badge, which, until the regular badge can be obtained, must be a Red Flag tied round the left arm. So soon as he is satisfied that the arrangements are understood, trains may be allowed to go on to the section under the control and by the permission of the Pilotman.

(iii) Every train entering the section or portion of the section to which Pilot working applies must be accompanied by the Pilotman, or must have the Pilotman's caution ticket (T.112) in the possession of the Engine-driver. The Pilotman's caution ticket is to be properly filled up and signed by the Pilotman, and handed to the Driver personally by the Pilotman, who must start such train. It is for use in cases where two or more trains have to be despatched in one direction before a train runs in the opposite direction.

(iv) A Pilotman's caution ticket (T.112) will apply only for a single journey to the other end of the Pilot section, and must be immediately given up to the Officer-in-charge there, who must at once cancel it by writing the word "cancelled" across its face.

(v) When it is possible for ordinary working to be resumed the Pilotman must on his last trip notify all concerned accordingly, and must collect all forms issued in connexion with the establishment of Pilot working, and must hand the necessary cancellation forms (T.113) prepared by the Officer who instituted the working to those who have been supplied with the Pilot working forms.

(vi) A conspicuous notice must be affixed to the Electric Staff Instrument stating—*Instrument not in use; Obstruction exists at Mileage Staff No. Working Traffic.*

In all cases the Signalmen at each end of the Section must communicate with each other and arrive at a clear understanding how the obstruction is to be removed.

(vii) Signalmen and Officers-in-charge must not on any account allow any train to pass into any section that is being worked by Pilotman, except under the Pilotman's instructions, and when he is present.

(viii) The regulation badge is a red armlet with the word "Pilotman" shown thereon in white letters.

(ix) In no case of obstruction away from an Electric Staff Station must an Electric Staff be restored to the Instrument at either end of the section until the section is clear, except as laid down in Regulations 24 and 30 hereof.

26. Train or portion of train left within a Section.—(a) When a train or portion of a train is left upon the single line from accident, or inability of the engine to take the whole forward, and it becomes necessary for the engine to return to the train or rear portion of the train from the Electric Staff Station in advance, the Engine-driver must retain possession of the Electric Staff until the whole of the train is removed from the Section.

(b) After sunset, or in foggy weather, a red light must be placed on the front vehicle of the rear portion by the man who divides the train. As soon as the first portion has been drawn forward sufficiently far, either by day or night, the Under Guard or the Fireman, must place two detonators upon the line about 400 yards from the front vehicles of the rear portion to notify the Engine-driver when returning of the position of the remainder of his train.

(c) Where there are two Guards, the Head Guard must remain in charge of the rear portion, and the Under Guard must ride upon the last vehicle of the front portion. If there is only one Guard he must remain in charge of the rear portion and the Fireman must ride on the last vehicle of the front portion. In both cases the Guard must protect the rear portion by a red flag by day and by red lights by night; but in those cases in which a good view cannot be obtained he must in addition place two detonators on the line not less than 400 yards behind the train.

(d) Should a failure occur to an engine assisting a train in the rear, the Driver of the train engine must send his Fireman to the Driver of the assisting engine, and obtain from him an order in writing authorizing the Driver of the train engine to return from the Electric Staff Station in advance for the remainder of the train and stating that he will not allow the disabled engine to be moved until the leading engine returns. The train engine must then proceed to the Electric Staff Station in advance, and after disposing of the front portion of the train, the Engine-driver, after informing the Signaller what he is about to do and showing him the written order, must return and remove the rear portion of the train and the disabled engine from the Section; but if an intermediate siding exist where the disabled engine or a portion of the train can be disposed of, and access cannot be obtained except by means of the Electric Staff, the Driver of the disabled engine must hand the Electric Staff to the Driver of the leading engine, together with a written order stating he will not allow the disabled engine to be moved until the leading engine returns, and if the disabled engine is also placed in the intermediate siding, not until the Driver of the disabled engine is in possession of the Electric Staff or is attached to an engine, the Driver of which is in possession of it. On arrival at the Electric Staff Station after clearing the Section, the order held by the Driver of the leading engine must be delivered to the Signaller.

(e) If the train is assisted by a bank engine in the rear, and the train engine becomes disabled so that it cannot be moved forward, the bank engine must draw the train back to the Electric Staff Station, but the Electric Staff must not be delivered up to the Signaller, but must be retained by the Driver of the bank engine, who will return to the assistance of the disabled train engine, acting in accordance with the provisions of Regulation 24 above.

27. Train Disabled or Portion Left on Line During Pilot Working.—

(a) Should a train accompanied by the Pilotman become disabled, he must make the best arrangements for procuring assistance without delay. The train must be protected.

(b) In the event of a train unaccompanied by the Pilotman becoming disabled, the Guard must protect his train in accordance with Regulation 24 (a) and communicate with the Pilotman as soon as possible.

(c) When a portion of a train is left upon a Section of the line worked by Pilotman, from inability of the engine to take the whole forward, and the Pilotman be with the train, and accompanies the engine with the first portion, the Driver may return without written instructions from the Guard, and the Guard must protect his train.

(d) If the Pilotman be not accompanying the train, the Driver must not return for the rear portion unless he has received written instructions from the Guard authorizing him to do so, and the Guard must continue to protect his train in the rear and prevent a following train from pushing it ahead.

(e) After sunset, or in foggy weather, a red light must be placed on the front vehicle of the rear portion by the man who divides the train. As soon as the first portion has been drawn forward sufficiently far, either by day or night, the Under Guard or the Fireman must place two detonators upon the line, about 400 yards from the front vehicles of the rear portion, to notify the Engine-driver when returning of the position of the remainder of his train.

28. Breakdown Van Trains, and Engine Replacing, or Assisting Disabled Engine.—(a) To prevent delays, breakdown van trains, when proceeding to clear the line, must be signalled as Express Passenger Trains.

(b) The same course must be adopted in the case of one engine proceeding to take the place of another that has failed, or of an engine, with or without a train, when sent forward to render assistance in case of failure or accident to preceding trains.

29. Stop and Examine Train.—(a) If a Signaller observe anything unusual in a train during its passage, such as signals of alarm by a passenger, goods falling off, a vehicle on fire, a hot axle-box, or other mishap (except a Tail Disc missing or a Tail Light out, or a train divided, for arrangements as to which see Regulations 30 and 31 below), he must endeavour to stop the train; should he fail to do so he must give to the Signaller at the Electric Staff Station in advance the "*Stop and Examine Train*" Signal, and the Signaller at the Electric Staff Station in advance must acknowledge such signal, and immediately exhibit the "*Danger*" Signals to stop the train coming from the Electric Staff Station from which the signal was received. The train, when stopped, must be carefully examined and dealt with as occasion may require.

(b) Should the Signaller who receives the "*Stop and Examine Train*" Signal be unable to ascertain, after examination of the train, why the signal was sent, he must, if the next train is travelling in the opposite direction, inform the Engine-driver of that train of the circumstances, and instruct him to proceed cautiously to the next Electric Staff Station. He must also communicate with the Signaller who forwarded the signal in order that the latter may, if necessary, caution the Engine-driver of the next following train.

(c) Where practicable, the Signaller must also telegraph or telephone the Electric Staff Station in advance the cause of sending the "*Stop and Examine Train*" Signal. Signallers must be careful to notice each train as it passes to ascertain whether there is any apparent necessity for having it stopped at the next Electric Staff Station for examination.

(d) Should either Signaller have reason to believe, in the case of a vehicle being off the rails, or goods falling from the train, that the permanent-way has been damaged or fouled, he must not allow any train to proceed in the direction of the obstruction until the line has been examined and he is satisfied that it is safe for the passage of the train.

(e) The "Stop and Examine Train" Signal must always be sent in any of the circumstances named, even where in Short Sections it is possible that the train may have passed onward into one or more Sections. The duty of the Signaller receiving the "Stop and Examine Train" Signal, if he cannot stop the train, is to immediately pass on the same signal to the Signaller in advance, who must at once put up his signals to stop the train, and those for any parallel line which might possibly become obstructed.

30. Train Passed without Tail Disc or Light.—(a) All trains and light engines will carry a White Disc in the rear by day and a Red Tail Light by night, to indicate to the Signaller that no vehicle has become detached on the journey, and Signallers must carefully watch each train as it passes and satisfy themselves that it is complete before giving the "Train Arrival" Signal to the Electric Staff Station in the rear.

(b) If a train should pass with the Tail Signal missing or out, the Signaller must send the "Train Passed without Tail Disc or Light" Signal to the Electric Staff Station on each side of him, but must not deposit the Electric Staff in the Instrument. The Signaller at the Electric Staff Station in advance must stop the approaching train and ascertain from the Guard whether his train is complete. If the train is complete the Signaller must give the "Train Arrival" Signal, and the Signaller at the Electric Staff Station from which he "Train Passed without Tail Disc or Light" Signal was sent must then deposit the Electric Staff in the Instrument and give the "Train Arrival" Signal to the Station in the rear. Should the Signaller become aware as the train passes into the Section in advance, or on receipt of information from the Electric Staff Station in advance, that a portion of the train has been left behind, steps must be taken to clear the obstruction; the first available engine at either end of the Electric Staff Section being detached from its train for the purpose of clearing the line.

(c) If the engine which is to remove the obstruction starts from that end of the Section where the Electric Staff is out of the instrument, the Signaller must hand such Electric Staff to the Engine-driver and instruct him to proceed cautiously to the vehicle or vehicles which have become detached, and remove them to the most convenient end of the Section.

(d) If, however, the relieving engine is to start from the other end of the Section, then the Electric Staff must (after all arrangements are made) be placed in the instrument, so that one may be withdrawn at the other end of the Section (Signal "2-1-2-1") to enable the relieving engine to proceed to the vehicle or vehicles which have become detached, and remove them to the most convenient end of the Section.

(e) In either case, the Signallers at both ends of the Section must communicate with each other and arrive at a clear understanding as to how the obstruction is to be removed.

(f) The engine sent into the Section to clear the obstruction must be signalled out and subsequently dealt with as laid down in Regulation 24 (a) above.

(g) When trains or engines stop at Electric Staff Stations, or before leaving termini, Signallers should see that the Tail Signals are in proper order, so as to avoid as far as possible the unnecessary use of the "Train Passed without Tail Disc or Light" Signal.

31. Train Divided.—(a) This signal must be sent to the Electric Staff Station in advance in the event of a Signaller observing that a train has become divided, and is running in two or more parts in the same direction. If the train is assisted by a bank engine in the rear, or is running on a falling gradient, or between short sections where the stoppage of the first part would risk a collision with the second part, the Signaller receiving such signal, if the line on which the divided train is running be clear ahead for it to run upon, and permission has not been given for a train to approach from the opposite direction, must not exhibit the signals to stop the first portion, but must give the Engine-driver a green signal, either by flag or hand lamp as occasion may require, moving the signal in a vertical circle. The Engine-driver, on seeing the green signal moved in a vertical circle, will understand that his train is divided, and must exercise great caution by looking out for the second portion, and unless he has reason to believe the line is not clear ahead, must not stop the portion attached to his engine until he is satisfied that the rear portion has been stopped, or is running very slowly. He must, however, observe and obey any signals that may be exhibited against him. If the line be not clear into the next Section ahead the Signaller must keep the signals at danger against the approaching train. So soon as the first portion of the train has passed, the Signaller sending and receiving the "Train Divided" Signal must take proper measures for dealing with the second portion, and place detonators on the rails to attract the attention of the Guard, or of the bank Engine-driver should there be a bank engine in the rear.

(b) If the divided train is running on a rising gradient, or where the line is level, and is not assisted by a bank engine in the rear, the Signaller receiving the signal must exhibit the danger signal to stop the train. The first portion of the divided train, when stopped, must be shunted into a siding as expeditiously as circumstances will permit, or otherwise dealt with as may be necessary to prevent the second portion coming into collision with it.

(c) No train must be allowed to enter the Section until it has been ascertained that the line on which it is about to run is not obstructed.

(d) Should a train become divided in starting, and the Engine-driver run forward with the first portion, leaving the rear portion stationary, the "Stop and Examine Train" Signal must be sent to the Electric Staff Station in advance, and not the "Train Divided" Signal.

32. Vehicles Running away.—(a) If any vehicle, train, or portion of a train, is running away, the Signaller at the Electric Staff Station towards which the train or portion of the train is running must be advised of the fact by the Signaller at the Electric Staff Station in the rear giving the "Vehicles Running Away" Signal. The Signaller receiving this signal must stop any train about to proceed on the same line, and take any other measures that may be necessary, such as turning the runaway train on to another line or into a siding, or repeating this signal to the next Electric Staff Station, as may be most expedient under the circumstances.

(b) The first train travelling in either direction must not be allowed to proceed until it has been ascertained that the line on which it is about to run is not obstructed.

(c) The Signalman at the Electric Staff Station from which the runaway vehicle or train has started, or any other Signalman whose station may be passed by the runaway vehicle or train, must immediately give the "Obstruction Danger" Signal to the Signalman at the Electric Staff Station towards which the runaway vehicle or train is travelling before giving the "Vehicles Running Away" Signal, as prompt action on the part of both Signalmen may prevent a mishap. Should the Signalman receiving the "Obstruction Danger" Signal succeed in stopping the train or engine for which the "Is Line Clear?" Signal has been accepted, he must restore the Electric Staff to the Instrument, and then advise the Signalman in advance by giving the "Cancelling" Signal.

33. Parallel Lines.—With reference to Regulations 14, 14 (a), 22, 24, 25, and 27 above, where there are parallel running lines, the necessary steps must be taken to stop or caution the trains running on any lines that may possibly be obstructed by what has occurred.

34. Failure of Electric Staff Apparatus.—In the event of a failure of Electric Staff working between any two Electric Staff Stations, steps must at once be taken to have the defect remedied; but if this cannot be done immediately, the following action is to be taken:—

(1) The stations concerned must at once despatch an urgent telegram to "FAIL" and communicate (Form T.73) with the Chief Traffic Manager, who may authorize the suspension of ordinary electric staff working. If the Chief Traffic Manager cannot be communicated with, the Stationmaster, Parkeston, or the Stationmaster, Cook, is hereby empowered to give authority for the issue of Authorization Orders in accordance with these instructions. In such cases, the following instructions must be observed:—

i. If an Electric Staff is out of the Instrument—

(a) If the Electric Staff is at the end from which the next train has to depart, it is to be used for such train, and may, after arrival of the train at the other end of the section, be used for a train returning in the opposite direction, without being passed through the instrument. If two or more trains require to be despatched before a train travels in the opposite direction, then all trains but the last must travel on a written order in the following form, a receipt for it being obtained from the Driver and Guard of the train:—

	Station.	T.85.
	19	
To the Engine-driver and Guard of No.		
The Electric Staff Instruments for the Section	to	
having failed you are hereby authorized to travel on this		
Order from	to	
The last train left here at		
Time		Signed.

The Driver must in all cases in which he travels on this written order see the Electric Staff.

The Officers-in-charge at each end of the Section must confer with one another where possible. If communication is not possible, then the arrangements set out above may be adopted, and the station at which the Electric Staff is not out must be especially careful not to allow the Section to be fouled until the arrival of the Electric Staff at his station. The order must be at once cancelled after the arrival of the train travelling on it, or by the Officer-in-charge, who will write the word "Cancelled" across the face of it.

(b) If the Electric Staff is out at the end to which the next train has to travel, the Officer-in-charge at the station at which the Electric Staff is out must send an authorization to the officer at the other end of the Section in the following form:—

	Station.	T.86.
	19	
To the Officer-in-charge at		
The Electric Staff Instruments for the Section	to	
have failed and an Electric Staff is out of the instrument		
and in my possession. You are hereby authorized to despatch Train No.		
from your station, and I will not allow the Section to be fouled until the		
arrival of No.	at this station.	
Time		Signed.
(NOTE.—The staff is to be locked up until required where this is possible.)		

On receipt of this message the officer concerned may despatch a train on an order similar to that in clause (a), the following words being added:—"The Electric Staff for the section is out of the instrument at and in possession of the Officer-in-charge there, and will not be used for any train until your arrival at that station." The officer giving the authorization must remain on duty to collect the written order from the driver of the train travelling on it, and on receiving it must at once write "Cancelled" across the face.

A receipt for this order shall be given by the Driver in charge of the train engine. Successive trains may be so despatched, but a separate authority must be given for each, and minimum intervals as laid down in the instructions *re* Divided Staff Working (Regulation 36) must be maintained. On arrival at the other end, the electric staff may be used as in clause (a).

No train is to be despatched under this instruction unless the Officers-in-charge have conferred with one another either directly or through the medium of another station. If this is impossible, Pilot Working must be instituted.

ii. If no Electric Staff is out of the Instrument—

The Officers-in-charge must confer with one another, and agree which station is to despatch the first train. The Officer-in-charge at the station from which the train is to start must receive the authorization of the Officer at the other end of the Section, such authorization to be in the following form:—

		T.87.
Station.		19
<p>To the Officer-in-charge at You are hereby authorized to despatch Train No. from to I will not allow the Section to be fouled until the arrival of No. at this station. Time Officer-in-charge.</p>		

The train is then to be despatched on an order the same as that shown in clause i. (a) (the words "No staff is out of the Instrument" being added), and a receipt therefor obtained from the Driver of the train engine. Successive trains may be despatched on such orders, but the authorization of the Officer-in-charge at the other end of the Section must be obtained in each case, and minimum intervals as laid down in the instructions *re* Divided Staff Working (Regulation 36) must be maintained. The Officer giving the authorization must remain on duty to collect it from the Driver of the train travelling on it, and on receiving it must at once write "Cancelled" across the face of it.

If communication cannot be obtained between the stations concerned, either directly or indirectly, then Pilot Working must be instituted.

The authorizations shown in clause i. (b) and ii. should be transmitted by telegraph when this is possible. If telegraph communication does not exist, then telephonic communication will be permitted, but wherever possible another station should be asked to note the transmission of the authorization.

All forms used in connexion with this working are to be sent to the Chief Traffic Manager.

iii. If it be necessary for an intermediate Electric Staff-locked siding to be worked by a train working under these instructions the Driver of which does not hold an Electric Staff, the District Lineman must also accompany the train and open the locks with a master key as desired by the Guard. The Guard and the District Lineman will be held responsible for the points being left properly set and secured after completion of shunting.

(2) Where telephone or telegraph communication is not available and it is necessary to establish Pilot Working (see clause i. (b) and ii. above), the following instructions are to be observed.—

i. The Officers-in-charge at both ends of the Section must arrange for Pilot Working, and the Pilotmen appointed at both ends must proceed along the railway in order that they may meet, and on doing so they must go together to the Station at

which a train is waiting or is expected. The Pilotman who returns to the Station from which he started must obtain the form which had been handed to the Signaller there, and return it and the other forms in his possession to the Officer-in-charge who filled them up, and the latter must at once cancel them by writing the word "Cancelled" across them. The other Pilotman must hand one of his forms to the Signaller and act as Pilotman.

ii. Pilot working is instituted in the following manner:—The Officer-in-charge must fill up and sign three or more of the forms as may be necessary for establishing working by Pilotmen during the failure of the apparatus; one of these (signed by the Pilotman) he must deliver, in the presence of the Pilotman, to the Signaller at the Electric Staff Station at his end of the Section. One, signed by the Signaller, must be handed to the Pilotman, who must also sign it, and the remainder must be handed to the Pilotman. The Pilotman must proceed as quickly as possible to the other end of the Section, using the best means at his disposal for the purpose—but must not use an engine or any railway vehicle other than motor section car, motor quadricycle, motor tricycle, hand trolley or tricycle. Special care must be exercised when rail motor vehicles are used. On his arrival at the other end of the Section the Pilotman must deliver one of the forms (signed by himself) to the Officer-in-charge, and another (also signed by himself) to the Signaller on duty (when the Officer-in-charge does not act as Pilotman) each of whom must also sign the form held by the Pilotman. Afterwards trains may be allowed to enter the Section in accordance with the following instructions:—

(a) The Pilotman must inform the Engine-driver and Guard in charge of each train of the circumstances, and when practicable accompany every train; but when it is necessary to start two or more trains from one end of the Section under his control before a train has to be started from the other end, he must furnish the Engine-driver in charge of each train not accompanied by himself with one of the printed Pilotman's Caution Tickets properly filled up and signed, must personally start such trains, and himself accompany the last train. The Tickets issued in these cases will apply only to the single journey to the other end of the Section, where they must be immediately given up to the Signaller, who must at once cancel them by writing the word "Cancelled" across the face of each Ticket, and after ordinary working has been resumed, they must be forwarded to the Chief Traffic Manager with a report giving full particulars. The minimum intervals between trains as laid down in the instructions *re* Divided Staff Working (Regulation 36) must be maintained.

- (b) The Pilotman, in the event of there being an Electric Staff out of the Instrument at one end of the Section, must take possession of such Electric Staff. He must keep the Electric Staff in his possession until the Electric Staff apparatus is again repaired and ready for use; and he must show the Electric Staff to the Engine-driver of every train passing over the Section during the time Pilot Working is in operation.
- (c) Electric Staff-locked Intermediate Sidings controlled by means of the Electric Staff must only be worked by trains accompanied by the Pilotman. In cases where no Electric Staff is held by the Pilotman the Signal Fitter or District Lineman must also accompany the train and open the locks at the Sidings with a "Master Key" by direction of the Pilotman when necessary. After the shunting has been completed the Signal Fitter or District Lineman and Pilotman will be held responsible for the points being properly set and secured for the Running Line.
- iii. The Pilotman must wear a distinctive Badge which, until the regular Badge can be obtained, must be a red flag tied round his left arm. The Regulation Badge is a Red Armlet, with the word "Pilotman," shown thereon in white letters, thus:—
- PILOTMAN.
- iv. Should the Pilotman give up the working to another, fresh forms must be issued, on which the name of the new Pilotman must be inserted. The fresh forms must be delivered by the new Pilotman, and substituted for the old forms, and the necessary signatures obtained on the fresh forms. He must, at the same time, withdraw the old forms. The issue of the new forms must only be done by the person who arranged the Pilot Working, to whom the new Pilotman must afterwards deliver the old forms.
- v. After one Pilotman has been relieved by another the Pilotman who has been relieved must not ride upon any engine until he resumes duty as Pilotman.
- vi. Should the Signaller be changed during the time the Pilot Working is in operation, the man coming on duty must be made acquainted, by the man going off duty, with the arrangement in force, and with the person acting as Pilotman. He must countersign the form held by the Pilotman, and, where possible, this must be done before taking charge.
- vii. When the Electric Staff Apparatus is again repaired and ready for use the Pilotman must withdraw the notice for Pilot Working at one end of the Section, then take the Electric Staff, if there be one out of the Instrument, from that end

of the Section to the other end of the Section, and after delivering it to the Signaller there, and withdrawing the notice for Pilot Working, the traffic will be again conducted in accordance with these Regulations.

- viii. Signalmen must not, on any account, lower their Signals to allow any train to pass into any Section that is being worked by Pilotman, except under the Pilotman's instructions, and when he is present. The Pilotman must obtain the permission of the Signalman before allowing a train to enter the Section that is being worked by Pilotman.

35. **Staff Lost or Damaged.**—In the event of an Electric Staff being lost or damaged, the stations concerned must at once communicate (Form T.74) with the Chief Traffic Manager, who may authorize the adoption of the following procedure:—

- (a) **Lost Staff.**—When a train requires to travel over the Section, the following authorization is to be sent by the Officer-in-charge at the station to which the train is to proceed:—

NOTE.—If the Chief Traffic Manager cannot be communicated with, the Stationmaster, Parkeston, or the Stationmaster, Cook, is hereby empowered to give authorization for the issue of authorization orders in accordance with the instructions.

To the Officer-in-charge at
Electric Staff No. _____ for the Section _____ to
_____ is lost, and you are hereby authorized to despatch Train
No. _____ from your station. I will not allow the Section to
be fouled until the arrival of No. _____ at this station.

Time— _____ (Signed) _____

This order is to be countersigned by the Officer-in-charge receiving it and handed by him to the Driver of the train as his authority for entering the section, and a receipt for it is to be obtained from the Driver. It is to be delivered up by the Driver on arriving at the end of the Section, and immediately cancelled by the Officer-in-charge, who will write the word "Cancelled" across the face of it. The Officer giving the authorization must remain on duty to collect it.

If two or more trains require to be despatched before a train travels in the opposite direction, then each must be despatched on a separate order, and the authorization of the Officer-in-charge at the station to which the train is to proceed must be obtained in each case, and the minimum intervals between trains as laid down in the instructions *re* Divided Staff Working (Regulation 36) must be maintained.

If the lost Electric Staff cannot be found after diligent search, a circular will be issued by the Chief Traffic Manager giving full particulars of and cancelling the missing Electric Staff. A copy of this circular must be affixed to the Electric Staff Instrument at each end of the section. The District Lineman will then put the instruments in order to permit of Electric Staff working being resumed.

Should the missing Electric Staff be afterwards found, it must be handed to the Officer-in-charge and the matter reported to the Chief

Traffic Manager. The Electric Staff must be kept in a secure place by the Officer-in-charge, being locked up if possible, until a circular has been issued by the Chief Traffic Manager authorizing its use.

(b) Damaged Staff.—When from any cause an Electric Staff is damaged, it may be put into the instrument, provided it will go in without forcing, and other Electric Staffs are then to be used for the trains running.

If an Electric Staff be broken, or damaged, so that it cannot be replaced in the instrument, it may be used for one journey only (provided that the Electric Staff is at the end at which a train is waiting to proceed). In the case of a broken Electric Staff, the portions must be tied together. After such use, the damaged Electric Staff must be retained by the Officer-in-charge to whom it is delivered, and for any further trains required to run, or for all trains required to run in the event of the damaged Electric Staff being at the wrong end for the first train, the authorization shown below is to be sent by the Officer-in-charge at the Station to which the train is to proceed. The damaged Electric Staff should be locked up where possible until delivered to the District Lineman from whom a receipt must be obtained.

Station.....	T.89.
Date.....	
To the Officer-in-charge at Electric Staff No. for the Section and	
is damaged, and cannot be placed in the instrument, and you are hereby authorized to despatch Train No. from your station on this order. I will not allow the Section to be fouled until the arrival of No. at this station.	
Time.....	(Signed)

This order is to be countersigned by the Officer-in-charge receiving it, and handed to the Driver of the train as his authority for entering the Section, and a receipt for it is to be obtained from the Driver.

It is to be delivered up by the Driver on arriving at the end of the Section, and immediately cancelled by the Officer-in-charge there, who will write the word "Cancelled" across the face of it. The Officer giving the authorization must remain on duty to collect it.

If two or more trains require to be despatched before a train travels in the opposite direction, then each train must travel on a separate order, and the minimum intervals between trains as laid down in the instructions *re* Divided Staff Working (Regulation 36) must be maintained.

If a damaged Electric Staff cannot be replaced in the Instrument, a circular will be issued by the Chief Traffic Manager as early as possible, giving full particulars of and cancelling the damaged Electric Staff. A copy of the circular must be affixed to the Electric Staff Instruments at each end of the Section, and the District Lineman will then put the instruments in order to permit of Electric Staff working being resumed.

When a damaged Electric Staff has been repaired, it must be replaced in the proper Instrument by the District Lineman after a circular has been issued by the Chief Traffic Manager advising all concerned that the Electric Staff is to be replaced.

The authorizations in clauses (a) and (b) above are to be transmitted in the same manner as those referred to in clause (ii) of Regulation 34 *re* "Failure of Electric Staff Apparatus."

All forms used in connexion with this working are to be sent to the Chief Traffic Manager.

36. Divided Electric Staff.—(a) Divided Electric Staffs will be supplied for use on certain sections of the line, as arranged by the Chief Traffic Manager.

(b) A Divided Electric Staff is designed to avoid delay to following trains on a long section. It is of the same pattern as the ordinary Electric Staff used in the same instrument, but it differs from it inasmuch that after it has been withdrawn from the instrument it can be divided into three parts by unscrewing each end from the centre part. The three parts are then available for use by three trains travelling in one direction under the conditions set out hereunder, and they are virtually equivalent to a Train Staff and two tickets, and are engraved accordingly "Staff," "Ticket 1," and "Ticket 2."

(c) If it is desired to despatch three trains over the same section, and in the same direction before the first of them is due to arrive at the other end of the section, then the first train must travel on Ticket No. 1, the second on Ticket No. 2, and the third on the portion marked "Staff." Should there be only two trains running in the same direction before the due arrival of the first at the other end of the section, then the first train must travel on Ticket No. 1, and the second on the balance of the Staff, *i.e.*, Ticket No. 2 and the Staff portion, which must not be separated from one another. The three parts of the Divided Electric Staff will be so marked as to show the section to which they apply. *The Driver must see the remaining portions of the Staff when accepting Ticket No. 1 or Ticket No. 2.*

(d) The station to which trains are travelling on parts of the Divided Electric Staff must await the receipt of the whole of the Staff before attempting to place the Electric Staff in the instrument. Consequently trains travelling on any part of the Divided Electric Staff must run through the section.

(e) When it is desired to despatch successive trains from one station to another, as above, the persons in charge of the instruments at both ends must confer with one another, so that a second or third train will not be despatched in the same direction, or prevented from being despatched, when good working demands the contrary course.

(f) When a train is despatched on Ticket No. 1, its departure must be signalled by four bells, given thus: "2 pause 2:" when despatched on Ticket No. 2 the departure must be signalled by three bells, given thus: "1 pause 2", and the departure of a train travelling on the Staff portion is to be signalled by two bells. The departure signal for a train travelling on Ticket No. 2 and the Staff portion combined will be two bells.

(g) The "Train Arrival" Signal must not be given until the last train carrying any portion of the divided Electric Staff has arrived complete; but the person in charge at the arriving station should advise the person in charge at the despatching station by telephone of the arrival of the earlier train or trains, and a record of this advice must be made in the Train Register Books at both stations.

(h) Trains requiring to work in the section must not be despatched without the complete Electric Staff.

(i) The following intervals must be preserved between departures:—

- (i) For any train (except a Ballast train—see clause (iv)) following a passenger train:—30 minutes in daylight and 60 minutes at night.
- (ii) For a passenger train following any train:—Such time as after allowing for the running time of the preceding trains through the section and the time required to work therein, will bring the preceding train to the station in advance fifteen (15) minutes in day-time, and thirty (30) minutes at night before the due arrival of the passenger train. The Guard and Driver of the preceding train must be specially informed by the person in charge of the station at which the Divided Electric Staff is issued of the time at which they must arrive at the station in advance; and every effort must be made to so arrive, work being left unfinished if necessary to ensure this. Such information must be in writing and a receipt obtained. If accident arises to prevent the punctual arrival of the preceding train, the Guard must take all necessary steps to ensure the protection of the train by the exhibition of hand signals and the placing of detonators.
- (iii) For any other train following any other train, thirty (30) minutes in day-time, and sixty (60) minutes at night (except as shown in clause (iv)).
- (iv) For a ballast or other train working in the Section following any other train, 10 minutes.
- (v) For an Inspection Motor Car or Motor Section Car following any train, 10 minutes; but no train is to leave less than 60 minutes after such Cars. The Drivers of these Cars must inquire as to the running of trains when obtaining the Divided Electric Staff.

(j) In all cases the Drivers of trains, including Inspection Motor Cars, or Motor Section Cars travelling on Ticket No. 2 or the Staff portion, must be given a notice in the following terms, unless advice has been received of the arrival of the earlier despatched train or trains:—

Notice of Train Ahead.		T.90.
Station,		19
To the Engine-driver and Guard of No. 1,	The Train left here at	on Ticket
No. 2, and has not yet been reported in at		
2,		
Time.....	(Signed).....	

A receipt in the undermentioned form must be obtained from the Engine-driver and Guard:—

Notice of Train Ahead.		T.90.
Station,		19
Received notice that the	Train left here at	and has not
yet been reported in at		
	.....Driver.	
	.....Guard.	
	.....Train.	
Time.....		

The Train Ahead Notice is to be retained by the Driver of the train while running the section, and delivered by him to the Officer-in-charge at the end of the section on arrival there, and cancelled by the latter by the word "Cancelled" being written across the face. When a train is travelling on a Ticket only, the Officer-in-charge must inform the Guard.

(k) If only one Divided Electric Staff is supplied for use on a section, the Chief Traffic Manager will fix the station at which it is normally to be kept. After it has been availed of for trains leaving that station, it must be used as an ordinary Electric Staff for the first train travelling back thereto, unless it is required for use in that direction as a Divided Electric Staff before being so required at the station at which it is normally kept.

If two Divided Electric Staffs are supplied to a section, one must be allotted to the station at each end, and after use arrangements must be made for the speedy return of the Divided Electric Staff to the station to which it belongs.

37. Train Breaking Down Within a Divided Electric Staff Section.—
If a train is travelling on portion of a Divided Electric Staff when the engine becomes disabled and unable to move the train, the following instructions are to be observed:—

(a) In each case when a train travelling on portion of a Divided Electric Staff becomes disabled within a section, the first duty of the Guard and Fireman will be to place detonators as under:—

One at 400 yards from the train.

One at 800 yards from the train.

Three at 1,000 yards from the train, 10 yards apart. The Guard will protect at the rear end of the train and the Fireman in front. In the case of a light engine breaking down the Driver and Fireman must place detonators as indicated—the Driver at the rear and the Fireman in front; but should the Driver be unable to leave the engine then the Fireman must protect in both directions.

(b) If the disabled train is travelling on Ticket No. 1 or Ticket No. 2—

It may be removed to the station from which it was proceeding only by a train in possession of the staff portion.

It may be removed to the station to which it was proceeding—

(i) By a following train travelling on Ticket No. 2, or Staff portion; or

(ii) By a relief engine despatched from that station which may be despatched on authorization order T.84 (*vide* Regulation 24 (a)). The authorization when telephoned in connexion with a train travelling on a Divided Electric Staff must indicate very clearly which portion of the Staff the disabled train is travelling on. A relief engine must not be despatched while there is any engine or train in the section between the disabled train and the relieving station.

(c) If the disabled train is travelling on Ticket No. 2 and the Staff portion combined or on the Staff portion only—

It may be removed to the station from which it was proceeding by a train travelling on the telephoned authorization of the Guard and Driver, or Driver in the case of a light engine, countersigned by the Officer-in-charge, as in the case of a disabled train travelling on an ordinary Electric Staff (*vide* Regulation 24). If telephone communication is not available, and it is desired to remove the disabled train to the station in the rear, then Ticket No. 2 and the Staff portion (or the Staff portion only, as the case may be) must be taken by the Fireman to that station, and handed by him to the Driver of the relief engine, which he must accompany.

If on arrival of the Fireman at the station in the rear, it is found that relief is not available there, the Officer-in-charge must communicate with the Officer at the other end of the section, and arrange for relief to be obtained therefrom. The Officer-in-charge of the former station must obtain Ticket No. 2 and the Staff portion of the Divided Electric Staff (or the Staff portion only, as the case may be) from the Fireman, place them under lock and key, and advise the Signaller at the other end of the section on Form T.92:—

	Date	Time	T.92.
To the Officer-in-charge at			
Train No. travelling on Ticket No. 2 and Staff Portion of Electric			
Staff No. is disabled at in the Section from			
to Arrange for relief engine to proceed to the point of			
obstruction. I hold Ticket No. 2 and the Staff portion under lock and key			
until you advise that the line is clear, and that they can be used for			
following train or trains.			
(Signed)			

This form is to be written out in full by both Despatching and Receiving Officers and the Receiving Officer's copy is to be countersigned by him and handed to the Driver of the relief engine, together with Ticket No. 1. A receipt should be obtained from the Driver for the authorization, and advice of the despatch of the relief engine must be

sent to the Officer-in-charge at the other end of the section. On arrival of the relief engine at the disabled train, arrangements must be made to propel it to the station in the rear or to draw it to the station ahead, as may be most advantageous in all the circumstances. If it is taken to the station from which it set out, on arrival there the authorization and Ticket No. 1 must be immediately collected by the Officer-in-charge from the Driver, the authorization being at once cancelled by writing the word "Cancelled" across its face. The Electric Staff being completed must be put through the instrument, and the Signal "2—1" sent to the station at the other end of the section. Advice of the exact position must also be sent by telephone.

If the disabled train is taken to the station ahead and the next train running over the section starts from that end, then the Officer-in-charge at the other end of the section must telephone authorization permitting the despatch of such train on Ticket No. 1, the telephoned authorization being endorsed by the Officer-in-charge. After such authorization is telephoned, the section must not be fouled until the train for which it was issued has run the section and arrived complete.

38. Instructions applying to Stations where the Guard works the Electric Staff Instruments for certain Trains.—(a) The Chief Traffic Manager will notify all concerned of the stations at which Guards are to work the Electric Staff Instruments at other than Unattended Electric Staff Stations, and in respect of which trains or between which hours this is to be done. Guards who perform this work must have passed the necessary safe-working examination. The train must travel on a complete Electric Staff, not on a portion of the Divided Electric Staff.

(b) The employee in charge at a station at which a Guard is to so act must, before going off duty—

- (i) Place any necessary keys in an appointed place.
- (ii) See that any trucks loaded out are properly loaded and carded and that the way-bills for them and for any van, goods, or parcels, are left at an appointed place.
- (iii) If necessary, light the fixed signals or any other signal lamps and the station lamps.
- (iv) See that all signals are in the "Danger" position.
- (v) Make any other necessary arrangements for the proper conduct of the station business for the time that he will be absent; and leave any necessary written instructions for the Guard in a book kept specially for the purpose.

(c) On approaching a station at which the Guard is to work, the Driver must bring his train to a stand at the Home Signal. The Guard will advise any passengers of the intended movement, and then go forward, and after satisfying himself that there is no train already at the station or approaching the station from the opposite direction, he will determine on which road his train is to run, and lower the fixed signal, or give the necessary hand signal for this train to draw forward. If another train is already at the station, or is approaching from the opposite direction, he must wait, and confer with the Guard of that train, and the Guards together must come to a clear understanding before any movement of their trains is made.

(d) After his train has drawn forward, the Guard must immediately place the necessary fixed signals at danger.

(e) The Guard will then attend to such ordinary station duties as may be necessary. He must in all cases collect the Electric Staff from the Driver, treating it in exactly the same manner as the employee in charge of the station should do, exchanging the usual bell signals with the station at the rear, and making the necessary entries in the Train Register Book.

(f) The Guard must place any way-bills, correspondence, goods, or parcels for the station in the place set aside for the purpose, and see to the proper securing of the points, choke blocks, and signals.

(g) When his train is ready to depart, and an Electric Staff for the section ahead is not already out of the instrument, and he has reason to consider that the section ahead is clear, the Guard will exchange the necessary signals with the station in advance, and obtain an Electric Staff for that section. He must make the necessary entries in the Train Register Book. If everything is then in order, and the signals in the correct position, he may hand the Electric Staff to the Driver, and depart.

(h) Should any emergency arise, the Electric Staff Instruments fail, the Electric Staff be lost, or should it be necessary for any reason after the arrival of the train at the station that an authorization order be issued for a train to travel over the section on either side, or that Pilot Working be established, the Guard must immediately call the Officer-in-charge, who must at once come on duty. Should the Guard be unable to locate the Officer-in-charge he must at once communicate with the Chief Traffic Manager and obtain his instructions. If communication cannot be established with the Chief Traffic Manager, then the Traffic Officer-in-charge at the nearest available depot station must be advised, and he will be responsible for giving any necessary directions in accordance with the existing instructions.

(i) Should a train, the Guard of which is responsible for working the Electric Staff instruments, break down within a section on either side of the station at which he has acted or is to act, and the Guard can establish communication by means of portable telephone with the Officer-in-charge at either end of the section, then relief may be arranged or authorization order issued in accordance with Regulation 24 above. If the Guard cannot communicate by portable telephone with the Electric Staff Station at either end the Fireman must go for relief. If the Fireman goes to the station at which the Officer is off duty, he must arrange to call him on duty.

(j) In any emergency the Officer-in-charge must, if necessary, remain on duty for all trains.

(k) The Guard and Driver must be informed by the Officer-in-charge at the station in the rear regarding any station in advance which is to be worked under the conditions laid down herein.

39. Automatic Electric Staff Working.—1. Object of Automatic System—(a) At certain stations an apparatus is installed in connexion with the Electric Staff Instruments to enable an Electric Staff to be

withdrawn without the co-operation of any person at the other end of the section, provided there is not already an Electric Staff out for such section.

(b) Except between two adjacent unattended Electric Staff Stations, automatic working will apply in one direction only, i.e., from an attended station to an unattended station, or to a partly attended station during the hours the station staff are off duty. From an unattended station to an attended station the Electric Staff is to be obtained as in ordinary working.

(c) The doors of station buildings at unattended or partly-attended Electric Staff Stations will be secured with "M" locks. Guards of trains and Firemen of light engines must lock the doors of such buildings before their trains and light engines, respectively, proceed on their journey. Guards working trains on automatic sections must exercise special care to ensure their having an "M" key in their possession. Officers-in-charge on either side of an unattended Electric Staff Station must, when handing the Electric Staff for the section to the Driver of a light engine, supply him with an "M" key to enable the Fireman to unlock the station building. The key is to be handed to the Officer-in-charge at the attended station in advance, and returned by him to the original station by first train—booked as a Value parcel.

2. Method of Working.—(a) When it is required to despatch a train from an attended to an unattended station, or from one unattended station to another unattended station, the Officer-in-charge must give slow beats on the tapper key whilst turning the handle of the Electric Staff Instrument Generator until the bell rings, indicating that an Electric Staff may be withdrawn (provided an Electric Staff is not already out of either end of the section). If, when the Electric Staff is withdrawn, the bell continues to ring, the current must be cut off the line by giving slow beats on the generator tapper key until the bell ceases to ring. The Electric Staff may then be handed to the Driver of the outgoing train.

A similar method is employed when it is required to despatch a train from one unattended station to another unattended station.

NOTE.—Should the bell ring unnecessarily, i.e., after the Electric Staff is withdrawn or when one is not required, it must be immediately stopped by depressing the tapper key a sufficient number of times until it ceases to ring. If the bell is permitted to ring for long periods the battery will be impaired and a failure result.

(b) On the arrival of a train at an unattended staff station (provided no crossing is to be made, and the line on which the train is to travel is clear), it must proceed slowly on the main line towards, but must not foul, the facing points of the advance section. The Fireman, on passing the station building, must place the Electric Staff on the hook provided for its reception on the station building, to facilitate which the Electric Staff must always be attached to a cane hoop. The Guard will place the Electric Staff in the instrument for the section to which it applies, and give the "Train Arrival" Signal to the station in the rear. The Guard will then obtain an Electric Staff for the advance section in the ordinary way giving the usual signals as in

the case of attended stations. After recording all the signals in the Train Register Book, and locking the office door, the Electric Staff is to be handed to the Driver and the train despatched.

(c) In the case of a light engine arriving at an unattended station, the Electric Staff must be inserted in the Electric Staff Instrument for the section by the Fireman, who will give the "Train Arrival" Signal and obtain an Electric Staff for the advance section, &c., as indicated in the preceding paragraph (b)

(d) The main line points at unattended Electric Staff Stations are staff-locked, and may be unlocked only by the Electric Staffs applicable to the respective section.

(e) Divided Electric Staffs will not be used on Automatic Electric Staff Sections.

3. *Crossing of Trains and Light Engines.*—(a) When two trains, a train and a light engine, or two light engines are required to cross at an unattended Electric Staff Station, the Driver and Guard of each train or engine must be handed a printed or written notice as under, and their receipt obtained on a copy of the notice to be filed for future reference:—

CROSSING NOTICE.		T.75.
<p style="text-align: center;"><i>To be used when two trains have to cross at an unattended Electric Staff Station.</i></p>		
		.....Station.
		Date.....
To Driver.....	}	of No.....Train.
Guard.....		
<p>You are hereby notified that your Train will cross No..... train at.....Station, where there is no one in charge. You are required to approach that station with special care and stop your train at least 20 yards clear of the outside facing points until signalled to proceed by the Guard of your train or the Guard of the train which is being crossed.</p>		
Time.....	(Signed)..... Stationmaster.	

Crossing Notice (T.75) is printed in triplicate, numbered, and bound in book form. Copies are to be prepared by means of carbon paper, and the triplicate signed by the Driver and Guard must remain in the book.

(b) When two trains cross, the first to arrive must stop at the facing points and be admitted to the crossing loop by the Guard, who, after placing in the proper instrument the Electric Staff brought in by his own train, and giving the "Arrival" Signal, must obtain another Electric Staff for the same section, and proceed to the facing points to admit the other train. After exchanging Electric Staffs with the Driver, he must give "Right-away" to the other Guard, should the train not be required to stop. The first Guard will then obtain an Electric Staff for his own train and arrange its despatch.

(c) When two trains arrive at an unattended station at the same time, both trains must be brought to a stand at the respective facing points until admitted by the Guard of the Up Train, who will in such circumstances be in charge of the station, and conduct the working as laid down in the preceding clause 2 (b).

(d) If a crossing is to be made by a light engine and a train, and the former arrives first, the Fireman must admit the engine to the crossing loop and carry out the duties assigned to the Guard in clause 2 (b). Should the train arrive first it must be admitted to the loop, the Guard taking charge of the working.

(e) When two light engines cross, the Fireman of the first engine to arrive (or the Fireman of the engine travelling in Up direction where the engines arrive at the same time) will attend to the working.

(f) In the case of two adjacent unattended stations, the Officers-in-charge of the attended stations on each side, before despatching a train into the automatic section, must confer and agree as to whether a crossing is necessary at either of the unattended stations. In the event of a crossing being necessary, the Driver and Guard of each train or light engine concerned must be handed (and sign for) a Crossing Notice (T.75) in accordance with the preceding instructions.

After a train has left the attended station, no alteration must be made in the working of such train unless agreed upon between the Officers-in-charge on each side. If, after a train has left the attended station, it is necessary to alter the crossing arrangements or arrange a crossing with another train at one of the unattended stations, the Officers-in-charge must confer, and if the altered arrangement is agreed upon, it must be confirmed by the exchange of the following messages:—

A.	
To the Stationmaster.....	Time.....
Date.....	Owing to No.....
I propose that No.....cross No.....at.....	
Do you agree?	
(Signed)..... Stationmaster. .....Station...	
B.	
To Stationmaster.....	Time..... Date....
I agree to your proposal that No.....cross No.....	
at.....instead of at.....	
and I am instructing the Guard of No.....accordingly.	
(Signed)..... Stationmaster. .....Station...	

The Guard of each train on arrival at an unattended station and before attempting to withdraw an Electric Staff for the automatic section ahead, must communicate by telephone with the attended station in advance, and ascertain whether any alteration in the working of his train is necessary.

Should an alteration be necessary and a train be required to proceed from one unattended station to an adjacent unattended station, and there cross another train or light engine, the requisite Crossing Notice (T.75) must be compiled by the Guard, who must obtain the driver's receipt for same, before leaving the former unattended station.

(g) The foregoing is subject to the instructions *re* crossing of trains, clause 29 of this Appendix, which must be observed.

4. *Signals.*—(a) The arms and spectacles are removed from the signals at unattended stations, and the signal masts are to be regarded as land marks.

(b) The Home Signal masts are fitted with Adlake Signal Lamps, which show a distinctive white light at night time to assist drivers in locating the station. The lamps are to be attended to weekly by the Ganger stationed at or nearest to the unattended station, or as otherwise arranged by the Chief Traffic Manager.

5. *Train Register Books.*—Train Register Books must be kept at unattended stations, and are to be entered up by Guards (or Firemen as the case may be). The attended stations on either side must also record all signals given and exchanged in connexion therewith, and the times at which Electric Staffs are obtained and trains despatched toward unattended stations (*vide* clause 2 (a)).

6. *Telephone Communication.*—Telephone communication is available as usual under "Automatic" working, but care must be exercised to see that bells are not left ringing (see note clause 2 (a)).

A device is installed at each unattended station enabling any call from a portable telephone on the Electric Staff line wire to be heard at the attended station on either side, e.g., a ring from any point between Cook and Barton would be heard at both these stations.

7. *Failure of Automatic Apparatus.*—(a) In the event of the apparatus failing and an attended station being unable to obtain an Electric Staff from the instrument, the Officer-in-charge must at once communicate with the attended station on the other side of the unattended station, informing him of the position, and, if considerable delay would be involved in waiting for the District Lineman to attend to the instruments, a wire must be despatched by the attended station concerned to the Chief Traffic Manager in the following form:—

T.73

The Electric Staff Instruments for.....section having failed and there being no one in charge at.....authority is required to despatch train No.....from.....to.....without a staff. There is no train between.....and this station.
(Signed).....Stationmaster

Should it not be possible for the Officer-in-charge to communicate with the station on the other side of the unattended station, he must seek the necessary approval for the above authority; but it is essential that both officers should confer as early as possible.

On the necessary authority being given, the Officer-in-charge of the station from which the train is waiting to depart will issue the following authorization order to the Driver and Guard (or to Driver only in the case of a light engine), obtaining their signatures for same on a copy:—

T.85.			
.....Station.			
.....Date.			
To Driver.....	} of No.....	Up	Train.
Guard.....		Down	
<p>The Electric Staff Instruments for the section.....having failed, you are hereby authorized to travel on this order from.....to..... The last train left here at.....m.</p> <p style="text-align: right;">(Signed).....Stationmaster.</p>			

On arrival at the unattended station, the instruments for the section just traversed should be tested with a view to ascertaining the cause of failure and, if possible, removing it.

(b) Should an Electric Staff be out of the instrument at the attended station it must not be used to work trains, but must be securely locked up until required by the District Lineman putting the instrument in order. The fact of the Electric Staff being out of the instrument must be wired to the Chief Traffic Manager when seeking authority to issue the authorization order.

(c) Should the apparatus fail and an Electric Staff be unobtainable at an unattended station, authority to work the traffic must be sought from the Chief Traffic Manager by the Officer in charge of the attended station to which the train is waiting to proceed, also by the Guard (or Fireman, as the case may be) at the unattended station, as laid down in clause 7 (a)—a joint wire being sent.

Should a crossing have been arranged at one of two adjacent unattended stations and an Electric Staff be unobtainable at the other unattended station to enable the train concerned to proceed to the appointed crossing station, these facts must be mentioned in the joint wire to the Chief Traffic Manager, applying for authority to work a train on an authorization order.

(d) Should an Electric Staff be out of the instrument at the unattended station, from which end of the section the next train has to depart, this fact must be stated in the joint wire, and the Electric Staff is to be used for such train; and on arrival at the attended station it must be placed in the instrument or locked up as directed in Clause 7 (b).

Should permission be given to use an Electric Staff between two unattended stations and it will be impossible to replace the Electric Staff in the instrument, it must be left on the lip of the instrument, and the matter specially reported by urgent wire to the Chief Traffic Manager, Superintendent of Signals and Lighting, and District Lineman.

8. *Staff Lost or Damaged.*—In the event of an Electric Staff being lost or damaged, the attended stations on either side of the unattended Electric Staff Station must at once send a "FAIL" telegram briefly stating the circumstances (Form T.74).

(a) *Lost Staff*.—When a train requires to travel from an unattended station to an attended station, the request for the authorization order must be sent to the Chief Traffic Manager by the Guard (or Fireman in the case of a light engine) at the former station, and the Officer-in-charge at the latter. When approved, the authorization order will be issued per telephone by the Officer-in-charge of the attended station (i.e., to which the train is travelling). For a train entering the section from the attended station the authorization order (when approved) will also be issued by the Officer-in-charge of the station.

When a train requires to travel from one unattended station to another unattended station without an Electric Staff, the request for the authorization order must be made by the Guard (or Fireman in the case of a light engine) at the former station, and the Officer-in-charge of the attended station ahead.

(b) *Damaged Staff*.—If the Electric Staff be broken or damaged so that it cannot be replaced in the instrument at the attended station, it must not be used to work trains, but must be securely locked up until required by the District Lineman putting the instruments in order. The matter must be immediately reported to the Chief Traffic Manager and authority sought to work the trains by means of authorization order.

If the broken or damaged Electric Staff is at the unattended station (from which end the first train is to proceed) it is to be used for one journey only, and on arrival at the attended station must be dealt with as directed in the preceding paragraph.

A broken or damaged Electric Staff may be used to work a train from one unattended station to another on the authority of the Chief Traffic Manager, in which case the damaged Electric Staff must be left on the lip of the instrument at the latter station.

9. *Trains Breaking Down within an Automatic Electric Staff Section*.—(a) Regulation 24 above is to be observed, except that the message from the Guard and Driver of the disabled train must be addressed to the attended station on either side of the unattended station, being repeated if necessary by the attended station nearest to the breakdown to the other attended station.

(b) An Electric Staff must be used on each section, if available. Form T.84 must only be used as authority for a relief engine to travel on a section for which the Electric Staff is not available.

10. *Train or Portion of Train Left within a Section*.—Should it be necessary for an engine to leave the whole or portion of its train in a section and run to an unattended station, the Driver must retain the Electric Staff, and on arrival at such station, communicate with the attended station on either side, and also, if possible, with the Guard of the train. He must also advise both stations (and the Guard if possible) when he is about to return to pick up his train. The provisions of Regulation 26 above will apply, except that orders must be given up to the Officer-in-charge of the first attended station reached.

11. *Failure of Electric Staff Instruments—Staff lost or damaged*.—The instructions in Regulations 34 and 35 above must be observed, except in so far as they are amended by the foregoing instructions.

12. *Authorization Orders*.—In an automatic Electric Staff Section no train must be permitted to follow another train on an authorization order until the preceding train has cleared the section, or in the event of communication being impossible, until the ordinary sectional running time has elapsed.

The Stationmaster, Parkeston, or the Stationmaster, Cook, is empowered to give authority for the issue of authorization orders in accordance with these instructions, if the Chief Traffic Manager cannot be communicated with.

13. *Partly Attended Stations*.—In the event of an Electric Staff failure, loss or damage to an Electric Staff, trains having to cross, or any other untoward happening at a partly attended station when the Officer-in-charge is off duty, he must at once be called, and must come on duty to attend to the working of traffic.

14. *Shunting outside the Home Signal*.—Shunting outside the Home Signal at the attended station on automatic Electric Staff Sections is permissible in accordance with Regulation 20 above, in which case the Guard of the train at the unattended station must confer with the Officer-in-charge of the attended station, and the former must compile and issue the requisite form T.121 to the Driver.

Shunting is not permissible outside the facing points at unattended stations unless the Driver is in possession of the Electric Staff for the section.

15. *Working Staff Locked Sidings during Failure of Apparatus*.—(a) In the event of the automatic apparatus failing, and it being necessary for the staff locked points at an intermediate siding to be unlocked for shunting, or those at the unattended station to be unlocked to enable a shunt or a crossing to be made, the Guard of the train (or Fireman where a light engine is concerned) must present the authorization order to the Ganger concerned, and the latter employee will then, if necessary, disconnect the staff lock.

(b) Generally, it will only be necessary to disconnect a staff lock at an unattended station when there is an Electric Staff failure on both sides of the unattended station, as when the Electric Staff is available for one of the sections involved, the difficulty can be overcome by admitting the train which has the Electric Staff to the loop and backing out after the other train has passed through on the main line. Attention is particularly drawn to Regulation 39, sub-clause 3, above, requiring a train (or light engine) making a crossing at an unattended station to stop outside the facing points until signalled to proceed.

In such cases, if the train with the authorization order arrives first, it is to be admitted on the main line, and the Guard (or Fireman in the case of a light engine) must at once proceed to the points to admit the other train to the loop.

(c) When a staff lock has been disconnected as above, the Guard (or Fireman) must see that the staff lock is properly reconnected before the train using the staff locked siding is despatched.

(d) (i) Should it be impossible for the Guard (or Fireman) to get in touch with the Ganger for the purpose indicated, he must arrange with the Driver to disconnect the staff lock, and they must see that it is reconnected before their train leaves.

(ii) The Guard (or Fireman) must advise the Officer-in-charge at the nearest attended station of what has been done, and the latter must (if the Ganger has not in the meantime certified that the staff lock is in proper order) advise the Driver and Guard of any train proceeding to the unattended station of the circumstances, and instruct them to stop and examine the staff-locked points before passing over them. The District Lineman must also be advised at first opportunity.

40. Reporting Failures of Electric Staff Instruments.—When any irregularity or failure of Electric Staff Instruments occurs, or should an Electric Staff be lost or damaged, the District Lineman for the district must be immediately informed, either in person or by telegram. In addition particulars must be promptly telegraphed by the Officer-in-charge concerned to Port Augusta, using the code address "Fail," giving the time of the failure and brief particulars of the cause if known. After the failure has been rectified a telegram similarly addressed is to be promptly sent quoting the time the instruments are put in order. Subsequently full reports of the occurrence must be forwarded to (a) the Chief Traffic Manager by the Officer-in-charge; and (b) the Superintendent of Signals and Lighting by the District Lineman on the prescribed Form (C.R. 92).

The Superintendent of Signals and Lighting will in turn forward the District Lineman's report to the Chief Engineer with any comment that may be necessary.

41. Forms.—The undermentioned forms in connexion with Electric Train Staff Working must be kept on hand at each Electric Staff Station:—

No. of Form.	Description.	No. to be kept.
T.73	Application for Issue of Authorization Order (Staff Failure)	12
T.74	Application for Issue of Authorization Order (Staff Lost or Damaged)	12
T.75	Crossing Notice (Stations concerned only)	1 book
T.76	Relief for Disabled Engine Travelling on Divided Staff	12
T.84	Relief for Disabled Engine	12
T.85	Failure of Staff Instruments	12
T.86	" " "	12
T.87	" " "	12
T.88	Staff Lost	12
T.89	Staff Damaged	12
T.90	Notice of Train Ahead	1 book
T.111	Pilot Working	12
T.112	Pilotman's Caution Ticket	12
T.113	Cancellation of Pilot Working	12
T.114	Relief of Pilotman	12
T.121	Shunting outside Home Signal	1 book
T.122	" " " "	1 book

25. PERMISSIVE BLOCK AND ABSOLUTE TELEPHONE BLOCK REGULATIONS.

Trains running on lines where the Permissive Block System, or the Absolute Telephone Block System applies, shall be worked in accordance with the following regulations, which may be varied only on the authority of the Chief Traffic Manager.

DEFINITIONS:

In these Regulations the following terms shall have the meanings assigned to them, unless inconsistent with the context:—

"Proceed Authority" shall mean either a *Proceed Order* or a *Proceed Order and a Crossing Order or Orders*.

"Controlling Station" shall mean a station at which the Station Master or other employee in charge is authorized to issue *Proceed* and *Crossing Orders*, and is responsible for directing the movements of trains. Such stations shall be supplied with *Train Record Books*.

"Train Record Book Station" shall mean a station or siding at which a *Train Record Book* is located.

"Crossing Places" shall mean stations and sidings at which trains may cross.

"Intermediate Crossing Places" or "Intermediate Train Record Book Stations" shall mean *Crossing Places* or *Train Record Book Stations* situated between two *Controlling Stations*.

"Permissive Block Section" shall mean the section of line between two controlling stations.

"Controlling Stations," "Train Record Book Stations," and "Crossing Places" shall be those stations and sidings so designated in the *Working Time Tables*, or as otherwise notified by the Chief Traffic Manager.

1. Objects of Permissive Block and Absolute Telephone Block Working.—(a) The object of the Permissive Block System is to preserve a time limit between the departure of two trains in the same direction from a *Train Record Book Station*, and to prevent two trains travelling in opposite directions occupying the section between two *Crossing Places* at the same time.

(b) The object of the Absolute Telephone Block System is to prevent two trains (whether travelling in the same or opposite directions) from occupying the section between two *Crossing Places* at the same time. Absolute Telephone Block may apply in either or both directions of a section. The regulations governing this System are the same as for the Permissive Block System, except that—

(i) A train must not be advanced into the section in which Absolute Telephone Block working is in force before the last preceding train has cleared the section, and advice of its arrival has been received from the station in advance.

(ii) Where Absolute Block Working is in force from one attended Train Record Book Station to another attended Train Record Book Station (e.g. Copley-Beltana and Beltana-Copley), the Station Master or other employee in charge, before advancing a train into the section must obtain advice from the attended Train Record Book Station in advance that the last preceding train has arrived at that station, and of the time of arrival.

(iii) Where Absolute Telephone Block Working is in force from an unattended Train Record Book Station to an attended Train Record Book Station (e.g. Hookina to Hawker), the Guard, before allowing his train to advance into the section from the unattended Train Record Book Station, must obtain, by telephone, from the attended Train Record Book Station in advance, advice that the last preceding train has arrived at that station, and of the time of arrival.

(iv) The time of arrival of the last preceding train at the station in advance, and the time advice of the arrival is obtained must be recorded, in each case, in the Train Record Book at each of the stations concerned. The Guard is responsible for recording these particulars in the Train Record Book at unattended Train Record Book Stations, and the Stationmaster or other employee in charge at Controlling Stations.

2. Control of Train Working.—(a) The working of all trains in a Permissive Block Section is under the direction of the Station Masters or other employees in charge at the Controlling Stations at both ends of the section, and they are the only persons authorized to temporarily alter the crossing places of trains which are shown in the Working Time Tables or Special Train Notices (including notices issued by telegraph or telephone), and to issue or to authorize the issue of Proceed Authorities for trains to work in such section.

For cases where crossings at intermediate places have to be altered after departure from a Controlling Station, see Regulation 7.

(b) The Fixed Signals at a Controlling Station must be worked by the employee responsible for the issue of Proceed Authorities, unless otherwise authorized by the Chief Traffic Manager; and at Intermediate Train Record Book Stations or Intermediate Crossing Places, where Fixed Signals are provided, they must be worked by the Guard.

(c) Station Masters must keep themselves advised by telegraph or telephone of the running of all trains, so that they may, if necessary, make early arrangements in advance for altering the crossing points, or for fixing a crossing point where one is not provided for in the Working Time Tables or Special Train Notice.

(d) The Guard and Driver are both responsible for seeing that their train does not leave a Controlling Station (or, where the journey is commenced at an intermediate point, does not leave such intermediate point) without each of them being in possession of the necessary Proceed Authority to the next Controlling Station (or, where the destination of their train is an intermediate point, to such intermediate point).

3. Working Time Tables, Special Train Notices—Drivers and Guards to be in Possession of.—(a) Each Driver and Guard must have in his possession a copy of the Current Working Time Table, and a copy of all Special Train or other Notices affecting the section of the line over which he is required to work.

(b) The Station Master at the station where a journey is commenced must deliver (personally or by some employee authorized by him) to the Driver and Guard of each train, copies of all Special Train or other Notices affecting the section of the line over which the latter are required to work. A receipt must be obtained for such notices from each Driver and Guard in the book provided for the purpose, unless they certify in writing that they are already in possession of such notices.

When a return journey is commenced at a place other than a Controlling Station, the notices referred to must be delivered on the outward journey by the last Controlling Station (unless already supplied as shown in the preceding paragraph); but if this is not possible then by the first Controlling Station on the inward journey. Station Masters and other employees in charge must satisfy themselves that Drivers and Guards have full information in regard to special trains, speed notices, &c.

Drivers and Guards taking charge of trains at intermediate stations or sidings must be advised as above by the Station Master or other employee in charge; but if they take charge at an unattended place then they must obtain full information from the men they relieve, and verify this on arrival at the first attended station. In the case of relay working, each Driver and Guard must obtain a copy of the notices.

(c) Drivers and Guards must satisfy themselves by inquiry before commencing any trip, that they have received all Special Train Notices intended for them.

(d) Before departure of their train, the Driver and Guard must compare the Notices received.

(e) When there is more than one engine attached to a train, or when two or more engines run attached, these instructions apply to the Driver of each engine.

(f) Drivers must make all notices available to their Firemen, and Guards to their Assistants, and these employees must fully acquaint themselves with the train running.

4. Train Record Books—Arrival and Departure of Trains.—(a) At the Stations specified in the Working Time Tables a Train Record Book is provided in which the times of arrival and departure of all trains must be entered. These books are to be kept in a safe place at attended stations; and at unattended stations and sidings they are to be kept in a box provided for the purpose. These boxes will not be locked, but Guards must report any cases which occur which indicate that the books have been tampered with, and also all cases where the boxes are not in good order.

(b) At attended Train Record Book Stations the entries in the Train Record Book must be made by the Station Master or other employee in charge. At unattended Train Record Book Stations the guard, or the

fireman in the case of a light engine, must enter the times of arrival and departure in the Train Record Book, and must examine the Book to see the time of the departure of the preceding train, in order to ensure that the prescribed interval is maintained.

NOTE.—When an attended Train Record Book Station is not also a station authorized to issue Crossing and Proceed Orders, an employee in charge, who would otherwise be off duty, need not come on duty specially to record the arrival and departure times of trains, but this duty must then be performed by the Guard (or fireman) as in the case of unattended Train Record Book Stations.

(c) The instructions contained in clause 27, page 126 of the General Appendix concerning Train Register Books are also applicable to Train Record Books.

5. Proceed Authorities.—A train (including a light engine) must have as its authority to travel in a section either (a) a Proceed Order, or (b) both a Proceed Order and a Crossing Order or Orders.

A Proceed Order will, except as shown in the next paragraph, be the authority when a train has not to cross any other train before its arrival at the next Controlling Station in advance. It will show that trains scheduled to cross the train for which it is issued are not running, except those for which Crossing Orders have been issued.

In addition to a Proceed Order a separate Crossing Order must be issued (a) for each crossing which has to be made at an intermediate Crossing Place, (b) for each crossing to be made at a place other than that scheduled, and (c) for each crossing to be made by a train which is not shown in the Working Time Tables or Special Train Notice issued by the Chief Traffic Manager. Crossing Orders are necessary for all crossings made by a Conditional train shown in the Working Time Tables, the running of which is not shown in a Special Train Notice issued by the Chief Traffic Manager.

When a train is scheduled to cross another train in a Permissive Block Section, but the other train is running so late as to prevent a crossing being made within that section, then a Crossing Order shall be issued for a crossing at the next Controlling Station in advance. If the running of the trains, however, is such that a crossing cannot be satisfactorily made there, then the Crossing Order is to be collected from the Guard and Driver on arrival there, and another one issued for a crossing in the section in advance or at the next Controlling Station, as may be necessary. The Crossing Order for the delayed train is to be cancelled by the Station Master without delay, and is to be filed with other Crossing Orders as shown in sub-clause (g) of this clause. A similar procedure is to be adopted at the last named and subsequent Controlling Stations, if this is necessary.

When a train which is scheduled to cross another train at a Controlling Station, or in a Permissive Block Section, has gained time and is running so early as to prevent a crossing at that controlling station or within that section; a similar procedure to that provided in the fourth paragraph of this Regulation in respect of trains running late, must be observed.

The alteration of intermediate crossing arrangements is permitted in accordance with the regulations contained in Regulation 7, and a special form of Crossing Order (T.18A) is provided for use in such cases.

Guards and drivers must carefully peruse the Proceed Authority handed to them, and before entering a section must consult the Station Master or other employee in charge who prepared it, if the arrangements do not accord with the Working Time Tables, or Special Train Notices or Advices issued to them.

(a) Proceed Order Form (T.16), which is to be prepared at the Controlling Station to which the train is to proceed, or which is next in advance of an intermediate point which is the destination of the train, is printed on Green paper, in book form, and numbered consecutively. After the message has been transmitted to and repeated from the Station from which the train is to proceed a line must be drawn across the form, which must be retained in the book.

Specimen Form.

COMMONWEALTH RAILWAYS.

(T.16.)

Permissive Block and Absolute Telephone Block Systems.

PROCEED ORDER.

No. 19699.

This order must be carried by the Guard and Engine-driver of each train worked under the above-named systems.

Date....., 192...

The Stationmaster,

....., and Guard and Engine-driver of No.....

No.....	} is not running	} *to-day.
No.....		
No.....		

*Crossing orders have been issued for	}	No..... and No.....
		No..... and No.....
		No..... and No.....

No..... may proceed to	} *the next Controlling Station subject to the crossings shown above.

Time...../.....*a.m.
*p.m.

Stationmaster.

Transmitted by.....

Received by.....

Station.

*Strike out unnecessary words.

Specimen Form.

(T.17).

COMMONWEALTH RAILWAYS.

Permissive Block and Absolute Telephone Block Systems.

No. 8800.

PROCEED ORDER.

This order must be carried by the Guard and Engine-driver of each train worked under the above-named systems.

Date..... 192...

The Stationmaster,

....., and Guard and Engine-driver of No.....

No..... } *is } *to-day.

No..... } } *to-morrow.

No..... } *are not running }

*Crossing orders have been issued for } No..... and No.....
 } No..... and No.....
 } No..... and No.....

No..... may proceed to } *the next Controlling Station subject to the crossing shown above. }

Time...../.....

*a.m.

*p.m.

Stationmaster.

Station.

Approved.

Transmitted by.....

Stationmaster.

Received by.....

Station.

* Strike out unnecessary words.

Proceed Order Form (T.17) which is to be prepared at the station from which the train is to proceed, is in triplicate, in book form, and numbered consecutively. The top copy is on Blue paper, and the other two on Yellow paper. It must be prepared in black lead pencil, the copies taken with good carbon paper, and signed by the Stationmaster himself when on duty and at other times by the employee in charge, unless otherwise authorized specially by the Chief Traffic Manager. The writing and figures must be clear and distinct.

PROCEDURE.

After an understanding has been arrived at by the Stationmasters or other employees in charge at the Controlling Stations of the permissive block section affected, the particulars on Proceed Order Form T.16 must be prepared at the station to which the train is to be despatched (in these instructions called "B"), and telegraphed or telephoned to the station from which the train is to advance (in these instructions called "A"). Form T.16 must show all trains which are scheduled to cross the train which it is desired to advance, but which are not running on the date in question, or if running, for which crossing orders are required, and have been issued. The officer at station "A" must enter the particulars on Proceed Order Form T.17 and repeat the message to the transmitting station "B". If the officer at Station "A" be satisfied that the train or trains shown as not running are in fact not running, and that Crossing Orders have been issued in respect of all trains for which Crossing Orders are necessary in accordance with these instructions (and advice of the arrival of the preceding train has been received from the station in advance on lines where absolute telephone block working is in force), he must sign the form

under the word "Approved". The top (blue) copy must be retained in the book, one (yellow) copy must be handed to the Guard and the other (yellow) copy to the Driver.

When there are two or more engines on the train, each Driver must be furnished with a copy of a Proceed Order—to be prepared on the next form in the book with additional carbons, so that the whole of the forms may be written at the one time. The additional forms must be endorsed "Duplicate of Form No.", quoting the number of the preceding form. One of the yellow duplicate forms must be handed to the Driver of each additional engine, the spare duplicate form, if there be one, being retained in the book for reference. *The Blue copy must not, under any circumstances, be torn out of the book.*

(b) *Crossing Order Form (T.18).* Crossing Order Form T.18 is in triplicate, in book form, and numbered consecutively. The top copy is on pink paper and the other copies on white paper. Each copy has a red diagonal cross. The form is to be prepared in triplicate with black lead pencil and good carbon paper, and must be complete in every particular, including the signature of the employee transmitting or receiving the messages. The writing and figures must be clear and distinct.

Specimen Form.

(T.18.)

COMMONWEALTH RAILWAYS.

Permissive Block and Absolute Telephone Block Systems.

No. 2900.

CROSSING ORDER.

Y

The Stationmaster,

Date..... 192...

No.....

*to-day

*to-morrow.

to cross No..... at.....

Do you agree?

Stationmaster.

Time...../.....

*a.m.

*p.m.

Station.

Transmitted by.....

Received by.....

Z

The Stationmaster,

....., and Guards and Enginedrivers of No.....

and No.....

I agree to No..... crossing No..... at.....

*to-day, and No..... Down and No..... Up must work accordingly.

*to-morrow.

Stationmaster.

Time...../.....

*a.m.

*p.m.

Station.

Transmitted by.....

Received by.....

*Strike out unnecessary words.

In addition to Proceed Order, a (separate) Crossing Order must be issued (a) for each crossing which has to be made at an Intermediate Crossing Place; (b) for each crossing to be made other than that scheduled; and (c) for each crossing to be made by a train which is not shown in the Working Time Tables or a Special Train Notice issued by the Chief Traffic Manager. Crossing Orders are necessary for all crossings made by a conditional train shown in the Working Time Tables, the running of which is not shown in a Special Train Notice issued by the Chief Traffic Manager.

Procedure.—After an understanding has been arrived at by the Stationmasters or other employees in charge of the Controlling Stations of the Permissive Block Section affected, part "Y" of the Crossing Order must be prepared by the station (in these instructions called "A") from which the train is to be advanced, and telegraphed or telephoned to the station (in these instructions called "B") with which the arrangements have been made, and at which the particulars must be written on part "Y" of the Crossing Order. Part "Z" must then be filled in by the Stationmaster at "B", and the particulars telegraphed or telephoned to "A", when such particulars must be written on part "Z" of the Crossing Order at the latter station. The operators at each station must carefully check the messages telegraphed or telephoned before giving O.K. and their names.

The "Y" portion of the Crossing Order Form prepared at the transmitting station "A" must be signed by the Stationmaster himself when on duty, and at other times by the employee then in charge. The "Z" portion, prepared at the station "B" must be signed by the Stationmaster himself when on duty, and at other times by the employee then in charge. The Chief Traffic Manager may authorize other employees to perform this duty and Stationmasters concerned must submit for consideration cases where this is considered necessary.

When both messages on the Crossing Order Form have been transmitted and the form is complete, one of the white forms must be handed to the Guard and the other to the Driver of the train to be advanced from "A", in addition to the Proceed Order (T.17) as provided for in (a). The pink copy must be retained in the book.

The Guard and Driver of the train running in the opposite direction from "B", to be met at the Crossing Place, must be furnished with the Crossing Order prepared at that station, which must be an exact copy of the Crossing Order issued at station "A".

When there are two or more trains to be crossed, this procedure must be followed, and a separate Crossing Order prepared in respect of each of the trains affected.

When there are two or more engines on a train each Driver must be furnished with a copy of the Crossing Order—to be prepared on the next form in the book, with additional carbons, so that the whole of the forms may be written at the one time. The forms must be endorsed "Duplicate of Form No.", quoting the number of the preceding form. One of the white duplicate forms must be handed to the Driver of each additional engine. The spare duplicate form, if there be one, must be retained in the book. *The pink copy must not, under any circumstances, be torn out of the book.*

(c) *Proceed Authorities* must not bear erasures or alterations. If the form is not correct, it must be cancelled by writing the word "Cancelled" across the face, and the next form used. Cancelled forms must not be torn out of the book. Guards and Drivers must not accept these forms if they bear alterations or erasures.

(d) The Engine-driver must show the Proceed Authorities to his Fireman, and the Guard to his Assistant, so that they will be acquainted with the working of the train.

(e) In order to avoid delays in issuing Proceed and Crossing Orders when two engines are run on a train, the Stationmaster at the starting station where the two engines are attached must telegraph or

telephone such information to all stations ahead as far as the second engine is running. If, on reaching such station, it is found necessary to send the second engine beyond the point at which it was originally intended to despatch it, the Stationmaster at the latter station must notify stations thence to destination.

(f) Proceed and Crossing Orders issued in connexion with a Booked train continued beyond a certain point to a special timing, must refer to such train beyond such station NOT as "No." but as "..... a.m. or p.m. special form to".

(g) Unless otherwise provided all Proceed Orders and Crossing Orders must be handed up by Guards and Drivers on arrival at the Controlling Station at the end of the Permissive Block Section which they have traversed. The Stationmasters in charge of such Controlling Stations must carefully file these orders in date and numerical order, separate files being kept for Proceed Orders and Crossing Orders, and for Up and Down trains. Where the journey is completed at an intermediate Crossing point, the Proceed Authorities for the journey within the section not wholly traversed must be handed in at the Controlling Station at either end of the section affected, whichever the train first arrives at.

6. Intervals to be Maintained Between the Departure of Trains in the Same Direction from a Train Record Book Station.—(a) With the exception referred to in sub-clause (b) of this clause a Train must not leave a Train Record Book Station in the direction in which a previous train has departed at a less interval than the time which the Working Time Table, or Special Train Notice provides for the running of such previous train to the Train Record Book Station in advance, unless such booked running time exceeds 40 minutes, when trains may leave a station in the same direction at an interval of not less than 40 minutes.

Trains tabled to convey passengers must not be started before the time shown in the time table, except on the authority of the Chief Traffic Manager. Other trains may be run before the times specified in the time table, as provided in Rule 153 of the General Rules, except that a train must not be despatched from the starting point more than 60 minutes before tabled time.

(b) Exceptions to the intervals prescribed in (a) are made in the case of—

(i.) Ballast trains, requiring to work in the section, which may be despatched at an interval of not less than ten minutes after the departure of the preceding train.

(ii.) Both Up and Down trains between Beltana and Copley and Up trains between Hookina and Hawker, in which cases a train must not be despatched until the arrival of the preceding train at the Train Record Book Station in advance. The Beltana-Copley section is to be worked as an Absolute Telephone Block Section in both Up and Down directions; and the Hookina-Hawker section in the Up direction only.

(c) At attended stations, Stationmasters or other employees in charge are responsible for seeing that the prescribed interval is maintained between departure of trains. At unattended stations the Guard, or Fireman in the case of a light engine, is responsible.

(d) For intervals to be maintained with Motor Inspection Car see Regulation 22.

7. Alteration of Intermediate Crossing Arrangements.—(a) In cases of emergency Crossing Points may be altered by Stationmasters or other employees in charge of Controlling Stations acting in conjunction with the Guards of trains affected. The following regulations shall govern the making of such alterations:—

(b) When the alteration is from a crossing at an Intermediate Crossing Place to a crossing at a Controlling Station, the Stationmaster or other employee in charge of a Controlling Station in advance may make the alteration after consultation with the Guard of the train affected. The Guard must prepare portion "Y" of Form T.18A (Crossing Order for Crossing altered after departure from a Controlling Station) and telephone it to the Controlling Station in advance, who, after satisfying himself that everything is safe for such alteration must prepare and telephone portion "Z" to the Guard.

Specimen Form.

(T.18A.)

COMMONWEALTH RAILWAYS.

Permissive Block and Absolute Telephone Block Systems.

No. 597.

CROSSING ORDER.

(for crossing altered after departure from a Controlling Station).

The Stationmaster, Y Date....., 192...

No..... is booked to cross No..... at.....
No....., of which I am Guard, has arrived at.....
and *is ready to leave at..... *a.m.
*will be *p.m.
No..... has not arrived at..... and is not in
sight. Do you agree to No..... crossing No..... at.....
instead of at..... ?

Time...../..... *a.m. Guard of No.....
*p.m.

..... Location.
Transmitted by..... at..... *p.m.
*a.m.
Received by..... at..... *a.m.
*p.m.

Z

To the Guard and Enginedriver of No.....
No..... is (reason for altered crossing).....
I agree to No..... crossing No..... at.....
instead of at..... No..... and No.....
are to work accordingly.

Time...../..... *a.m. Stationmaster.
*p.m. Station.
..... Date.

Transmitted by.....
Received by.....

*Strike out words not required.

(c) When the alteration is from a crossing at one Intermediate Crossing Place to another Intermediate Crossing Place, the alteration must be made by the Stationmaster or other employee in charge at both ends of the Permissive Block Section in conjunction with the Guards of both trains affected. There must be a clear understanding between both Stationmasters and the Guards of both trains. When this understanding has been arrived at the Guards of the trains affected must prepare portion "Y" of Form T.18A. and telephone it to the Stationmaster or other employee in charge who agreed to the issue of the original Crossing Order. After he is satisfied that everything is safe for the alteration suggested, the latter must prepare and telephone portion "Z" to both Guards.

A crossing may be altered so that it will be made at a Crossing Place which will be arrived at before the Crossing Place originally fixed prior to consulting the Guard of the train which is to be advanced. A train must not be advanced beyond the Crossing Place originally fixed until the Guard of the opposing train has received a Crossing Order for the altered crossing.

(d) In all cases of altered crossings, all persons holding the original Crossing Orders must write the word "Cancelled" prominently across them as soon as the issue of the new Crossing Orders is completed.

(e) Form T.18A is in triplicate. The top copy will be printed on pink paper, and the other two copies on white paper, and each copy will bear a red diagonal cross. The form is to be prepared with black lead pencil and good carbon paper and must be complete in every particular. The original copy is to be retained in the book, and the other copies are to be cancelled immediately after use, or if not required, immediately after preparation. Each Guard and Driver affected must hold a copy of the Crossing Order, and must surrender it on arrival at the Controlling Station in advance.

(f) When a train loses ten or more minutes in a section where there are one or more Intermediate Crossing Places, and crossings have been arranged at such places, the Guard must promptly advise the Controlling Station or Stations as indicated in (b) and (c), and obtain instructions as to whether or not the meeting points with trains running in the opposite direction are to be altered.

If a train is running fairly well on time, and the Guard finds that the train to be met has not arrived or is not in sight, he must advise the Controlling Station or Stations of his arrival.

If no crossing has been arranged in a Section, but a crossing at the Controlling Station in advance is likely to be affected, similar advice is to be telephoned by Guards.

In all other cases, Guards must advise the Controlling Station in advance of any delays totalling thirty minutes, and of the probable further running of their trains.

3. Train Passing Another Train at an Intermediate Crossing Place.

—1. (a) When it is known prior to the departure of a train from a controlling station that a following train will be required to pass it at

an intermediate crossing place, the Stationmaster must confer with the Stationmaster at the controlling station in advance, and exchange with him the following messages:—

(Form T.1.)

Message A.

To the Stationmaster.....

No..... will leave..... at..... a.m. * to-day
p.m. * to-morrow

I propose that No..... which will follow that train shall pass

No..... at..... Do you agree?

Transmitted by..... at..... a.m.
p.m.

Signed

Received by..... at..... a.m.
p.m.

.....
Stationmaster

..... Station

..... Date

* Cross out words not required.

Message B.

To the Stationmaster.....

I agree to No..... passing No. at

Transmitted by..... at a.m.
p.m.

Received by..... a.m.
p.m.

Signed..... Stationmaster
..... Station
..... Date

(b) When the arrangement has been agreed to by the Stationmasters at the controlling stations on each side of the intermediate crossing place, and the above messages have been exchanged, the Stationmaster at the controlling station from which the trains are being despatched, must hand to the Driver and Guard of the first train a written notification in the following form:—

(Form T.2.)

To the Driver and Guard of.....at.....
 No.....will follow your train from this station (.....)
 and is to pass that train at.....No.....is
 to work accordingly.

work accordingly.
The Driver and Guard of No.....will be notified of this arrangement.
(Signed).....
.....Stationmaster.
.....Station.
.....Date and time.

He must also hand to the Driver and Guard of the train which is to pass the other at the intermediate crossing place, an authority in the following form:—

(Form T.2A.)

To the Driver and Guard of No.....
No.....left here at.....
 a.m.
 p.m.
No.....is to pass No.....at
The Driver and Guard of No.....have been notified of this
arrangement.

Signed..... Stationmaster
..... Station.
..... Time and Date.

(c) If telephone communication with the controlling station in advance cannot be established from the controlling station in the rear of the Intermediate Crossing Place, the Stationmaster at the latter controlling station may authorize a following train to pass a preceding train at the intermediate crossing place without having first exchanged messages "A" and "B", but he must advise the controlling station in advance of the arrangement at the first opportunity.

2. Should it be found necessary for a following train to pass a preceding train at an intermediate crossing place, after the first train has been despatched, but before the departure of the following train from the controlling station, the procedure laid down in Clause 1 must be observed, except that the notification to the guard and driver of the preceding train is to be telephoned to them at, or before their arrival at the proposed passing point.

3. (a) Should a following train overtake a preceding train at an intermediate crossing place owing to the preceding train losing time, and in order to avoid serious delay to the following train, it is considered advisable to allow the following train to pass and proceed ahead from the intermediate crossing place, the Guard of the preceding train must prepare and telephone a message in the following form to the Stationmaster at the controlling station in advance, advising him of the circumstances:—

(Form T.3.)

To the Stationmaster.....

No.....arrived at.....at.....a.m.
p.m.

No.....arrived at.....at.....a.m.
p.m.

Owing to No.....
of which I am Guard.....
(reason)

it is considered No.....should pass and proceed ahead of No.....
from..... Do you agree?

Transmitted by at
 a.m.
 p.m. (Signed)
 Guard of No.

Received by at a.m.
p.m. at Station.
..... Date.

(b) If the Stationmaster at the controlling station in advance is agreeable to the following train passing the preceding train at the intermediate crossing place, he must prepare and telephone approval in the following form:—

(Form T.3A.)

To the Driver and Guard of.....
 and the Driver and Guard of.....
 at..... I agree to No..... passing No..... and
 proceeding ahead of that train from.....
 No..... and No..... are to work accordingly.
 Transmitted by..... at..... a.m. (Sgl.) Stationmaster.
 p.m.
 Received by..... at..... a.m. Station.
 p.m.
 Date.

The Guard receiving this message must hand a copy to the Driver of his train for his information, and to the Guard and Driver of the following train as authority for that train to pass and proceed ahead from the intermediate crossing place.

(c) If telephone communication cannot be established with the controlling station in advance, the Guards of the trains concerned may agree to the arrangement, and in such cases the Guard of the first train must prepare and hand the authority to the Driver and Guard of the train which is being allowed to pass his train. The Guard of the latter train must notify the Guards of opposing trains met in the section after his departure from the passing point that his train and the train passed are running out of course, and must on arrival at the first controlling station in advance inform the Stationmaster or employee in charge there. Should there be no one on duty on arrival at the first controlling station in advance, he must advise the Stationmaster or employee in charge at the next controlling station in advance.

4. Immediately advice is received of a train passing another out of course, the Stationmaster or employee in charge at a controlling station must, if the trains concerned are running beyond his station, promptly pass the information on to the next controlling station in advance.

5. These instructions do not authorize any departure from the instructions in regard to "Alteration of Intermediate Crossing Arrangements", Regulation 7, of the Permissive Block and Absolute Telephone Block Regulations. Should any alteration in crossing arrangements be involved the instructions in regard thereto must be strictly observed, and the Guards and Drivers of the opposing trains concerned informed of the circumstances before a train is authorized to pass another train running in the same direction at an intermediate crossing place.

6. In the event of a train being required to pass another train, which is tabled to precede it, at a controlling station, it will not be necessary to issue any special authority to the Driver and Guard of the trains concerned, but they should be informed of the arrangement, and advice must also be passed on to the controlling stations in advance as provided in Clause 4 hereof.

9. Trains Working to Intermediate Train Record Book Station and Stabling Prior to Advancing or Returning.—1. When a train (other than a Work or Ballast Train, for which see Regulation 16) runs to an Intermediate Train Record Book Station and stables, thence returning to the Controlling Station from which it was despatched, or continuing to the Controlling Station in advance, the following procedure must be observed:—

(a) A Proceed Order to the *Intermediate Train Record Book Station* (which must also be a crossing place) authorized in accordance with the procedure laid down in Regulation 5 must be issued to the Driver and Guard, in addition to a Crossing Order for each crossing to be made at any point between the Controlling Station from which the train is despatched, and the Intermediate Train Record Book Station at which it is to be stabled. In addition, a Crossing Order must be issued for any crossing which will be made at the Intermediate Train Record Book Station by the train stabling there and a train which is to be despatched from the Controlling Station in advance before the due arrival of the stabling train at such Intermediate Train Record Book Station.

(b) On arrival at the Intermediate Train Record Book Station and after the train has been safely stabled clear of the main line, the Guard must telephone the arrival to the Controlling Stations at either end of the Section, and an assurance that it is clear of the main line, as per form hereunder:—

"To the Stationmasters at..... and.....
 No..... arrived at..... at..... a.m.
 p.m.

and has been stabled clear of the Main Line, and will not be allowed again to foul the main line without your permission.

..... Guard.
 No..... Train.
 Location.
 Date."

This message must be written out by the Guard before telephoning it; and he must endorse on it the names of the persons who receive it, together with the time of transmission. The time of arrival and the time advice of arrival is transmitted and received must be recorded in the Train Record Book at both Controlling Stations, as well as at the Intermediate Train Record Book Station.

(c) Until advice has been received of the arrival of the train at the Intermediate Train Record Book Station at which it is to stable, the Stationmaster at the Controlling Station in advance must issue a Crossing Order for any crossing with that train at the stabling point, to the Driver and Guard of each train despatched from his station for which a crossing has not previously been made. The Crossing Orders must be prepared in accordance with the procedure laid down in Regulation 5. The forms prepared at the station at the opposite end, however, must be endorsed "Crossing with Train stabling at Intermediate Point", and left in the book.

NOTE.—If the Guard of the train to be stabled at the intermediate point can be communicated with and a crossing arranged at another Crossing Place with advantage, this may be arranged in accordance with the procedure laid down in Regulation 7.

(d) The Guard and Driver of each following train which is despatched from the Controlling Station prior to receipt of the advice of arrival of train at the stabling point, must be issued with a "Passing Order" in accordance with Regulation 8 to pass that train at the Intermediate Point at which it is to stable.

(e) The Proceed Orders issued to Drivers and Guards of trains despatched from either Controlling Station, after receipt of the advice of arrival at the Stabling Point, and during such time as the train is stabled there must be endorsed—

No..... is stabled clear of the main line at.....

(Signed)..... Stationmaster.

2. A train stabled at an Intermediate Train Record Book Station must not be permitted to foul the main line or be despatched from the Intermediate Train Record Book Station until a Proceed Order, and Crossing and Passing Orders, as necessary, have been obtained in accordance with the following procedure:—

(a) The Guard must confer with the Stationmasters at the Controlling Stations on either side, and when a clear understanding has been arrived at, the Stationmaster at the Controlling Station to which the train is required to proceed must telephone the Controlling Station at the other end of the section and the Guard of the train, in the following form:—

(Form No. T.6.)

"The Stationmaster..... and the Guard of.....

I propose to issue a Proceed Order permitting No..... to be despatched from..... to my station, and Crossing Orders to cross.

No..... at.....

No..... at.....

No..... at.....

Do you agree?

Time lodged..... Stationmaster.

Time sent..... Station.

Sent by..... Date."

Received by.....

(b) If agreeable the Stationmaster at the Controlling Station at the other end of the section will reply in the following form:—

"To the Stationmaster..... and Guard of.....

I agree to No..... proceeding from..... to..... and the proposed crossing arrangements.

The last train despatched from this station to be notified that

No..... is stabled at..... was

No..... at..... a.m.

No..... at..... p.m.

Time lodged..... Stationmaster.

Time sent..... Station.

Sent by..... Date."

Received by.....

(c) Both messages must be made out in duplicate by the Guard and a copy of each must be handed by him (with the Proceed and Crossing Orders) to the Driver. After the exchange of these messages the Guard of the train, and the Stationmaster at the Controlling Station to which the train is to be despatched may proceed with the issue of the Proceed Orders, and Crossing Orders as necessary in accordance with the procedure laid down in Regulation 5 provided there is not an opposing train in the section with which a crossing has not been previously arranged. To avoid delay on account of an opposing train being within the section between the Intermediate Stabling Point and the Controlling Station to which a train requires to be despatched with which a Crossing has not been previously arranged, the Stationmaster will, if unable to arrange a Crossing before its departure, require to instruct the Guard of the former train to inquire by telephone from the most suitable place in regard to the arrangements. The crossing may then be arranged with the Guard in accordance with Regulation 7.

3. All forms used in working trains under this Regulation must be carefully attached together at each Station and forwarded to the Chief Traffic Manager. The forms used for the outward journey must be collected by the Guard and handed to the Stationmaster at the first Controlling Station reached after departure from the stabling place, and the Stationmaster concerned will be held responsible for forwarding them to the Chief Traffic Manager.

4. The Guard of a Train working under this Regulation must be supplied with Books of Proceed Orders (T.16) and (T.17), a Book of Crossing Order Forms (T.18), and all other necessary forms, prior to commencing the journey.

10. Trains Running to an Intermediate Point and Returning to the Station from which They Started Without Running through to the Controlling Station in Advance.—(a) When a train runs to an Intermediate Point, and requires to return to the Controlling Station from which it started without running through to the Controlling Station in advance, the Guard and Driver of such train must be supplied with Crossing Orders and/or Proceed Orders as may be necessary for the forward and return journey before leaving the last Controlling Station on the forward journey.

(b) The Guard of the train, the starting point of which is an Intermediate Train Record Book Station, must, if practicable, speak on the telephone to the first Stationmaster on either side before leaving, and ascertain how the trains to be met, or passed, are running, and also advise such Stationmasters the probable time of departure of his train. As far as practicable, the nearest Stationmaster on either side should be in attendance fifteen minutes before the booked departure of the train.

(c) When such Intermediate Point is a Crossing Place but not a Train Record Book Station, the Guard must, just prior to his departure, advise the Station to which his train is returning of the time at which his train is leaving, and the Guard of the next following train must, before leaving such Intermediate Crossing Place, ascertain from the

Station in advance, by telephone, the time of the departure of the preceding train, and maintain the interval prescribed in Regulation 6 for trains departing from Train Record Book Stations.

(d) When the Intermediate Point is not a Crossing Place, the Guard must advise the station to which his train is returning on arrival at the first Crossing Place.

(e) When a train is run to an intermediate point, and is due to return therefrom almost immediately (e.g., an Inspection train, or engine on trial run), the Guard need not communicate as shown above, unless directed to do so by the Stationmaster controlling the station from which the train departed.

(f) See Regulation 9 for Trains Stabling at an intermediate point before returning, &c.

11. Crossing of Trains at Stations Without Resident Staff.—(a) The train arriving first must come to a stand 20 yards outside the first facing points, or outside the Home Signal where provided, and must then be admitted by the Guard in accordance with Rules 43 (a) and 166 (c) of the General Rules.

(b) When the second train arrives it must come to a stand 20 yards outside the first facing points, or outside the Home Signal where provided. The Guard of the first train must then admit it in accordance with Rules 43 (a) and 166 (c) of the General Rules.

(c) When two trains approach at the same time, both must come to a stand 20 yards outside the first facing points or outside the Home Signal where provided, and after the Guards have come to a clear understanding as to the working, they must be admitted in accordance with Rule 166 (c) of the General Rules.

(d) The Guard of the train leaving the station or siding last must satisfy himself before departure that all points and choke blocks are locked, and that the signals (where provided) are in the regulation position.

(e) In the case of light engines, the Fireman must carry out the duty prescribed for the Guard in Clauses (a) to (d) inclusive; and to enable this to be done, the Driver must be provided with an "S" key by the Stationmaster at the station from which the engine starts. This must be delivered to the Stationmaster at the destination station, who must promptly waybill it back to the station to which it belongs.

12. Crossing of Trains at Stations with Resident Staff but Not Provided with Signals.—The working prescribed for stations without Resident Staff applies, except that the Stationmaster or other employee in charge, must assume charge of the station working instead of the Guard in accordance with Rule 43 (a) of General Rules.

13. Banking or Assisting Engines Not Proceeding through the Section.—(a) When a Banking or Assisting Engine is required to assist a train to an Intermediate Point, and return to the Station from which

it started, without running to the Controlling Station in advance, the following messages must be exchanged by the Controlling Stations:—

(Form T.4.)

From despatching Station—Banking } Engine.
Assi }
is assisting Train No. to and
returning to this Station.

To despatching Station—Banking } Engine.
Assisting }
assisting No. Train to and
returning to your Station noted.

(b) In such cases, the Driver of the Banking or Assisting Engine must be furnished with an authority to return to the Controlling Station from which he started, and the Stationmaster at such station shall not allow any subsequent Engine or Train to leave his station until the return of such Banking or Assisting Engine, and until he has received from the Driver and has cancelled the Order authorizing the return of such Engine.

(c) The order to be given the Driver of such Banking or Assisting Engine must read as follows:—

(Form T.4A.)

..... Station.
..... Date.
To the Engine-driver of Engine Banking }
Assisting } No. Train.

You are hereby authorized to proceed to
assisting No. Train, and to return here. The Section will
be kept clear until you return to this station and hand this order back
to me.

(Sgd.) Stationmaster.

(d) It will be the duty of the Driver of the Banking or Assisting Engine to deliver the authority held by him to the Stationmaster at the Controlling Station immediately on his return, and it will be the duty of the Stationmaster to immediately write the word "Cancelled" across the face of it, and to file it for reference.

(e) Attention is drawn to General Rule 133. Stationmasters in charge of stations where banking or assisting working is considered to be advantageous must report to the Chief Traffic Manager for instructions.

14. Shunting Outside Station Limits.—(a) At Controlling Stations where Home and Distant Signals are Provided.—The main line inside the distant signal may be occupied for shunting purposes provided that the distant signal is at "danger", and provided that the main line between the distant and home signals is cleared not less than 15 minutes before the due arrival time of any train running towards the station at which shunting is being performed.

(b) At Controlling Stations where Home and Distant Signals are not Provided.—The main line beyond the outside facing points may be occupied for shunting purposes provided that a Proceed Authority has

not been issued by the adjacent Controlling Station for a train to proceed from that station to the station at which shunting is to be performed. If such an Authority has been issued, shunting operations may proceed but a sharp look-out must be maintained during such operations, and in no case is the main line beyond the outside facing points to be occupied within fifteen minutes of the due time of arrival of the opposing train running in the section.

(c) *At an Intermediate Crossing Place.*—The main line beyond the outside facing points may be occupied for shunting purposes provided that a Crossing Order fixing a crossing at that place has not been issued for the train which is to perform shunting work; or if one has been issued, provided that it has been cancelled and another crossing place substituted in accordance with Regulation 7.

If a Crossing Order has been issued (and it has not been cancelled in accordance with Regulation 7) shunting operations may proceed, but a sharp look-out must be maintained during such operations, and in no case is the main line beyond the outside facing points to be occupied within fifteen minutes of the due time of arrival of the opposing train running in the section.

(d) If a train is running out of course (either before or after tabled time) allowance must be made for this in computing the fifteen minutes margin fixed in (a), (b) and (c).

(e) At attended stations shunting outside station limits is to be performed only on the authority of the Stationmaster or other employee in charge, who must see that the above regulations are strictly observed.

(f) Drivers, Firemen and Guards of all trains working under this system must keep a sharp look-out when approaching all Crossing Places so that they may stop short of any obstruction which may be on the main line.

15. *Ballast and Work Train Working.*—(a) Ballast and Work Trains must work to a Time-table. It will not always be practicable for this to be issued by the Chief Traffic Manager, and when it is not, the advice of the running of the train must be issued by the Controlling Stationmaster by telephone or telegraph and, when possible, in writing. Such advices should show, as far as practicable—

- (i) The date and time of starting.
- (ii) The date and time of return.
- (iii) The place or places where the Train will cross other trains or where other trains will pass.
- (iv) The places or mileages between which the train is authorized to work, and between what hours.
- (v) The place where the train will stable each night.

(b) Not more than one Ballast or Work Train (unless otherwise authorized by the Chief Traffic Manager) must work on the line between any two Controlling Stations at the one time.

(c) The brakevan of each Ballast or Work Train must be equipped with a Portable Telephone.

(d) A Ballast or Work Train may work in a section occupied by another train, but it must be clear of the main line at the appointed passing place at least fifteen minutes before the due arrival of the following train. Where a crossing has to be made, the Ballast or Work Train must arrive at the Crossing Place so as not to delay the train to be crossed.

(e) The Driver and Guard of a train proceeding into a Permissive Block Section in which a Ballast or Work Train is working must be handed, in addition to the Proceed Authority, a "Warning Order" in the following form:—

(Form T.5.)

To the Driver and Guard of.....train.
Ballast or Work Train left.....at.....
and is working between mileages.....and.....
in the.....section* and will cross
your train at.....*Your train will pass
that train at.....Keep a sharp lookout.
Sgd.....Stationmaster.
.....Station.
.....Time.....Date.

* Cross out words not required.

(f) The Guard of a Ballast or Work Train, immediately on the arrival of his train at the appointed Crossing Place, when such Crossing Place is unattended, must advise the Officers-in-charge at the Controlling Stations on either side by telephone of the arrival.

16. *Ballast or Work Trains Stabling at an Intermediate Crossing Place.*—(a) The following instructions must be observed in connexion with Work or Ballast Trains when they stable at an Intermediate Crossing Place:—

Before departure from the stabling point each day the Guard of the Work or Ballast Train must telephone the Stationmasters at the Controlling Stations on either side, in the following form for authority:—

Message No. 1.

(Form T.7.)

To the Stationmasters

.....and.....

The *Work train as per Special Train Notice.....
*Ballast

of which I am guard is required to work.....miles
to.....miles between.....and.....station
to-day, and will be ready to leave.....

at.....p.m. Do you approve?
.....a.m.

(Signed).....Guard of Train.

.....Location.

.....Date.

* Cross out words not required.

The Stationmasters immediately on receipt of this message must confer with each other, and with the Guard of the Work or Ballast Train, and as soon as a clear understanding has been arrived at in regard to the working they must each reply to the message in the form hereunder:—

NOTE.—The reply must be addressed to the Stationmaster at the other end of the section, as well as to the Guard of the Work or Ballast Train (e.g. if working between Maree and Edwards Creek the reply from Edwards Creek must be addressed to the Stationmaster, Marree, and the reply from Marree must be addressed to the Stationmaster, Edwards Creek, as well as to the Guard of the Work or Ballast Train).

(Form T.8.)

Message No. 2.

To the Guard and Driver of *Work train at.....
*Ballast
and the Stationmaster.....

I approve of the *Work train, of which you are Guard,
*Ballast
and driver, proceeding from.....at.....a.m.
p.m.
to work.....miles to.....miles * subject to
the following working.

* No.....will be despatched from this station to
cross* your train at.....
pass*

No.....will be despatched from this station to
pass* your train at.....
cross*

I will not despatch any other train from this station whilst your train is working in the section, unless first agreed upon with you.

You must keep in touch with this station by telephone and keep yourself acquainted with the running of trains, so that alteration in the working may be arranged if necessary. Your train must be at the appointed crossing or passing place as provided in Regulation 15 (sub-clause (d) of the Permissive Block Regulations).

Time Transmitted.....a.m. (Signed).....
p.m. Stationmaster.

Date.....Location.

* Cross out words not required.

A copy of this order with Crossing and Passing Orders as necessary must be handed to the Driver as his authority to proceed.

(b). Arrangements for trains to cross or pass the Work or Ballast Train must be confirmed by the issue of crossing orders (T.18) in conjunction with the Guard of the Work or Ballast Train, by the Stationmaster at the station from which the trains to cross or pass the Work or Ballast train, are to be despatched.

(c). Each train despatched from the Controlling Stations must be provided with, in addition to a Crossing Order or Passing Order, a "Warning Order" as provided in Regulation 15, Clause (e) of the Permissive Block and Absolute Telephone Block Regulations.

(d). The Guard of the Work or Ballast Train must keep in close touch with controlling stations by telephone so that delays to the work or trains may be obviated.

(e) On the return of the Work or Ballast Train to the stabling point after completion of the day's work, the Guard must advise the Stationmaster at the Controlling Station on each side of the time of arrival and give an assurance that the train has been placed clear of the main line.

(f) All authorities and orders received by the Guard and Driver of the Work or Ballast Train must, after use, be attached and forwarded to the Chief Traffic Manager with the Guard's Running Statement.

17. Advice of Running of Special or Conditional Trains.—1. When time permits special train notices will be issued, and stationmasters must be careful to see that such notices are received by all concerned, prior to the running of the train. When it is necessary, owing to short notice, for advice of special train to be telegraphed, Stationmasters must immediately advise all concerned, being particularly careful that accurate information is communicated to the fettling gangs and others who may be on the line with section cars, trollies, &c.; but when it is possible for a Stationmaster to issue a written notice to any person who would be supplied with the ordinary printed special train notice, he must do this for the whole or any portion of the journey of the special train. Each Stationmaster at a Controlling Station will be responsible for doing this for the section from his station to the next Controlling Station in advance.

2. The instructions contained in Clause 32 of this appendix apply in regard to the distribution of Special Train Notices, but in order to facilitate train working in the event of failure of Telegraph and/or Telephone communication, the following instructions must also be observed:—

(a) Every Guard who distributes the Special Train Notices must obtain a receipt for them on the form supplied, from the Stationmaster at each Controlling Station. On arrival at the Controlling Stations at which the Special or Conditional Train is to commence or conclude its journey or, when the Special Conditional Train is to commence or conclude its journey at an Intermediate Crossing Place, at the first Controlling Station beyond the Intermediate Crossing Place (unless the train distributing the Notices does not run to the controlling station in advance of the Intermediate Crossing Place, when it is to be handed in at the last Controlling Station passed), he must hand the receipts (except as provided in (b)) to the Stationmaster or other employee-in-charge, who must promptly advise the Despatching Station (i.e. the Controlling Station from which the Special or Conditional train will commence the journey) and the Chief Traffic Manager by wire, that all acknowledgments have been received.

(b) In the event of a Special Train Notice only concerning the running of a Special or Conditional Train which is to commence the journey from the station at which a waybill containing receipts for the Special Train Notice is handed in, that station will only require to advise the Chief

Traffic Manager that receipts have been received, but the Stationmaster will require to satisfy himself that receipts have been obtained from all Controlling Stations concerned as in other cases.

- (c) As provided in Clause 32 of this Appendix waybill on which receipts are to be obtained by Guard will be prepared in four sections, viz.:—

Port Augusta to Quorn.
Beyond Quorn to Marree.
" Marree to Oodnadatta.
" Oodnadatta to Alice Springs.

and the waybill for each section for trains terminating at Quorn, Marree, Oodnadatta and Alice Springs, or running through the three former stations will be handed in at the respective sectional terminal stations, viz., Quorn, Marree, Oodnadatta and Alice Springs. The Stationmasters at these stations will be responsible for advising the Despatching Station and the Chief Traffic Manager with regard to receipts from Controlling Stations in their respective sections. For trains terminating at intermediate stations, the procedure is as shown in (a).

- (d) In the event of the running of a Special or Conditional Train being advised by telegraph or telephone, each Stationmaster concerned must, immediately on receipt of such advice, telegraph or telephone an acknowledgment to the Despatching Station and to the Chief Traffic Manager.
- (e) The Stationmaster at the Despatching Station must use every endeavour to obtain advice of acknowledgments of the Special Train Notice or other advice of a special or conditional train prior to the due departure of the train concerned.
- (f) The following illustrates the procedure laid down in this clause:—

A Special Train Notice (No. 250/29) is issued by the Chief Traffic Manager for No. 7 Down from Quorn to Edwards Creek, and for No. 10 from Edwards Creek to Quorn. The notice is distributed by No. 3 Down Mixed train several days before the specials are due to run. The Stationmaster, Marree, must wire the Chief Traffic Manager, and the Stationmaster, Quorn, that all Controlling Stations north of Quorn to Marree, inclusive, have received the notice for No. 7 (or if all stations have not received the notice, the names of the stations at which it has not been received); and the Stationmaster, Edwards Creek, must also send similar advice so far as his station is concerned for this train. For No. 10, the Stationmaster, Marree, must advise the Chief Traffic Manager, and the Stationmaster, Edwards Creek, that receipts have been received from all Controlling Stations on the Marree-Quorn section; while the Stationmaster, Edwards Creek, must wire the

Chief Traffic Manager acknowledgment for No. 10. As both trains are included on the same notice, however, the messages should read:—

S.M. Marree to C.T.M., Port Augusta, S.M. Quorn and S.M. Edwards Creek.

AXIS 250/29 (Copley receipt missing—where applicable).

S.M. Edwards Creek to C.T.M. Port Augusta and S.M. Quorn.

AXIS 250/29.

- (g) The Stationmaster or other employee in charge at the Despatching Station must enter in the Train Notice Receipt Book, the following particulars:—

"Acknowledgments have been received from all Controlling Stations concerned, of Special Train Notice No. concerning the running of No. or a.m. Special from p.m.

to with the exception of (enter particulars of stations from which acknowledgments have not been received).....

Sgd. Stationmaster.

..... Date."

The Guard of the train concerned must carefully read this entry, sign his name opposite and enter particulars on his Train Waybill for his own information, and the information of other Guards who may be required to work the train for portion of the journey.

- (h) In the event of acknowledgments not being received from all Controlling Stations concerned prior to the departure of the Special or Conditional Train concerned, the Stationmaster at the despatching station must continue his endeavours to complete the acknowledgments, and must advise the Guard of the train concerned by wire, particulars of acknowledgments subsequently received. All such cases must be reported to the Chief Traffic Manager.

- (i) Controlling Stations must be advised of all trains required to run within the sections under their control.

18. Failure of Telegraph and/or Telephone Communication.—(a) In the event of the failure of Telegraph and/or Telephone communication, whereby it becomes impossible to transmit the necessary messages in accordance with these regulations, the Crossing Places laid down in the working Timetable or Special Train Notices must be strictly observed. Proceed Authorities applicable under these conditions are to be issued for all regular trains and for all Conditional or

Special Trains for which Special Train Notices or telephone or telegraph advices have been issued and received by the Controlling Stations at both ends of the section affected (see Regulation 17). Each Proceed Authority so issued must be distinctly endorsed in ink—

“Telegraph and/or telephone (as the case may be) failed, and scheduled working is to be strictly observed.”

(b) In the event of the failure occurring while any train, running in the opposite direction to that from which it is desired to despatch a train, is in a section, no opposing train is to be despatched until the arrival of the first mentioned train, even though they may be scheduled to cross between the two Controlling Stations affected, unless the proper Proceed Authority had been completed prior to the failure.

(c) The instructions contained in Clause 121 sub-clause 12 of this appendix concerning failure of telegraph and/or telephone communications must be observed, and every effort must be made to locate the fault and restore communication with the least possible delay. The Guard and Driver of proceeding trains must assist in every possible way to locate and remove the fault.

19. Obstruction on Line.—In the event of a train becoming disabled or breaking down in a section, the following instructions will apply where their observance will avoid serious delays:—

(1) In each case the first duty of the Guard and Fireman will be to place detonators on the line as under:—

One at 400 yards from the train in both directions.

One at 600 „ „ „ „ „ „

Three at 800 „ „ „ „ „ „

The Guard will protect the rear of the train and the fireman the front. In the case of a Light Engine breaking down the Driver and Fireman must place detonators as indicated; should the driver be unable to leave the Engine, then the Fireman must protect in both directions, protecting the rear of the train first. All trains which have followed the disabled train into the section must, after coming to a stand, draw as near to the obstruction as advisable, each Guard protecting his train at the rear as prescribed above, so that when the last train is stopped the line will be protected at both ends of the obstruction, i.e. at the front of the disabled train and at the rear of the last train.

Detonators should be removed from the line before the journey is resumed.

(2) If communication can be established by means of the portable telephone, the Guard must, after protecting his train, confer with the Controlling stations on either side, advising the officers-in-charge of the circumstances.

(3) (a) In the event of the disabled train being able to proceed on its journey with the assistance of a following train,

that course may be adopted. Should it be found necessary to leave the disabled engine at an Intermediate Siding, it must be placed clear of the main line, together with the whole, or any portion of the train, which has to be left with it, and the Proceed Authority must be withdrawn from the Guard and Driver of the disabled train by the Guard of the Assisting Train. A written assurance must also be obtained by the Guard of the assisting train that they will not, under any circumstances, allow their train, or any part of their train, to be moved, until an engine is sent to remove it, or they are placed in possession of a proper Proceed Authority. This assurance, which is to be given on Form T.26 is to be handed to the Officer-in-charge on arrival at the Controlling Station, together with the Proceed Authority.

(b) The Officer-in-charge of the Controlling Station at which the Proceed Authority and written assurance of the Guard and Driver of the disabled train are handed in, must immediately confer with the Officer-in-charge at the Controlling Station at the other end of the section, and take prompt steps to work the disabled train forward.

(c) If communication can be established by means of the portable telephone, the Officers-in-charge at the Controlling Stations on either side must be advised by telephone of the circumstances by the Guard of the assisting train, before the latter leaves the Intermediate Siding at which the disabled train is being left, and the Officers-in-charge must then proceed to make the necessary arrangements to work the disabled train forward.

(d) The ordinary working of trains may be continued whilst the disabled train is thus standing in the intermediate Siding, but the Proceed Authorities of all trains despatched into the section, whilst the disabled train is standing in the Siding, must be endorsed—

“No.....disabled and is standing in the Siding at.....”

(4) (a) Should a train or light engine, proceeding to cross a train or trains at an Intermediate Crossing Place become disabled before reaching the Crossing Place, and should it be possible, with the assistance of another engine, to work the train forward, the Fireman of the disabled engine (except in cases where it is nearer or more advantageous to obtain assistance from the rear) must proceed along the line to the Crossing Place with the Proceed Authority, and a written application from the Guard or Driver of the disabled train for assistance, containing particulars of the nature of the disablement, and an assurance that the train will not be moved until the arrival of such assistance (Form T.26 to be used). The Stationmasters in charge of the Controlling Stations should be consulted and the Crossing Place should be altered where this would be advantageous as per Regulation 7. If communication can be established by portable or other telephone with the Guard of the approaching train, Form T.24 may be telephoned to the Guard

and Driver of that train, and in this event it will not be necessary for the fireman to go forward beyond the point at which communication becomes possible.

(b) On arrival at the Crossing Place the Fireman will hand the Proceed Authority and written application from the Guard and Driver of the disabled train to the Driver of the opposing train, the latter, after conferring with the Guard of his train, and after the train has been secured with hand brakes or as otherwise necessary, may uncouple his engine and proceed cautiously under the direction of the Fireman of the disabled train to the point of obstruction, and assist the disabled train clear of the main line.

(c) The disabled train left in the siding must be dealt with in accordance with sub-clause 3 of this regulation.

(d) The ordinary working of trains may be continued whilst the disabled train is standing in the siding, in accordance with sub-clause 3 (d) of this regulation.

(5) (a) Should it be necessary or advisable to obtain assistance from one of the controlling stations instead of from a following train or train to be crossed, and communication can be established by means of the portable telephone, the Guard must prepare the form shown hereunder, which must be signed by himself and the Driver, and telephone the contents to the controlling Station on either side.

T.24.

Date..... Time.....
The Officer-in-Charge.....and.....

The engine oftrain of which we are Guard and Driver, and which is travelling on Proceed Order No.....and Crossing Orders No.....and proceeding to.....to cross No.....is disabled at.....in the section.....and.....

Arrange relief and we will not allow the engine or any part of the train to be moved until arrival of the relief engine.

(Sgd.).....Guard.
.....Driver.

In the case of a light Engine the form will be prepared and signed by the Driver alone.

After the message (T.24) has been despatched the disabled engine or train must not be moved until the arrival of the relief engine.

(b) On receipt of the message from the Driver and Guard of the disabled train, which must be written out in full and repeated by the Officer-in-charge at the Controlling Station at either end of the section, they must confer with the view to the adoption of the best means of removing the obstruction.

(c) The Officer-in-charge at the Controlling Station from which the Relief Engine is to be despatched, will hand the Driver of the Relief Engine, as his authority to enter the Section, the Trainmen's Authorization (T.24) countersigned by himself, together with a written notification (T.25) in the form shown hereunder, showing particulars of the trains already in the Section; between his Station and the disabled train, and the disabled train and the Controlling Station at the other

end of the Section, and containing assurance that no other train will be permitted to enter the Section until notification has been received from the Driver of the Relief Engine that the disabled train has been removed clear of the Main Line. If no other trains are already in the section, Form T.25 must be issued and endorsed accordingly.

T.25.

Date..... Time.....

The Driver Relief Engine No.....

You may proceed on Form T.....telephoned by the Guard and Driver of No.....to assist that train, which is disabled at.....in the Section.....and.....

The trains already in the Section are:—

(a) Between.....and the disabled train—
No.....travelling on.....Order and booked to cross.....at.....
No.....".....".....".....".....".....at.....
No.....".....".....".....".....".....at.....

(b) Between.....and the disabled train—
No.....travelling on.....Order and booked to cross.....at.....
No.....".....".....".....".....".....at.....

No other trains will be permitted to enter the Section until notification is received from you that the disabled train has been removed clear of the main line. The working of the disabled train after relief is to be as directed by me.

(Sgd.).....Stationmaster.
.....Station.

(d) Should a train running in the opposite direction to the Relief Engine be in the Section between the disabled train and the Controlling Station from which it is proposed to despatch the Relief Engine, the Relief Engine must not be despatched from the Controlling Station until the opposing train has cleared the Section, unless proper crossing arrangements have been made with the Guard of that train in accordance with Regulation 7, and the Driver of the Relief Engine is furnished with the prescribed Crossing Order, in addition to the Authorities referred to in the preceding sub-clause (c).

(e) The Officer-in-charge must advise the Controlling Station at the other end of the section of the despatch of the Relief Engine, and the Officer-in-charge at the latter station must cancel the Trainmen's Authorization held by him by writing the word "Cancelled" across the face. The Guard of the disabled train (or, in the case of a light engine, the Driver) must be kept informed of what is being done; and the Guard (or Driver) must keep in touch with the Controlling Stations.

(f) On arrival at the point of obstruction the Driver of the Relief Engine must withdraw the Proceed Authority from the Driver and Guard of the disabled train, and show his T.25 to them; and on arrival at the Controlling Station he must hand both his own and the disabled train's authorities to the Officer-in-charge.

(g) The disabled train, when ready to be moved, must be worked as arranged by the Officers-in-charge of the adjacent Controlling Stations. If the disabled train has to cross other trains before arriving at the end of the Block Section, Crossing Orders must be issued in accordance with Regulation 7 of these instructions. Guards of all trains in the section

should communicate with the Controlling Stations as soon as they are aware that there is a disabled train in the section, and obtain instructions as to their movements.

(h) All arrangements should be finalized as far as possible by the Officers-in-charge of the Controlling Stations, the Guard of the disabled train and the Driver of the Relief Engine, before the despatch of that engine into the section in which the disabled train is.

(6) (a) In cases where the engine becomes disabled adjacent to a Controlling Station, or where communication by telephone cannot be established, and it is decided to send for assistance, Form T.24 must be prepared and signed by the Guard and Driver as provided in Clause 5 (a) of this Regulation. The Driver must then send his Fireman along the line with the completed form (T.24) to the nearest Controlling Station.

(b) The Fireman, on arrival at the Controlling Station, must hand the Form (T.24) to the Officer-in-charge, who will immediately confer with the Officer-in-charge of the Controlling Station at the other end of the Section, and if it be decided to send a Relief Engine from the former station, the Officer-in-charge of that station must repeat the contents of the form to the Officer-in-charge at the other end of the section.

(c) In cases covered by this Clause no train must be allowed to enter the Section, after the despatch of the Relief Engine, or until the appropriate Crossing arrangements have been completed, where crossings are necessary.

(d) If the fireman comes to a place where telephone connection can be established before arriving at the Controlling Station, he shall telephone the request for assistance (T.24) from that place and after receiving instructions as to the action being taken to afford relief, he shall at once return to his train and inform the Guard and Driver of the arrangements.

(7) (a) Should an accident or obstruction occur and it become desirable to work trains on one or both sides of the obstruction, special arrangements must be made for the working of the trains. As soon as a definite understanding has been arrived at, the Officer-in-charge at the Station from which the Relief Engine or Breakdown or other Train is to be despatched must arrange for the introduction of Pilot Working (see Regulation 20) between his Station and the point of obstruction, and all Engines and Trains must thereafter, until the obstruction has been removed, be worked over that part of the Section under the control of the Pilotman.

(b) Should it be necessary for the assistance of a Breakdown Train to be obtained from the other end of the Section also, or for other trains to be worked between there and the point of obstruction for the purpose of transferring passengers or otherwise, such trains must be worked under the Regulations relating to Pilot Working. Pilot Working on such other end of the Section may only be introduced after an understanding has been arrived at between both Officers-in-charge concerned, and after the Pilot Working forms for such other end of the Section have been filled in and dealt with as laid down in the Regulations.

(c) Ordinary Working must not be resumed until the obstruction has been removed, and the Section has been cleared of the obstruction and of any train or trains which have been allowed to enter, or stand in the Section during the work of clearing the obstruction, but ordinary working may be continued whilst a disabled train is standing at an Intermediate Siding "dead" and clear of the Main Line in accordance with sub-clause 3 (d) of this Regulation.

(d) Should one or more following trains have entered the Section before Pilot Working has commenced, and it is found expedient to commence Pilot Working from the station at the rear of the disabled train, the Pilotman, whenever necessary to clear the line of such train or trains, must do so by means of the Relief Engine. When there is more than one train the first should be hauled by the relief engine, and Pilotman's Caution Tickets in the approved form must be issued to all excepting the last train which he must accompany. Such trains may be placed in Sidings, but must not afterwards come on to the main line unless authorized by the Pilotman.

(e) The Pilotman, from whichever end appointed, must at the first opportunity withdraw the Proceed Orders and/or Crossing Orders from the Drivers and Guards of the trains already in the Section, and hand them to the Officer-in-charge of the Station from which he is working at the earliest opportunity, and the Officer-in-charge will advise the Station at the other end of the Section that they have been handed to him.

(f) Should it not be practicable for trains, including Breakdown trains, on the Section at the time the obstruction is removed, to be worked in the forward direction, and it is necessary for them to be returned to the Station in the rear, this must be done under the control of the Pilotman. Such trains may be despatched at intervals of ten minutes and the second and succeeding trains must proceed very cautiously. On arrival of the trains at the rear Station, the Officer-in-charge there will advise the Officer-in-charge at the Station in advance of the fact, giving the numbers and other necessary particulars of the trains.

(g) The Pilotman must always accompany the last train off the Section as a guarantee that the Section is clear, and the Officer-in-charge receiving this assurance will communicate accordingly with the Officer-in-charge at the other end of the Section, stating what trains (including Relief Engines or Breakdown Trains) have reached his end, and after the Officers-in-charge have satisfied themselves that every train or engine previously in the Section has arrived, that the Pilot Working forms have been withdrawn and cancelled, and that the line is safe for traffic, ordinary working may be resumed.

(h) In the event of Pilot Working having been in force on both ends, the clearing of the Section after the obstruction has been removed must be as arranged by the Officers-in-charge of the Controlling Stations concerned and the Pilotmen, due regard being paid both to safety and to expediting trains, as well as to these Regulations.

(i) In the event of the Officers-in-charge at both ends of the Section being unable to communicate with each other owing to the telephone and/or telegraph communication having failed, the Chief Traffic

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Manager must be advised without avoidable delay, and in the meantime everything possible must be done to arrange for the clearance of the obstruction.

20. Pilot Working.—Pilot working is instituted and cancelled in the following manner:—

(a) Before the employee who is to act as Pilotman is despatched he must be handed three of the printed forms (T.39), provided for the purpose of establishing working by Pilotman during obstruction, properly filled up. One of these, signed by the Pilotman, must be retained by the Officer-in-Charge; the second must be retained by the Pilotman; and the third must be conveyed by the Pilotman to the Guard or other employee in charge of the point of obstruction. When the form held by the Pilotman is countersigned by both Officers-in-charge, i.e., one officer at station and one at point of obstruction, and their forms are countersigned by the Pilotman, Pilot Working may be instituted. Before despatching trains, Officers-in-charge must carefully examine the Pilotman's form to assure themselves that the form is properly completed.

COMMONWEALTH RAILWAYS.		T.39
PERMISSIVE BLOCK AND ABSOLUTE TELEPHONE BLOCK SYSTEMS.		
Working of Traffic by Pilotman.		
This form must be filled up and used whenever it is temporarily necessary to work the traffic by Pilotman.		
Station.		192....
To.....	Owing to*	.....
.....at.....the traffic between		
.....and.....(station		
or place of obstruction) will be worked by Pilotman in accordance with		
Regulation 20 of the Permissive Block and Absolute Telephone Block		
Systems.		
.....will act as Pilotman,		
and no train is to be allowed to pass on to the above section of the line,		
unless he is present and rides upon the engine, or issues a Pilotman's		
Caution Ticket and personally orders the train to start.		
(Signed)		Time.....
† Noted by	at .....	.....
† Noted by	at .....	.....
† Noted by	at .....	.....
† Noted by	at .....	.....
Noted by.....		Pilotman.
.....		Time..... Date.
* State here reason for introduction of Pilot working.		
† These signatures need only be made on the copy held by the Pilotman.		

(b) The Pilotman must wear a distinctive badge which, until the regular badge can be obtained, must be a Red Flag tied around the left arm. So soon as he is satisfied that the arrangements are understood, trains may be allowed to go on to the Section under the control and by the permission of the Pilotman.

PERMISSIVE AND ABSOLUTE TELEPHONE BLOCK. 123

(c) Every train entering the section or portion of the section to which Pilot Working applies must be accompanied by the Pilotman, or must have the Pilotman's Caution Ticket (T.40) in the possession of the Engine-driver. The Pilotman's Caution Ticket is to be properly filled up and signed by the Pilotman and handed to the Driver personally by the Pilotman, who must start such train. It is for use in cases where two or more trains have to be despatched in one direction before a train runs in the opposite direction.

(d) A Pilotman's Caution Ticket (T.40) will apply only for a single journey to the other end of the Pilot Section, and must be immediately given up to the Officer-in-charge there, who must at once cancel it by writing the word "Cancelled" across the face.

COMMONWEALTH RAILWAYS.		T.40
PERMISSIVE BLOCK AND ABSOLUTE TELEPHONE BLOCK SYSTEMS.		
Pilotman's Caution Ticket.		
Ticket No.....		.....
Train No.....		.....
To the Guard and Engine-driver.		
You are authorized to proceed from.....		
.....to.....		
The last train that left here was.....		
.....at.....		
Signature of Pilotman.....		Date.....
NOTE.—The Pilotman's Caution Ticket will apply only to a single journey to the other end of the section, where it must be given up by the Engine-Driver to the Officer-in-charge, who must cancel the ticket by writing the word "cancelled" across the face of it and forward it to the Chief Traffic Manager.		

(e) When it is possible for ordinary working to be resumed the Pilotman must, on his last trip, notify all concerned accordingly, and must collect all forms issued in connection with the establishment of Pilot Working, and must hand the necessary cancellation forms (T.41) prepared by the Officer who instituted the working, to those who have been supplied with the Pilot Working Forms.

COMMONWEALTH RAILWAYS.		T.41.
PERMISSIVE BLOCK AND ABSOLUTE TELEPHONE BLOCK SYSTEMS.		
Working of Traffic by Pilotman.		
Cancellation Order.		
Station.		192....
* To.....		
Pilot-working arrangements made by me at.....		
.....on.....192.... for the line between		
.....and.....are hereby can-		
celled, and ordinary working will be resumed.		
(Signed)		Officer-in-charge.
* Each person who received a Pilot-working Form must also be handed a copy of this Cancellation Order.		
NOTE.—The Pilotman, when cancelling Pilot-working, must notify all employees concerned that ordinary working will be resumed.		

(f) A conspicuous notice must be affixed to the telephone and/or telegraph instrument stating—

"Pilot Working in force—Obstruction exists at....."

In all cases the Officer-in-charge at each end of the Section must communicate with the other and arrive at a clear understanding how the obstruction is to be removed.

(g) Officers-in-charge must not on any account allow any train to pass into any section that is being worked by the Pilotman, except under the Pilotman's instructions, and when he is present.

(h) The regulation badge is a red armet with the word "Pilotman" shown thereon in white letters, thus:—

PILOTMAN.

(i) Should the Pilotman give up the working to another, fresh forms, (T.39) and Relief of Pilotman Forms (T.42), must be issued, on which the name of the new Pilotman must be inserted. The fresh (T.39) forms and Relief of Pilotman Forms (T.42) must be delivered by the new Pilotman and substituted for the old forms (T.39), and the necessary signatures obtained on the fresh forms (T.39). He must at the same time withdraw the old forms. The issue of the new forms must be done only by the person who arranged the pilot working, to whom the new pilotman must afterwards deliver the old forms.

COMMONWEALTH RAILWAYS. T.42 PERMISSIVE BLOCK AND ABSOLUTE TELEPHONE BLOCK SYSTEMS.

Relief of Pilotman.

.....Station.....
.....192.....
* To at
PILOTMAN.....appointed by me
between..... and
is now being relieved; new forms are being issued, and.....
.....appointed as Pilotman.

(Signed)
Officer-in-charge.

* Each person who receives a Pilot Working Form (T.39) must also be handed a copy of this order. The old T.39 forms must be withdrawn, and new forms issued at same time as T.42 is issued.

(j) After one pilotman has been relieved by another, the Pilotman who has been relieved must not ride upon any engine until he resumes duty as Pilotman.

(k) Should the Officer-in-charge be changed during the time the Pilot Working is in operation, the man coming on duty must be made acquainted, by the man going off duty, with the arrangement in force, and with the person acting as Pilotman. He must countersign the form held by the Pilotman and, where possible, this must be done before taking charge.

21. Train or Portion of Train Left Within a Section.—(a) When train or portion of a train is left upon the single line from accident or inability of the engine to take the whole forward, and it becomes necessary for the engine to return to the train or rear portion of the train from the Station or Siding in advance, the Engine-driver must retain possession of the Proceed Authority until the whole of the train is removed from the section.

(b) After sunset, or in foggy weather, a red light must be placed on the front vehicle of the rear portion by the man who divides the train. As soon as the first portion has been drawn forward sufficiently far, either by day or night, the Under-guard or the Fireman must place two detonators upon the line about 400 yards from the front vehicle of the rear portion to notify the Engine-driver when returning of the position of the remainder of his train.

(c) Where there are two Guards the Head-Guard must remain in charge of the rear portion, and the Under-Guard must ride upon the last vehicle of the front portion. If there is only one guard he must remain in charge of the rear portion, and the Fireman must ride on the last vehicle of the front portion. In both cases the Guard must protect the rear portion by a red flag by day and red lights by night; but, in the hours of darkness or in those cases in which a good view cannot be obtained, he must, in addition, place two detonators on the line not less than 400 yards behind the train.

(d) Should a failure occur to an engine assisting a train in the rear, the driver of the train engine must send his Fireman to the Driver of the Assisting Engine, and obtain from him an order in writing authorizing the driver of the Train Engine to return from the station in advance for the remainder of the train, and stating that he will not allow the disabled engine to be moved until the leading engine returns. The train engine must then proceed to the station in advance, and after disposing of the front portion of the train, the Engine-driver, after informing the Officer-in-charge what he is about to do, and showing him the written order, must return and remove the rear portion of the train and the disabled engine from the section; but if an intermediate siding exists where the disabled engine or a portion of the train can be disposed of, the Driver of the disabled engine must hand to the Driver of the leading engine a written order stating he will not allow the disabled engine to be moved until the leading engine returns, and if the disabled engine is also placed in the intermediate siding, not until the Driver of the disabled engine is in possession of proper Proceed Authority or is attached to an engine, the Driver of which is in possession of it. On arrival at the station after clearing the section, the order held by the Driver of the leading engine must be delivered to the Officer-in-charge.

22. Motor Inspection Car.—This car is subject to the ordinary Permissive Block and Absolute Telephone Block Regulations, with the exceptions shown hereunder, and the Driver must hold the necessary Proceed Authority.

The time intervals to be maintained both on Permissive Block and Absolute Telephone Block Sections are as follows:—

When preceding a train, an interval of not less than fifteen minutes, unless the Stationmaster of the despatching station, and the person in charge of the Car are of the opinion that a greater margin is necessary, owing to special circumstances, or in view of the fact that between Port Augusta and Marree, the maximum speed of trains is 30 miles per hour, while for the Car it is only 25 miles per hour.

When following a preceding train an interval of not less than fifteen minutes.

When carrying passengers, however, the ordinary time interval as shown in Regulation 6 must be observed.

The Car is not run during the hours of darkness except in cases of emergency. When running at night both headlights must be burning and a red tail light must also be exhibited.

WORKING OF TRAINS.

26. TESTING OF DETONATORS.

As provided in Rule 77(b), Book of General Rules, detonators are to be tested every six months. Stationmasters, Guards, Gangers, and others holding supplies of detonators must have them tested by allowing a vehicle to pass over several selected from the stock on hand. Shed Foremen and Officers-in-charge of locomotive depots are to select for test several detonators from supplies held by Drivers. Detonators held in stores stock are also to be tested.

Circular advice will be issued by the Chief Traffic Manager when tests are due and results are to be reported through the usual correspondence channels. Should a detonator fail to explode it should be forwarded for inspection.

27. TRAIN REGISTER AND TRAIN RECORD BOOKS.

1. The Train Register and Train Record Books must be used as a medium for recording all matters relating to the working of traffic and signals, and each column must be carefully filled in.

2. Promptness and neatness in making entries are most important. If any incorrect or illegible entry be made, a line must be drawn lightly through it, and the correction made above or below, so that the original entry may be clearly seen. The actual times of arrival and departure of trains and of receipt, &c., of signals must be entered by those responsible.

3. The actual time occupied by trains at stations must be accounted for in the "Remarks" column.

4. The books are to be forwarded to Port Augusta for checking as may be directed by the Chief Traffic Manager. The books for each station are to be numbered 1 and 2 respectively.—No. 1 to be used while No. 2 is being checked, and vice versa.

On the North Australia Railway Train Register Books are to be sent to the Manager, Darwin, for checking as directed.

23. OBSERVANCE OF SIGNALS.

All employees concerned in the working of trains must realize that the proper observance of signals is of the utmost importance.

In the case of accident or irregularity which is likely to raise the question of the position of signals, the Stationmaster, Guard, Driver, and Fireman must direct each other's attention to the position of the signals, and so avoid subsequent disagreement.

29. CROSSING OF TRAINS AND MAXIMUM LENGTH OF TRAINS.

TRANS-AUSTRALIAN RAILWAY.

The following instructions are to be observed in the crossing of trains, unless otherwise authorized by the Chief Traffic Manager:—

- (1) At stations where trains cross, the first train to arrive must be admitted to the loop and the other train must take the main line.
- (2) When trains which have to cross each other arrive at a station at the same time, the signals in both directions must be kept at danger until both trains are at a standstill, when the less important train must be admitted to the loop, after which the other train must be admitted to the main line.
- (3) When the length of any train exceeds the capacity of the crossing loop at a station at which it is necessary for it to cross another train, then the longer train must take the main line, and the shorter (irrespective of class or direction) must take the loop.
- (4) As a standard crossing loop is designed to hold a train of 60 four-wheeled vehicles and engine, Stationmasters at the following stations, before despatching a train of greater length than this, must obtain from the Stationmaster at the next station on the list an assurance that no train exceeding 60 vehicles is in the section, or will be despatched into the section to be traversed by the train, unless the necessary arrangements for stowing such train have been made:—

Port Augusta.	Barton.	Rawlinna.
Pimba.	Cook.	Zanthus.
Tarcoola.	Loongana.	Parkeston.

Stationmasters at the stations named above must make allowance for vehicles to be attached to trains at intermediate sidings before crossing is effected.

- (5) The lengths in the clear of crossing loops are as shown in particulars of accommodation at stations. (See clause 178 of this Appendix.)

The maximum number of vehicles (exclusive of engine and tender) which may be permitted to run on any train is—

Bogie vehicles	..	..	..	40
Four-wheeled vehicles	..	..	..	80

When loads consist of part bogie and part four-wheeled stock one bogie vehicle is to be counted as equal to two four-wheeled vehicles.

The lengths of vehicles over coupling points, as shown in clauses 171, 172 and 173 of this Appendix, are the lengths to be used in computing train lengths.

CENTRAL AND NORTH AUSTRALIA RAILWAYS.

6. The lengths of the crossing loops on the Central Australia Railway vary very greatly and at times some of the loops are not sufficiently long to hold trains hauled by N.M. class engines and Stationmasters and others concerned must keep in touch with one another to ensure that no difficulty will be encountered in handling trains which have to cross at their stations, or at intermediate crossing places.

7. The maximum number of vehicles, exclusive of engine and tender, which may be permitted to run on any train is the equivalent of fifty (50) four-wheel vehicles—a bogie vehicle to be regarded as two four-wheel vehicles.

The lengths in the clear of crossing loops and goods sidings are as shown in particulars of accommodation at stations (*vide* clause 178 of this Appendix).

The lengths of vehicles over coupling points as shown in clauses 171, 172 and 173 of these instructions are the lengths to be used in computing train lengths.

North Australia Railway.—The maximum length of a train is not to exceed equal to 50 four-wheeled vehicles.

GENERAL.

8. Crossing Loops.—Unless otherwise authorized, sidings and roads used for the purpose of passing or crossing trains must always be kept in readiness for the immediate and safe entrance or passing through of any train.

With the exceptions outlined hereunder, vehicles must not be allowed to stand in the crossing loop at any station without the express authority of the Chief Traffic Manager. It is not intended that this instruction shall prevent the crossing loop being used for shunting purposes when necessary, but vehicles must not be allowed to stand therein after the shunting has been completed.

Should it be considered advantageous or necessary to leave vehicles in the crossing loop at any time for the purpose of stabling trains or otherwise, full particulars must be submitted to the Chief Traffic Manager for direction as to the action to be taken.

Where a crossing loop is also used as a goods siding and is fitted with choke blocks, the choke blocks are to be kept locked across the rails whether sidings are occupied by vehicles or not.

On the Trans-Australian Railway vehicles may stand in crossing loop at the stations named for the purposes specified, viz. :—

Forrest ..	.. To stand stock trucks for loading or unloading when necessary (see fourth paragraph of this sub-clause).
Zanthus ..	.. To stand Up mixed trains, when stabled there.

9. Protection of Trains Crossing.—Each train stopping at a crossing station must, if possible, stand clear of the other running line or lines, and the employee in charge of the station will be held responsible for effecting this. Precautions are to be adopted also by the Guard and Driver respectively of every incoming train to see that neither end of the train fouls another running line. Immediately after stopping, the Guard must examine the position of the rear portion, and the Driver the position of the front portion. In the event of the train being foul, the circumstance is to be promptly reported to the employee in charge, by the Guard in the case of the rear portion, and by the Fireman, under the instructions of the Driver, in the case of the front portion.

If the train is of such length that fouling cannot be avoided, the employee in charge must adopt such measures as may be necessary for the protection of the obstruction. If the employee in charge cannot be informed in time the Guard must protect the rear portion, and the Fireman, under the instructions of the Driver, must protect the front portion.

(See instructions also in clause 24, sub-clause 39 (3) in regard to crossing trains at unattended stations.)

30. WORKING OF STAFF-LOCKED POINTS.

In order to avoid staff locks at sidings being damaged through the points not being properly set for the passage of vehicles, it is essential that the staff lock drawers be properly closed after the staff is inserted, otherwise the points cannot be manipulated, and employees engaged in shunting operations must see that the drawer is in place and points are in the proper position before signalling the Engine-driver to proceed.

All concerned are reminded of instructions which provide for the Fireman giving assistance to the Guard when necessary in connexion with shunting operations at unattended sidings. (See clause 40, sub-clause 16 of the Appendix.)

31. RUNNING OF SPECIAL TRAINS.

1. Advice of Running to be Issued.—When time permits special train notices will be issued, and Stationmasters must be careful to see that such notices are received by all concerned, prior to the running of the train. When it is necessary owing to short notice for advice of special train to be telegraphed, Stationmasters must immediately advise all concerned, being particularly careful that accurate information is communicated to the fettling gangs and others who may be on the line with section cars, trollies, &c.

2. Train Crew to have Time-table and Exercise Vigilance.—The Driver and Guard of any special train must be in possession of a time-table for the running of the train, and when written notice has not been issued they must be advised accordingly by the Stationmaster at the station from which the train starts, and directed to keep a sharp

look-out for section cars, trollies, or similar vehicles, and for men who may be working on or near the line. The Driver of a special train must be specially vigilant, and sound the whistle when approaching points where employees may be at work.

3. **Special Train Signal.**—When notice of special train has not been issued, the special train signal, as described in Rule 112, Book of General Rules, must be carried by the train passing over the section immediately prior to the special train, and fettling gangs and others working or travelling along the line must be on the look-out at all times for such signals.

32. DELIVERY OF TRAIN NOTICES AND CIRCULARS.

1. The method of obtaining receipts for train notices and circulars issued to stations, depots, gangs, &c., from the office of the Chief Traffic Manager or the Manager, Darwin, is as under:—

2. A way-bill or way-bills showing names of those to whom the notices are issued must be handed to the Guard with the Notices. The Guard must check each way-bill with the addressed envelopes received to see that they agree, and sign in a book (kept specially for the purpose by the Stationmaster) as having received such way-bill and notices.

3. The Guard must deliver the notices as addressed, handing same to the Stationmaster or the Officer-in-Charge of attended stations (whose signature he must receive on the way-bill), and throwing out notices at mileages at which the train does not stop; in the latter case the Guard must indorse the way-bill "put-out" and initial the entry.

4. Where notices are thrown out of a train at intermediate mileages for Gangers, Pumpers, and others, these employees, where it is possible to do so, must acknowledge receipt by portable telephone to the nearest Stationmaster. Stationmasters concerned will be held responsible for ascertaining from Gangers (from whom they receive daily inquiries by portable telephone as to train running), if they have received a copy of each notice issued to them. If the notice has not been received, full particulars must be given and the matter reported to the Chief Traffic Manager or Manager, Darwin. All acknowledgements by portable telephone must be recorded by the Stationmasters in the Train Notice Receipt Book, quoting date, time acknowledged, and name of person acknowledging.

5. On the Central Australia Railway a separate way-bill will be prepared for each of the following sections, viz.:

- Port Augusta to Quorn inclusive.
- Beyond Quorn to Marree inclusive.
- Beyond Marree to Oodnadatta inclusive.
- Beyond Oodnadatta to Alice Springs.

The Stationmaster, Port Augusta, will acknowledge receipt for the notices, &c., supplied to him on the Port Augusta—Quorn way-bill, prior to handing the way-bill to the Guard, and the Guard will be responsible for seeing that this acknowledgment is received before leaving Port Augusta.

6. Each Stationmaster with the exception of the Stationmaster at Port Augusta, will be held responsible for delivering a sufficient number of train notices or circulars received to the responsible officer of each branch or section located at his station, and for obtaining signatures acknowledging receipt thereof. A special book must be prepared and kept for this purpose, and carefully preserved for reference. Under this arrangement all copies of notices for each station will be sent to the respective Stationmasters.

7. (i) At the termination of each section the way-bill and notices must be handed over to the relieving Guard, who must check the notices with the way-bill. When the distribution has been completed by the Guard of the last section he must hand the way-bill to the Stationmaster at the destination station. The latter must return the way-bill as a "value" to the Chief Traffic Manager by the first available through train.

(ii) On the Central Australia Railway when a Guard is relieved *en route* he must hand over the way-bill or way-bills and the remainder of the Train Notices or Circulars to the Relieving Guard, who must check the notices, &c., with the way-bills and continue the distribution in accordance with these instructions. Should the Relieving Guard be not required to sign on duty until after the incoming Guard has signed off duty, or if it is necessary for the notices, &c., to be sent forward by a later train, the way-bills and notices, &c., must be handed over to the Stationmaster, or other employee in charge, who must deliver them to the outgoing Guard, and obtain his receipt for them.

The completed way-bill must be handed in by the Guard at the termination of his section. If, however, the distribution be completed prior to reaching the termination of a section, the way-bill for that section must be handed in at the last attended station at which the notice is delivered. The Stationmasters at these stations must return the way-bill as a "value" to the Chief Traffic Manager by the first available train.

8. Train Notice Receipt Books will be called in for periodical inspection.

9. Written acknowledgments are required from addressees at Port Augusta and at intermediate places where they are unable to acknowledge by portable telephone.

33. CLEANING AND EXAMINATION OF POINTS AND POINT LOCKS, ETC.

Stationmasters must make a daily examination of points and point locks within station limits and see that they are kept thoroughly clean and free from sand. If any point lock be found defective or if one be missing a report must be immediately forwarded to the Chief Traffic Manager, together with explanation of defect or loss.

In cases where the extent of the yard is such as to prevent the Stationmaster making a personal inspection as well as perform his ordinary duties, he may depute the work of inspection to another

employee, but approval for such arrangements must be obtained from the Chief Traffic Manager, and if such approval be given, the Station-master will be responsible for seeing that the inspection is regularly made.

At Port Augusta, Parkeston and Quorn, at unattended stations, and at attended stations on the Central Australia Railway where trouble with sand is experienced, the responsibility for cleaning points rests with the Maintenance Gang, and at other stations the cleaning must be done by the station staff.

Maintenance Gangers must exercise close supervision over points, particularly at unattended localities on the main line and at places where trouble with sand is experienced, and see that they are maintained in good working order. Guards working at unattended sidings must note the condition of the points, &c., and bring under notice any case where they are found out of order.

34. TRAINS RUNNING THROUGH POINTS IN A TRAILING DIRECTION, ETC.

All points must be properly held or secured for the passage of trains and vehicles, irrespective of whether such points are being passed through in a trailing or facing direction. In the case of reversible points the lever must be thrown over into the correct position before any vehicle is allowed to pass over the points, and in the case of non-reversible points the lever is to be firmly held for the passage of vehicles.

All employees engaged in shunting duties must see that points which have to be passed over in a facing direction during shunting operation are properly held by hand or secured by point lock or by lever-knob, and that the blade fits well home to the stock rail.

The employee conducting shunting and other operations is required to see that the points are in proper position before giving the signal for a train or vehicle to pass over them.

In cases where points are visible from the engine, however it is incumbent on the driver to see that they are correctly set (or to obtain the fireman's assurance to that effect) before moving the engine over them.

35. MOTOR INSPECTION AND SECTION CARS, HAND TROLRIES, ETC.

1. The following terms are to be used in referring to the various types of motor inspection, motor section, and hand-propelled cars, trolleys, and tricycles:—

Motor Inspection Car.—Four-wheeled covered car used for inspection and special purposes, and run and signalled as a train.

Motor Section Car.—Car used principally for convenience of gangs in connexion with their work. The minimum number of men who are to ride on the vehicle is laid down in clause 2 (b) hereunder.

Motor Tricycle or Quadricycle.—The single-man tricycle or quadricycle for the use of Roadmasters, District Linemen, Pumpers, &c.

Hand Section Car.—The car used by some of the maintenance gangs in connexion with their work—mechanically fitted for hand propelling.

Trolley.—Table-top trolley used for conveying material.

Tricycle.—The tricycle used by maintenance employees in connexion with the inspection of lengths, &c., either single or double seated.

The following instructions must be observed in addition to those contained in Rules 131, 207, 208, and 209, Book of General Rules:—

2. These Vehicles—

- (a) Are to be used only for departmental purposes, and only by authorized employees able to read and write, and in possession of a watch showing the correct railway time, a copy of the last working time-table, and any special train notices affecting the particular section of the line on which the vehicle is running on the day the vehicle is being used. Gangers and other employees having the vehicles in their custody are responsible for seeing that they are not used except as authorized.
- (b) Except when worked as a train under electric staff, staff and ticket, permissive or absolute telephone block regulations, are always to carry a sufficient number of men to quickly remove them clear of the line should occasion arise.

Motor inspection cars are in every case to be worked as a train.

A Motor section car must carry at least four men, except—

- (i) When working on electric staff, staff and ticket, or under permissive or absolute telephone block regulations, when a minimum of two men is permissible.

- (ii) In the case of trial after overhaul when electric staff is not available, fettling gangs running their lengths, or travelling to or from work, or when the Head of a Branch, or any of the following Officers are travelling on inspection, a crew of two men is permissible, *provided the motor section car is a Fairbanks-Morse type, and a portable turntable and portable telephone are carried on the car—*

Traffic Superintendent.

Accounts and Audit Officer.

Superintendent of Loco. Running.

Assistant Maintenance Engineer.

Superintendent of Maintenance.

Superintendent of Signals and Lighting.

Travelling Foreman.

Foreman Motor Repair Shops.

Roadmaster.

Traffic Inspector.

District Lineman.

- (iii) When working with trailer attached, when a minimum of three men may form the crew, provided that before the forward journey is undertaken, the assurance of the Stationmaster is obtained either in writing or by telephone that the section it is proposed to travel over is clear for the specified time required for the work. Under such circumstances the portable turntable and portable telephone must be carried on the car, and the specified time must not be exceeded without further assurance from the Stationmaster that the line is clear.
- (c) Must not be run at night-time or when the weather is such that a clear view is not obtainable, except in cases of emergency, and in such event a white headlight and red tail-light must be exhibited on the vehicle. These lights must be concealed when the vehicle is taken off the line.
- (d) Must not be attached to a train.
- (e) May be run, coupled together, but cars so coupled must carry the stipulated number of men in respect of each car, except when run under electric staff, staff and ticket, permissive or absolute telephone block regulations, when one man for each car will be regarded as the full crew necessary.
- (f) Must be kept in good working order, well oiled and cleaned, and when not actually in use clear of the line and road approaches, and where possible properly housed from the weather and under lock and key.

3. Motor Section Cars Hauling Trailers—

Flat-top trollies may be used as trailers attached to motor section cars in order to afford additional facilities for employees stationed at the following locations in procuring firewood:—

17 Miles	Wirrappa	343 Miles	946 Miles
Hesso	Wirraminna	Barton	Karonie
Bookaloo	Kingoonya	Ooldea	Randells
Woocalla	298 Miles	Naretha	Golden Ridge
	Wynbring	Zanthus	

The flat-top trolley must be securely coupled to the motor section car with hook and eye-bolt. The eye-bolt is to be secured through the frame work of the flat-top trolley, and the hook so arranged as to drop through the hole at rear of motor section car provided for pin of turntable.

It must be distinctly understood that firewood must not be gathered during working hours, and in all cases where the flat-top trolley is brought into use as trailer attached to motor section car the following instructions must be strictly adhered to:—

- (a) Where a flat-top trolley is stationary on the line, or is being moved over short distances during the operation of loading firewood the vehicles must be protected in accordance with Rule 209 (b) Book of General Rules.
- (b) Under no circumstance is the flat-top trolley to be propelled, but must be the trailing vehicle on both the forward and return journey.

- (c) The return journey with the flat-top trolley under load with firewood must be made only when the staff section is clear, and an assurance that such is the case be obtained from the Stationmaster before forward journey is undertaken. In such cases the conditions laid down in Rule 209 (a) will not apply.
 - (d) Firewood, which must not exceed 9 feet in length, is to be stacked crosswise on trolley; height of stack must not be more than 2 feet from trolley floor, the loading being properly secured from end to end to prevent the possibility of material falling off *en route*.
- ### 4. The employee in charge of any of these vehicles—
- (a) Must before leaving any station check time shown by his watch, and
 - (b) Obtain from the Officer-in-Charge all information in regard to the running of ordinary and special trains over the section, and make a note of any train of which he was not previously aware;
 - (c) Must exercise great caution to avoid danger to himself, to the other employees, and to his vehicle. He must make frequent stops to listen for trains, and before entering a cutting or passing on to a curve or any other portion of the line where the view is bad, he must take such action as may be necessary to make sure of the absence of danger from either direction before proceeding.
 - (d) Must keep a sharp look-out at all times. When approaching, vehicles must be brought to a stand-still within 50 yards of each other. When following, a space of not less than 100 yards should separate the vehicles when in running. The lighter vehicle must always give way to the heavier.
 - (e) Must remove his vehicle from the line at least ten minutes before the anticipated arrival of a train, due regard being paid to the actual running of the train expected. On those sections where a clear view of an approaching train cannot be obtained, it is essential that the employee in charge of the vehicle keep himself informed of train running by communicating with attended stations by means of the portable telephone. Where a train, which is permitted to run ahead of scheduled time in the section in which he is working, is due or nearly due in that section, he should ascertain the exact running of the train from the attended station from which the train will approach before placing the vehicle on the main line.
 - (f) Must exercise care and reduce speed to 10 miles per hour when running through facing or trailing points, and crossings, as the vehicle is apt to leave the rails.
 - (g) Must, in the case of a motor vehicle, hold a certificate of competency issued by the Head of the Branch. The certificate will be issued only to employees having a satisfactory knowledge of fixed, hand, and train signals, and of the general manipulation of the vehicle.

- (h) Must carry three red flags, two red hand lamps, and a supply of detonators. A portable telephone must also be carried if the vehicle is a motor inspection car, motor section car, motor quadricycle or hand section car. Further, the Fairbanks Morse type of motor section car must be equipped with a portable turntable.

5. Motor inspection cars, motor section cars, motor quadricycles or tricycles, hand tricycles, hand section cars, trollies, or similar manual or power propelled vehicles are to be used for Departmental purposes only, and except in the case of serious accident, illness, or other emergency, must not be used for the conveyance of passengers. In the case of serious accident, illness, &c., the Chief Traffic Manager may approve of the vehicles being so used, but in each instance the circumstances must be reported by first mail for the information of the Commissioner.

Stationmasters and others must report to the Chief Traffic Manager, or Chief Engineer of Way and Works, as the case may be, any instance of improper use of these vehicles.

6. *Speeds must be limited as under—*

Motor Inspection Car, 4' 8½" gauge	..	30	miles per hour.
Motor Inspection Car, 3' 6" gauge	..	25	" "
Motor Section Car .. ..	..	20	" "
Motor Section Car (on curves of 20 ch. radii and under)	..	15	" "
Motor Section Car with Trolley Trailer	..	15	" "
Hand Section Car .. ..	..	15	" "
Motor Quadricycle .. ..	..	15	" "
Hand Tricycle .. ..	..	8	" "
Trolley .. ..	..	8	" "

7. *Protection of Vehicles—*

- (a) The Stationmaster must warn the Engine-driver of a train departing from his station of the probable location of any vehicle likely to be on the line, and Drivers, Firemen, and Guards must keep a look-out at all times for such vehicles. As Motor and Hand Section Cars and Trollies will be extensively used for conveying men, and their tools and material, to and from their work, the look-out must be particularly sharp when men are likely to be so travelling.
- (b) As a precaution against vehicles being struck and damaged by trains running ahead of time, owing to employees in charge of the vehicle not being aware of such early running, Drivers must in such cases have their engines under such control and proceed at such speed as will enable them to stop short of any obstruction, so as to prevent mishaps.

8. *General—*

- (a) Stationmasters and other employees must immediately report in writing any breach of the instructions regarding the use of these vehicles.

- (b) Unqualified persons are not to tamper with Motor Vehicles. When repairs are necessary, the services of an authorized mechanic must be obtained. A record showing repairs and renewals effected, and periodical examinations due, must be kept by the Officer-in-Charge of such work.
- (c) Employees in charge of Motor Vehicles must make every effort to reduce consumption of petrol and other running stores to a minimum.
- (d) Motor Vehicles conveyed by train must be loaded some distance from the engine, or otherwise protected, so as to avoid risk of being set on fire through sparks from the engine.

36. **ENGINES PROCEEDING BEYOND LOCO. BOUNDS.**

The following points at stations named are to be regarded as the respective boundaries beyond which engines must not pass on to Traffic roads unless signalled to do so by a Traffic employee:—

Port Augusta.—Except as provided in clause 3—

- (1) No engine or travelling crane is to come on to Traffic lines unless admitted thereto by a Traffic employee. Any engine working on Traffic roads must be accompanied by and under the instruction of a Traffic employee. Should the nature of the work to be performed by the engine be such that a Traffic employee cannot remain constantly in attendance, then the Stationmaster must be advised and must see that proper action is taken to safeguard operations.
- (2) The following are the points at Port Augusta beyond which engines (except as provided in clause 3) must not proceed as set out above:—

(a) *Roundhouse—*

- (i) Standard Gauge Engines: The clearance point between the main Loco. Road and the Shunting Neck.
- (ii) Narrow Gauge Engines: The clearance point between the road leading from the Overhead Coal Bin to the Beach Road.

(b) *Workshop Yard—*

- (i) Standard Gauge Engines: The clearance point between the main Workshops Road and the road leading to the General Stores.
- (ii) Narrow Gauge Engines: The clearance point between the Workshops Road and the direct road (Standard Gauge) from the Station Yard to the Workshops.

Traffic employees requiring to go on Workshops premises to place water wagons, coal trucks, loading for shops, &c., are responsible for seeing that everything is safe for the required movements. If such movements have to be made in the dark, authority must first be obtained from a proper Loco. employee.

- (3) When it is necessary for the locomotive engaged in shunting in the Workshops' yard at Port Augusta, under the control of the Workshops' shunter, to proceed beyond the clearance point between the main Workshops' road and the road leading to the General Stores (on account of the length of the rake which is being handled), it may do so during the hours of daylight, provided the Workshops' shunter has first assured himself that the road is clear on that portion of the Line beyond the clearance point on which he is about to proceed. In no case, unless accompanied by a Traffic shunter, must it proceed beyond a point about 130 yards from the points leading to the Workshops' yard in the direction of the Wharf, which is marked by a white post.

All engines moving along the road from the Wharf in the direction of the Workshops and General Stores must be brought to a standstill at the post referred to in the preceding paragraph, and the shunter in charge must satisfy himself that the road is clear beyond that point before authorizing the engine to proceed.

- (4) Vehicles must not be left standing on the road from the wharf between the point marked by the white post referred to in (3) and the points leading into the Stores Siding.
- (5) Workshops' cranes in charge of the Workshops' shunter may shunt from the Workshops to General Stores road, and vice versa, for the purpose of placing vehicles for return to traffic, and for lifting, without a Traffic employee being in attendance, except on Tuesdays and Wednesdays, when permission must first be obtained from the Stationmaster.

Pimba.—Points at apex of triangle.

Tarcoola.—Clearance point between the Traffic loop siding and the main Loco. road.

Barton.—Points at apex of triangle.

Cook.—Clearance point between the crossing loop and the main Loco. road.

Loongana.—Clearance points between main line and Loco. road.

Rawlinna.—Clearance points between the crossing loop and main Loco. road.

Zanthus.—Loco. coal stage, &c., is situated on Traffic Loop siding, and engines must not move from thence unless signalled to do so by a Traffic employee.

Parkeston.—Clearance point between main road to Carriage Shed and Loco. road, but the following modification is authorized:—

- (a) When it is necessary for an engine to proceed from the running shed to the north side of the coal stage or vice versa in connexion with coaling, it may do so during the hours of daylight without being accompanied by a Traffic shunter, provided the Loco. employee in charge has first assured himself that the road is clear on those portions

of the line on which the engine has to travel, and that there is no other engine shunting, or otherwise engaged, in the vicinity of the carriage shed.

- (b) In no case must an engine, unless accompanied by a Traffic shunter, proceed beyond a point about 35 yards in the direction of the Parkeston station from the points leading to the north side of the coal stage. This point will be marked by a post bearing a lamp, which must be lit before dark by the Traffic staff if any engine is in Traffic use, or any train is due to leave or arrive at Parkeston during the hours of darkness. The lamp will show a white light on the running shed side, and a red light towards the station.
- (c) Any engine proceeding towards the running shed or carriage shed must be brought to a standstill at the post referred to in the preceding paragraph, and the shunter in charge must satisfy himself that the road is clear and properly made beyond that point before authorizing the engine to proceed.
- (d) At night time, or at any time an engine under steam is in the vicinity of the carriage shed, no other engine must move out of the Loco. boundary, i.e., the clearance point between the main road to the carriage shed and the Loco. road, unless accompanied by a Traffic shunter.
- (e) Vehicles must not be left standing on the main shunting road to the carriage shed.

Quorn.—Catch points on Loco. road near Station Yard.

Beltana.—Clearance point between Loco. Shed road and Crossing loop.

Farina.—Clearance point between Loco. Shed road and Main Line.

Marree.—Clearance point between Coal Stage road and Crossing loop.

Oodnadatta.—Clearance point between Loco. shed road and South leg of triangle.

Abminga.—Clearance point between Loco. shed road and main line.

Alice Springs.—Clearance point between Loco. road and crossover to the carriage shed road.

37. DELAYS TO TRAINS.

1. *Delays to Be Avoided.*—Every effort must be made by Stationmasters, Engine-drivers, Guards, Porters, and other employees connected with train-working to avoid delays along the road or at stations.

Stationmasters and Shed Foremen must see that members of their staff are impressed with the importance of delays being avoided. All concerned must see that parcels, luggage, &c., intended for despatch are ready in the most convenient positions for loading, &c.

2. *Engine Failure.*—In the event of trouble developing with the locomotive which may result in serious delay to or total failure of the engine, the Engine-driver must promptly wire Loco. and S.M. at the

depot in advance (or in the rear if time will be saved thereby), stating that relief is likely to be required. The message must be transmitted as expeditiously as possible to the Loco. Running Officer in charge of the depot, who will arrange for relief engine to be immediately prepared, and, if required, to be promptly despatched. The Engine-driver of the relief engine should proceed to the point where the train is located as expeditiously as possible consistent with speed restrictions and other regulations. Where long distances exist between points where relief engines are located it is most important that as much notice as possible be given to the depot to enable relief engine to be got ready, and Engine-drivers must keep this fact in mind and send a telegram immediately trouble develops which is likely to prove serious. The first message need not necessarily ask for relief to be sent, but should be despatched as a warning message to enable preparation of the relief engine to be put in hand.

3. **Train Delay Reports to be Forwarded Promptly.**—When compiling train running statements, Guards should be careful to account for all time occupied in excess of time-table allowance, and should state briefly the cause. Stationmasters must forward report by first train in connexion with all delays at their stations attributable to failure of engine or electric staff or other safe working apparatus, wash-away, or other interruption affecting his station. The Engine-driver must submit report of engine failure to his superior officer immediately on return to his own station, and must give full details in regard to the failure, stating to what, in his opinion, the cause is attributable. The Loco. Running Officer in charge must despatch this report, together with reports of any other employees concerned, by the first possible train.

4. **Train Running Wires to be Despatched.**—Stationmasters and Shed Foremen at depots where engines or crews are changed must forward telegrams addressed "Traco", giving the times of arrival and departure of *all trains*, together with the engine number and Driver's name, using code words where applicable, and giving particulars and actual causes of delays (if any) occurring since leaving the last depot. This information must be wired promptly after departure of trains during the day and as soon as possible after 9 a.m. if passing through the night.

5. **Telegraphic Advice of Delay to be Forwarded by Stationmasters.**—In addition to the foregoing, Stationmasters at stations other than those mentioned above must promptly advise "Traco" by wire of any delays to passenger trains in excess of 30 minutes, and to other trains in excess of 60 minutes which occur at, adjacent to, or between their station and the station in the rear.

In the case of delay due to engine failure, a brief summary of the actual cause must be stated in the wire, to enable decision to be made as to whether a Fitter or Boilermaker should be despatched to effect repairs.

6. **Central Australia Railway.**—Attention is drawn to pages 14 and 15 of the Working Time-tables.

7. **North Australia Railway.**—Attention is drawn to pages 3 and 4 of the Working Time-tables.

38. HOT BOXES ON ROLLING-STOCK.

1. When a hot box occurs on an engine, tender, or other vehicle, the Driver must take all reasonable precautions to avoid damage to the axle by seeing that prompt attention is given after heating occurs and reducing speed as may be necessary.

It is the duty of Officers in charge of Loco. Depots to see that employees who are called upon to oil, pack, fit pads, or otherwise attend to axle boxes are conversant with the precautions necessary to avoid hot boxes.

2. **Engines and Tenders.**—(a) In the event of a hot box on engine or tender becoming worse, entailing risk of damage to journal or serious delay to a train, the Engine-driver should take prompt steps to notify the Loco. Depot in advance (or in the rear if time will be saved thereby) in accordance with instructions laid down under heading "Delays to Trains."

(b) To minimize hot boxes on tenders, Officers in Charge of Loco. Depots, Mechanics and Enginemen should give special attention to cleanliness and oiling of the following parts so as to ensure freedom and elimination of jar:—

- (1) Bogie centre bearing and rubbing plates.
- (2) Compensating beam centre and end bearing pins.
- (3) Spring pins and links.
- (4) Spring hanger pins.
- (5) Side of spring buckle of framing (if not clear).
- (6) Axle box horn cheeks.

(c) Whale-back slippers are to be fitted to all tenders of locomotives and standard length metal-lined brasses should be used when replacement of pocketed brasses becomes necessary.

(d) The intermediate draw bar should also be frequently examined to ascertain if any undue strain is being thrown on the engine or tender by reason of the bar not having sufficient clearance in up or down or side movement.

(e) The weights on the engine wheels are to be periodically tested by means of bars or steelyards, so as to detect any improper distribution which may lead to hot boxes.

(f) The trimmings of engine boxes should be frequently examined, particularly after the boiler is washed out, and special attention should be given to trailing engine boxes in which water is liable to accumulate.

3. **Cars and Wagons.**—(a) Travelling Train Examiners engaged on passenger trains must feel round boxes of all vehicles except engine and tender at the first opportunity after leaving the terminal station, and also at different points along the route, so that, in the event of a box generating more than ordinary running heat, prompt measures may be taken to avoid further trouble.

(b) Should a hot box be detected on a train when no Examiner is available, it is the duty of the Engine-driver to renew the brass if necessary and give proper attention to packing and oiling. This is especially necessary in cases of vehicles containing live stock or perishables, in order that the detaching of vehicles and consequent possibility of serious loss may be obviated.

(c) The detaching of important loading may sometimes be avoided by a Loco. Running employee, such as a Pumper, Fuelman, or Cleaner travelling with the train when no Examiner is available, and if time does not permit of instructions being obtained from the depot, such employee must travel with the train and attend to the box *en route*. He must, before departure, confer with the Stationmaster regarding any necessary arrangements for the carrying on of his duties during his absence.

(d) Should a hot box occur on a vehicle containing explosives or other dangerous or inflammable goods, it should be immediately detached, and advice sent by the Guard as instructed herein.

(e) When it is necessary to detach a vehicle, the Guard must immediately wire to the Chief Traffic Manager.

(f) When a vehicle is detached at an unattended siding, the Guard must inform the Stationmaster at the next station, and this officer is to make necessary arrangements for the vehicle to be attended to.

(g) Engine-drivers are to forward reports in all cases of hot boxes on engine, tender, or other vehicle on the train, giving the number of the vehicle, the type of box, when heating first commenced, and the probable cause. Train Examiners are also similarly to report on all cases of hot boxes on any vehicle on the train other than engine or tender. Guards must show in their Running Statements, and Drivers and Train Examiners must show in their reports class and number of vehicle, also last date the vehicle had padding examined and last date vehicle was oiled. Officers-in-charge when submitting reports from Drivers, Train Examiners and others, must give particulars of any attention to the axle box concerned after the prior trip and any other details relevant to the case so as to avoid, as far as possible, the necessity for writing for further particulars.

4. Passenger Cars.—Officers-in-Charge at terminal depots must make necessary arrangements for oiling, repacking of boxes, and renewal of brasses.

5. Water Wagons.—Loco. Running Officers-in-Charge, Train Examiners, and other employees concerned should, on account of the heavy axle load and in view of the vehicles being used on passenger trains, give special attention to the axle boxes of water wagons. They should be felt round by the Train Examiner, or in the event of no Train Examiner being available, by the Engine-driver, when detached from a train, in order that any journal brasses inclined to heat may receive necessary attention before again going into service.

6. Material for Attending to and Repairing Boxes.—Employees in charge of locomotive sections are responsible for seeing that a supply of car and wagon oil, spare brasses, waste, &c., is maintained at stations where employees under their control are located.

7. Damage to Axle Boxes.—Examiners must be careful when lifting under axle-boxes. When a box has to be lifted for the removal of a brass, a strong piece of hardwood must be used between the lifting-jack and the bottom of the box to prevent damage to the axle-box through the shell not being sufficiently strong to transmit the strain.

39. EXAMINATION AND LUBRICATION OF AXLE BOXES.

Trans-Australian Railway.—All vehicles attached to passenger trains must be oiled at the commencement of each trip. Other vehicles are to be oiled every two months. Waste packing should be teased each time vehicles are oiled. The Train Examiner must see that the waste packing is pushed up under the journal. Waste packing should be examined every twelve months.

Central Australia Railway.—Axle boxes on all passenger and live stock vehicles proceeding to Marree and stations north of Marree must have boxes oiled before leaving Quorn. Pads must be examined every two months. Axle boxes on passenger and live stock vehicles proceeding to stations other than Marree and north of Marree must be oiled once a month. Pads must be examined every two months. Axle boxes on goods vehicles must be oiled every two months, and pads examined every four months. Waste packing in boxes should be teased each time vehicle is oiled and the Train Examiner must see that the waste packing is pushed up under the journal. Waste packing should be examined every twelve months. Oil wagons must have pads examined and boxes oiled before going north to Quorn, irrespective of last oiling and pad examination dates.

North Australia Railway.—Axle boxes on all passenger and live-stock vehicles must be oiled before leaving Darwin. Pads are to be examined every two months. Axle boxes on goods vehicles must be oiled every two months and pads examined every four months.

General.—Train Examiners, when oiling axle boxes, must ascertain from chalk marks on the vehicle whether the pads or waste packing are due for examination, and, if so, these must be attended to first. Care should be taken when oiling not to overflow the boxes. After the completion of examination and oiling, date must be shown separately opposite the respective positions on the vehicle as marked:

PX	Date	Initials
O	Date	Initials

The old dates are to be carefully rubbed out and the new dates chalked on clearly so as to be easily read.

In all cases where boxes are found running above normal temperature the pad or waste packing should be examined as the overheating is probably due to a defective pad, or to the waste packing being away from the journal.

At stations where time permits, and where no Train Examiner is on duty, Guards of trains should feel around the boxes on the train and draw the Driver's attention to any that require attention. A supply of oil, pads, and waste, axle box spanner to fit oil plug and packing pusher, must be kept in all brake-vans for use in such cases, and the Train Examiners on duty at Kalgoorlie, Port Augusta, Darwin, and Quorn must see that this equipment is complete before trains leave those depots. Axle boxes are to be kept clean, and care is to be taken to avoid overflowing them when oiling.

40. SHUNTING.

1. **Points to be in Proper Position Before Giving Signal to Shunt.**—The employee conducting shunting and other operations must be very careful to see that the points are in proper position before giving the signal for the train or vehicle to move over them in either direction.

2. **Violent Shunting to be Avoided.**—Shunters must exercise great care in shunting operations. They must avoid all violent and reckless shunting, and be careful in signalling Engine-drivers, to prevent vehicles coming into violent contact with other vehicles or buffer stops.

3. **Vehicles left Standing in Sidings.**—Vehicles left standing in sidings must be clear of the fouling points of any adjoining siding and lines, and properly secured by the application of a sufficient number of hand brakes, and, as an additional precaution, when necessary by the use of sprags.

4. **Shunting into Sidings where Vehicles are left Standing.**—Prior to shunting into sidings where vehicles are left standing, the position of the vehicles in the siding must first be ascertained, and the Guard or Shunter must signal the Engine-driver when setting back, so as to prevent the train striking the vehicle in the siding with too much force.

5. **Speed of Vehicles being Shunted to be Checked by the Application of Hand Brakes.**—During shunting operations, Shunters must check the speed of moving vehicles by applying the hand brakes, so as to avoid striking other vehicles or buffer stops with undue force. Such precaution is specially necessary where the grade is falling.

6. **Engine-drivers to Obey Signals.**—Engine-drivers performing shunting operations must exercise vigilance and be careful to promptly obey the directions and signals given by Shunters and others in charge of the operations.

7. **Engine-drivers to be Verbally Instructed.**—Stationmasters, Guards, and Shunters must, as far as possible, verbally instruct Drivers with respect to the movements of their engines, and also as to the position of vehicles, and not trust entirely to signals.

8. **Competent Employee to be in Charge.**—A train or portion of a train must not be shunted, unless a Guard, Shunter, or other competent employee accompanies it for the purpose of seeing when the last vehicle is clear of the points, and the Driver must not move his engine until he has been directed to do so by the Guard or other person in charge, either verbally or by hand signal.

9. **Shunting Passenger and Mixed Trains from Platforms.**—The Shunter must be careful not to move any passenger or mixed train from a platform without first obtaining an "All right," signal from the person in charge of the platform, or if no person is in charge at the time, without first satisfying himself that all the passengers have alighted.

10. **Doors of Vehicles to be Fastened and Loads Secured.**—The doors of loaded or empty trucks must be properly secured before shunting is commenced, and when trucks are partially discharged care must be taken to see that the loads are secured before the vehicles are moved.

11. **Shunting when either Driver or Fireman is off the Engine.**—Except as provided in sub-clause 16, no engine must be employed shunting unless two qualified men are in attendance on it. The Engine-driver must not leave the engine unless absolutely necessary. During his absence, the Fireman (if he has qualified for the position of Acting Driver) may be allowed to shunt with the assistance of another competent employee on the engine.

12. **Improper Methods of Shunting.**—The practice of shunting two vehicles on two parallel lines by placing a piece of timber between their ends and propelling one of the vehicles by an engine is prohibited.

13. **Shunting Vehicles Containing Live-stock, Explosives, or Inflammable Liquids, &c.**—Vehicles containing live-stock, explosives, or inflammable goods must not be loose shunted. At least one truck must be between the engine and any vehicles the loading of which consists entirely of explosives or inflammable liquids during shunting operations.

Special care must be exercised also in moving other vehicles to prevent them coming into forcible contact with vehicles containing livestock, explosives, or inflammable liquids.

In marshalling yards where vehicles are moved by "gravitation", oil tank trucks, or other vehicles containing inflammable liquids, must only be moved if attached to an engine or when the hand brakes of the vehicles are under the control of a shunter or other competent employee, who must prevent them coming into forcible contact.

14. **Shunting Passenger Cars.**—Passenger cars must not be loose shunted, nor are vehicles to be loose shunted against them. Care must be taken to see that the concertina blinds are disconnected before vehicles are separated.

15. **Shunting Operations on Running Lines.**—Shunting operations must not be conducted on running lines if it is practicable to do the work elsewhere. When shunting on running lines is necessary, every care is to be exercised by all concerned, and proper precautions must be taken to prevent vehicles running away.

16. **Shunting at Intermediate Sidings.**—At unattended places where shunting is to be performed and there is only one Guard on the train, the Fireman, if necessary, will assist the Guard in shunting operations by holding the non-reversible points, levers, &c. The absence of the Fireman from the footplate is not desirable, and the occasions when his services are to be utilized must be kept to a minimum.

17. **Shunting of Engines not Under Steam.**—When engines not under steam are being shunted they must be in charge of a Loco Running employee, and must not be fly-shunted.

18. **Hand Brakes on Vehicles.**—Before any vehicle is attached to or detached from a train the Guard or Shunter must try the hand brake. If the hand brake is not in good working order, proper precautions must be taken, and the vehicle must not be loose shunted.

41. LIVE STOCK ON LINE.

1. To minimize the risk of accident through derailment, where the line is unfenced, Drivers must exercise extreme vigilance to prevent the killing of live-stock. When stock are near the line, the Driver must reduce speed at once and maintain reduced speed until the way is clear.

2. Drivers must report before going off duty any loss of live-stock, giving the fullest particulars of the occurrence. If at night time, it must be stated whether it was moonlight or dark at the time of the accident, the condition of the electric headlight to be stated also.

3. Drivers of trains causing such injuries must advise the Guard, who must ascertain (if time permits), the extent of the damage, brands of animals, &c., and hand in particulars at the next station. Gangers must on finding killed or injured stock on the line forward similar particulars to the Roadmaster, who will in turn forward to the Chief Engineer of Way and Works report in duplicate on Form C.R.135 (Report of Animals Killed).

4. The train crew must see that stock killed or injured are clear of the line.

42. PRIVATE SIDINGS.

1. It is the duty of Stationmasters, Shunters, and other employees concerned to examine vehicles at first opportunity after loading at a private siding, in order that it may be seen:—

- (a) That the loading is placed and secured on vehicles in accordance with the Regulations. If any re-arrangement is necessary the cost is to be charged to the lessee of the siding.
- (b) That tarpaulins and lashings are properly fastened.
- (c) That the contents and labels of vehicles are in accordance with the way-bills or consignment notes.
- (d) That Westinghouse brake connexions are properly made.

2. Shunters are responsible for seeing that the necessary shunting note is made out and handed into the goods office so that debits (where chargeable) may be raised against the lessee for shunting vehicles to and from the siding.

3. A record is to be kept by the Stationmaster, showing the number and class of vehicle, and particulars of tarpaulins and lashings placed in, and removed from sidings.

4. Unless instructions are issued to the contrary, the permanent way, including turntables, points, &c., is to be maintained by the Department at the expense of the lessee.

43. SAFETY OF THE LINE DURING WET WEATHER, WASHAWAYS, ETC.

1. The attention of all concerned is directed to the necessity for the extreme vigilance during and subsequent to wet weather, windstorms and thunderstorms on any part of the line, and for seeing that any special precautions required are taken promptly.

2. Roadmasters, Gangers and, if necessary, other employees must be on duty, and should it be essential, are to issue such instructions as will ensure the stoppage of trains or the imposition of speed restrictions until all danger is past.

3. Stationmasters and others in charge of stations must be on the alert for advices from Roadmasters and/or Gangers at such times, and Enginedrivers must also be specially vigilant.

4. When it is necessary for a Roadmaster or Ganger to direct that special precautions be taken, e.g., trains be stopped or speed be reduced, such direction should, if practicable, be given in writing to the Stationmaster or other traffic employees concerned and be signed for. If it be necessary to telephone or telegraph such instruction, it must be taken down in writing by the employee receiving it, who must in turn give the instruction in writing to the Enginedriver and Guard and obtain their signature therefor. The points between which trains are to be stopped or the speed is to be reduced and the rate of speed to be observed, must be clearly stated in such advice.

5. The advice should also state whether or not caution signals will be exhibited, and give any other particulars which will assist the Enginedriver and Guard to observe safe procedure.

6. Roadmasters and Stationmasters must telegraph immediately to their respective Heads of Branches for further instructions.

7. Gangers must keep the Roadmasters and the Stationmasters on either side of and within their lengths well posted concerning the condition of the road. Gangers must also observe fully the instructions contained in General Rule No. 226 and Clause 151, Pages 306-307 of this Appendix.

44. TARPAULINS AND LASHINGS.

1. Tarpaulins are provided as under:—

Trans-Australian Railway—

Tarpaulins: 20 feet x 13 ft. 6 in.

Central Australia and North Australia Railways—

Tarpaulins: 17 feet x 11 ft. 6 in.

Except with the authority of the Chief Traffic Manager, tarpaulins must be used only on the particular Railway for which they have been provided.

The goods for which the Department does not undertake to provide tarpaulins are specified in the Goods Rates Book.

2. *Method of Fastening.*—All concerned should see that Tarpaulins and lashings are properly secured so as to obviate possible delay to train in stopping to make them secure, or damage through coming into contact with passing trains or structures. Care must be taken to see that goods are properly protected from rain and from sparks from the engine.

When covering machinery or loading with sharp edges, packing must be used to prevent damage to the tarpaulins.

The load of each vehicle should as far as practicable be raised in the centre to prevent hollow sheeting and the consequent risk of damage through water collecting. Water so collected must be promptly removed, care being taken to prevent damage to the goods underneath.

All tarpaulins should be placed over the loading with the number outwards.

Every precaution is to be taken in covering goods of an inflammable nature to avoid risk of fire.

Tarpaulin ropes or lashings must not be tied to the Westinghouse brake cocks or to bogies of vehicles, but the proper fasteners should be used.

When two or more tarpaulins are used to cover loading the overlap is to be towards the trailing end to prevent sparks, rain, or wind from driving under the tarpaulin. Stationmasters at stations *en route* should see that tarpaulins and lashings are secure, and the Guard should frequently look out on the journey to detect any becoming unfastened so that they can be promptly adjusted.

3. **Tarpaulins Damaged in Transit.**—If a tarpaulin be damaged in transit the guard on arrival at the station where the vehicle covered by the tarpaulin concerned is put off must, where practicable, call the attention of the Stationmaster to the matter. He must also note the occurrence on his running statement giving the individual number of the tarpaulin involved, and on reaching his home station he is to hand in to the Stationmaster a report giving particulars of the circumstances under which the damage was sustained. The Stationmaster will then promptly report the matter to the Chief Traffic Manager.

4. **Tarpaulins not in Use.**—Before proceeding to unload any truck, tarpaulins must be taken off, folded so that the numbers shall be visible, and removed to a place of safety, and, if possible, placed under cover. Tarpaulins not in use shall be protected from the sun. Should any tarpaulins be wet they are to be dried before being folded.

In removing tarpaulins from the trucks, care must be taken that they do not fall under the wheels. At places where there is no person in charge, Guards must fold sheets and place them in a safe position, and, if practicable, under cover.

Tarpaulins and/or lashings, when not required for loading, must not be allowed to remain at stations, but must be waybilled (G.L.10) as under:—

Trans-Australian Railway—

To the Stationmaster, Port Augusta, and despatched in the brake-van of passenger trains. Parkeston will return tarpaulins to Port Augusta in the bulk mail-van.

Guards picking up tarpaulins at unattended stations must prepare way-bill (G.L.10) for them. Port Augusta, except when specially advised to the contrary, is to be regarded as the destination station.

Central Australia Railway—

To the Stationmaster, Quorn, by the first available train.

South Australian Railways' tarpaulins and lashings are to be similarly dealt with.

It must be realized that idle tarpaulins and lashings, irrespective of ownership, allowed to remain at stations and sidings outside Quorn unnecessarily increase the number of these articles in this Department's use, and consequently affect the interchange balance at Quorn.

Stationmasters, Caretakers and Guards must give special attention to the prompt return of these articles from stations and unattended sidings. Stationmasters are responsible for

preparing G.L.10 waybills for those returned from attended stations, the Caretakers at Gordon and Hookina for those returned from their sidings, and Guards for those returned from all other unattended sidings. An additional carbon copy is to be made of all G.L.10 waybills prepared for the return of tarpaulins and lashings, and this copy is to be forwarded to the Stationmaster, Quorn, under cover.

Guards of trains must set aside a truck on each Up train for the conveyance of tarpaulins and lashings picked up at stations and sidings for Quorn.

Stationmasters and Caretakers at Wilson, Lyndhurst and Hookina are responsible for folding up tarpaulins with numbers visible and placing them with lashings in a position that will facilitate loading by guards or station staff on arrival of trains. Guards must gather and load all tarpaulins and lashings from all other unattended sidings.

Should it be necessary to divert tarpaulins and lashings waybilled to Quorn to stations or sidings *en route*, as is frequently done during wool seasons, Guards must check the individual numbers of tarpaulins and number of lashings so delivered, and endorse the G.L.10 waybills concerned accordingly.

The Stationmaster, Quorn, must arrange for tarpaulins and lashings received to be thoroughly checked with G.L.10 waybills and for a record to be kept of unentered tarpaulins and ropes received, and all other discrepancies detected. He will be held personally responsible for reporting in detail all such discrepancies.

North Australia Railway—

To the Stationmaster, Darwin, by first train.

5. **Unauthorized Use.**—Tarpaulins and lashings are not to be used for covering goods lying on station premises or hired to private individuals without authority from the Chief Traffic Manager.

6. **Damaged Tarpaulins.**—Damaged tarpaulins are to be sent to the Chief Mechanical Engineer for repairs. This will be attended to by the Stationmaster, Port Augusta, to whom all damaged tarpaulins are to be sent duly way-billed (G.L.10), the words "For repairs" being shown on the way-bill. The Stationmaster, Port Augusta, when delivering damaged tarpaulins for repairs will require to obtain a signature, and similarly one will require to be given to the Chief Mechanical Engineer in respect of tarpaulins which have been repaired and are again available for traffic purposes. A record must be kept by the Stationmaster, Port Augusta, of the individual number of each tarpaulin, particulars of condition, date sent to Chief Mechanical Engineer for repair, and date returned.

In the event of a tarpaulin being damaged to such an extent as to make it not worth repairing, or when a tarpaulin is cut up, the Chief Mechanical Engineer will advise the Chief Traffic Manager so that it may be so recorded.

7. **Record of Tarpaulins and Lashings, Trans-Australian and North Australia Railway.**—Each station will require to keep a book record of all tarpaulins and lashings received. The record must show the date

of receipt, station from, number of way-bill, number of tarpaulins, and their individual numbers. Similar information is to be recorded in regard to tarpaulins despatched.

The receipt and despatch of lashings must be similarly recorded.

All tarpaulins, whether covering goods or not, must be waybilled to destination station, and individual numbers must be shown on way-bill. In the cases of tarpaulins covering goods the individual numbers must be shown on the way-bill used for the goods they cover. Consignment note way-bill (G.L.10) is to be used for tarpaulins not covering goods.

Lashings must be way-billed in a similar manner to tarpaulins.

8. Record and Returns of Tarpaulins and Lashings, Central Australia Railway.—Stationmasters must compile in triplicate a daily return showing the movements of tarpaulins and lashings at their stations and sidings under their control. The originals must be forwarded to the Stationmaster, Quorn, the duplicate to the Chief Traffic Manager, by first available train, and the triplicate must be carefully filed at stations.

The forms which have been provided for this purpose, must be compiled in the following manner—

At attended stations the individual numbers of tarpaulins and the total number of lashings received and despatched on loaded trucks must be recorded in the Number-taker's Handbook, opposite the truck on which they are received or despatched.

Particulars of individual numbers of tarpaulins and the total number of lashings received and despatched loose are to be obtained from G.L.10 waybills.

From the abovementioned particulars the portion of the return under heading "Details of Receipts and Despatches to-day" must be compiled. After these details have been obtained the receipts and despatches on loaded wagons and loose must be totalled separately and the summary on the top of the form must be compiled by:—

- (1) Bringing forward the number of tarpaulins and lashings on hand as at 12 midnight on the previous day, and adding those received on loaded wagons and loose;
- (2) Subtracting those despatched on loaded wagons and loose.

The summary will show the number of tarpaulins and lashings remaining on hand, and at the foot of the return Stationmasters must explain the reason for retaining them.

The returns for unattended sidings, which must be compiled at controlling stations, are to be compiled on the same form and in a similar manner as the returns compiled for attended stations, with the exception that instead of the individual numbers of tarpaulins being shown the total number on each truck must be shown.

Provision is made on siding reports for guards to show the number of tarpaulins and lashings on trucks attached and detached and on trucks remaining at the siding. These particulars must be shown, and in addition guards picking up loose tarpaulins and

lashings from unattended sidings must show the details in the "attached" column of siding reports. Stationmasters must see that guards carry out these instructions.

9. (a) When tarpaulins and ropes are used to cover and secure goods, and when tarpaulins are placed on the floor or in any part of a truck to protect goods, or for any purpose whatsoever in connexion with goods loaded on the Central Australia Line, the individual numbers of tarpaulins belonging to each Department, and the total number of ropes belonging to each Department in or on the vehicle must be shown on the truck label, thus:—

Wagon No. N.G. 431.		G.L. 40.	
		1/4/1930.	
Weight of Contents ..	tons. 12	cwts. 1	qrs. 0
Gross Weight of Wagon ..	21	17	1
HAWKER			
TO			
PORT ADELAIDE.			
Consignee, Elder Smith & Co.			
C.R. Tarps. Nos. 94, 106. Ropes, 2.			
S.A.R. Tarps. Nos. 1,220, 1,720. Ropes, 2.			

In addition, the tarpaulins and ropes so used on trucks containing intersystem goods must be waybilled on G.L.10 waybills to Quorn. Way-bill must contain similar particulars to those shown on the truck label, i.e., date, truck No., station from, station to, individual No. of tarpaulins belonging to each Department, total number of ropes belonging to each Department, date and train of despatch.

(b) Arrangements have been made for stations on the South Australian Railways loading for stations on the Central Australia Line (including Quorn) goods covered, secured and protected with tarpaulins and ropes, to distinctly show on truck labels the individual numbers of tarpaulins belonging to each Department, and the total number of ropes belonging to each Department so used. In addition, this equipment will be waybilled to Quorn.

(c) The following employees will be held responsible for seeing that tarpaulins and ropes used on outward loading are correctly recorded on truck labels and waybilled where necessary:—

At attended stations—Stationmasters, or officers in charge.

At Caretaker stations—Caretakers.

*At unattended stations—Guards of trains to which loading is attached.

*During wool seasons, wool contractors will be instructed to show particulars on the truck labels, and guards must see that this is done, and prepare the necessary waybills.

(d) Stationmasters and Caretakers must check tarpaulins and ropes received on inward loading with particulars shown on truck labels, and in all cases where discrepancies are detected they must report the matter to the Stationmaster, Quorn.

(e) The Stationmaster, Quorn, must arrange to similarly check tarpaulins and ropes received on all inward loading at Quorn, and report to this office any discrepancy detected. He must also report any instances where he receives advice of discrepancies detected by line stations.

(f) The Numbertakers at Quorn must record in Numbertaker's Hand Books the individual numbers of tarpaulins belonging to each Department and the total number of ropes belonging to each Department, covering, securing and protecting goods loaded in trucks arriving at and departing from Quorn from and to all lines. These particulars are to be obtained from truck labels, but in cases where particulars are not shown on truck labels, they must be obtained by thoroughly scrutinizing the truck or from waybills received. Numbertakers must report to the Stationmaster all instances where these particulars are not shown on truck labels.

(g) The Stationmaster, Quorn, must keep a book record of Commonwealth Railways tarpaulins despatched to and returned from South Australian Railways System, and of South Australian Railways tarpaulins received on and returned from the Central Australia Line (including Quorn). This record must contain the following particulars, which must be obtained from the Numbertaker's handbooks and waybills:—

RECORD OF COMMONWEALTH RAILWAYS TARPULINS ON SOUTH AUSTRALIAN RAILWAYS SYSTEM.

DESPATCHED.						RETURNED.				
Date.	Train.	Tarp. No.	Truck No.	Station.		Date.	Train.	Truck No.	Station.	
				From.	To.				From.	To.

RECORD OF SOUTH AUSTRALIAN RAILWAYS TARPULINS ON CENTRAL AUSTRALIAN RAILWAY (INCLUDING QUORN).

RECEIVED.						DESPATCHED.				
Date.	Train.	Tarp. No.	Truck No.	Station.		Date.	Train.	Truck No.	Station.	
				From.	To.				From.	To.

10. Lashings.—In order that ropes in use on the Central Australia and Trans-Australian Railways may be readily distinguished they have been dyed a distinctive colour, i.e., green. They have also the certificated trade mark, consisting of a purple thread running through the

entire length of two strands of the rope, which is discernible on close inspection. All concerned should co-operate in watching the interests of the Department by bringing under notice any unauthorized use of this equipment.

All ropes despatched from stations, whether in use or otherwise, must be way-billed. Ropes on trucks detached at unattended sidings must be removed by the guard, who will prepare way-bill (G.L.10) for their return to Quorn or Port Augusta.

11. Stocktaking.—A stocktaking of tarpaulins and lashings will be carried out as directed from time to time by the Chief Traffic Manager.

45. INSTRUCTIONS RELATING TO COUPLING AND UNCOUPLING ENGINES TO AND FROM TRAINS.

At stations where engines commence and terminate their journey, the coupling and uncoupling of engines to and from trains must be done by the Fireman.

At intermediate stations where engines are cut off for locomotive purposes, coupling and uncoupling must be done by the Fireman; and also at unattended stations and sidings.

During shunting operations, the coupling and uncoupling of engines must be done by a member of the transportation staff, except where special directions are issued to the contrary.

It will be the duty of every employee who may require to uncouple the engine from the train, or to separate the train itself for shunting or other purposes, to first obtain the permission of the Guard or other responsible transportation employee. The latter employee will be responsible, before giving permission, for seeing that, in addition to the application of the brakes, any other precautions necessary are taken to prevent the separate portion of the train moving.

The person coupling or uncoupling the engine must in all cases see that the air-hose, and water-hose where provided, are properly connected or disconnected as the case may require, that the lock lifts of the couplers drop into position, and that uncoupled hoses are connected to dummy couplings.

When two engines are attached to the front of a train, the Driver of the leading engine must see that the engines are coupled together, and the Driver of the second engine must see that his engine is properly coupled to the train.

The Driver will be held responsible for seeing that the Fireman efficiently carries out the duties mentioned herein, that the engine is properly coupled to train before commencing the journey, and that it is uncoupled at the termination of the trip.

46. ENGINE WHISTLES.

The code of whistles given hereunder is to be used by Engine-drivers, who must be careful that the correct whistles are sounded in each case. The code is not to be added to without approval, but employees are to bring under notice any circumstance which appears to warrant an additional code whistle being introduced.

Dot denotes short blast; dash, long blast.

Challenging Fixed Signals applying to running lines when at danger

"Move forward"

"Move backward"

"Stop"

When two or more engines are coupled light or to a train, the code whistle given by the leading engine must be repeated by the driver of the rear engine, or engines, and promptly obeyed. (See General Rule 117 (d).)

To signify want of assistance, and for the guard to apply his hand brake Succession of three short sharp blasts.

When commencing to descend a grade (with train controlled by hand brakes) to indicate to the guard that sufficient hand brakes have been applied and that the train is under control

On reaching foot of grade to indicate to the guard to release the hand brakes

To recall guard or fireman protecting train

Approaching level crossings, sharp curves, cuttings, or other points where a clear view is not obtainable

Driver drawing attention to fire along the line

Before entering or leaving running shed or workshops' buildings, and between main line and loco. siding at Quorn

Before entering or leaving carriage shed (including breakdown van sheds)

When proceeding from station yard to carriage yard or direct road to workshops, Port Augusta

47. VEHICLES LEFT ON RUNNING ROADS AFTER DARK.

Vehicles left after dark on running roads must be protected by red lights, and the Shunter or other employee concerned will be responsible for this being done.

48. COACHING STOCK TO BE PLACED UNDER COVER.

Coaching vehicles must not be left in the open longer than is necessary, and must always be placed under cover in preference to other stock. When stored under cover they must be coupled together, the hand brake on the vehicle nearest to the exit tightly applied, and the Westinghouse brake on all vehicles released so that in the event of fire they may be drawn out of the building without delay.

When it is necessary for coaching stock to remain in the open and not under constant surveillance, the Shunter or other employee concerned must see that they are locked and window lights closed.

49. COACHING VEHICLES TRAVELLING EMPTY.

When coaching vehicles are placed on a train and are not required for conveyance of passengers, they are to be securely locked and window lights closed so as to protect the interior from dust and prevent unauthorized persons gaining access to the cars.

50. INSPECTION CAR—TRANS-AUSTRALIAN RAILWAY.

Plugs are available in the car with which to make the windows secure from being opened from the outside, and when the inspection car is travelling or standing unoccupied the windows must be securely locked to prevent the car being improperly entered.

51. DOORS OF VEHICLES TO BE CLOSED AND SECURED.

Doors on all wagons must be properly closed and secured, and Stationmasters must report any instance where wagons are received with doors not properly secured.

When trucks are unloaded in Workshops yards the Workshops staff must see that the sides are properly secured before the vehicles are returned to traffic.

52. RIDING IN BRAKE-VANS.

(a) No person, other than the Guard, is permitted to travel in the Guard's compartment of the brake-van, except—

- (i) An employee authorized to do so in the course of his duty;
- (ii) A person in possession of a pass endorsed "Available for brake-van";
- (iii) As provided in clause (b) hereunder:

(b) In special circumstances, when no passenger accommodation is available on the train, passengers may be allowed to ride in the Guard's compartment of the brake-van, but the Stationmaster must first have indemnity form (P.26) properly filled in and signed by each passenger.

In the case of a passenger joining at an unattended station, the responsibility for having indemnity form properly completed will rest with the Guard. Guards are required to carry a supply of Form P.26.

(c) When passenger cars are not attached to No. 9 down and No. 6 Up Trans-Australian mixed trains, persons desiring to travel by them will be accommodated in the passenger compartments of the brake-vans. On such occasions it will not be necessary for passengers to sign the usual indemnity Form P.26.

53. CONDITIONAL STOPS FOR THROUGH PASSENGER TRAINS AT UNATTENDED STATIONS.

1. Through passenger trains may be stopped to pick up or set down paying passengers when required at recognized conditional stopping places as shown in the working time-table.

2. (a) Red discs for use by day and red lamps for use by night have been supplied to these places, and are to be used by intending passengers for the purpose of signalling trains to stop. The discs and lamps are mounted on posts about 6 feet high near the station or platform.

(b) Notices have been posted near the appliances, instructing passengers how they are to be used.

(c) Engine-drivers are directed to keep a sharp look-out for these signals when approaching conditional stopping places.

3. (a) In the case of a train being required to stop at any of the places mentioned to set down passengers, the Senior Conductor must advise the Guard prior to departure from last stopping place, in ample time for the latter to advise the Engine-driver.

(b) At Port Augusta the Guard must ascertain from the Booking Office and Conductors, before departure of Down passenger train, as to whether there are any passengers for Hesso, or other conditional stopping places, and advise the Engine-driver as necessary. Stoppage may also be made at Hesso on Down journey to set down employees travelling on free passes.

(c) At Kalgoorlie the Guard must ascertain from Conductors before departure of Up trains whether there are any passengers for Golden Ridge, or other conditional stopping places, and arrange stoppage accordingly.

(d) Where passengers join trains outside the Conductors' hours of duty, Guards will be responsible for ascertaining if stoppage at an authorized unattended stopping place is necessary, and for arranging accordingly.

(e) Guards must extinguish the lamps before re-starting trains after they have been stopped at night time for passengers to entrain at unattended stations.

(f) Lamps will be trimmed weekly by gangers, who will also see that discs, &c., are kept in proper order. Kerosene and wicks are to be requisitioned direct from the Comptroller of Stores whenever necessary—due regard being paid to the avoidance of interim requisitions.

(g) The instructions in sub-clauses 2 and 3 (e) and (f) of this clause are to be observed in connexion with conditional stopping places on the Central Australia Railway. Guards must also ascertain if there are any passengers for conditional stopping places and instruct the Enginedriver as necessary.

54. ATTACHING FOUR-WHEELED VEHICLES TO PASSENGER TRAINS—TRANS-AUSTRALIAN RAILWAY.

Four-wheeled vehicles are not to be attached to passenger trains without the approval of the Chief Traffic Manager, and when such approval is given they are to be coupled at the rear of the brake-van, unless otherwise directed.

55. GOODS AND LIVE-STOCK VEHICLES ATTACHED TO PASSENGER TRAINS.

Goods or live-stock vehicles when attached to passenger trains on the Trans-Australian Railway must be marshalled as instructed by the Chief Traffic Manager. The Stationmaster must advise the Train Examiner on duty the class of vehicle required, and the Train Examiner must examine a suitable vehicle and perform such work as may be necessary to avoid hot boxes or other defects on the road. The Train Examiner must furnish a certificate to the Stationmaster, showing the date and time notice was received that the vehicle was required, and the time and date certificate is handed to the Stationmaster or his representative.

56. VEHICLES NOT FITTED WITH W.H. BRAKE NOT TO BE ATTACHED TO LIVE-STOCK TRAINS—CENTRAL AUSTRALIAN RAILWAYS.

No goods or other vehicle is to be attached to a loaded special live-stock train on the Central Australia Railway unless it is fitted with the Westinghouse Brake complete, or with train pipe except on special authority from the Chief Traffic Manager. In cases where it is considered that circumstances warrant the attaching of non-air vehicles to live-stock specials, Stationmasters must make application for authority in good time. When such vehicles are attached, they must be marshalled immediately in front of the brakevan, so that the air brake may operate on as many vehicles as possible.

56a. MARSHALLING OF LOADED LIVE-STOCK VEHICLES.

Loaded live-stock vehicles attached to trains which are required to shunt at intermediate stations and sidings should, as a general practice, be marshalled so that they will not be subject to shunting in transit. With this in view, the order in which such vehicles should be marshalled on mixed trains and other trains which are

required to attach and detach vehicles at intermediate stations or sidings is set down hereunder for the guidance of those concerned:—

On Mixed Trains:

At rear end of train in front of passenger cars.

To avoid nuisance to passengers a suitable through vehicle (covered van for preference) should be marshalled between the leading passenger car and the live-stock vehicles.

On Trains with no passenger vehicles attached:

At rear end of train in front of Brakevan.

If by so doing, loaded live-stock vehicles for an intermediate station will not be subject to shunting at other intermediate stations, they may be marshalled with other vehicles for the same station for the convenience of detaching at the destination.

The instructions appearing in the Working Timetables, Page 13, and Sub-clause 16, Clause 77 of this Appendix, respecting "Westinghouse Brake power on trains" are hereby modified so far as it is necessary to permit of the above instructions being carried out, except that in cases where less than one-third of the vehicles on the train (not including loaded live-stock vehicles) are equipped with effective Westinghouse Brake complete, live-stock vans so fitted must be marshalled so as to make the number of vehicles equipped with effective Westinghouse Brake not less than one-third.

The above instructions do not apply to trains working between Quorn and Port Augusta, in which cases vehicles must be marshalled, subject to the instructions on page 13 of the Working Time-tables, and Sub-clause 16, Clause 77 of this Appendix, to the best advantage for detaching *en route* and shunting at Port Augusta and Quorn.

56b. MARSHALLING OF VEHICLES BETWEEN LOCOMOTIVES— CENTRAL AUSTRALIA RAILWAY.

Inquiries concerning the derailment of a four-wheeled vehicle indicated that the derailment was due to the fact that the vehicle was marshalled between two locomotives and being thus placed there was insufficient buffer side-play to permit of the vehicle negotiating the curve. In future, a four-wheeled vehicle must not be marshalled between two locomotives.

56c. MOVEMENTS OF PASSENGER VEHICLES AND BRAKEVANS ON TRIANGLES—CENTRAL AUSTRALIA RAILWAY.

No movement is to be made on any triangle on the Central Australia Railway with a four-wheel vehicles directly coupled to—

- (a) Sleeping Car (NRC. 36).
- (b) Special Service Car (NSS. 34).
- (c) Sleeping Car (NRP. 24).
- (d) 2nd Class Cars (NBPa. Nos. 25 to 27).
- (e) Relay Vans (NHBR. 18 to 23 and 28 to 30).
- (f) Any passenger vehicles belonging to the South Australian Railways Department.

In addition to the above, no four-wheeled vehicle is to be directly coupled at any time to:—

- (a) Special Service Car (NSS. 34).
 - (b) Sleeping Car (NRC. 36).
- (O.C. 60/29.)

57. BALLAST OR WORK TRAINS.

1. Notice to be Given to Transportation Branch.—When a ballast or work train is required to run, not less than 48 hours' notice should, if possible, be given to the Transportation Branch to enable a "Special Train" notice to be issued. The notice should state the nature of the work to be performed and the time to be allowed at each place for purposes of ballasting or other work.

2. Particulars to be given when Ordering Ballast or Work Train.—The Ways and Works Branch must, when ordering a train for ballasting or other purposes, state—

- (a) The place at which the engine and Guard are required.
- (b) Interval required for shunting or other purposes before the train starts on its journey.
- (c) Approximate time it is desired train should depart on journey and arrive back at depot station.
- (d) Nature of work to be performed at various points, and time required at each place.

3. Stations to be Notified.—In the event of time not permitting the issue of a notice, telegraphic advice of the running of the train must be forwarded, and in such cases Stationmasters will be held responsible for seeing that the train is not allowed to start until advice of its running has been forwarded. The Guard of the ballast train must ascertain from the Stationmaster at the station from which the train starts whether advice of the running of the train has been sent to all points concerned.

4. Train Signal at the Rear of Previous Train.—When a ballast or work train is run without written notice, the train signals must be carried on the previous train as provided for in Rule 112, Book of General Rules.

5. Guard and Engine-driver to be Notified when Section is to be Cleared.—The Guard and Engine-driver of a ballast train which has to do work on the line must be told to which end of the section the staff is to be taken (or, when working under the Permissive and Absolute Telephone Block Regulations, the crossing place to which he is to proceed) and at what time it is to be there, in order to clear the line for the next train.

6. Working to be Expedited.—Stationmasters and others concerned must give the working of ballast train, loaded or empty, close attention with a view to expediting the working, but due regard must be paid to the running of other trains.

7. Engine and Wagon Hire.—The Ganger in charge of the train will be responsible for seeing that engine hire dockets are sent to the Engineering Branch, giving the time the engine came into Traffic and the time returned to Loco. The Transportation Branch will advise Engineering Branch particulars of wagons, vans, &c., used for ballasting purposes, so that necessary debits can be raised.

8. **Ballast Trains Used for Back Loading.**—Ballast trains may be used for the conveyance of back loading for the Transportation Branch provided the Roadmaster or Ganger in charge considers that this can be done without unduly interfering with the working of the train, or causing loss of time to the men employed in connexion therewith. In such cases the Guard must show the information on his train way-bill.

9. **Care to be Taken When Moving Train during Loading or Unloading Operations.**—When a ballast train has to be moved during loading or unloading operations, the signal will be given by the Guard at the direction of the Roadmaster or Ganger in charge. Care must be exercised by all concerned to avoid accident to men through train being moved while they are in the wagons.

10. **Examination of Rolling-stock.**—If the rolling-stock used for ballasting purposes does not at frequent intervals pass through a depot where a train examiner is located, the Loco. Running Officer in charge of the section of the line in which the ballast train is working will be responsible for necessary arrangements being made for examination of Westinghouse brake and other rolling-stock parts.

11. **Mileage of Ballast Trains.**—Mileage will be computed on the basis of 8 miles per hour while ballasting, plus the actual mileage to and from the point of work.

12. **Loading of Ballast Wagons.**—Attention is drawn to the necessity for care being taken to avoid overloading of wagons. (See instructions regarding "Loading of Wagons," clause 63 of this Appendix.)

13. **Roadmaster or Ganger to be in Charge of Operations.**—Every ballast train must be in charge of a Guard. The Guard must take directions from the Roadmaster, or, in his absence, from the Ganger in charge in regard to the movements of the train.

58. LIVE STOCK TRAFFIC.

1. **Care of Stock in Transit.**—Every endeavour must be made by Engine-drivers and other employees concerned to run live-stock trains to schedule time. Care must be exercised in shunting, starting, and stopping trains by which live-stock are conveyed, and precautions must be taken by all concerned to avoid the animals being unnecessarily disturbed or frightened. Stationmasters and Guards must carefully examine the live-stock from time to time to satisfy themselves that they are travelling safely, and prompt steps must be taken to have any animals which are down put on their feet.

2. **Ordering of Live Stock Vehicles.**—*Trans-Australian Railway.*—Stationmasters must be careful not to inform persons lodging orders for live-stock vehicles that the wagons will be supplied. Definite information is to be given only when advice is received from the Chief Traffic Manager's office that the wagons will be available. Particulars as given in the following sample telegram should be promptly transmitted to the office of the Chief Traffic Manager:—

"C.T.M.—Elim (date of loading) 3 C vans load horses Jones Kingoonya to Elder Smith, Port Augusta, Ossa Podu.—S.M."

On receipt of reply the Stationmaster must promptly advise the consignor.

Live-stock requisition on Form G.L.52 (or G.L.5 when vehicles are required to load or unload at a place where proper facilities are not provided) and deposit in accordance with instructions in Goods Rates Book, must be obtained from the consignor.

Central Australia Railway.—All orders for live-stock vehicles must be lodged on Form G.L.52, except where the loading or unloading is to be performed at a station or siding where proper trucking yards are not provided, when Form G.L.5 must be prepared, and signed by the consignor. Orders for live-stock vehicles must not be accepted without first obtaining the authority of the Chief Traffic Manager, to whom particulars of all orders must be promptly wired.

These instructions do not apply to orders for live-stock vehicles to load at Quorn for stations south thereof; in such cases the particulars are to be wired to the Divisional Superintendent, Peterborough, in case of live-stock loading within the Peterborough Division, and in other cases to "Stock," Adelaide.

3. **Loading of Live Stock.**—Live stock vehicles must not be overloaded. Weak stock should be given plenty of room, and as far as possible animals of uniform size should be kept together.

4. **Races and Doors to be Clear Before Moving Vehicles.**—Stationmasters and Shunters must, before vehicles are moved when loading or unloading, see that doors are secured and that race gates are closed and fastened. Care is to be taken that end doors and flaps of sheep vans are closed and secured after unloading, otherwise they are liable to be damaged in shunting.

5. **Portable Sheep Races and Hurdles.**—Portable sheep races and hurdles are provided for use at stations where sheep yards do not exist, and are controlled by the Stationmasters, Port Augusta and Quorn, to whom application must be made when it is necessary to use this equipment for loading or unloading sheep. The Stationmasters, Port Augusta and Quorn, will be responsible for seeing that races and hurdles are returned to them immediately after use, unless they are required elsewhere in the immediate future.

Periodical inspection must be made by the Stationmasters, Port Augusta and Quorn, to see that the equipment is intact.

At Meadows, canvas and fittings to form wings in conjunction with the portable sheep race have been provided, and when not in use are held and cared for by the Ganger. At Alice Springs a portable sheep race is provided, and is not to be removed from that station except upon the authority of the Chief Traffic Manager.

6. **Losses of Live Stock in Transit.**—The Officer-in-Charge of the receiving station concerned must report to the Chief Traffic Manager the condition on arrival of all consignments of live-stock, indicating therein the number of deaths, if any, that occurred during transit, or during the interval after arrival and before delivery is taken.

In cases where live-stock are consigned to an unattended siding, the Guard of the train will send the necessary report to the Officer-in-Charge of the accounting station, who will forward the report to the Chief Traffic Manager.

The Guard of the train on which live-stock are conveyed will also report any unusual circumstances which may contribute to the death of any animal *en route*.

Suitable report forms for the purpose have been supplied to stations.

7. Conveyance of Live-stock.—The importation of cattle into Western Australia is permissible in the following cases:—

(1) Stud stock accompanied by a certificate from the Chief Veterinary Officer of the State of South Australia that such stud stock are from clean herds and have not been in contact with diseased stock for a period of at least six months.

(2) Cattle transported by railway direct to the Kalgoorlie Abattoirs for immediate slaughter and under such conditions that the hooves of such cattle do not touch ground outside of such abattoirs, and provided that the cattle to which this exception applies shall be accompanied by a certificate issued by an Inspector of stock in South Australia that such cattle are free from disease.

A transfer ramp is provided at Parkeston which will permit of cattle being transferred from Commonwealth to State trucks at that place, and of the conveyance of cattle direct therefrom to the Kalgoorlie Abattoirs.

The certificates must be signed by the Stationmaster, Cook.

8. Water for Stock in Live-stock Yards.—The Stationmaster must see that water is available for stock in Live-stock Yards, and bring under notice of the Chief Traffic Manager any case where necessary facilities are not on hand.

9. Live-stock Vans forwarded from Depots to meet Orders to be Thoroughly Cleaned; Door Fastenings, &c., to be in Good Order.—It is the duty of the Stationmaster at Port Augusta, so far as the Trans-Australian Line is concerned, and of the Stationmaster at Quorn, so far as the Central Australia Line is concerned, to see that all stock wagons sent from their stations to be loaded, are thoroughly clean when despatched, and that all doors and fastenings are in satisfactory condition and can be worked properly, and that in the case of cattle wagons, the floor cleats are in good order.

Stationmasters to whom empty vans are supplied for loading purposes must inspect stock trucks in good time before they are loaded, and if any attention to them is required, which can be given by themselves or by the Train Examiner, if one is available, see that this is given in good time to avoid any cause for complaint on the part of the loaders.

A report should be submitted by loading stations where defects are discovered so that necessary action may be taken to do what is possible to avoid a recurrence.

59. GUARD'S KIT AND BRAKE-VAN EQUIPMENT.

The following articles shall constitute the standard kit for Guards and equipment for brake-vans:—

GUARD'S KIT.

- 1 Hand lamp.
- 1 Watch
- 1 Whistle.
- 1 Carriage key.
- 1 key for point locks and choke blocks.
- 1 Pair ticket cancelling nippers.
- 1 Red flag.
- 1 Green flag.
- 1 Tin of detonators (containing 12).
- Rule Book and General Appendix.
- Current General Notices.
- Current Time-table, Special Train Notices, and other notices affecting running, signalling, or the general working.
- 1 Book of Indemnity Forms (P.26.).
- 1 Excess Fare Book.
- 1 Guard's Roadbill Book.
- 1 Passenger Fares Book.
- 1 Goods Rates Book.

The following additional articles are included in the standard kit for Guards on the Central Australia Railway:—

- 1 Book Crossing Orders (T.18a).
- Permissive Block and Absolute Telephone Block Instructions.

BRAKE-VAN EQUIPMENT.

- 2 Sprags or wheel chokes.
- 1 Tail rope.
- 1 Tail disc with one white face and one red face.
- 1 Tail disc, white with black cross.
- 2 Side lamps.
- 2 Red tail lamps.
- 1 Portable telephone.
- 1 Ambulance box.
- 1 Stretcher.
- 1 Bucket.
- 2 Spare W.H. hose pipes.
- 2 Spare tail bolts.
- 1 Portable fire extinguisher.

A standard length rope is to be included in the equipment of brake-vans run on stock trains on the Central Australia Line. The Stationmaster, Quorn, must see that brakevans of stock trains are so equipped when leaving on the down journey and that the rope is returned each trip. Guards of trains must make the rope available to drovers when required.

An axe, saw, and claw bar in box, for emergency use only.
On the regular Mixed Trains between Quorn and Alice Springs
1 Hurricane Lamp is to be included.

In addition the following articles must be carried as specified:—

In H.R. and Y.B. Brake-vans—

1 Step ladder.

Through Passenger Trains—Trans-Australian Railway—

2 Re-railing ramps.

1 Dynamo belt.

2 10 in. x 5 in. brasses.

2 9 in. x 4½ in. brasses.

2 Tender brasses.

2 Bottle jacks.

2 Jack bars.

2 Wood blocks (2 ft. 8 in. x 5 in. x 5 in.).

2 Wood blocks (1 ft. x 5 in. x 5 in.).

1 Wood block (2 ft. 6 in. x 8 in. x 6 in.).

2 Brake blocks.

1 Cramp for uncoupling cars.

It will be the duty of the Travelling Train Examiner before departure of train to see that the articles mentioned are in the brake-van.

All Trains North of Quorn—

1 Can oil.

6 Spare pads each of following types (S.A.R.), S.32, S.36, and S.43, and of each C.R. type.

1 Spare brass of each C.R. stock.

2 Draw-hooks in lieu of two tail bolts carried for Trans-Australian Railway.

On regular mixed trains north of Quorn, and on passenger trains, one ambulance chest instead of one ambulance box is to be carried. On all other trains one ambulance box is standard.

Each Guard in charge of a train must satisfy himself before starting that the above-mentioned equipment, together with any other articles directed, are in his Brake-van.

Each Officer-in-Charge of a depot station must, as far as possible, examine the equipment of each Brake-van, and the articles carried by each Guard under his charge, to ascertain whether equipment and kit are complete and each article is in proper condition and fit for use.

Emergency Tool Boxes in Vans.—Emergency tools in brake-vans are to be used only in case of emergency, and are not for general use.

This equipment is carried in a box which is permanently fastened to the wall of the van. Each box is provided with a glass or light wooden front, which can be readily broken should an emergency arise necessitating the use of the equipment. Each wooden front has painted thereon, "To be broken in case of emergency."

In order that the boxes may be promptly repaired, all concerned must specially report any case of the glass or wooden front being broken, and Guards must record the occurrence on the Train Waybill.

Pending repairs to boxes, suitable action must be taken to safeguard the equipment.

60. GOODS IN TRANSIT.

To insure safe transit of goods, and to guard against pilferage, the following instructions must be observed:—

1. As far as possible all general goods are to be loaded into covered vans which must be sealed at the loading station (where seals are provided) immediately the loading is completed. Special care should be taken to load spirits, beer, tobacco and similar consignments in covered vans, whenever practicable. Vans containing through goods between Port Augusta and Parkeston must be secured by locks as well as seals. Doors of vans which have to be opened *en route* for the purpose of dealing with roadside goods must be secured with M. locks on the Trans-Australian Railway, and S. locks on the Central Australia Railway. Such vans must be relocked immediately the loading or unloading is finished at wayside stations.

2. Receipt for sealed trucks must be obtained at Port Augusta, Parkeston, Quorn, Alice Springs, or any other station at which a train may commence its journey, from guards of outgoing trains, and guards must obtain a signature for sealed trucks from the Stationmaster, Shunter, or other employee taking charge of the train on arrival at each depot. Stationmasters must wire the Chief Traffic Manager immediately when any covered trucks of through goods are received minus either seals or locks. Guards must carefully examine all trucks of goods when taking over trains, giving signature for sealed trucks attached thereto, and obtaining signature when handing over to other guards.

3. Any defective seal or other irregularity in the sealing or locking of trucks must be reported immediately and defective seals or locks must accompany the report to the Chief Traffic Manager.

4. Stationmasters at stations where trains stay overnight or for any length of time, must examine the locks and seals of all vans on arrival and before departure. Keys of trucks secured with Yale or other special locks must be handed to the Stationmaster by Guards when booking off duty, and obtained from him before departure.

5. Guards must check all contents of brake-vans as soon as possible after taking over the train and promptly report by wire any discrepancy to the sending and transshipping station, also the station at which van was taken over.

6. Stations must promptly report by wire brief particulars of shortages (also cases of pilferage, &c., where circumstances warrant telegraphic advice) following same by full report embracing invoice details, brands, whether trucks locked and sealed, and any special feature concerning the shortage. Stationmasters must also report promptly to the local police shortages and ullages, where the circumstances point to theft. Tact must be exercised in regard to this duty, and the staff must first satisfy themselves that the goods left the forwarding station in good order. Ullages or bad order packages must be carefully weighed at transshipping and receiving stations, and the weight noted on the invoice or waybill.

7. A Missing and Damaged Goods Book (G.L.36) must be kept at each station in which must be noted all discrepancies between goods waybilled and received; also damaged or ullaged goods, &c. Each discrepancy is to be taken up promptly in correspondence.

8. When shortages in consignments for unattended mileages are discovered by Guards, they must endorse the waybill accordingly and immediately on arrival at the next attended station bring the discrepancy under the notice of the stationmaster or employee in charge, who in turn will be responsible for taking immediate steps to trace the missing goods and report the matter.

9. Waybilling stations must be careful to show correct truck and van numbers on waybills to facilitate checking and ensure consignments being easily located at destination.

10. All goods, parcels, &c., must be carefully handled to avoid damage, and discretion must be exercised by all concerned when stowing in wagons to prevent damage through contamination or through heavy goods being placed on fragile articles, &c.

11. Goods or articles found on the line by an employee must be labelled stating the place where found, whether on up or down side of the line, the time and date found, and if possible the train from which the goods or articles fell, and must be taken or sent promptly to the nearest attended station.

The employee discovering the goods must also forward a report to his Officer-in-charge giving the particulars referred to above. The stationmaster receiving the goods must by letter or telegram (according to the circumstances) advise the Chief Traffic Manager, and instructions will be forwarded regarding action to be taken. All such goods or articles forwarded by train are to be waybilled.

60a. TRANSPORTATION OF SUGAR.

Complaints have been received regarding the damaged condition of consignments of sugar which have been conveyed by rail on this system, and on inquiry being made it has been found that the damage has been caused mainly by friction between the sugar containers and cased goods, and leakage from consignments of spirits, oils, acids, &c., which are stowed in the same vehicle. Sugar is a commodity very liable to damage and it is important, therefore, that special care be exercised in handling and stowing. The following instructions are to be strictly observed:—

- (1) When sugar is offered for despatch by rail, each mat, sack, or other container must be carefully examined and the attention of the consignor directed to any defects noticed, such as small holes, evidence of previous chafing, stains by liquid, &c., both portions of the consignment note being endorsed accordingly.
- (2) Each consignment must be handled with special care; the use of bale hooks or other similar grappling device is forbidden.
- (3) Sugar waiting despatch must be properly protected from the weather. It must be stowed under cover so far as possible, and on a clean floor, apart from consignments of liquids, fat, skins and other articles which may damage or contaminate the consignment.

(4) Covered vans must be used so far as possible and care must be taken to see that there is nothing on the floors of vans which may foul, stain or otherwise damage the sugar.

(5) In stowing vehicles special care must be exercised to place the sugar in such a manner as to prevent contact with cased goods, liquids, &c., likely to cause damage.

To afford additional protection a quantity of old bagging has been supplied to Stationmasters, Port Augusta and Quorn, who must see that this is used to the best advantage in separating sugar from sides of wagons and from cased, &c., goods. The bagging on receipt at the stations must be bundled up and returned addressed and waybilled to Stationmaster, Port Augusta or Quorn (according to station originally forwarding) by first up train. As tarpaulins become worn out they will be cut up and the sound portions branded and used in addition to the bagging.

When bagging or pieces of old tarpaulins, or other suitable material is not available, sugar must be enclosed in a sound tarpaulin to prevent damage.

In the case of loss or damage to sugar, a full report must be forwarded to this office by first up train. The report must show the truck number, train, date, nature of damage, actual weight of sugar lost or damaged, position in which stowed, probable cause of damage, and say whether bagging, tarpaulins, old canvas or sawdust as directed above had been used when sugar was stowed. The report must show where truck was loaded, whether loaded direct for destination, or whether takeout wagon, and particulars of station where takeouts were off-loaded. In every instance a copy of the waybill, and where used, the original transfer note, must accompany the report. When delivery has been accepted or refused by the consignee a further report is to be forwarded giving particulars of receipt obtained, or the reason declined.

Reports must be forwarded from Guard and Assistant Guard of train if damage noticed at terminal, otherwise Stationmaster at terminal must be wired to obtain and forward reports to the Chief Traffic Manager. If guards off-loading takeouts have not travelled through to destination, the Stationmaster at the station at which guards changed over or left train, must be wired to obtain reports for despatch to the Chief Traffic Manager.

Stationmasters, Guards and Station Staff generally must give these instructions careful attention.

61. GOODS WAYBILLS AND TRANSFER NOTES, SOUTH AUSTRALIAN RAILWAYS.

It is essential that the way-bills and transfer notes for consignments for South Australian Stations accompany the consignments throughout, and to ensure that this is done, the following instructions must be observed:—

Stationmasters and all Traffic Staff concerned must see that way-bills and transfer notes are compiled in respect of every consignment accepted for conveyance to South Australian stations, and that they are forwarded to Quorn by the same train as that by which the consignment goes forward. Guards must be careful to follow the instructions concerning consignments picked up at wayside stations.

Each way-bill, in respect of traffic originating from Alice Springs and intermediate points to Wilson, is to be folded in such a manner as to permit of the heading being read without unfolding the way-bill. The entry must then be addressed to the Stationmaster, Quorn, and the truck number to which it refers must be clearly inserted on the top left-hand corner of the way-bill above the address. In all cases where the consignment is a "Take out" this must be distinctly indicated on the way-bill by writing "take out" immediately above the truck number.

Guards of all Up trains must sort the way-bills and transfer notes in truck order, and see that they are promptly delivered to the Stationmaster's office on arrival of the train at Quorn.

Similar arrangements will apply to goods and live-stock traffic from Port Augusta, except that the way-bills and transfer notes for each truck must be placed in a separate envelope addressed to the Stationmaster, Quorn, and endorsed "Invoices and Transfer Notes for South Line." The truck numbers must also be shown on the envelope in the position indicated above.

The object of this arrangement is to ensure that all way-bills and transfer notes for traffic to stations on the South Australian Railways system are received by the Stationmaster at Quorn, who will be held responsible for their subsequent despatch south by the proper trains.

The Stationmaster at Quorn will require to maintain an accurate record of the movements of South Goods Way-bills and Transfer Notes, so that, when necessary, proof of despatch may be established.

62. INSTRUCTIONS IN REGARD TO EXAMINING AND REPAIRING OF ROLLING-STOCK.

1. **Train Examiners' Duties.**—Train examiners are to meet all trains on arrival and carefully examine each vehicle. This does not apply to passenger trains on which travelling train examiners are travelling. All trains must be thoroughly examined before commencing a journey and the train numbers recorded on time-sheets.

2. **Examiners to Record Examinations, &c., on Daily Time Sheets.**—Examiners must record on time-sheets particulars of vehicles repaired, giving individual numbers.

3. **Reports of Repairs Effected or Required.**—When a vehicle is taken out of running for repairs, the Train Examiner must forward L.41 form to the Shed Foreman giving particulars of repairs required. The Shed Foreman before forwarding form to the Chief Mechanical Engineer will fill in column "Repairs effected" if repairs are effected at his depot. If repairs are to be performed at workshops, form is to be endorsed "Vehicle carded for workshop repairs."

4. **Vehicles Overloaded.**—Train examiners must report all cases of vehicles being overloaded or with unequal distribution of load.

5. **Examination of Axles.**—All engine, tender, car and wagon axles and journals are to be carefully examined for defects when removed for the purpose of wheel change or turning of tyres or journals, and journals are to be subjected to hammer tests consisting of lightly tapping the journal with a hand hammer for sound test and smart blows with a 6-lb. copper hammer on outside collar and on ends of axles with outside journals, and on the wheel rim for axles with inside

journals and on the centre of the axle before examination, care being taken in all cases not to damage the journals. Also when wheels and axles are forwarded to the workshops the journals are to be oiled and protected with suitable covering. After derailment, collision, or hot axle-box, special attention is to be paid to the examination of wheels and axles of rolling-stock to see that the axles are straight and in every respect fit to run.

6. **Broken Axles.**—Full information, accompanied by sketch, is to be furnished to the Chief Mechanical Engineer in all cases of broken car and wagon axles or fractured tyres. This information is to be forwarded together with a full report on the circumstances under which the breakage occurred.

7. **Examination of Wheels.**—Train examiners must see that all wheels except those of the engines and tenders are fast on the axles, true to gauge, the tyres sound and properly secured, and in good running condition. To enable any movement of loose wheels on car and wagon stock to be easily detected it has been arranged to have the joint of the axle and the hub of the wheel on the inside thoroughly cleaned as vehicles pass through the shops. After examination a thick coat of white paint, extending about 1 inch from the joint both ways, will be applied around the joint of the axle and the hub of the wheel. The presence of the paint will assist in disclosing any movement on the axle. Train examiners and others examining or repairing rolling-stock must maintain a careful watch on all vehicles to see that any movement which may take place is promptly reported.

8. **Defective Wheels.**—Wheels with sharp flanges, or below the condemning gauge, or grooved in the tread, or with flats, must be taken out of traffic.

9. **Tyres to be Sounded.**—With the object of detecting defects in wheels and tyres, all carriage and wagon tyres are to be sounded with a hammer upon the arrival of trains at the examining stations.

10. **Tyres.**—The profiles of tyres and the distance between the inside faces of the tyres should be similar in all carriage and wagon stock of same gauge.

11. **Springs.**—The springs of all rolling-stock must be quite free to work.

12. **Bogie Stock.**—The frames of all bogie stock should have approximately $\frac{1}{2}$ -inch camber, and should not sag, as otherwise an undue strain will be put on the tension rods.

13. **Defective Hand Brakes.**—When the hand lever or wheel brake of any vehicle is known to an examiner or guard to be defective it will be the duty of such examiner or guard to at once tie up the brake lever and chalk "Bad Brake" in prominent place on both sides of the vehicle, in order to prevent risk of injury to shunters who may attempt to use the brake in ignorance of its defective condition. With lever brakes the brake must be taken up before the lever strikes the bottom of the rack when applied. Vehicles with defective brakes must be immediately forwarded to the nearest depot for repairs.

Screw hand brakes when being released must not be violently turned to the limit of the release position, as such treatment is liable to cause the brake to jamb.

14. **Condition of Brake to be Reported in Case of Collision.**—In the event of damage to vehicles which may have got away from the shunter and collided with other vehicles it must be stated by examiners whether the brakes of the vehicle or vehicles that got away were in good condition.

15. **Westinghouse Brake Gear to be Returned.**—All defective Westinghouse brake gear must be forwarded to the nearest Loco. Depot to be dealt with as necessary.

16. **Westinghouse Brake on Carriages and Wagons.**—Train Examiners will be held responsible for the following:—

That W.H.B. coupling cocks are tested occasionally to see that they are not seizing.

That brakes are tested on incoming trains and all defects brought under notice.

The attention of Train Examiners is drawn to instructions in this appendix relating to the Westinghouse brake.

17. **Defective Hose Pipes.**—All air hose pipes that fail are to be sent to the Chief Mechanical Engineer carefully labelled and addressed. The point of failure, if possible, should be indicated by a chalk mark. The pipes must be sent weekly, securely lashed together; an advice note must be forwarded to the Chief Mechanical Engineer stating how and by what train they were forwarded. The parcel must be carefully labelled and particulars must also be sent of the number and class of vehicle removed from, also date applied to vehicle, date failed, part of hose which failed, maker's name. Drivers and Train Examiners who remove hoses must deliver them to the Shed Foreman of the district.

63. LOADING OF WAGONS.

1. **Wagons not to be Overloaded.**—The authorized load of every wagon is to be painted on the side, and unless special instructions are issued to the contrary, the load of any wagon must not exceed that shown. Care must be taken to see that the load in the wagon is so distributed that undue weight will not be placed at either the ends or the sides. In the case of bogie wagons, the greater weight must be distributed over the bogies, and not placed in the centre of the wagon.

2. In the case of wagons loaded with heavy articles, every care should be taken to see that the coupler or couplers are not unduly lowered from the ordinary height above rail level. This can be judged when the wagon which contains the heavy loading is seen against an empty wagon or against a wagon that does not contain loading of an exceptional kind. The springs also should not be unduly depressed. Any doubtful case must be brought under the notice of the Shed Foreman or the Train Examiner.

3. When forwarding ballast spalls, road metal, screenings, clay, sand, &c., there is a risk of the wagons being overloaded, especially if the material is wet. To avoid this the employee responsible for loading the vehicles must ascertain the height to which any such material can be loaded, and care must be taken to see that this is not exceeded.

4. If a wagon is found to contain loading that is in excess of its authorized load, arrangements must at once be made to reduce the load.

5. **Loading Gauge.**—Stationmasters and others concerned must see that loads placed on vehicles at their stations are within the loading gauge. In the case of unattended stations, the Guard is responsible.

6. **Loading of Goods in Mail and Covered Vans.**—The doors of mail vans and covered vans are sometimes difficult to open on arrival at destination owing to the contents being loaded hard against doors. As the goods are very often unloaded through the door opposite to that through which they are loaded, it is necessary for employees loading the goods to so stow them as to permit all doors being readily opened.

7. **Conveyance of Liquor.**—As shown in Clause 60, intoxicating liquor must, wherever possible, be loaded in covered vans.

TRANS-AUSTRALIAN RAILWAY.

8. **B.S. Wagons.**—The maximum carrying capacity of all B.S. wagons is 10 tons.

9. **Loading of Firewood.**—Firewood (which is a class of traffic requiring special attention) is usually loaded on either "R," "RA," or "BS" trucks. On "R" and "RA" trucks firewood is usually loaded crosswise; and on "BS" trucks lengthwise. In the case of "R" and "RA" trucks, firewood must not project more than 6 in. over either side of the trucks. Long stanchions should be used at both ends of such trucks. Stationmasters and Guards must watch this when supplying empties.

Loaders should secure firewood on "BS" trucks by placing suitable lengths of wood in position to act as stanchions, and should, if necessary, further secure load by wire or chains.

Sandalwood or other such traffic is to be dealt with similarly to firewood.

10. **Portable Loading Gauges** have been supplied to the following places, and must be used whenever it is considered advisable to test the loading:—

Port Augusta.	Kitchener.
17-Mile.	Karonie.
Hesso.	Parkeston.
Bookaloo.	

The foot of the gauge should rest on a sleeper and the toe should fit between the head and web of the rail. Stationmasters at stations other than those mentioned above, must, when the occasion arises, check the loading by measurement, or obtain a loading gauge from the nearest station at which one is available.

CENTRAL AUSTRALIA RAILWAY.

11. **Loading of Takeouts in Covered Vans.**—Covered vehicles (e.g., N.V., N.L.S., and N.V.S.), must be utilized to the fullest extent possible for the conveyance of Roadside Takeouts on the Central Australia Railway, so that the use of open wagons for this purpose, and the time required for uncovering and re-sheeting such wagons, may be reduced to a minimum.

All empty covered vans must be worked to Quorn promptly. Available outward loading may be despatched in these vehicles.

In working empty covered vans to Quorn, they are not to be given preference over loaded wagons.

12. **Maximum Axle Loads.**—As the maximum axle load on the Central Australia Railway has been fixed at $8\frac{1}{2}$ tons, no vehicle (either Commonwealth or State) is to be loaded to such extent as will make the gross weight greater than $16\frac{1}{2}$ tons in the case of a four-wheeled vehicle, or 33 tons in the case of a bogie vehicle.

The following classes of S.A.R. vehicles are capable of carrying a load that would exceed the permissible axle load mentioned, and the loading of these vehicles must therefore be restricted accordingly.

Description.	Letter. Code	Description.	Letter. Code
Highside Bogie	.. Q	Highside Goods	.. N
" "	.. T	" "	.. X
Hopper Wagon	.. Z	" "	.. Y
Highside Bogie, Goods	.. W	Flat "Top Bolster	.. H
		Long Lowside	.. —

64. LOADING AND CONVEYANCE OF ARTICLES OF EXCEPTIONAL SHAPE, DIMENSIONS, OR WEIGHT.

1. Every possible precaution must be taken to prevent any load of exceptional shape, dimensions, or weight becoming displaced during transit.

2. If, owing to shape, dimensions, or weight, or to any other circumstance, there is, in the opinion of the person responsible, difficulty in properly loading or securing a consignment, he must call the attention of the employee-in-charge to it, and the employee-in-charge must, if necessary, communicate with the Chief Traffic Manager (by wire, if circumstances demand such action) in order that arrangements may be made for a responsible officer to examine the consignment, and supervise the loading, if necessary.

3. Under no circumstances must any such exceptional consignment be sent forward until the loading has been examined by the employee in charge, who must satisfy himself that it is within the dimensions of the loading gauge. Should any doubt exist, the load must be carefully measured.

4. Every Guard and Shunter must pay particular attention to the careful examination of any load of this description at all places where the train may stop, to see whether it has shifted, or requires adjustment; and, if so, the wagon or wagons must not be taken forward until the load has been made secure. The wagons should be marshalled as near as possible to the rear brake van, so that the load may be watched in transit.

5. It is often found that by the use of special appliances, or by a slight alteration to a wagon, arrangements can be made for the safe conveyance of consignments which might not otherwise travel safely.

6. When traction engines, boilers, or other heavy articles of similar description have to be forwarded, the weight of the consignment, as accurate as possible, must first be ascertained, and care must then be taken to see that a vehicle of ample carrying capacity is provided. Before accepting heavy loading of this character, it must be ascertained whether the consignment can be unloaded at the destination.

65. CONVEYANCE OF ARTICLES EXCEEDING GAUGE DIMENSIONS.

1. Except with the prior consent of the Chief Traffic Manager no consignment is, under any circumstances, to be accepted for conveyance, whose loaded height or width overall (including ropes, chains, &c.), exceeds the maximum loading gauge dimensions, or whose exceptional length raises a doubt as to whether it will pass safely round curves.

2. In all cases where it is necessary to convey such articles, the employee in charge must specially advise the Chief Traffic Manager, and at the same time enclose a drawing or sketch showing the exact shape and dimensions of the consignment. Inquiries will then be made with a view to determine whether the consignment can be accepted for conveyance.

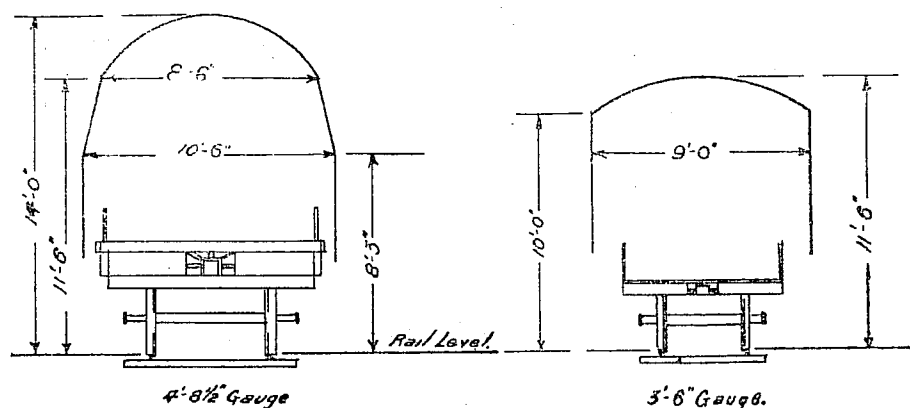
3. (a) Before authority is given for an out-of-gauge load to be conveyed, a certificate must be furnished by a responsible officer of the Way and Works Branch that the article can be safely loaded and conveyed between the required points. When considered necessary by the Chief Traffic Manager, a certificate must be given by the Chief Engineer of Way and Works.

(b) Out-of-gauge loads of exceptional width will be conveyed only by specified trains. It may be necessary for trains conveying such loads to be brought to a stand before being passed by any other train, and the passing should be at a place where there is no curve on the line. If it be necessary to shunt these trains to allow another train to pass, or to meet other exigencies of working, they should, if possible, be shunted into a siding well clear of the main line and/or other running lines.

4. If necessary, a Traffic employee conversant with the working of the traffic should be appointed to travel with the train, and when this is done, he must make himself acquainted with all special arrangements applicable to the safe working of such train; and see that these instructions and any other special instructions issued, are carried out. An employee of the Way and Works Branch will also travel with the consignment when considered necessary by the Head of that Branch.

5. A circular containing the necessary instructions will be issued by the Chief Traffic Manager prior to the day on which it is intended that the consignment shall travel.

MAXIMUM LOADING GAUGE.



66. MOVEMENTS AND DISTRIBUTION OF ROLLING-STOCK

In connexion with the movements and distribution of rolling-stock, the following instructions are to be observed:—

TRANS-AUSTRALIAN RAILWAY.

1. All spare empty wagons must be worked by the first available train to Port Augusta, unless otherwise directed, with the exception of stock vans, brake vans, passenger rolling-stock, water wagons and R wagons in excess of number allocated to any station from time to time which must be worked forward only as directed by the Chief Traffic Manager.

2. Stationmasters at other stations than Port Augusta, Cook and Parkeston, must telegraph a report after the departure of both the Up and Down mixed train to the Chief Traffic Manager, showing particulars of empty and loaded goods and live stock vehicles, and water wagons on hand, and the number of each type of wagon required to meet orders at their station. The Stationmasters, Port Augusta, Cook, and Parkeston, must furnish similar reports after the departure of the mixed train to the Chief Traffic Manager.

3. Guards on mixed trains must hand in at the first attended station particulars of wagons, &c., on hand at sidings, and the Stationmasters concerned must immediately telegraph these particulars to the Chief Traffic Manager.

4. Stationmasters at Port Augusta and Parkeston must also furnish reports (the latter by telegraph), showing particulars (type, numbers, &c.) of coaching stock and brake-vans on hand at 9 a.m. each Monday. Other stations need only furnish this report when coaching vehicles are on hand at their stations.

5. Orders for goods wagons may be supplied from those on hand, but application must be made promptly to the Chief Traffic Manager for any additional wagons required.

6. Orders for all other vehicles must be forwarded to the Chief Traffic Manager, stating full particulars, and reason required.

7. When passenger vehicles, brakevans, stock vans, and water wagons are labelled "for repairs," and are required by the Chief Mechanical Engineer for that purpose, they must not be taken out of traffic until directed by the Chief Traffic Manager. In such cases Stationmasters must promptly communicate with the Chief Traffic Manager, giving full particulars, and the latter will arrange for equipment, &c., as necessary, to be removed, and will instruct the Stationmaster as to the action to be taken.

8. All other vehicles labelled "for repairs" are to be worked to Port Augusta or other depots as necessary with the least possible delay.

CENTRAL AUSTRALIA RAILWAY.

9. Each Stationmaster on the Central Australia Railway (including Port Augusta so far as narrow gauge vehicles, &c., are concerned) is to compile a Daily Report showing the total number of goods and livestock vehicles, water tanks, tarpaulins, ropes, powder magazines, twitch sticks, &c., at his station and at each siding under his control as at 8 a.m. daily (Sundays excepted). This report must be prepared on the form supplied and be transmitted to the Chief Traffic Manager each week day at the times shown in sub-clause 15.

The explanation of the terms used in the form are as under:—

EBER—Empty goods trucks on hand:

This heading is subdivided into "Spare" and "Required".

On the "Spare" line the total number of each class of empty goods vehicles on hand and not required is to be shown. On the "Required" line the total number of each class of empty goods vehicles on hand and required for local loading is to be shown.

EBON—Loaded goods trucks on hand inwards:

The total number of each class of goods vehicle on hand containing inwards loading is to be shown under this heading, which must also include inwards loading in loco. (For instructions in regard to defective trucks see heading "ECTI").

The Quorn report under this heading is to be subdivided into two lines, namely "Ex South" and "Ex C.A.R."

ECCE—Loaded goods trucks on hand outwards:

Under this heading are to be shown the total number of each class of goods vehicle on hand containing goods waiting transit and the gross tonnage for each station. A separate line is to be used for each destination on the Central Australia Railway; but the total number of each class and the gross tonnage for all stations on the S.A.R. System are to be bulked and shown on one line.

ECTI—Defective wagons out of traffic on hand:

The total number of each class of goods truck on hand in a defective condition and not fit for transit is to be shown, loaded and empty vehicles to be shown separately, and destination in the case of loaded trucks. When vehicles have been repaired and are again fit for transit, they are to be transferred from this heading to the then appropriate heading.

EDOW—Goods trucks in transit:

The total number of each class of goods vehicle and travelling tank in transit at the time the report is taken is to be shown under this heading. The particulars are to be supplied by Guards of trains in transit on forms provided, which must be handed in to the Stationmaster at the last attended station passed not later than 8 a.m. Stationmasters are responsible for seeing that this report is handed in by Guards and all cases of neglect must be immediately brought under notice. Guards are to obtain receipt for this statement on their Running Statement from the person to whom report is handed.

ERTA—Water Tanks:

The total number of each class of travelling tank on hand, whether in Traffic yard for camp use, standby purposes, &c., or whether in Loco. for engine use, &c., is to be shown under this heading. Defective water tanks are to be included under the heading "ECTI".

DEMO—Tarpaulins on hand:

This heading is divided into two columns, namely "C.R." and "S.A.R.", each of which is subdivided into two columns "A" and "B".

C.R. "A" represents the total number of Commonwealth tarpaulins on hand.

C.R. "B" represents the number of Commonwealth tarpaulins of the total shown in "A" required at the station or siding for immediate use.

S.A.R. "A" and S.A.R. "B" apply to South Australian tarpaulins in the same manner.

DARA—Ropes on hand:

This heading is divided and subdivided in similar manner to "DEMO", and is to be compiled for C.R. and S.A.R. ropes in the same way as the "DEMO" heading is compiled for tarpaulins.

BALA—Truck balance:

The rollingstock report of each station and siding must be balanced daily prior to being transmitted to the Chief Traffic Manager. This is to be done by adding to the previous day's balance those trucks received since it was rendered and subtracting from that total the trucks despatched during the same period. Particulars of receipts and despatches are to be taken from Wagon Books (T.93).

EDAR—Inwards loaded trucks on hand over 12 hours:

Particulars of inwards loaded trucks remaining at a station or siding under load over 12 hours are to be shown under this heading.

FUMY—Outwards loaded trucks waiting transit over 12 hours:

Under this heading are to be shown particulars of outwards loading waiting transit over 12 hours.

EMIR— . . . Trucks required for station use in addition to those on hand:

The trucks required at a station or siding in addition to those on hand are to be shown under this heading. Inward loaded trucks must be taken into consideration when requisitioning for trucks. For example, if there are two empty trucks and one inwards loaded truck at a station requiring three trucks, no truck should be requisitioned for, but steps should be taken to have the inwards loading released.

10. **Tarpaulins, Ropes, Twitch Sticks, &c., Required.**—If stations require supplies of tarpaulins, ropes, twitch sticks, &c., in excess of those on hand, their requirements are to be shown in the daily report. As in the case of trucks full use must be made of equipment on inwards loaded vehicles.

11. **Trucks received from and Despatched to South since last Report.**—This information is to be supplied only by the Stationmaster, Quorn, who is to advise separately the total number of goods wagons received from and despatched to the S.A.R. System daily.

NOTE.—Throughout this report totals and balances are to be calculated on a four-wheel basis, i.e., one bogie vehicle is to be regarded as equal to two four wheel vehicles.

12. **Specimen Report.**—The following is an example of the form in which reports should be rendered by stations:—

"Truck report:—

EBER spare 2 NRA, 1 CC, required 1 NLS.

EBON 2 X

ECCE Hawker 3 NGS, 1 Y, 50 tons; Marree 1 NG, 25 tons; S.A.R. 5 X, 45 tons.

ECTI loaded Marree 1 NRA.

EDOW No. 21 1 NG, 5 NGS, 2 X, 1 NTB.

DEMO C.R. 5 A, S.A.R. 2 A.

DARA C.R. 6 A, S.A.R. 4 A.

BALA 10 received, 8 despatched, 5 on hand.

EDAR 1 NGAS.

FUMY 1 NRA rails Wire Creek.

EMIR 1 NRA.

Required six sticks."

Where there is no business to be dealt with under any particular code word such code word may be omitted from the wire; but so far as attended stations are concerned, a report must be submitted every day even if there are no trucks, sheets, ropes, &c., on hand, in which event a "Nil" report must be forwarded. So far as sidings are concerned, however, it will be assumed, in the absence of any report for them, that there are no goods, vehicles, sheets, ropes, &c., on hand thereat.

13. **Siding Reports.**—Stationmasters are to prepare a daily report for each siding under their control. Guards of trains shunting sidings must prepare a siding report on the forms provided. These provide for particulars being shown of vehicles detached and attached and remaining at the siding after the passage of such trains. Guards are to hand the reports to the Stationmaster or other officer at the first attended station in advance who will acknowledge receipt by initialling the corresponding entries on the Guards Train Waybills. In cases where the Stationmaster receiving the siding report is not the Supervising

Officer for the siding concerned, he must forward the report to the Supervising Officer by the first available train, and should there be no train running which will enable the report to reach such Supervising Officer before the time the next daily report is due, he must telegraph or telephone particulars.

Stationmasters at destination stations to whom Guards train waybills are handed must examine the entries affecting unattended sidings and see that the Guard has obtained the necessary acknowledgments for siding reports.

LIST OF SIDINGS AND CONTROLLING STATIONS.

Controlling Station.	Name of Siding.
Quorn	Woolshed Flat
"	Saltia
"	Stirling
"	Willochra
"	Gordon
"	Wilson
Hawker	Hookina
"	Mcra Merna
"	Edeowie
"	Brachina
"	Meadows
Parachilna	Nilpena
Copley	Telford
Farina	Wirrawilla
"	Mundowdna
Marree	Callana
"	Wangianna
"	Alberrie Creek
"	Bopeechee
"	Curdimurka
"	Coward Springs
"	Beresford
"	Strangway Springs
"	Irrappatana
"	William Creek
"	Anna Creek
"	Boorthanna
Edwards Creek	Warrina
"	Algebuckina
"	Mount Dutton
Oodnadatta	Alberga
"	Pedirka
"	Ilbunga
"	Abminga
"	Finke
Rumbalara	Bundooma
"	Rodinga
"	Ewaninga
Alice Springs	

15. Time-table for Transmitting Reports.—In order that the transmission of the daily report shall be effected punctually and as speedily as possible the reports are to be despatched from stations at the following times. In the case of non-telegraph stations the reports are to be telephoned to adjacent telegraph stations as shown. If this instruction is not observed the operator at Port Augusta must bring the matter under the notice of the Chief Traffic Manager:—

Alice Springs	9.10 a.m.
Oodnadatta	8.00 a.m.
Edwards Creek	8.05 a.m.
Hawker	8.15 a.m.
Parachilna	8.20 a.m.
Beltana	8.25 a.m.
Copley	8.30 a.m.
Farina	8.40 a.m.
Marree	8.45 a.m.
Quorn	8.50 a.m.
Port Augusta	9.00 a.m.

If through line crosses, weather conditions, &c., it is found impracticable to transmit the report by telegraph, resort must be had to the telephone service.

These reports are to take precedence over all other business, except those prefixed "D.G.", "L.C.", or "G.M.".

16. Live-stock—

DYAK—Empty stock trucks on hand:

A separate report is to be compiled in respect of live-stock vehicles showing the position at 8 a.m. daily. This is to be prepared and transmitted in a similar manner and at the same time as the daily truck report. If no live-stock vans are on hand at an attended station a "Nil" report is to be wired as follows:—

"DYAK Nil".

In the case of sidings it will be assumed in the absence of any report that there are no live-stock vehicles on hand there.

No live-stock vehicle is to be attached to or detached from any train without instructions from the Chief Traffic Manager.

17. General.—All concerned must realize the importance of making the fullest possible use of the available truck supply. This can only be secured by a full observance of the above instructions, and any neglect to observe these will be seriously viewed.

67. RUNNING STAFF TIME-SHEETS, ENGINEMEN'S TIME ALLOWANCES, ETC.

1. Computation of Time—Driver's Daily Time-sheet, Form L1.—

(a) It is essential that complete information be shown in every case by Drivers and Transportation staff under the respective headings. Engine-drivers particularly must see that all time is accounted for from time of signing on duty until time of signing off duty.

(b) Provision is made for copy of Guard's train-running statement to be made on the back of this sheet.

(c) A uniform method must be adopted on the Trans-Australian Railway by Enginemen and station staff in regard to zone times. The time shown on Drivers' time-sheets must conform to the Zone time of the station at which they are signed on and off duty respectively, e.g., the Driver of No. 1 Down *ex* Tarcoola must sign on duty at that station by Adelaide time and off at Barton by Central time.

(d) When signing on duty the Driver will be handed L.1 form by the Loco. Running Officer in charge, showing the Driver's name, the name of the Fireman, the number of engine, and the train he will be required to work. The time on duty will be initialled by the Shed Foreman or Chargeman at the depot from which the Driver commences his trip, or if no Chargeman is available, by the Stationmaster.

(e) On arrival in traffic the traffic employee taking charge of engine will initial the time booked on traffic in the column provided for the purpose.

(f) On joining train, the Driver will be responsible for delivery of the L.1 sheet to the Guard, who will fill in the particulars on the back thereof (indicating *separately* the time involved for each delay or stop, i.e., station business five minutes, watering cars ten minutes, change engine five minutes, &c., &c., instead of booking twenty minutes delay to station business, watering cars and changing locomotive, &c.), and return sheet to the Driver on the completion of the trip. The Driver will be responsible for seeing that he receives the sheet when leaving the train.

(g) When the engine is returned to loco., the traffic employee will initial the time engine passed over traffic points, and the loco. running employee in charge (or traffic employee when no loco. running employee is available) will initial time signed off duty.

2. Time Sheet to be Checked by Officer-in-Charge.—Drivers will fill in the various columns on the face of the sheet and hand to the Shed Foreman or Chargeman at their home depot when signing off duty. The Shed Foreman or Chargeman must check particulars shown on the sheet and reconcile times on and off duty with the Guard's train running statement, and also with the times in and out of traffic, after which the sheet is to be certified to and forwarded to the Chief Mechanical Engineer by first train. Delay in submitting sheet may result in time worked being omitted from pay-sheets.

3. Sheets to be Carefully Filled in.—All concerned are notified that care is to be exercised in making entries on the L.1 time-sheet, as payment cannot be made to the engine crew until the sheet is properly filled in by those concerned.

4. Time Allowances for Booking On and Off, Preparing Engines, &c.—(a) Shed Foremen or Chargemen and Stationmasters are responsible for seeing that only the booking on and off times as specified in the Staff By-law and other instructions are allowed to engine crews and Guards, except in special circumstances, when a certificate for the extra time involved must be given by the Officer-in-Charge.

(b) When Full Stabling Duties not Performed by Crews.—In the event of full stabling duties not being performed by engine crews, an allowance of 30 minutes only will be granted from time of passing traffic points.

5. Crews Changing Over.—Crews changing over on the main line for passenger, mixed, or other trains are to sign on duty five minutes before the train is expected to arrive at the station from which they are to work. Between the hours of 7 a.m. and 9 p.m. a Driver at such places must ascertain how the train is running and sign on as advised by the Stationmaster. Between the hours of 9 p.m. and 7 a.m. the traffic staff will arrange to call the crew in time to be on duty five minutes before the train is expected to arrive. The station staff will sign the outgoing crew on duty (on L.1 time-sheet) but it will not be necessary to sign the incoming crew off duty as they are allowed fifteen (15) minutes after arrival of the train.

6. Enginemen on Duty Unnecessarily.—Cases have occurred where enginemen have been brought on duty before actually required owing to the train which they have to work running late. Stationmasters at Loco. depots must advise the Shed Foreman or Chargeman promptly when trains are running late so that the crew can be brought on duty correspondingly later.

At stations where there is no loco. running employee in charge the Stationmaster must arrange for the enginemen to be advised and brought on duty in accordance with the above.

Stationmasters must also see that engines are promptly returned to Loco. when no longer required in traffic.

At unattended places Guards will sign Drivers and Firemen "On traffic" or "Off traffic," and the specified preparing and/or stabling allowance will be made accordingly. Where other duties, such as coaling, lighting up, &c., necessitate extension of the allowance, particulars of the duties performed must be shown under "Drivers' remarks" at foot of time-sheet.

When booked off at unattended places north of Quorn the enginemen will be responsible for sending the time-sheet direct to the Chief Mechanical Engineer.

The Shed Foreman, Stationmaster, or other authorized person signing an Engine-driver or Fireman off duty must see that all time and work is accounted for on the daily time-sheet (L.1.), and forward the time-sheet (signed) direct to the Chief Mechanical Engineer.

7. Running Shed Employees' Fortnightly Time-sheet (L.5).—This form is to be used by employees in Running Sheds and must be compiled from day to day. The following instructions must be strictly observed by all concerned:—

Headings, number of job (if numbered), and brief description of work engaged upon, must be shown, all time occupied on any one job to be shown on one line of the time-sheet. (See instructions on inside of time-book cover.) Each particular class of work to be shown on separate line.

In cases where there is no job number, the engine or other vehicle number and class must be shown in the column set apart for "Job Number", and a brief description of all work performed must be given.

Any work performed for South Australian Railways, or for joint S.A. and C.R. service, must be separately and clearly indicated in "Job Number" column on time-sheets.

A separate time-sheet must be submitted by any employee acting in other than his classified grade and the acting designation must be clearly shown thereon.

Where helpers are engaged assisting tradesmen, the names and designations of such tradesmen must be shown also full particulars of work engaged upon.

The South Australian Railways bear portion of the cost of shunting at Quorn, including wages, coal, water, oil, firewood, and all other materials used, also the whole cost of wages, water, coal, cleaning and preparing of State engines, and it is important that time-sheets and requisitions should indicate clearly all work performed and all material obtained for these purposes. Cost of shunting with train engines is also a debit to Joint Working.

8. **Engine Cleaner's Daily Time-Sheet (L.5a); Pumper's Time-Sheet (L.68).**—The following instructions are to be closely observed:—

Full particulars of all work performed each day, such as lighting up, cleaning, coaling, repairs to water columns, overhead tanks, pipelines, hoses, clearing ashes, &c. (each item separately), and the individual number of each engine concerned must be distinctly shown, *also the time occupied on each particular class of work.*

Any work performed on behalf of the South Australian Railways, or other C.R. Branches, must be clearly shown on time-sheets to ensure the Department or Branch concerned being correctly debited with the cost.

Time-sheets for Cleaners on Relay and other work (if booked off duty away from home station) will be certified by the Stationmaster or his deputy (or Driver at unattended places) and sent direct to the Chief Mechanical Engineer.

9. **Guard's Weekly Working Sheets (T.83).**—It is not now necessary for Guards to submit Claim for Expenses (T.56), as expenses are now calculated from the Weekly Working Sheets.

10. **Absentee Slips (L.11) and Overtime (L.12) Dockets.**—Absentee Slips (L.11) are used in connexion with time-sheets L.1., L.5., and L.5a, and Overtime Dockets in connexion with Fortnightly time-sheets (L.5) must be forwarded daily to the Chief Mechanical Engineer by the Officer-in-charge of depot concerned.

11. **General.**—In all cases, the appropriate type of time-sheet (L.1, L.5, L.5a, L.68 or T.83) provided for each particular grade of employee must be used.

The Shed Foreman will send to the Chief Mechanical Engineer daily a copy of the Shed Running Sheet (Roster), also the daily time-sheets of any men booked off duty.

Shed Running Sheets (L.3) must show the destination of each train in the "Remarks" column.

Time-sheets of Loco. Running men stationed north of Quorn (with the exception of Drivers and Firemen booking off at other than home stations) will be certified and forwarded direct to the Chief Mechanical Engineer.

Employees engaged on special work, such as sand or ballast trains, away from a controlling station will be signed on and off duty by the Ganger or other Officer-in-charge of the work.

All daily time-sheets must be sent to the Chief Mechanical Engineer by the first available train after the employee has been booked off duty, and weekly and fortnightly time-sheets at the close of the week or fortnight as appropriate.

68. GUARDS' TRAIN REPORTS.

1. Guards must prepare two copies of each train running statement by means of carbon paper, and on completion of the journey the original is to be handed in to the Stationmaster concerned. The carbon copy, which is to be made on back of Driver's daily time-sheet (L.1) is to be handed to the Driver at the point where he leaves the train. The Guard must also prepare a train way-bill which is to be handed in to the Stationmaster with the original of the running statement on the completion of the journey. In the case of a light engine, the Driver must prepare running statements in accordance with these instructions.

The Stationmaster must check the statement and the way-bill and forward them to the Chief Traffic Manager without delay.

2. When Guards change over on the journey only one train running statement and one train way-bill are to be compiled for the train. The Guard beginning the journey must fill up the statement so far as he is in charge of the train and hand it to the Guard taking charge at the changing station, who must continue and complete the statement. Both Guards must sign the statement.

3. In the case of the mixed trains between Kalgoorlie and Port Augusta, these will be regarded as working between Port Augusta and Cock and Parkeston and Cook. In the case of the Down mixed train for instance, a train running statement and train waybill are to be compiled for the journey Port Augusta to Cook and a separate running statement and way-bill prepared for the journey from Cook to Parkeston.

4. It is essential that the particulars shown on the train running statement and train way-bills be accurate, and Guards must be careful to enter the correct time of arrival and departure. The information shown on the Driver's copy of the running statements must agree in every particular with the original. All delays, both in sections and at stations, must be fully accounted for on the running statement, and the extent of the delay due to traffic, locomotive, maintenance and other causes must be separately accounted for. When the arrival time at stations is not shown in the time-table for certain trains, Guards must enter the actual time of arrival in the column provided. When a train runs through a station the Guard must show on his running statement the time at which such station was passed.

5. In the event of any occurrence which might have involved in any respect the safety of the train or line, the Guard must, in addition to endorsing his running statement, make a special report thereon.

6. If it is considered by the Guard that delays which have taken place could have been avoided or minimized if trucks had been properly marshalled and "take outs" more satisfactorily arranged, he should bring the matter under notice.

69. DAMAGE TO COACHING STOCK.

In the event of a window or other car fitting being broken on the road by a passenger or employee, cost as indicated in the following is to be collected by the conductor, if damage occurs on a through passenger train, and by the guard in the case of other trains. If damage occurs and is discovered at a station, the responsibility for collection of the amount will rest with the Stationmaster.

All concerned must make every effort to discover the person responsible for the damage. If payment is refused, the full name and address of the person concerned must be obtained, and should doubt exist as to the correctness of the information, verification should be obtained from card or envelope which has passed through the post.

TRANS-AUSTRALIAN RAILWAY.

	s.	d.
B.R., A.R., A.R.P., B.R.P., B.R.P.F. Cars—		
Corridor partitions	6	0
Lavatory doors		
Sliding door		
Shutter corridor partition		
A.R., A.R.P., B.R., B.R.P., B.R.P.F. Cars—		
End doors	7	6
Corridor swing doors		
A.R. and B.R. Cars—		
Exit side doors.. .. .	38	3
Outside windows—		
D., A.R., A.R.P., B.R., B.R.P., B.R.P.F., T.B.P. Cars, Y.B., H.R. Vans—		
Outside windows	11	0
Y.B., H.R. Vans—		
Fixed glass in sliding doors	21	0
A.F. Car—		
Outside windows	69	0
A.F. Car (No. 49)—		
Outside windows	29	6
Mirrors—		
B.R., B.R.P., B.R.P.F. Cars—		
Lavatories and cross partitions	27	6
A.R., A.R.P. Cars—		
W.C.	34	0

Mirrors—continued.

	s.	d.
A.R.P., A.R., B.R.P., B.R., B.R.P.F., T.B.P. Cars—		
Attendant compartment and lavatory	19	0
H.R. Van—		
Attendant compartment	13	0
A.R., A.R.P., D., A.F. Cars—		
Mirror above wash basin		
Cross partition		
End framing		
External walls	50	0
B.R. Car—		
Compartment external wall fascia	17	6
Photo glass—		
D., A.F. Cars—		
Cross partition	12	0
End framing	20	0
D. Car—		
External walls	23	3
A.R.P. Car—		
External walls	14	0
B.R., B.R.P., B.R.P.F. Cars—		
External walls	6	6
A.R., A.R.P. Cars—		
Cross partition	9	6
A.R. Car—		
Wardrobe	4	6
Opal glass—		
B.R., B.R.P., B.R.P.F. Cars—		
Pent roof	3	6
Bevelled plate glass—		
A.F. Car—		
Bookcase	11	0
Lead lights—		
A.R.P., D. Cars—		
Pent roof	8	6
A.F. Car (No. 49)—		
End doors	39	6
Inside or outside oval lead light and frosted glass	46	3
Inside and outside oval lead light and frosted glass	75	0
D. Car—		
End doors		
Sliding doors	12	6

Photographic transparencies—

A.F. Car—					
Pent roof	10	0			
Cross partitions	20	6			
Doors	28	0			
Electric light fittings—					
Shades and lamps on all cars	3	6			

CENTRAL AUSTRALIA AND NORTH AUSTRALIA RAILWAYS.

s. d.

N.B.P., N.B.P.A., N.Y.B.A., N.A.P.B., N.D., N.R.C., N.R.P., N.S.S., Cars: N.Y.A.B., N.Y.B., N.H. Vans—					
Side lights	9	0			
N.B.P., N.B.P.A., N.A.P.B., N.R.C., N.R.P., N.S.S., Cars: N.H.B.R. Relay Vans—					
Frosted glass in Lavatory	11	0			
N.B.P., N.B.P.A., N.A.B.P., N.D., N.R.C., N.S.S., Cars—					
Coloured glass in end, lavatory, and centre doors	6	0			
N.B.P., N.B.P.A., N.A.B.P., N.R.C., N.R.P., N.S.S., Cars: N.H.B.R. Relay Vans—					
Mirror (lavatory)	18	6			
N.R.P. Cars—					
Frosted glass in end doors	12	6			
N.Y.B.A., N.Y.A.B., N.Y.B., and N.H. Vans: N.H.B.R. Relay Vans—					
Drop lights in Guard's and Goods compartment doors	5	0			
Fixed lights in Guard's and Goods compartment doors ($\frac{1}{4}$ plate)	15	0			
N.H.B.R. Relay Vans—					
Sleeping, Dining and Kitchen lights	9	0			
N.S.S. Car—					
Curved glass lights	70	0			
All Cars and Vans—					
Shades and lamps	3	6			

An advice of special debit is to be prepared in accordance with instructions laid down, and the money is to be accompanied by an advice of special remittance. If the money is collected by the Guard or Conductor, the amount is to be paid to the employee in charge of the station at which his journey terminates, and the latter will deal with it as shown above.

A full report of the circumstances is to be made to the Chief Traffic Manager.

Damage to Cars.—It has come under notice that passenger cars have been damaged owing to passengers lifting or passing luggage through the windows. Every endeavour is to be made by the staff to prevent this practice.

70. EXAMINATION OF INTERIORS OF THROUGH PASSENGER TRAINS.

Detailed instructions regarding examination of car interiors by the Stationmasters, Port Augusta and Parkeston, Conductors and others concerned are given in Book of Instructions to Train Conductors and Dining Car Attendants. The Train Examiner must make a thorough joint examination with the Senior Conductor prior to reaching Parkeston, and on the afternoon of departure from Kalgoorlie. A record of shortages and breakages must be kept by both the above-mentioned employees.

71. VEHICLE REPAIR CARDS.

When a vehicle becomes damaged, or unfit for service, cards must be placed in the clips provided for the purpose, in accordance with the following instructions:—

1. The Train Examiner finding a vehicle unfit to travel must make out three "Not to go" L16 Red Cards showing the nature of defect, and where vehicle is required to be placed, e.g., "Repair Road" or "Workshops' Yard". He must place one Red Card on each side of the vehicle, and deliver the third Red Card to the Stationmaster, who will arrange to have the vehicle placed where required, to enable repairs to be dealt with promptly. The Guard of a train finding at a station where no Stationmaster or Train Examiner is located a vehicle unfit to travel, either on account of defective vehicle or loading, will, after consulting the Engine-driver, "Red Card" the vehicle, and advise the controlling Stationmaster of the nature of the defect, and cause if known; he will also include this information on his running statement.

2. **For Repairs Card.**—When a vehicle requires repairs, but is fit to travel, it must be labelled on both sides by the Train Examiner (or by the Stationmaster or Guard as the case may be) with a green "FOR REPAIRS" card (form L 15) and taken to the place indicated on the card. When a vehicle is found in a damaged condition at any station, the examiner or other employee must, as soon as possible, call the attention of the Stationmaster or Shunter—and the driver and guard when the vehicle is attached to a train—to the fact. If possible to effect repairs without delaying traffic this is to be done.

3. **First Trip Card.**—When a vehicle is sent into traffic for its first trip after being built, or after repairs necessitating reduction in carrying capacity, it must be labelled on both sides with a white card (L 14), "FIRST TRIP OF THIS VEHICLE," and the load must not exceed, for the first trip, half the carrying capacity of the vehicle.

4. **Westinghouse Brake Defective Card.**—These cards are to be placed on both sides of vehicles with the Westinghouse brake out of action. See instructions relating to Westinghouse brake.

5. **Removal of Cards.**—The cards are to be removed only by authorized employees. Train Examiners and others responsible for rolling-stock repairs must see that the cards are removed from the vehicles when no longer required.

72. PROTECTION OF LOCOMOTIVES AND OTHER ROLLING-STOCK UNDER REPAIRS.

1. Engines and other rolling-stock undergoing repairs must be protected by a red flag by day and red light by night, which must be clearly visible to the Driver and Fireman of an engine approaching in either direction.

2. If shunting or other movement of vehicles is likely to take place in the vicinity, the Shunter or other employee concerned must be notified.

3. The mechanical staff immediately in charge of the repairs are held responsible for seeing that these precautions are taken.

4. To guard against accidents when engines are separated from their tenders for the purpose of effecting repairs between them, the engines and tender must be placed not less than 10 feet apart, and in addition to the handbrakes being screwed hard on at least four wheels of both engine and tender, must be chocked with suitable wedges, to prevent them moving towards each other in the event of an unexpected "hit up" during shunting operations.

6. Stationmaster to advise Shed Foreman.—The Stationmaster on receiving from the Guard advice of vehicles carded for repairs, will arrange with the nearest Shed Foreman or Train Examiner to have the repairs attended to, advising him of the nature of the defect. In the case of defective loading the Stationmaster will arrange for adjustment, consulting the Chief Traffic Manager's office when necessary.

7. L.41 Reports to be Prepared.—An L.41 report must be compiled by the Train Examiner for all vehicles carded for repairs. In cases where the Examiner effects the repairs, he will hold the L.41 until repairs are completed, and after entering particulars thereon he will forward form to the Superintendent Locomotive Running through his immediate superior officer. The Examiner must advise the Stationmaster concerned of repairs having been completed, and remove the Repair Cards from the vehicle. When a vehicle has to be sent to Quorn Loco. Depot for repairs the L.41 form must be forwarded promptly to the Shed Foreman, Quorn, who will arrange for the repairs to be effected, and for the completed L.41 form to be forwarded to the Superintendent Locomotive Running.

The Train Examiner, after completing repairs to a hot box on any vehicle, and having removed repair cards, must chalk mark clearly the defective box, and chalk mark on the vehicle the words "Hot box (and date)—Requires attention *en route*."

Guards picking up vehicles that have been repaired in the above manner must take necessary action to have attention given as may be required.

When a vehicle is carded for the Port Augusta Workshops the L.41 form in duplicate must be sent promptly to the Carriage Shed Foreman, Port Augusta, who will forward the original L.41 to the Superintendent Locomotive Running, and hand copy of same to the Officer-in-charge of vehicle repairs at the workshops. A certificate will be given by the Workshops staff when the vehicle is again fit for traffic.

8. Examination of and Repairs to S.A.R. Rolling-Stock.—In addition to the general action to be taken in regard to defective vehicles, reports in duplicate on S.A.R. form No. 422 "Heated Bearings", and on S.A.R. form No. 418 "Carriage and Wagon Examiners Daily Report," must be prepared by each Train Examiner at Quorn, and handed in to the Shed Foreman when signing off duty after each shift. The Shed Foreman must forward the original of these to the Divisional Superintendent, Peterborough, daily, and retain the duplicates for record purposes.

73. SPEED RESTRICTIONS.

1. (a) The maximum rate of speed permitted over the ballasted portion of the Trans-Australian Railway is 45 miles per hour, and over the unballasted portion 35 miles per hour. The sections which are ballasted will be notified from time to time through the General Notice.

(b) The maximum rate of speed permitted on the Central Australia Railway is 30 miles per hour.

2. The maximum rates are subject to special rates of speed, which must not be exceeded, in respect of particular circumstances, places, and vehicles, as set out hereunder:—

GENERAL.

- (a) When diverging from the straight road over facing points: 15 miles per hour.
- (b) When running on to the straight over trailing points: 15 miles per hour.
- (c) When passing over facing points: Trans-Australian Railway, 20 miles per hour; Central Australia Railway, 15 miles per hour.
- (d) When passing over weighbridges: 3 miles per hour.
- (e) When pushing vehicles: 20 miles per hour.
- (f) When running tender first: Trans-Australian Railway, 30 miles per hour; Central Australia Railway, 25 miles per hour.
- (g) Motor Inspection Car: 4' 8½" gauge, 30 miles per hour; 3' 6" gauge, 25 miles per hour; over facing points: 15 miles per hour.
- (h) Motor Section Car: 20 miles per hour (15 miles per hour over facing points).
- (i) Motor Section Car with trolley trailer: 15 miles per hour.
- (j) Motor Quadricycle: 15 miles per hour.
- (k) Hand Section Car: 15 miles per hour.
- (l) Hand Tricycle: 8 miles per hour.
- (m) Trolley: 8 miles per hour.

- (n) Port Augusta Wharf:—10 miles per hour for "D" and "NM" class engines. "G", "K", "KA" and "NB" class engines are not allowed on the wharf. The 5-ton crane and the 30-ton crane are not allowed on the wharf without the special approval of the Chief Engineer of Way and Works.
- (o) Shunting in Tassie-street, Port Augusta, and between Harbor Master's residence and Flour Mill, Port Augusta, in both directions: 8 miles per hour.

TRANS-AUSTRALIAN RAILWAY.

	Ballasted Road.	Unballasted Road.
(p) When running round curves of 20 chains radius and under 25 chains radius ..	35 m.p.h.	20 m.p.h.
When running round curves of 25 chains radius and under 40 chains radius ..	40 m.p.h.	30 m.p.h.
When running round curves of 40 chains radius and over ..	45 m.p.h.	35 m.p.h.

Curve boards are placed on the Driver's side 10 chains from the commencement of curves of 40 chains radius or less in both directions; and Enginemen must look out for these boards, and control the speeds of their trains accordingly.

- (q) When exchanging staffs: 15 miles per hour.
- (r) "K" and "KA" class locomotives: 25 miles per hour.
- (s) 30 tons breakdown crane: 25 miles per hour.
- (t) Between Port Augusta station and Tassie-street in both directions: 10 miles per hour.
- (u) Between Harbor Master's residence and entrance gate to Loco. Workshops in both directions: 15 miles per hour.

CENTRAL AUSTRALIA RAILWAY.

- (v) Port Augusta-Quorn—
When rounding curves between 239 miles and 250 miles .. 20 miles per hour.
- (w) Quorn-Marree:—
When rounding curves between—
- | | |
|----------------------------------|----------------------|
| 282 m. 20 c. and 286 m. 60 c. .. | } 20 miles per hour. |
| 300 m. 20 c. and 301 m. 40 c. .. | |
| 356 m. 40 c. and 358 m. 00 c. .. | |
| 359 m. 00 c. and 359 m. 20 c. .. | |
| 360 m. 60 c. and 361 m. 40 c. .. | |
| 364 m. 20 c. and 364 m. 60 c. .. | |
| 367 m. 20 c. and 368 m. 40 c. .. | |

Curve boards are not provided on the Central Australia Railway.

- (x) Marree-Oodnadatta—

From 483 m. 40 c. to 582 m. 40 c.: 25 miles per hour.

At 492 m. 72 c.: 20 miles per hour.

- (y) Oodnadatta-Alice Springs—

From 716 miles to 718 miles ..	} 20 miles per hour.
" 746 " " 752 " ..	
" 843 " " 847 " ..	
At 857 miles 60 chains ..	
From 869 miles to 871 miles ..	

- (z) All trains entering Woolshed Flat station yard from the Quorn end must be well under control and their speed must not exceed 8 miles per hour.

- (za) Engines passing over triangles: 5 miles per hour.

- (zb) When proceeding in either direction over the loco-shunting neck at Quorn: 10 miles per hour.

Maximum and special rates of speed; list of curves 20 chains and under on the North Australia Railway are shown in the Working Time-tables for that line.

3. Orders regarding temporary speed limitations in respect of particular places or trains will be issued as required from time to time, but in such cases arrangements must be made, if time permits, to have signals exhibited for the guidance of the running staff, in addition to the issue of instructions. The procedure in this regard is laid down in General Rule 212.

The rate of speed, which must not be exceeded, when caution signals are exhibited, will be as laid down in instructions issued by the Chief Traffic Manager, but in the event of a restriction having to be made before notification of the maximum permissible speed can be completed, Enginemen must, on seeing the caution boards or hand signals exhibited, reduce speed to 10 miles per hour.

4. As a temporary limitation of speed may be necessary at any point along the line under circumstances where it has not been possible to give notice, Enginemen and all concerned must be always on the lookout, and prepared to stop, or to run at reduced speed. Special attention is directed to the necessity for all concerned keeping strict watch after rain, particularly at doubtful places, so that temporary speed restrictions may be introduced, if necessary. If there is any doubt as to the stability of the track, this precaution is to be promptly taken. If the Driver, Fireman, or Guard finds the road out of order at any particular place, he must report the matter at once to his immediate senior officer, and also notify the nearest Ganger.

As provided in Rule 212a Book of General Rules, when caution boards are not erected, detonators must be placed 400 yards on each side of the portion of the line over which the reduced speed is to operate, and hand signals exhibited.

5. Guards, Gangers and others must bring under the notice of their immediate senior officer any case in which a Driver runs in excess of the maximum rate of speed prescribed.

6. The Chief Engineer of Ways and Works will be responsible for deciding as to the necessity for special speed reductions other than those referred to in clause (4), and for the placing of the necessary signals, lighting, extinguishing, and care of lamps used in this connexion. The Chief Traffic Manager will be responsible for the issue of such notifications to all concerned as are practicable. Guards must at once report to the Chief Traffic Manager any cases where caution signals should be exhibited but are not provided.

74. ENGINE LOAD TABLE.

TRANS-AUSTRALIAN RAILWAY.

Sections.	Passenger Trains.	Fast Goods or Fast Mixed Trains.		Heavy Goods or Slow Mixed Trains.	
	Engine "G" Class.	Engine "G" Class.	Engine "K" or "Ka" Class.	Engine "G" Class.	Engine "K" or "Ka" Class.
DOWN.					
Port Augusta—Salt Works Siding (4½ miles) ..	460	700	1,050	780	1,050
Salt Works Siding (4½ miles)—Pimba ..	460	550	700	570	770
Pimba—Ooldea ..	460	550	700	620	835
Ooldea—Kitchener ..	460	650	835	780	1,055
Kitchener—Zanthus ..	460	550	700	675	910
Zanthus—946 Miles ..	460	550	700	620	835
946 Miles—Kalgoorlie ..	460	500	675	500	675
UP.					
Kalgoorlie—Parkeston ..	460	460	650	460	650
Parkeston—946 Miles ..	460	500	675	500	675
946 Miles—Kitchener ..	460	550	700	675	910
Kitchener—Ooldea ..	460	650	835	780	1,055
Ooldea—Burando ..	460	550	700	620	835
Burando—Pimba ..	460	550	700	570	770
Pimba—43 Mile Siding ..	460	550	700	620	835
43 Mile Siding—Salt Works Siding (4½ miles) ..	460	550	700	675	910
Salt Works Siding—Port Augusta ..	460	700	1,050	780	1,050

CENTRAL AUSTRALIA RAILWAY.

"N.M." Class Locomotives.

Section.		Tons.	Section.		Tons.
From—	To—		From—	To—	
Port Augusta ..	Stirling ..	400	Alice Springs ..	Oodnadatta ..	412
Stirling ..	Quorn ..	202	Oodnadatta ..	Edward Creek ..	412
Quorn ..	Willochra ..	600	Edward Creek ..	William Creek ..	412
Willochra ..	Gordon ..	486	William Creek ..	Coward Springs ..	412
Gordon ..	Wilson ..	350	Coward Springs ..	Curdimurka ..	500
Wilson ..	Hawker ..	432	Curdimurka ..	Marree ..	412
Hawker ..	Hookina ..	486	Marree ..	Farina ..	450
Hookina ..	Mern Merna ..	365	Farina ..	Copley ..	370
Mern Merna ..	Edeowie ..	365	Copley ..	Beltana ..	330
Edeowie ..	Brachina ..	365	Beltana ..	Nilpena ..	405
Brachina ..	Parachilna ..	550	Nilpena ..	Parachilna ..	405
Parachilna ..	Nilpena ..	370	Parachilna ..	Brachina ..	550
Nilpena ..	Beltana ..	370	Brachina ..	Edeowie ..	405
Beltana ..	Copley ..	330	Edeowie ..	Mern Merna ..	350
Copley ..	Farina ..	412	Mern Merna ..	Hookina ..	405
Farina ..	Marree ..	500	Hookina ..	Hawker ..	330
Marree ..	Curdimurka ..	412	Hawker ..	Wilson ..	350
Curdimurka ..	Coward Springs ..	500	Wilson ..	Gordon ..	550
Coward Springs ..	William Creek ..	412	Gordon ..	Willochra ..	500
William Creek ..	Edward Creek ..	412	Willochra ..	Quorn ..	405
Edward Creek ..	Oodnadatta ..	412	Quorn ..	Woolshed Flat ..	270
Oodnadatta ..	Alice Springs ..	412	Woolshed Flat ..	Port Augusta ..	500

The existing time-tables were compiled on the basis of the foregoing loads being hauled.

All concerned are referred to the working notes appearing in the Working Time-tables.

The loads of a train worked by an "NM" class engine from Quorn to Port Augusta and assisted by a "push-up" engine, Quorn to Summit, is 450 tons, except during wet or frosty weather, when the load must not exceed 405 tons.

In the case of trains over the tabled load of 270 tons, one-third of the number of vehicles (regarding a bogie vehicle as being equal to two four-wheelers) must be equipped with effective Westinghouse brake complete, and in all cases where the Westinghouse pipe is continuous throughout the train, the Westinghouse brake of the "push-up" engine is to be coupled to the train, and the isolating cock on the "push-up" engine is to be closed.

Special attention must be given to the application of hand brakes at Summit in accordance with Instruction 3 (b) of the Working Time-tables and sub-clause 11 of clause 78 of this Appendix, when a "push-up" load is being hauled.

NORTH AUSTRALIA RAILWAY.

Section.	N.G. Class.		N.P. Class.		N.A. 1.
	Down.	Up.	Down.	Up.	
Darwin-LoCo. Shops ..	180	220	140	180	60
LoCo. Shops-McMinns Lagoon ..	220	190	140	150	..
McMinns-Adelaide River ..	180	180	140	140	..
Adelaide River-Fountain Head ..	200	200	160	160	..
Fountain Head-Burrundie ..	220	180	170	140	..
Burrundie-Pine Creek ..	180	190	140	150	..
Pine Creek-Katherine ..	180	180	140	140	..
Katherine-Birdum ..	220	220	180	180	..

Exception—Up cattle trains, 198 tons or = 11 bogie vans cattle.

75. TRAIN EXAMINERS' KIT.

Examiners' tool-kit must include the following:—

- 1 Tyre gauge for testing the thickness of tyres, thickness of flanges, and hollow tyres.
- 1 Gauge for testing the distance between the tyres.
- 1 Hand hammer.
- 1 Clyburn spanner.
- 1 Spanner for screw plugs on axle boxes.
- 1 Pin punch.
- 1 Cold chisel.
- 1 Hookie punch.
- 1 Oil bottle.
- 2 Bottle jacks.
- 1 Packing drawer.
- 1 Tommy bar.

76. RELAY VANS—CENTRAL AUSTRALIA LINE.

1. When relay vans (NHBR) are used solely as brakevans and the sleeping accommodation in them is not required to accommodate members of the staff, the mattresses and pillows must be removed from the vans and kept in safe custody by the Stationmaster at Quorn. Mattresses and pillows must be supplied for the berths in these vans when the sleeping accommodation is required for train crews, e.g., when used for long distance live-stock trains, or for journeys where train is stabled over night at a station at which barracks are not provided.

2. Passengers are not to be carried in the sleeping portion of the relay van. The passenger compartment in the relay vans may be used for the conveyance of passengers on any train on which the train crews are not working under relay conditions.

It may also be used for the conveyance of passengers on any train working north of Marree, with the restriction that it is not to be used for intermediate travel between Quorn and Marree, except—

- (a) In the case of drovers.
- (b) In the case of passengers travelling to and from stations north of Marree.
- (c) In the case of passengers travelling between Quorn, Willochra, Gordon, Wilson and Hawker.
- (d) In the case of emergency, such as sickness.

Thus, passengers are not allowed to travel in the compartment between Copley and Farina when a train is being worked under relay conditions, except as shown above, but they are allowed to travel between Copley and Alice Springs.

If special circumstances arise not covered by the foregoing, instructions should, if time permits, be obtained from the Chief Traffic Manager.

The compartment on special stock trains is primarily intended for the accommodation of drovers in charge of the stock, and Stationmasters and Guards must see that the compartment is not over-crowded.

3. Members of the Running Staff using the vans must assist in maintaining them in a clean and sanitary condition. The compartments must be cleaned and swept out at the termination of each journey, and, when necessary, during the journey. Refuse, &c., is not to be thrown out of the windows, as, in addition to other reasons, this is liable to disfigure and damage the side of the vehicle.

4. The standard van equipment is to be kept in the vehicles, except as provided in sub-clause 1, and employees using the vans should report to the Stationmaster at Quorn any shortage in the equipment before leaving the station, and on their return to Quorn should report any shortage which has arisen during the journey.

5. Any fire in the kitchen stove must be extinguished and stove doors and other openings closed before being left unattended.

6. A fire extinguisher is provided in each van and is to be used in case of fire. The necessary instructions in regard to the use of the extinguishers appear in the vans.

7. The Guard, or where there are two guards, then the senior of them, is responsible for seeing that all the employees using the van while he is in charge of the train observe these instructions, and it is his duty to report any neglect of them to the Stationmaster, Quorn.

8. The Stationmaster, Quorn, must see that the inside and outside of these vans are washed and cleaned as often as necessary to keep them in good condition before they are attached to trains, and that they are fully equipped when leaving and on return to his station.

9. Each member of the running staff, whose duties require him to sleep away from home, either in relay van or resthouse, will be supplied with two rugs and a pair of sheets and pillow slips. The Department will arrange to provide these on each occasion on which

they are required for use. It has, however, been found in the past that a number of men prefer to have their own allotment of rugs and sheets retained by themselves, and to have their laundry and any other attention required arranged by themselves, thus ensuring that they will be using their own individual equipment all the time and not be changing around with other persons, and the above equipment will be allotted to men who desire that the arrangement shall apply to them. Such men will be those whose work is such that they regularly require the equipment, or that they require it at reasonably frequent intervals. The equipment will be signed for in the first place, and when it requires renewal the worn-out articles must be handed in before others are issued to replace them, and the holder will be responsible for the loss of, or unreasonable use of, the equipment.

77. INSTRUCTIONS RELATING TO THE WESTINGHOUSE AUTOMATIC BRAKE.

BRIEF DESCRIPTION, AND METHOD OF TESTING AND OPERATING.

The Westinghouse brake is operated by compressed air supplied by an air compressor mounted on the locomotive.

1. **Action of the Brake.**—The compressed air is stored in a large main reservoir on the engine, and at the will of the Engine-driver it passes through the brake valve and along a continuous train pipe to the Guard's van. At the same time it flows from the train pipe through the branch tee-piece and along the branch pipe on each vehicle to the triple valve, thence to the auxiliary reservoirs.

Each vehicle is also provided with a brake cylinder which is connected by piping to the triple valve. The piston in the brake-cylinder is connected to a series of levers and rods, and when air is admitted to the brake cylinder it forces out the piston and by operating these levers and rods brings the brake blocks into contact with the wheels.

The admission of compressed air from the train pipe to the auxiliary reservoir and from the auxiliary reservoir to the brake cylinder, and also the exhaust of air from the brake cylinder to the atmosphere, is controlled by the triple valve. When the air in the train pipe is maintained at a constant pressure, the triple valve is in the normal or release position, but should the pressure in the train pipe be decreased—purposely or accidentally—the triple valve operates and opens a passage from the auxiliary reservoir to the brake cylinder, thereby applying the brakes.

The necessary reduction of pressure in the train pipe to apply the brakes is made from the engine by the Engine-driver by means of the Drivers' valve, or in case of emergency by the Guard opening the cock in the van.

The accidental reduction of pressure, such as could be caused by the parting of a train and the separation of the hose couplings, or hose pipes bursting and releasing the air from the train pipe, has the same effect, and instantly applies the brakes throughout the train.

The brakes are released and the blocks kept off the wheels by the Engine-driver restoring and maintaining the air pressure in the train pipe. This causes the triple valves to move into the release position and allows the compressed air in the brake cylinder to escape to the atmosphere. At the same time the auxiliary reservoirs are recharged, ready for any future application of the brake.

2. **Continuity of Brake.**—The Westinghouse automatic brake must be continuous throughout every passenger express or loaded livestock train that is, all hoses must be connected and all end cocks open, except those at the extreme ends of the trains.

3. **Testing Brakes.**—The brake must be tested at all places where the engine is changed, and whenever the continuity of the brake is in any way affected.

When testing the brake on trains a pressure of not less than 60 lb. should be used on passenger trains, and not less than 40 lb. on mixed and goods trains.

Before proceeding on its journey a passenger train should have a working pressure of 70 lb. in the train pipe, and 50 lb. in the case of mixed and goods trains.

The Engine-driver must be informed by the Train Examiner of the condition of the brakes before starting.

Where there is no train examiner, the Engine-driver will be held responsible for seeing that the brake on the train is in good working order.

4. **Terminal Test.**—On arrival at and before leaving a terminus or after changing engines or picking up vehicles, a terminal test must be made as follows:—

When the train has been coupled and fully charged, the Train Examiner must see that the train pipe cocks between the vehicles are all open with the exception of the one at the end of the train. The Engine-driver, at the request of the Train Examiner, must apply the brakes with full service application, and hold them so applied until all the brakes of the whole train have been inspected and the signal given to release them.

The Train Examiner must proceed along the train and see that all hose couplings are secure, that there are no leaks, that all the brakes are applied, that the blocks are of sufficient body to complete the trip, that the piston travel is not excessive, and that all gear is secure and properly lubricated. The Train Examiner shall then signal to the Engine-driver to release the brakes.

The Engine-driver must thereupon place the handle of his valve in the first or "release" position. The Train Examiner must then see that all the brakes release promptly and that the blocks fall clear of the wheels.

Should any defects appear they must be remedied, if possible, before the train is allowed to depart.

Should it not be possible to effect the repairs required, the brake on the defective vehicle must be cut out by means of the cut-out cock on the branch pipe, and a Westinghouse Brake Defective Card placed on each side of the vehicle.

The Engine-driver must in all cases be informed of the exact number of sound and defective vehicles.

In addition to this test, the Guard must also test the brakes by means of the van cock in the rear van. He should make a reduction of about 10 lb., and on closing the cock the hand of the gauge should rise again until the original pressure is reached.

Terminal tests on mixed goods, and other trains to which non-piped vehicles are attached, must be made on that portion of the train to which the Westinghouse brake is coupled.

5. **At Roadside Stations.**—Following the separation of couplings during shunting at road-side stations, the terminal test need not be carried out, but it must be ascertained by test that the rear brakes respond to the brake-valve on engine and that brakes are properly released.

6. **Hand Signal.**—The hand signal to indicate to Engine-drivers that they are required to apply or release the brakes, consists of the hand by day, and a white light by night moved in a vertical circle.

7. **Cut-out Cocks.**—Couplings and cut-out cocks on standard gauge rolling-stock are open when the handle is parallel with the pipe and closed when the handle is at right angles to the pipe.

Coupling cocks used on narrow gauge rolling-stock are of straight type, and are open when the handle is at right angles to pipe line, and closed when parallel to pipe line. Cut-out cocks between train pipe and triple valves are open when handle is parallel to pipe line, and closed when at right angles to pipe line.

Should any doubt exist as to the proper position for any cock, this can be determined by the position of the cut on the plug handle. The cut in every case lies along the pipe when open, and across it when closed.

8. **Hoses to be Uncoupled by Hand.**—When vehicles are uncoupled, the hose pipes must be first uncoupled by hand and not pulled apart. Unless this is done the interior of the hose is likely to be damaged or the hose broken.

9. **Hoses to be Attached by Dummy Couplings.**—Hoses when uncoupled must in all cases be attached to the dummy couplings to prevent the admission of sand, ashes, dust, &c., which finding its way to the triple valve absorb the oil, and fouling the valve eventually renders the whole brake equipment inoperative.

Engine-drivers, Train Examiners, and Fitters must report any instances of the neglect of this instruction, so that accidents and rough handling due to sticky and defective triples may be prevented.

10. **Working of Trains Down Gradients.**—The Engine-driver and Guard will be responsible for having their train under proper control and for working it safely down gradients.

When descending the gradient, careful manipulation is required to prevent waste of air by too frequent application of the brake. The brake should not be applied with greater force than is necessary to control the speed of the train, and thus avoid the necessity for frequent release and skidding.

The Engine-driver must test the Westinghouse brake before descending a steep gradient, and if when the test is made he is of opinion that he cannot maintain a sufficient air pressure in the train pipe and auxiliary reservoirs, or that otherwise the brake power is not adequate to control the train down the gradient, the speed must be reduced, and, if necessary, the train must be brought to a standstill and a sufficient number of hand brakes applied, so that the speed may be under complete control and the train stopped where required.

The duty of applying the hand brakes to the number specified by the Engine-driver, and of releasing them again at the place where the Engine-driver elects to have this done, must be jointly performed by the Fireman and the Guard.

The hand brakes when applied must be properly secured and with heavily laden vehicles as much pressure as possible should be applied, but care must be taken to see that the hand brakes (especially those of the screw type) are not applied so hard as to cause the wheels to skid.

When it is necessary for hand brakes to be so applied and released, it will not be necessary, except in the case of unusual delay, for the Guard to go back and protect his train in accordance with the Regulations.

11. **Approaching Terminal Station.**—When approaching a terminal station or a crossing station on a single line, at which the train has to stop, the Engine-driver must test the continuous brake and satisfy himself that it is in proper order (such test to be made for stations approached by a heavy falling gradient, at the top of the gradient, and for other stations when passing the distant signal), and the speed of the train must be reduced to 15 miles per hour.

12. **Failure of any Part of the Westinghouse Brake.**—If there be a failure of any part of the Westinghouse brake apparatus during the journey, such as would interfere with the proper control of the train, the Engine-driver must bring the train to a standstill with as little delay as possible. If in order to do this he requires the special assistance of the Guard's brake, *he must give a succession of three short sharp whistles*, and the guard must immediately apply his brakes. On passenger trains the Conductors must also apply the hand brakes on the cars under their control.

If it is seen, when the train is brought to a stand, that the failure cannot be at once remedied, but that the brake may be still operated on a portion of the train by cutting out the brake on one or more vehicles, the Engine-driver may take the train on to the next convenient station or to its destination. In so doing he must take great care to regulate the speed of his train when approaching falling gradients, junctions and stations, in accordance with the brake power available, and in any such case the Guard must apply his brake as soon as he becomes aware that the Engine-driver is applying his. If required by the Engine-driver, hand brakes must also be applied on sufficient vehicles to control the train down gradients as described in the preceding clauses.

If with a reduced rate of speed the Engine-driver be not satisfied that the brake power available is sufficient to properly control the train, the load must be reduced to what can be safely controlled, and if the failure be due to a defective vehicle, it must be detached or otherwise attended to at the first convenient station.

13. **Westinghouse Brake Wholly Inoperative.**—If there be any failure, such as would render the Westinghouse brake wholly inoperative, the instructions in this Appendix relating to the use of hand brakes on vehicles not equipped with Westinghouse brake, must be observed.

The train should not proceed beyond the first convenient station unless it be there found that the defect can neither be remedied nor other satisfactory arrangements made.

INSTRUCTIONS TO TRAFFIC EMPLOYEES.

14. **Marshalling Goods Trains—Trans-Australian Railway.**—In marshalling a goods train composed of loaded and empty vehicles, it is desirable that the loaded vehicles be placed at the engine end of the train, but any other instruction in regard to the marshalling order of vehicles containing loading of an exceptional character must not be departed from to do this.

15. **Brake to be Fully Released at Terminal Stations before Disconnecting Engine.**—At terminal stations the brake must be fully released on the whole train before the engine is disconnected. Care should be taken to leave the regulation pressure in the train pipes, so that the Train Examiner can test the train if necessary.

16. **Brake to be Released on Whole Train before Detaching.**—Before detaching the engine or any carriages the brakes must be fully released on the whole train; neglecting this precaution, or applying the brakes by opening a valve or tap when the engine is away, may cause serious inconvenience in shunting.

In the case of trains containing vehicles fitted with pipes only, not operating brake blocks, or in the event of it being necessary to cut out the brake on any vehicle, the Westinghouse brake must still be capable of being applied to vehicles which represent at least—

Three-quarters of the total load of the train in the case of a Passenger or Mixed train; and

One-half of the total load of the train in the case of a Goods train.

On a Mixed or Goods train not more than three vehicles fitted with pipes only must be together, unless at the rear end of the train.

Central Australia Railway.—Passenger and Express trains on both the Up and Down journey must be composed of vehicles fully equipped with the Westinghouse brake, and hauled by an engine also equipped with the Westinghouse brake. A bogie brake-van must also be worked on these trains.

Mixed, Goods, and other trains to which non-piped vehicles are attached, must have these vehicles marshalled at the rear of all goods and live-stock vehicles that are fitted with Westinghouse brake complete,

or with train pipe only. Goods and live-stock vehicles fitted with Westinghouse brake complete should (except where otherwise provided, see Clause 56A re marshalling loaded live-stock vehicles) be distributed as evenly as possible amongst those fitted with train pipe only, and the brake must be connected from the engine through the whole of the vehicles, due regard being given to placing the trucks in station order where possible.

Enginemen are to be particularly careful in handling the brake on Mixed trains, so as to avoid any jolting.

17. **Testing of Westinghouse Brakes.**—On arrival at and before leaving a terminus the brake must be subjected to a terminal test. If the train will be run by two engines the train engine may be used for testing purposes, but it must be afterwards tested in a satisfactory manner by being applied and released with the leading engine before the train departs.

In order to permit of the Train Examiner testing the brake as soon as possible, Guards and Shunters must promptly couple up the trains so that the air may be passed through immediately the engine is available.

18. **Guard to Test.**—Before allowing a train (equipped throughout with Westinghouse automatic brake) to depart, the Guard must satisfy himself that the brake is connected throughout the train by opening the van cock and discharging air until the pressure gauge indicates a drop of 20 lb. As the gauge on the engine does not indicate whether the brake is connected throughout the train or not, the Guard must see that the pressure in the gauge rises again on the cock being shut, as no test can be considered complete unless this is done.

19. **Guard to Inform Driver of Number of Vehicles in Train, and on how many Westinghouse is Non-operating.**—The Guard must, before starting, and at places where the engine is changed, or any vehicle attached or detached, or the continuity of the brake in any way interfered with, inform the Engine-driver of the number of vehicles that are on the train, and in the event of the brake not being in operation on the whole of them, upon how many it cannot be applied, and the position of such vehicles in the train. The Engine-driver must be informed whether the attaching or detaching of such vehicles will interfere with the working of the brake on the whole or a portion of the train, and, if the latter, to what extent. The Engine-driver will be held responsible for obtaining this information.

20. **Guard to use Hand Brakes with Care when Continuous Brake only on Front Portion of Train.**—The Guard in charge of a train must inform the Engine-driver how many vehicles are fitted with the continuous brake, and whether the continuous brake is in working order. Should it happen that only the front part of a train is controlled by the continuous brake, the Guard must use his hand brake with great care, to prevent jerking or rebound; keep a sharp look-out when descending gradients, and so manipulate the hand brake as to have the train well under control.

21. **Empty Train.**—The brakes on empty trains in traffic must be tested in the same way as if the trains were loaded.

22. Guard to Test Hand Brakes.—The Guard of a train fitted with the Westinghouse brake must always test the hand brake in his van and see that it is in proper working order before every journey prior to testing the Westinghouse brake. Guards must be careful to screw all hand brakes clear off before starting, and must carefully watch the speed of the trains and be prepared to assist Engine-drivers by the aid of the hand brake when necessary. Guards should, as far as practicable, avoid skidding the wheels.

23. Guards Working Vans not Equipped with Westinghouse Brake to Assist with Hand Brake.—Guards working vans having a pipe only must use the hand brake, whether the Westinghouse brake is in use on the other portion of the train or not, and manipulate their hand brakes in such a way as to keep their trains well under control.

24. Vehicles Fitted with Train Pipe Only.—The continuous brake does not operate on the brake blocks of vehicles fitted with train pipes only, as the pipes are merely provided so that the continuous brake may be distributed as far as possible along the train by marshalling the vehicles having only train pipes between those completely fitted.

25. Applying Westinghouse Brake from Van.—Guards, when they have occasion to apply the brakes from their vans, must open the cock and allow the air to escape until the train is brought to a standstill, using their discretion as to apply the brake fully or gradually, as circumstances may require. The continuous brake must not be used except in cases of emergency, such as violent oscillation, carriages on fire, or anything likely to cause danger to the train.

26. Releasing Brakes.—The brake may be released on a standing vehicle by opening the release valve attached to the brake cylinder. This may be done by pulling the release wire attached to the underframe, but the wire must not be bent under any circumstances; a short pull of a few seconds being sufficient to release the brakes and to retain pressure in the train pipe, providing the cocks are properly shut off. The location of the release wire is indicated by a white semi-circle painted on the side of the underframe.

27. Air to be Released from Vehicles when Engine Westinghouse Brake Ineffective.—Before a passenger train charged with air is run by an engine on which the Westinghouse brake is ineffective, the air should be released from the vehicles.

28. Cutting Out Brake on Single Vehicle.—A branch pipe between the train pipe and triple valve carrying a stop-cock is fixed under each vehicle. When the handle of the cock stands parallel with the branch pipe, the brake is in working order. When it is necessary to put the brake out of use on one vehicle only, the cock on the branch pipe must be turned at right angles to that pipe. When this is done by the Traffic Staff, the Engine-driver must at once be advised, and the Train Examiner at the earliest opportunity.

29. Trains not to Leave Stations with Brakes Dragging.—At stations where the composition of trains is altered, the Staff must be careful to see that all the brakes are clear off and no train must be allowed to leave with the air pipe leaking or broken on any part, however slight.

Engine-drivers must stop if they feel the train is being retarded, and have the brakes properly released. When this is done and the release valve is connected to the auxiliary reservoir, the release valve should only be opened sufficiently long to lower the pressure, which is indicated by the exhaust of air from the brake cylinder, through the triple valve as if it had been released by the engine. If held open unduly long air is wasted and the train pipe pressure diminished.

When the release valve is connected to the cylinder it should be held open, until all the air escapes from the cylinder.

30. Westinghouse Brake to be Tested from Last Effective Vehicle in Train.—If the Westinghouse brake is not in use on the whole train, or if the van is not the last vehicle, the test must be made by opening the cock in the brake pipe at the rear of the last vehicle connected.

31. Brake Continuity Interrupted.—If the Guard, upon making test, finds that the brake connexion is interrupted, he must take steps to examine the train pipe cocks to see that they are properly open before signalling the Engine-driver to start.

32. Parted Train.—In the case of a train parting the Guard must put his hand brake hard on and take any other precaution that may be necessary to prevent the rear portion moving, before going back to protect his train, in accordance with the regulations. The cock at rear of first section must then be closed and the Engine-driver signalled to release the brakes. When the train is coupled up the brakes must be inspected on each vehicle before proceeding.

33. Standing on Westinghouse Brake Cocks.—Shunters, Porters, or others, when crossing between vehicles must not stand on Westinghouse brake cocks or hose couplings. Whenever a train conveying live-stock is stopped at a station and it is necessary for the Guard, or other employee, or a drover travelling with stock, to make an inspection of the animals, the Guard must see that during such inspection no train pipe cock handle is inadvertently altered in position and also that the continuity of the brake is not otherwise interfered with.

34. Shunting Passenger Vehicles.—Carriages and vehicles being attached to passenger trains and vehicles containing live-stock must have air through them and be completely coupled during shunting operations.

35. Carriages to be Shunted Carefully—Westinghouse Brake not to be Used.—When shunting carriages into sidings, Shunters must not use the Westinghouse brake, but must shunt the vehicles in such a manner as to be able to stop them before reaching any carriages that may be standing in the sidings, or before striking the buffer stops.

36. Westinghouse Brake not to be Relied on During Shunting.—During shunting operations, the Westinghouse brake must not be relied on, as damage may result owing to the air having leaked off or the cylinders not being charged, therefore the vehicle hand brakes are to be used during such operations, and also for securing vehicles on a running line or in a siding.

37. Brake to be Applied on Portions of Trains Left Standing in Stations or Sidings.—At stations where vehicles are attached or detached, the traffic employees in charge of the operations must always apply the brake on that part of the train disconnected from the engine. Should this part of the train be left standing on a falling grade, sufficient hand brakes should be applied whether the Westinghouse brake is in operation or not. Care must, however, be exercised not to allow any more air out of the train pipe than is necessary to rightly apply the brake, as by letting all the air out the Engine-driver may have trouble in getting up the necessary pressure on long trains.

The number of hand brakes to be applied will depend upon the steepness of the grade, the number and class of the vehicles, their loads, the state of the weather, and the rails.

The Westinghouse brake must not be relied upon to secure any train from which the engine has been detached, or any portion of a train, whether standing on a running line or in a siding.

38. Trains Standing on Grades.—Whenever a train is kept standing on a grade by application of the Westinghouse brake, the hand brakes on engine, tender, and van must also be applied. If the stoppage is longer than ten minutes and the conditions require it, a sufficient number of vehicle hand brakes must be applied to hold the train stationary. The air brakes must then be released and the train re-charged with air. Before starting, the air brakes should be re-applied and all hand brakes released.

39. Train Pipe Cocks to be Opened after Hose Pipes are Coupled.—Shunters in all cases, after connecting the couplings, must open the cocks at the ends of all vehicles, EXCEPT THE LAST, so as to complete the brake throughout the train. BEFORE UNCOUPLING, the pipe cocks at the point where the train line is broken must be shut, but before doing so, Shunters must satisfy themselves that the Engine-driver has taken the brake off, and that the hand brake at the end of the train has been applied.

40. Trains to be Properly Coupled.—It will be the duty of each Stationmaster, Inspector, or employee starting a train where it commences its journey, to have an assurance that the air pipes are connected between each vehicle, as well as that the train is properly coupled up in every respect.

41. Guard Responsible for Seeing that Train is Properly Coupled.—The preceding paragraph will not in any way relieve the Guards of their responsibility for seeing that every coupling is properly connected.

42. Train Pipe Cock to be Shut when Coupling and Uncoupling Hose Pipes.—The train pipe has a cock at each end of every vehicle; all such cocks should be open when the hose couplings are connected, except the one at the end of the train. The cocks must always be opened AFTER connecting the hose couplings AND CLOSED BEFORE SEPARATING THEM. The position of handles of such cocks are:—Straight coupling cock—open when at right angles to line of pipe; closed when parallel to line of pipe. Bent coupling cock—open when parallel to line of pipe; and

closed when at right angles to line of pipe. Bent coupling cock with handle at side—open when handle is parallel with line of pipe; and closed when at right angles to line of pipe.

43. Cock on Vehicle next to Engine to be Closed Before Uncoupling.—Shunters and others, before uncoupling the engine from the train, must see that the cock on the end of the vehicle next the engine is closed, and a signal given to the Engine-driver to apply the brake fully on the engine. This exhausts the air from the hose pipes. The cock on the pipe of the engine is then to be closed and the couplings separated.

44. Burst Hose Pipe.—In the event of a hose pipe becoming defective or bursting during a journey, it should be at once replaced, and if no other hose pipe is available, one may be taken from the rear end of the van or last vehicle, or the hose in front of the engine may be used for this purpose, and if neither of these is available, then from a vehicle between the defective one and the van or last vehicle, but as near the latter as possible.

45. Vehicles Not to Run on Fast Trains unless Completely Fitted with Westinghouse Brake.—Unless instructions are issued to the contrary, vehicles not fitted with Westinghouse brake complete, or only fitted with train pipes, must not be forwarded by express, mail or passenger trains.

46. Guard to Test Brakes after Couplings have been Accidentally Detached.—In the event of any of the couplings of vehicles on trains, loaded or empty, having become detached accidentally or otherwise, after the prescribed test has been made, or on the journey, the Guard must be informed of the circumstances, and he must re-test the brake, whether the flexible pipe has been disconnected or not.

47. Guards to see that Train Pipe Cocks are Closed Before Attaching Engine.—Guards must see that the cocks in each van and at the rear of the last vehicle on the train are shut before the engine is attached, so as to avoid waste of air.

48. Guards to Draw Driver's Attention to Low Pressure of Air.—On passenger or mixed trains, when the brake pressure falls below 45 lb., the Engine-driver's attention must be called thereto at the first opportunity.

49. Unauthorized Persons not to Alter or Tamper with Brake Cocks.—No person must be allowed to tamper with or alter the cocks of the brake. Stationmasters and Inspectors must give this matter particular attention, and see that each member of the Staff properly understands when and how to turn off and put on these cocks; and that no persons, except those properly authorized, are allowed to interfere in any way with the cocks or fittings of the brake.

50. Guard's Remarks in Statement re Westinghouse Brake.—When the train is run with the Westinghouse brake in use, the Guard must enter on his train way-bill or in the remarks column of his running statement, particulars of the brake in use; and, in the event of its not working properly, he must make a special report giving full particulars, and adding also in the remarks column of his statement, "See Special Report."

TRAIN EXAMINERS.

51. **Duties of Train Examiners.**—Train Examiners are to examine all trains on arrival and before departure; they must see that the couplings, coupling cocks, pipe joints, triple valves, and cylinders are free from leaks, and that all apparatus is in good condition and operates satisfactorily. The tests must be carried out as previously directed in these Instructions.

52. **Defective Brakes.**—No passenger train must be allowed to leave a terminal station with the brake upon any car cut out or in a defective condition.

If a defective brake is discovered on a vehicle of a goods train which cannot be detained long enough to have repairs effected, the brake must be cut out and the vehicle carded for repairs, so as to call the attention of the next Train Examiner to the repairs required.

53. **"Defect" Card to be Attached.**—Whenever the brake on a vehicle is cut out of action, the Train Examiner must attach a "Defect" Card in the card clip on each side of the vehicle. The card must be marked with a cross opposite the defect requiring attention. The brake defective card is white, with a red centre, and printed thus—

WESTINGHOUSE BRAKE DEFECTIVE

Brake will not apply ..		Triple Exhaust leaking ..	
" " " release ..		Release Valve " ..	
" leaks off ..		Hose Pipe leaking ..	
Piston Travel too long ..		Train " " ..	
" " too short		Brake Rigging defective	
Date cut out ..		Examination overdue ..	

Attached at _____

By _____ Date _____

54. **Unauthorized Persons not to Remove Cards.**—Defect cards must not be removed until the brake is put in good order, and must only be removed by the employee who remedies the defect.

55. **Spares.**—Train examiners will be held responsible that a good supply of spare hoses and brake blocks are always on hand.

56. **Adjustment of Brakes.**—Where piston travel is excessive the brake must be taken up. When adjusting brakes care must be taken that

the hand brakes are fully released. Where necessary new blocks must be put on. Blocks on vehicles of through trains should not be allowed to wear to a thickness of less than $\frac{3}{8}$ -in. at the centre. The brakes must be so adjusted that the working stroke of the piston shall not be less than 4 inches nor greater than 8 inches.

57. **Slack Adjusters.**—Where automatic slack adjusters are used they must be fully released before the slack is taken up elsewhere. Where double apparatus is used it must be seen that both slack adjusters are evenly adjusted.

58. **Collisions.**—In reporting on damage to vehicles which may have got away from Shunters and collided with other vehicles, the condition of the brakes must be stated.

ENGINE-DRIVERS.

59. **Engine-drivers to see that Brake Equipment is in Perfect Working Order.**—On taking charge of an engine, the driver must see that the whole brake equipment on engine and tender is in perfect working order, and that the air pump, lubricator, and governor (if provided) work properly. He must satisfy himself by testing, that all parts operate satisfactorily. To do so, he should place the brake valve handle in the running position, start the pump, and let it work until it is cut out automatically by the governor. The gauge should then indicate a pressure of 90 to 95 lb. in the main reservoir and 70 lb. in the train pipe. When a governor is not provided the Engine-driver must stop the pump when a pressure of 70 lb. is reached in the train pipe, the main reservoir pressure should then be 90 to 95 lb. He must then release the hand brake and apply the brake by making a 10-lb. reduction by placing the handle in the fourth or "service" position, then returning the handle to the third or "lap" position. He must then proceed round the locomotive and see that all the brake blocks are applied on both engine and tender, that the blocks are thick enough to complete the trip, that the stroke of the brake pistons is not excessive, that all bearing parts are lubricated, all joints tight, all pins and cotters are secure, and that the brake does not leak off. He should then instruct the Fireman to release the brake by putting the handle of the Driver's valve in the first or "release" position. The brakes must then release smartly and the blocks fall clear of the wheels. Should there be any defects, the Driver must have same remedied before leaving the shed.

59A. **Non-Automatic Brake Equipment Fitted to "NM." Engines and Tenders.**—Non-automatic brake is fitted to all "NM" class locomotives. This brake is for use during shunting operations, and it may also be used when necessary to keep the brakes applied on the engine and tender whilst the train pipe and auxiliary reservoirs are being recharged by the Engine-driver when descending long down grades. When the non-automatic brake is applied the pressure in the brake cylinders on the engine and tender is indicated on the pressure gauge. A pressure reducing valve is fitted between the main reservoir and the non-automatic brake valve, and this must be set so that not more than 50 lbs. pressure can pass to the brake cylinders when this brake is fully applied. A safety valve is also placed on the pipe leading from the non-automatic brake valve to the brake cylinder, and this must be set to

blow off when 50 lbs. pressure has been applied. A book of instructions must be obtained by all enginemen working on "NM." locomotives containing details of this equipment.

60. *Piston Travel.—Engine.*—The piston travel of vertical cylinders on engines must not exceed 4 inches nor be less than $2\frac{1}{2}$ inches.

Tender and Vehicles.—The piston travel of horizontal cylinders on tenders and other vehicles must not exceed 8 inches nor be less than 4 inches.

61. *Governor.*—If a governor is provided it must be in perfect order and set to cut off the steam to the pump when a pressure of 95 lb. per square inch is reached in the main reservoir.

62. *Lubrication.*—The steam and air end of the pump must be lubricated with cylinder oil, and must be lubricated through the oil cup provided and not through the air strainers. Kerosene must not be used in air cylinders that have become heated, as under such conditions it is liable to cause an explosion.

63. *Care of Westinghouse Brake Apparatus.*—Engine-drivers must take every care of Westinghouse brake apparatus. The pump must be kept clean and properly lubricated and the glands carefully packed. The brass cap covering the reversing spindle must not be hammered, as this may cause the spindle to jamb and so put the pump out of action.

The Driver's valve must be kept clean, and must work freely.

The main reservoir on the engine must be drained by the Engine-driver on each trip prior to leaving the depot.

64. *Starting Pump.*—The pump must be started slowly until 20 or 30 lb. pressure is reached, and must not be allowed to pound.

65. *Air Pressure.*—The train pipe pressure must be maintained when running at 70 lb. per square inch on passenger trains, 60 lb. on mixed trains, and on long goods trains where it is difficult to maintain pressure, the pressure must not be allowed to fall below 50 lb. per square inch. The Engine-driver is responsible that the correct pressure is maintained, and must not rely on the governor.

Engine-drivers must not leave more than 50 lb. pressure in train pipe when detaching at terminals.

66. *Attaching Engine.*—The Engine-driver is responsible for the brake connexion between the locomotive and train being perfect, and must satisfy himself before starting that the hose coupling on the engine or tender is properly connected to that on the first vehicle, and that the corresponding cocks are open.

He must satisfy himself by testing that the Westinghouse brake is in proper working order before starting, and at all times when engines or vehicles are attached or detached.

He must ascertain from the Guard the number of vehicles on the train, and how many vehicles have air brakes in good order. At intermediate stations where vehicles are attached or detached, the Engine-driver must ascertain the alteration in braking power of the train thus occasioned.

67. *Starting Train.*—Steam must not be applied to move a train until all the brakes are properly released.

68. *Double Heading.*—In cases of two engines being coupled together, the brake must be connected, and the Engine-driver of the leading engine must take full control of the brake power. The Engine-driver of the second engine must take no action in ordinary stoppages, but he must be at all times prepared to apply the brakes in cases of emergency.

To admit of the train brakes being controlled from the leading engine when two engines are attached to the same train a stop-cock is placed in the brake-pipe between the Driver's brake valve and main reservoir. The Engine-driver of the second engine must close the stop-cock by placing the handle at right angles to the pipe as soon as the front engine is attached, and keep it so as long as he has the assistance of that engine, and he must place the handle of the equalizing brake valve in the release position. He must also maintain the usual pressure in the main reservoir by keeping the air pump going. In cases of emergency the Engine-driver of the second engine can apply the train brakes by operating the Driver's valve handle in the usual way; he will be unable to release them, which will be done by the leading engine.

When the front engine is detached, the Engine-driver of the second engine must at once open the isolating cock under the brake valve by placing the handle downwards, in line with the brake-pipe. If this is neglected he will not be able to release the train brakes from the engine.

69. *Application of Brake.—General.*—Care must be taken when applying the brake that the train is brought to a stand without shock, rebound, skidding, or otherwise causing inconvenience to passengers, or damage to property.

The brake must be applied in good time, so that a moderate application is sufficient.

A reduction of pressure below 5 lb. must not be made, as such reduction is not sufficient to operate all triples, and so would be wasting air.

Train pipe pressure must not be reduced more than 25 lb. when applying brakes, as any further reduction has no beneficial effect on the braking force and also means waste of air.

Care must be taken not to skid the wheels of any vehicles, as a skidding wheel has not the same braking effort as a revolving one, and flats become worn on the tyres. For this reason Engine-drivers must not reverse the engine when the brake is applied, as the wheels will lock and skid.

70. *Service Application.—Passenger Trains.*—In making service stops from high speed two applications should be used. The first application should be made by two or more reductions, and when the speed has decreased to about 15 miles per hour, the brakes should be released and the stop completed with a moderate service application. To prevent rebound, the brakes should be finally released about the time the wheels make the last revolution.

Goods Trains.—In applying the brakes to steady a train on a descending grade, or for reducing speed for any purpose, an initial train pipe reduction of not less than 7 lb. must be made.

Releasing brakes at slow speed must not be attempted, but after a reduction to apply the brakes no attempt must be made to release them.

until the stop is made and air ceases to discharge from brake valve exhaust. Ample time should be allowed when making a stop, first allowing the slack of the train to gather before using the brake. A reduction of 7 to 12 lb., according to the weight of train, should first be made, followed by further reductions as circumstances and judgment dictate. Long trains require more careful handling, and more air discharged than short trains, and this must be borne in mind when applying the brake.

71. Emergency Application.—The emergency application of the brakes must only be used in actual emergencies. Under such conditions the brake valve must be left in emergency position until the train has come to a stop.

72. Releasing Brake.—To release the brake, the handle of the Driver's brake valve must be moved quickly to the release position and left there until the auxiliary reservoirs have recharged to the working pressure required according to the class of train. The handle should then be placed in running position. Drivers should allow a reasonable time—at least 20 seconds—to elapse for the brakes to release on a train before opening the regulator.

73. Running Position.—The handle of the brake valve should be carried in running position whenever possible to ensure the extra air supply being maintained in main reservoir.

74. Application of Brakes on Gradients.—Before descending long and steep gradients Engine-drivers must see that the brakes are working properly, and that they have a sufficient supply of air. The brake must always be applied before the speed becomes excessive, and advantage must be taken of curves to release the brakes and recharge the auxiliaries. Careful judgment must be exercised and care taken not to waste air by numerous and unnecessary applications. In the event of any stoppage of the Westinghouse pump or serious loss of air from main reservoir when approaching or descending a severe down grade, the train must be carefully stopped, the defect remedied, and hand brakes applied, if necessary, before resuming the journey.

75. When Engine Shunting.—At stations and sidings where shunting is to be done, Engine-drivers should be careful to work their pumps in such a way that the pressure in the vehicles attached to the engines while shunting will not rise higher than that in the detached portion of the train. The Driver's valve handle should also be kept in the running position, in order to conserve the necessary excess pressure for releasing the brakes. Engine-drivers will be held responsible for any damage which may result from unskilful application of the brakes.

76. Defective Brakes.—Should the Engine-driver find his train is being retarded owing to the brakes not releasing on all vehicles, he must stop (if practicable, under the protection of fixed signals) and have the brakes properly released.

Should any defect occur in the working of the brake to render it ineffective, the Engine-driver must, as soon as possible, give the Guard notice and arrange with him for the use of the hand brake in the van, and as many of the train hand brakes as may be necessary. Should it be necessary, the load must be reduced.

Engine-drivers must call the attention of the Train Examiner at the first opportunity to any irregularity in the working of the brake, and also enter in their reports, the number and class of any vehicle on which the brake is defective. All defects of engine and tender brake apparatus must be entered up in the Drivers' Repair Report Book on completion of trip.

77. Damaged Hose.—Should a coupling hose burst or become damaged on the road, the Engine-driver must replace it with a spare carried in the brake-van. The Engine-driver must take charge of the damaged hose, and immediately forward it to his depot with a report on the occurrence.

78. Guard's Hand Brake.—Should the Engine-driver require the assistance of the Guard's hand brake, he must call the Guard's attention by giving a succession of three short, sharp whistles.

Should the brake be applied by the Guard, or should a hose burst or train part, the Engine-driver must place the handle of the brake valve in "lap" position to prevent waste of air from the main reservoir.

ERECTION AND MAINTENANCE.

79. Chief Mechanical Engineer to be Advised of Vehicles Equipped or Changes Made.—When a vehicle has been equipped with Westinghouse brake, the responsible officer must advise the Chief Mechanical Engineer, on the prescribed form, of the number and class of vehicle, size of equipment, and date equipped, so that the information may be recorded on the history card of the vehicle concerned.

Should the brake be removed for any reason, or any departure made from standard practice, the Chief Mechanical Engineer must be furnished with details of the alteration.

80. Standard Equipment.—The Westinghouse brake gear adopted as standard on Commonwealth Railways standard, 4 ft. 8½ in. gauge rolling stock is as follows:—

Air compressor ..	Class "F," 8" x 8½", for "G" locomotives.
	" "KL," 10" x 10½", for "K" and "KA" locomotives.
Driver's valve ..	Driver's equalizing brake valve No. 4, with simple feed valve.
Brake cylinders ..	Horizontal, long stroke, 8", 10", 12", 14".
" " ..	Vertical, 13".
" " ..	Combination, 8".
Triple valves ..	Improved type, with "O," "A," or "B" bulbs.
Train pipes ..	1" steam pipe.
Branch " ..	½" steam pipe.
Cut-out cock ..	Female ½", piece No. 541.
Release valve ..	1 horizontal nipple, piece No. 491.
" spring ..	Standard " " 590.
" " ..	Heavy " " 591.
Coupling cocks ..	1" side handle, " " 915.
Branch tee ..	1" to ½", " " 582.
Hose coupling ..	1" standard, " " 564.
Dummy " ..	With eyebolt and nut " " 575.

81. Equipment Used on Various Standard Gauge Vehicles.—The following list shows the gear used on various classes of rolling-stock:—

Class.	Vehicle.	Brake Cylinder.	Triple.		Crosshead.		Fulcrum Bracket.	
			Size.	Bulb.	Type.	No.	Type.	No.
AF	Lounge Car ..	12"	12"	B	Long, flat	3225	Short, flat, 12"	3252
AFR	Special Car, No. 2	12"	12"	B	" "	3225	Short, flat ..	3252
AR	First sleeper ..	14"	14"	B	" "	3225	Short, flat, 14"	3252
ARP	First sleeper ..	12"	12"	B	" "	3225	Short, flat, 12"	3252
BAS	Hopper wagon	8"	8"	O	Short, flat	3223	Nil	..
BP	Ballast spreader	10"	10"	B	Long, flat	3221	Short, flat, 10"	3251
BPS	Ballast spreader, 4-wheel	8" com.	8"	O	Short, flat	3223	Nil	..
BR	Second sleeper ..	14"	14"	B	Long, flat	3225	Short, flat, 14"	3252
BRP	" " ..	12"	12"	B	" "	3225	Short, flat, 12"	3252
BRPF	Second sleeper (saloon)	12"	12"	B	" "	3225	" "	3252
BS	Hopper wagon	8"	8"	O	Short, flat	3223	Nil	..
C	Cattle wagon ..	10"	10"	B	Long flat..	3221	Short, flat, 10"	3251
D	Dining Car ..	14"	14"	B	" "	3225	Short, flat, 12"	3252
E	Employees' van	10"	10"	B	" "	3221	Short, flat, 10"	3251
G	Goods wagon ..	10"	10"	B	" "	3221	" "	3251
HR	Brake-van, passenger	10"	10"	A	" "	3221	" "	3251
M	Mail van ..	10"	10"	B	" "	3221	" "	3251
O	Hospital Car ..	10"	10"	B	" "	3221	" "	3251
R	33' and 35' flat wagon	10"	10"	B	" "	3221	" "	3251
RA	45' flat bogie wagon	10"	10"	B	" "	3221	" "	3251
S	Sheep, flat wagon	10"	10"	B	" "	3221	" "	3251
SA	Butchers' van ..	10"	10"	B	" "	3221	" "	3251
SS	Special Car, No. 1	14"	14"	B	" "	3225	Short, flat, 14"	3252
TBP	Temp. 2nd Class	10"	10"	B	" "	3221	Short, flat, 10"	3251
TC	Water wagon, 7,000 gallons	10"	10"	B	Long, flat	3221	Short, flat, 10"	3251
TD	Water wagon, 8,000 gallons	10"	10"	B	" "	3221	" "	3251
TSA	Water wagon, 2,400 gallons	8" com.	8"	O	Short, flat	3223	Nil	..
TSB	Water wagon, 4,000 gallons	8"	8"	O	" "	3223	Nil	..
V	Covered goods ..	10"	10"	B	Long, flat	3221	Short, flat, 10"	3251
VP	Provision van ..	10"	10"	B	" "	3221	" "	3251
VS	Covered goods van (24')	10"	10"	A	" forked	3220	Nil	..
VS	Covered goods van (18')	8"	8"	A	Short, flat	3223	Nil	..
X	Breakdown van	10"	10"	B	Long, flat	3221	Short, flat, 10"	3251
XS	Breakdown van	10"	10"	A	" forked	3220	Nil	..
YB	Brake van, goods	10"	10"	A	" flat	3221	Short, flat, 10"	3251
YS	Brake van, 4-wheel wagon	10"	10"	A	" forked	3220	Nil	..
—	Dispenser's Car ..	10"	10"	B	Long, flat	3221	Short, flat, 10"	3251
—	Laboratory Store Car	8" com.	8"	A	Short, flat	3223	Nil	..
—	Pay Car ..	10"	10"	B	Long, flat	3221	Short, flat, 10"	3251
—	Inspection Car ..	10"	10"	B	" "	3221	" "	3251

82. Equipment to be in Accordance with Instructions.—Any brake equipment not in accordance with the practice laid down in these instructions, must be altered and made correct.

83. Train Pipes.—Employees installing brake sets, must ascertain that the train pipe, branch pipe, and hose couplings, are perfectly clean and free from scale or dirt. The entire piping system and auxiliary reservoir must be blown through with compressed air, before the triple valve is connected up. Care must be taken that only good quality steam pipe is employed. Branch pipes must be of $\frac{1}{2}$ -in. steam pipe. Copper branch pipes are not to be used.

84. Sand to be Avoided.—When erecting, examining, or repairing triple valves and brake cylinders in the open, employees must take effective precautions to avoid sand entering the valves or cylinders.

85. Cocks to be Vertical.—Employees erecting piping must connect the cut-out cocks so that the plug stands in a vertical position, thus avoiding any possibility of the vibration turning the cocks to the closed position.

86. Engine Brake to be Tested after Alterations to Piping.—When erecting or altering the brake piping on a locomotive, great care must be taken that the connexions are correctly made. In such cases the employee concerned must test or arrange for a test under air being made before the locomotive is again required for traffic.

87. Triples not to be Cleaned with Waste.—Triple valves must be cleaned with a clean rag. Cotton waste must not be used on any account.

88. Sizes of Bulbs.—Care must be taken that the correct sizes of bulbs are fitted to triple valves. The size of bulb increases with the length of train pipe, thus:—

Vehicles with train pipes up to 25 ft. long must have O bulbs.

"	"	"	25 to 40	"	"	A
"	"	"	over 40	"	"	B

Where more than one cylinder is used the bulbs must be correspondingly smaller.

89. Lubrication of Brake Gear.—The triple valves and brake pistons must be lubricated with "Paragon" or other approved grease. This grease is supplied for these parts only and must not be used on other work. The steam and air end of Westinghouse compressors must be lubricated with ordinary cylinder oil.

90. Leathers to be Kept Pliable.—Spare brake cylinder leathers, gaskets, and other leather appliances must be kept well oiled and not allowed to become dry and hard.

91. Release Valve Wiring.—Release valve wires must not be heavier than 10 gauge and must not be connected rigidly to the frame, but be provided with about 9-in. of $\frac{1}{4}$ -in. chain.

Where the release valve is connected to the side of the vehicle no release wire is required on that side. Advantage should be taken of truss rods, &c., where they can support long release wires.

92. Defective Gear to be Rectified.—Officers in charge of depots must give immediate attention to any vehicles standing at their depots, which are carded as defective. Such vehicles must be put in proper order before again going into traffic.

SPARE PARTS.

93. A stock of necessary spare parts must be kept at each depot. When an item is taken from the stock of spares, a similar item must be requisitioned from Port Augusta to keep the stock of spares up to strength. The following spares of 38 items must be kept at each depot where more than six locomotives are stabled.

Item. No.	Description.	Piece Numbers.
1 .. 1	Air compressor, 10" x 10 $\frac{3}{4}$ ", Class KL, for K, Ka and NM locomotives	101
2 .. 1	Air compressor, 8" x 8 $\frac{1}{4}$ ", Class F, for G locomotives	238
3 .. 1 each	Top head	1738 for KL .. 1300 for F
4 .. 1	Main valve (repair size)	12076 .. 12013
5 .. 0	Packing rings, for large main valve piston (repair size)	12077 .. 12002
6 .. 0	Packing rings, for small main valve piston (repair size)	12078 .. 12003
7 .. 3	Suction valves, for KL (three plates each)	3089 ..
8 .. 3	Delivery valves, for KL (new size)	3375 ..
9 .. 3	" " (repair size)	12138 ..
10 .. 1	" valve spring	3999 ..
11 .. 6	Air valves, for F (new work)	1298 for F
12 .. 0	" (repair size)	12093
13 .. 1 each	Reversing rod	1379 for KL .. 1268
14 .. 1	" plate	1098 .. 1191
15 .. 2	Gaskets, for top of steam cylinder	4154 .. 1201
16 .. 2	" bottom of air cylinder	1321 .. 1204
17 .. 2	" main valve cover	1376 .. 1340
18 .. 2	" valve case	3687 ..
19 .. 6 each	Tee bolts and nuts, $\frac{5}{8}$ " x 2 11/16", for top head	20098 .. 20098 for F
20 .. 0	Studs and nuts, $\frac{5}{8}$ " x 2 $\frac{1}{2}$ ", for bottom cover KL	0958 ..
21 .. 1	Hose coupling for between engine and tender	562
22 .. 1	Driver's valve, No. 4, complete	340
23 .. 0	Leather washers, for Drivers' valves	2016
24 .. 1	Triple valve, 8", with O bulb	393
25 .. 1	" 10", with A bulb	397
26 .. 1	" 12", with B bulb	398
27 .. 1	" 12", with B bulb	400
28 .. 2	Leather gaskets for triple cover	2444
29 .. 2	" bulb	2014
30 .. 0	Standard hose couplings	504
31 .. 3	Release valves	491
32 .. 2	Coupling cocks	915
33 .. 2	Dummy couplings	576
34 .. 1	Crosshead	3225
35 .. 1	"	3223
36 .. 1	"	3221
37 .. 1	Fulcrum bracket	3251
38 .. 1	"	3252

Items 3 to 38 are to be held at depots where a mechanic is regularly employed.

The Shed Foreman at Quorn is to see that suitable spare parts are kept on hand to enable repairs to be promptly effected.

94. Repairs to Fittings.—All standard gauge compressors, triple and other valves, &c., to be overhauled must be forwarded to Port Augusta for attention. The gear must be safely packed and way-billed to the

Superintendent of Locomotive Running, together with a note advising that the material has been despatched. Narrow gauge fittings north of Quorn, requiring repair, are to be sent to the Shed Foreman, Quorn.

95. Repaired Gear to be Tested.—All brake apparatus, such as driver's, triple, and release valves, cocks, cylinders, &c., that have been repaired, must be tested before being put into service. The Leading Hand in charge of brake repairs must personally pass each repaired article.

96. Compressors to be Tested.—Each compressor after being overhauled must be tested under steam. The compressor must be connected to the main reservoir of the testing plant and at a speed not exceeding 50 double strokes per minute, must maintain for not less than 5 minutes 90 lbs. pressure in the main reservoir, against leakage through a hole .116-in. diameter for 8/8 $\frac{1}{2}$ -in. compressor or .152-in. for a 10/10 $\frac{3}{4}$ -in. compressor.

PERIODICAL EXAMINATIONS.

97. Westinghouse Brake and Pressure Water Supply to be Examined Periodically.—To maintain Westinghouse brake and pressure water supply in proper working condition they must be periodically examined and cleaned. The examinations must be thorough, and any faulty apparatus detected must be rectified by repairing or renewing the part concerned. Vehicles under examination must be held until all defects are remedied. The examinations prescribed must be thoroughly and regularly carried out.

98. List of Examinations.—The following periodical examinations must be carried out on the due dates:—

LOCOMOTIVES.

Quarterly.

Driver's Valve.
Pressure Gauge.
Triple Valves, clean and examine.
Reservoirs drained.
Train Pipes.
Hose Pipes.
Brake Rigging and Pins.

Half-yearly.

Air Pump.
Pump Governors.
Brake Cylinders, Leathers, and Pistons.

TENDERS.

Quarterly.

Triple Valves.
Reservoirs drained.
Train Pipes.
Hose Pipes.
Brake Rigging and Pins.

Half-yearly.

Brake Cylinders, Leather, and Pistons.

PASSENGER CAR AND VAN STOCK.

Quarterly.

Triple Valves.
Reservoirs, drained.

Half-yearly.

Brake cylinders and pistons.
Train Pipes.
Hose Pipes.
Brake Rigging and Pins.

GOODS VAN AND WAGON STOCK.

Half-yearly.

Triple Valves.
Reservoirs drained.
Brake cylinders and pistons.
Train Pipes.
Hose Pipes.
Brake Rigging and Pins.

PRESSURE WATER SUPPLY.

Quarterly.

Reducing valve.
Reservoirs drained.
Air strainer.
Pipes, taps, and filters.
Water tanks.

99. Examiner to be Qualified.—Only properly qualified employees are to be deputed to carry out examinations.

100. Employees making Examinations and Repairs Responsible for Proper Working of Brake and Pressure Water Supply.—Employees making examinations and repairs are responsible for all parts being thoroughly and minutely inspected and re-assembled in first-class working order.

101. Certificate to be Filled in.—The employee making the examination must fill in a Westinghouse Brake Examination Certificate showing the parts and date examined.

The signing of an Examination Certificate certifies that the parts indicated have been examined and re-assembled in proper working order.

102. Certificates to be Furnished Without Delay.—Employees concerned must forward Examination Certificates to their Supervising Officer without delay.

103. Records of Examinations to be Kept.—A card record of all Westinghouse brake examinations must be kept in the Chief Mechanical Engineer's Office, a record being kept of each vehicle equipped with the brake.

104. List of Examinations Due to be Issued.—Immediately on the close of each month, the clerk concerned must prepare a list of those vehicles which fall due for examination during the month and those which are overdue. This list must be forwarded to the officer responsible for the examinations, who must take the necessary action to have the examination carried out without undue delay. Special attention must be given to locating and examining overdue vehicles.

105. Vehicles at Out Depots.—In the case of vehicles at out depots due or overdue for examination and which are not likely to be worked into the terminal depots, a list of such vehicles must be forwarded to the Officer in Charge of the district, who must arrange for the examinations.

INSTRUCTIONS TO EMPLOYEES MAKING EXAMINATIONS.

106. Efficiency of Compressor.—A dummy test coupling provided with a small leakage hole (.116 inch dia. for $8/8\frac{1}{2}$ inch and .152 inch dia. for $10/10\frac{1}{2}$ inch) must be attached to the engine or tender hose pipe and the pump started. With the orifice open and the pump operating 50 double strokes per minute the pump must maintain for not less than five minutes a pressure of 90 lb. per square inch. Care must be taken that there are no leaks in the system and that main reservoir is drained. This test is to be made quarterly. If the examination is not satisfactory and the defects not easily remedied, arrangements must be immediately made to change the compressor.

107. Examination of Compressor.—The compressor or pump must be carefully inspected half-yearly. The top head must be removed and examined. The reversing rod and plate must be renewed if showing signs of excessive wear. Air valves must be examined and ground in if required. The bottom cover must be removed and air cylinder cleaned.

108. Driver's Valve.—The driver's valve must be cleaned, greased, and tried under air in the different positions. The valve must operate correctly in all positions and show an excess pressure of 20 to 25 lb. when in "running" position. Any leaks or defects must be remedied or the valve changed.

109. Pressure Gauge.—The pressure gauge must be checked with a "test" gauge, one of which must be kept at each Depot and Terminal Running Shed.

110. Triple Valves.—Triple valves must be cleaned with a piece of rag and the piston and slide valve greased. The bulb must be drained. If triple is defective it must be changed. Care must be taken in substituting triples that the new triple is fitted with the correct bulb and is of the proper size for the cylinder it is used with.

111. Reservoirs.—All air reservoirs must be properly examined and drained.

112. Brake Cylinders and Pistons.—The cylinders and pistons must be cleaned and lubricated with "Paragon" or other authorized grease. Ordinary oils or greases must not be used. The leakage groove must be carefully cleaned out. Pistons must be given a half-turn at each inspection so that the leather may be evenly worn.

113. End Cocks.—The plugs of end cocks must be greased so that they work satisfactorily.

114. Hose Pipes.—Hose pipes must be inspected to detect porous hoses and worn coupling rings. They must be tested half-yearly under air pressure. The intermediate hose pipe between engine and tender must also be examined and tested.

115. Train Pipes.—Train pipes must be examined for leaks and slack clips. They must be tested half-yearly under full air pressure.

116. Brake Rigging.—All brake rods, pins, levers, hangers, &c., must be examined to see that they are not bent, worn, insecure, or in any way defective. Bolts must not be used in place of pins, and all pins must be provided with a washer behind the split pin. Hand brake gear must be inspected and attended to where required. Where slack adjusters are required they must be examined carefully and repaired if necessary. Release valves and wires, cut-out cocks, and any other minor fittings must be in good order.

Brake gear must be adjusted so that the piston travel of horizontal cylinders is not less than 4 inches nor greater than 8 inches.

117. Pressure Water System.—The fittings and connexions of the pressure water system must be carefully inspected, and the whole apparatus maintained in good condition.

118. Reducing Valve.—The reducing valves must be opened up, cleaned, and if necessary readjusted. The valve must be set to a pressure of 5 to 10 lb., and must be tested by a gauge.

119. Air Strainers.—Air strainers must be opened up, cleaned, and re-packed.

120. Pipes, Taps, and Filters.—The piping leading from the train pipe to the water tank and from the tank to the taps in compartments and lavatories must be free from leaks and securely fastened. The cutout cock, check valve, air strainer, three-way cock and taps, flushing valves, and other details on pipe line must also be examined and cleaned.

Water filters must be cleaned, and, if necessary, repacked.

121. Water Tank.—The water tank must be cleaned out and inspected for leaks. The filling valve must be examined, and, if necessary, refaced or ground in. The spring cover of the filling bend must close tightly to prevent the entrance of dirt or foreign matter into the water tank.

122. 100-lb. Test.—Passenger vehicles must be tested half-yearly with air up to 100 lb. pressure for the purpose of detecting defective pipes, joints, triple valves, pistons, &c. Brakes that leak off in less than ten minutes must have piston leathers or triples attended to as required.

123. Date of Examination to be Chalked on Auxiliary Reservoir and Pressure Tank.—After an examination has taken place, the date, and whether the examination is quarterly or half-yearly, must be chalked on the auxiliary reservoir of the Westinghouse brake, and the pressure reservoir of the water supply, thus:—

Quarterly . . . Q. (date).
Half-yearly . . . H.Y. (date).

124. Westinghouse Brake Emergency Cock in Passenger Car.—Trans-Australian Railway.—A Westinghouse brake emergency cock has been installed in the Conductor's compartment of all first-class cars, and at one end of the corridor of all second-class cars.

This appliance is to be used for stopping a train in case of emergency. Preferably, the Senior Conductor or Guard should be communicated with, and the emergency cock is to be used by the Senior Conductor only in cases where he considers it is absolutely necessary.

When it is necessary to make use of the emergency cock a report of the circumstances is to be forwarded by the Guard to the nearest Depot Stationmaster, and by the Senior Conductor to the Supervisor, Dining and Sleeping Car Service.

A notice has been placed over each emergency cock reading as under:—

"Emergency use only.

Penalty for improper use £5."

125. On the North Australia Railway N.G. locomotives only are equipped with Westinghouse brake.

78. INSTRUCTIONS RELATING TO THE USE OF HAND BRAKES ON VEHICLES NOT EQUIPPED WITH WESTINGHOUSE BRAKE.

1. Use of Westinghouse Brake.—The Westinghouse brake must be used on all trains when not less than one-third of the vehicles are equipped with effective Westinghouse brake.

2. The train must be handled in the same manner as a train fully equipped with the Westinghouse brake, but particular care must be exercised to have the train under proper control before descending steep gradients and on approaching a station or other stopping place.

3. The Engine-driver must test the Westinghouse brake before descending a steep gradient and on approaching a station. If, when the test is made, he is of opinion that the brake power is not sufficient to control the train down the gradient, the speed must be reduced, and, if necessary, the train must be brought to a stand, and a sufficient number of hand brakes applied to properly control the train and enable a stop to be made where required.

4. Use of Hand Brakes on Trains on which less than one-third of the Vehicles are Equipped with Westinghouse Brake.—Trains on which less than one-third of the vehicles are equipped with effective Westinghouse brake complete must be properly controlled by the use of hand brakes.

5. Before a train commences a journey from a station at which a Train Examiner is employed, the hand brake on each vehicle and the van brake must be tested by that employee to ensure that they are in proper order.

In the case of a train starting from a station where no Train Examiner is employed, the Guard in charge of the train must satisfy himself that the hand brakes are in efficient condition.

6. If any vehicles are attached at any station or siding during the journey the Guard must see that the hand brakes are in an efficient condition.

7. The Guard must inform the Engine-driver of the condition of the hand brakes on all vehicles comprising the train, and the Engine-driver is equally responsible for ensuring that he is supplied with this information.

8. Vehicles with defective hand brakes must not be allowed to run on any train unless there is sufficient braking power on the remainder of the train to safely control the train down the steepest grade.

9. **Hand Brakes to be Applied when Approaching Grades.**—When approaching falling grades of 1 in 80 or steeper on the Trans-Australian Railway and of 1 in 60 or steeper on the Central or North Australia Railway the train must be brought to a stand before it reaches the top of the falling grade, and the Fireman and the Guard must apply hand brakes as the whole of the train is drawn on to the falling grade. The Fireman is to apply brakes from the front of the train and the Guard from the rear of the train. When the Engine-driver feels by the movement of the train that sufficient brakes have been applied, he will signal the Fireman and the Guard by one long blast on the engine whistle.

10. **The Engine, Tender, and Guard's Van Brakes must be Off** when the Train Commences to Descend the Grade in order that they may be held in reserve to steady the train or to stop it on the grade should it be necessary to do so.

If the Driver, after starting on the down grade, considers that the brakes already applied are not sufficient to keep the train under control he must bring it to a standstill and the Guard and Fireman must apply additional hand brakes to enable the train to be kept under perfect control. The Engine-driver will be held responsible for seeing that this instruction is strictly observed.

When approaching a station or stopping place, the train must be under thorough control.

Attention is directed to Rule 161, Book of General Rules, which indicates the duties of Guards in regard to the working of the van hand brake to steady the trains and assist the Engine-drivers when mixed or goods trains are travelling down steep inclines and are not controlled by the continuous Westinghouse brake. Guards are to apply the van hand brakes on all occasions when such trains are stopping. This is necessary in order to reduce the amount of jolting which is sometimes associated with trains not controlled by the continuous brake.

Engine-drivers must be particularly careful to handle their trains in such a way as to reduce jolting to a minimum.

11. **Number of Hand Brakes to be Applied.**—The number of hand brakes to be applied will depend upon the steepness of the grade, the load of the train, the number and class of the vehicles composing the

train, and the condition of the weather. Under normal conditions the number of hand brakes to be applied can be estimated from the following table, but the Engine-driver must satisfy himself that the number of brakes applied is sufficient to control the train.

For every one hundred tons of the gross train weight hand brakes are to be applied as hereunder:—

Grade.	Bogie Vehicles.	Four-wheeled Vehicles.
1 in 100	1	2
1 in 80	1	3
1 in 70	2	4
1 in 60 and steeper	Not less than 3	5

Notwithstanding the above, every train, other than a Passenger train on which the vehicles are all equipped with the Westinghouse brake complete, when travelling between Port Augusta and Quorn must stop at the Summit in both the Up and Down directions and hand brakes are to be applied by the Fireman and Guard on all loaded trucks and 50 per cent. of all empty trucks. The hand brakes which are operated by an unweighted lever are to be pinned down, but care is to be taken not to pin them so that the wheels will skid. Brakes with weighted levers need not be pinned down. Truck brakes are to be lifted at Stirling on the Up journey and at Quorn on the Down journey.

Examiners at Quorn must be particularly careful to see that the Westinghouse brake on all vehicles attached to passenger trains and the hand brake in the brakevan are in good order.

Examiners must also examine the hand brakes on all vehicles of all trains leaving Quorn.

12. When approaching falling grades the Guard must hold himself ready to apply the van hand brake and assist the driver in controlling the train down the grade.

13. **Loads of Trains Controlled by Hand Brakes.**—The maximum loads to be taken by any engine when the train is controlled by hand brakes only must not exceed the load the engine is capable of hauling up the steepest grade *without the aid of momentum*. For grades not steeper than 1 in 80 these loads are those given in the load table. In the case of grades steeper than 1 in 80 the loads must not exceed those shown in the following table:—

Grade.	G Engines.	K or K _a Engines.	NM Engines.
Not steeper than—			
1 in 70 ..	440 tons	594 tons	440 tons
1 in 80 ..	390 "	526 "	390 "
1 in 90 ..	320 "	432 "	320 "
1 in 100 ..	250 "	337 "	250 "

78a. JOLTING OF TRAINS—CENTRAL AUSTRALIA RAILWAY.

Complaints have been received from time to time in regard to the excessive jolting of trains on the Central Australia Railway, particularly in the sections covered by the following mileages:—

At 492 miles 72 chains.
 716 miles to 718 miles.
 746 " " 752 "
 843 " " 847 "
 At the 857 miles 60 chains.
 869 miles to 871 miles.

In order that the jolting may be kept at a minimum, the speed of trains over the sections mentioned above is to be restricted to a maximum of 20 miles per hour.

Guards are to so arrange their work in the van that they will be free to assist the driver by applying the handbrake at the mileages referred to.

Drivers, when running over the sharp, vertical curves, and just prior to closing the regulator, are to give a succession of three short, sharp blasts of the engine whistle. On receipt of this signal the guard is to apply the hand-brake in the van and keep it applied until the driver sounds a long blast on the whistle prior to opening the regulator, when the guard must at once release hand-brake.

When travelling over these sections, the Westinghouse brake should not be applied except in case of emergency.

In addition to the sections quoted above, there are other individual points where the grade changes rapidly, and drivers and guards are to make themselves conversant with such points and act in accordance with the above instructions.

The Shed Foreman, Quorn, is to see that the handbrake gear on all narrow gauge brakevans is maintained in good working order and condition, and that the drawgear on all vehicles is thoroughly examined prior to the departure of each train from Quorn. Should any slackness be apparent, the drawgear concerned is to be adjusted by the Train Examiner on duty.

Train Examiners located at points on the Central Australia Railway other than at Quorn are to thoroughly examine the hand-brakes and drawgear on all vehicles as opportunity offers. (O.C.25/30 and 8/31.)

CONTROL AND WORKING OF STATIONS.**79. UNIFORMS.**

Every employee receiving a Uniform must, when on duty, appear in it clean and tidy.

Employees must not come on duty with hats instead of caps, with winter instead of summer uniform, or with half winter and half summer uniform. Stationmasters must see that the Staff maintain uniformity of practice.

Generally speaking, summer uniforms should be worn from 1st November until 30th April, and winter uniforms for the balance of the year. Gorgets, badges, &c., where supplied, must be regularly worn. Where helmets are supplied, these should be worn when the hot weather justifies their use.

Uniforms are the property of the Commissioner, and must be worn only when on duty or when going to and from work.

80. FACILITIES FOR CALLING STATIONMASTERS WHEN OFF DUTY, AND FOR ESTABLISHING COMMUNICATION IN CASES OF EMERGENCY.**TRANS-AUSTRALIAN RAILWAY.**

1. (a) An extension bell from the station building to the Stationmaster's residence has been provided at each attended station except Port Augusta and Parkeston.

(b) The Stationmasters' residences at Port Augusta and Parkeston are connected by telephones to the respective station switchboards.

(c) The extension bells are connected to the electric staff circuit, and are so arranged as to repeat signals from either portable telephones or the electric staff instrument at the other end of the section, when the office door at the receiving station is closed. An automatic switch is provided which cuts in the house bell when the office door is closed and cuts out the house bell when the office door is open.

2. (a) The extension bells are provided to enable Stationmasters when off duty to be called in cases of emergency, and to ensure efficiency in this direction Stationmasters concerned must each working day test the bells by switching them in circuit (i.e., by closing the office door) and requesting the Stationmaster at the opposite end of the section to give one or two beats on the Electric Staff instrument.

(b) If A, B, and C be three Electric Staff stations, a test made between A and B will indicate whether the connexions at B for section B—C are satisfactory (as the bells are operated by a common battery), and consequently the test need only be made on one section. This also applies where one of the stations A or C is an automatic station. In the case where there is an automatic station on each side of an attended station, the Stationmaster at the latter place must arrange for test in conjunction with Guards.

(c) In the event of the signals not being repeated on the bells in the Stationmaster's residence, the fact must be reported promptly to the District Lineman and to the Chief Traffic Manager. Each test and result must be noted in the Train Register. Any attention at the station rendered necessary in consequence of a fault must be arranged pending its correction.

3. A device has been installed at all Automatic Staff stations whereby portable telephone rings from any point within the Automatic Staff sections will be repeated at the attended stations on both sides of the Automatic station, thus A-B and B-C being Automatic Electric Staff sections and B the Automatic Electric Staff station, a portable telephone ring from any point within the B-C or A-B sections will be repeated on the bells at both A and C.

4. (a) At attended Electric Staff Stations (including Port Augusta and Parkeston) a wall telephone is provided in the Stationmaster's residence, and at Forrest in the Operating Porter's residence, so that these employees can be communicated with outside their ordinary hours of duty.

(b) The attended stations at each end of a telephone circuit, and the residences in which a telephone is provided, may be communicated with by means of a portable telephone from any point between the two attended stations by connecting the telephone with the electric staff line wires and ringing for the station required.

NOTE.—The electric staff line wires referred to are the two wires on the top iron cross arm (nearest the railway).

(c) The attended stations may also be communicated with from an unattended electric staff station by means of the telephonette attached to the staff instrument at the unattended place.

(d) Communication may be established by means of the telephone with any station to Port Augusta or Parkeston by transmitting the message to the first attended station and having it repeated from there to the next attended station, and so on until the station required is reached, or a station is reached from whence telegraphic communication can be established with the station required.

5. **Telegraph Communication.**—Communication may be established between any of the stations connected with the circuit during the hours the Stationmaster or an operator is in attendance. Stationmasters and operators must keep themselves acquainted with the hours of telegraph attendance at intermediate stations, particularly at the adjacent stations and at Port Augusta and Parkeston. The hours of attendance at intermediate stations are governed by train working, and the hours of duty at the terminal offices will be as advised by circular from time to time.

The Port Augusta or Kalgoorlie post office can be raised on the railway telegraph circuit during the hours of attendance at those offices, and in an emergency a message can be transmitted by the postal officer at either place over the public exchange telephone to the Stationmaster. For particulars of offices connected with the Railway Telegraph Circuit see Regulation 121, Clause 24, Page 259.

EMERGENCY COMMUNICATION—POSTAL LINES.

6. The Postal Department have also lines of communication as follows:—

Telegraph Circuit—

Kalgoorlie Post Office,
Rawlinna Post Office,
Cook Post Office,
Tarcoola Post Office,
Post Augusta Post Office.

During hours of attendance messages may, in an emergency, be handed to the postal officers at these places for transmission. Excepting in the case of messages from one of the above stations, it would first be necessary to transmit the message over railway wires to the Stationmaster at one of the stations named and for that officer to arrange for its transmission by the Postal Officer. Thus, if a breakdown of

a train occurred in the Loongana-Haig section and the Stationmaster, Loongana, required to seek advice from Port Augusta, and other means of communication with Port Augusta having failed, it would be necessary for the Stationmaster at Loongana to telephone or telegraph to the Stationmaster, Rawlinna, and arrange with him to have the message transmitted by the Postal Officer there to Port Augusta.

7. **Carrier Wave Telephone.**—(a) In addition to telegraph messages, phonogram messages may be transmitted by the Postal Officers at Tarcoola, Cook, and Rawlinna, or if it is expedient, a telephone conversation arranged with Port Augusta from those places. These may be transmitted during the ordinary hours of attendance of the Postal Officer at Tarcoola, Cook, or Rawlinna, or outside those hours if the Postal Officer is called. Messages or conversations by carrier wave telephone would be transmitted through the public exchange at Port Augusta, and during the hours of attendance at the Railway Telegraph Office at Port Augusta any responsible officer at Port Augusta may be communicated with. Outside the ordinary hours of attendance at the Port Augusta Railway office, the public exchange line will be switched through to the Stationmaster's residence and that officer may be communicated with.

At Parkeston, the Stationmaster's residence is also connected with the public exchange.

(b) As in cases of messages for transmission over the postal telegraph circuit, it will first be necessary to transmit the message to the Stationmaster at Tarcoola, Cook, or Rawlinna, and for that officer to arrange transmission by the postal officer.

(c) The hours of telegraph attendance at Kalgoorlie and Port Augusta Post Offices and at intermediate official Post Offices will be advised by the Chief Traffic Manager from time to time.

As the attendance at the postal offices is subject to revision from time to time, however, the Stationmasters at the stations concerned must keep in touch with the hours of attendance at these offices and promptly advise the Chief Traffic Manager of any alteration.

(d) It must be distinctly understood that the postal lines of communication must only be resorted to in case of urgency, and when railway lines of communication have failed.

CENTRAL AUSTRALIA RAILWAY.

Telephones are provided in the Stationmaster's residence at:—

STATION.	CIRCUIT.
Parachilna	Quorn—Beltana Circuit.
Beltana	{ Quorn—Beltana Circuit. Beltana—Marree Circuit.
Copley	Beltana—Marree Circuit.
Farina	Beltana—Marree Circuit.
Marree	{ Beltana—Marree Circuit. Marree—Edwards Creek Circuit.
Edwards Creek	{ Marree—Edwards Creek Circuit. Edwards Creek—Oodnadatta Circuit.
Oodnadatta	{ Edwards Creek—Oodnadatta Circuit. Oodnadatta—Alice Springs Circuit.
Rumbalara	Oodnadatta—Alice Springs Circuit.
Alice Springs	Oodnadatta—Alice Springs Circuit.

Switches are provided in the station offices and Stationmasters' residences at the above-named stations for the purpose of connecting the telephone with the circuits indicated.

The Stationmasters concerned when going off duty must switch-in the telephone in the residence, to enable Guards or others to communicate with them outside ordinary hours of duty in cases of emergency or in connexion with train working.

Calls on the Stationmasters concerned, outside their ordinary hours of duty must be confined to matters of immediate importance, and they must not be disturbed in regard to matters which can stand over until they again sign on duty.

The ordinary station call is to be used in each instance to raise the Stationmaster at his residence.

81. LIGHTING OF SIGNAL LAMPS.

1. Except as otherwise instructed by the Chief Traffic Manager signal lamps are to be lit one hour before the first train is due to arrive (if due to arrive in darkness) and extinguished on departure of the last train during the hours of darkness.

At stations where trains stop overnight signal lamps are to be extinguished after train is stabled, unless another train is due before daylight.

2. Employees may light signal lamps whilst trains are in the section, but should not absent themselves from the office more than half an hour at any time during the specified hours of duty.

3. Signal lamps are only required to be alight when a train is approaching the station at night time, therefore Down signals are not to be lit when only Up trains are to pass through, and vice versa.

4. In a case where a train after leaving a station has for any reason to return to such station, and the employee in charge is aware of the train returning, he must have the appropriate signals alight.

5. Rule #6 Book of General Rules, is hereby modified so far as it conflicts with the above instructions.

82. INSTRUCTIONS FOR TRIMMING, LIGHTING, AND CARE OF ADLAKE LAMPS.

1. **Oil.**—The oil used should be water-white to ensure its being clean and having no impurities. Every care should be taken to ensure the purity of the oil being maintained from the source of supply until it is put in the lamp founts.

2. **Founts.**—Oil founts should be rinsed out frequently, say every four weeks, to prevent an accumulation of sediment, or more often if the oil is found to deposit any considerable amount of sediment.

3. **Cleaning.**—The lamp should be thoroughly cleaned inside and out, the lenses kept perfectly clean, and all soot and dirt removed from the inside of the lamp and from the ventilator openings.

4. **Trimming Wick.**—The wick should not be trimmed with scissors, but the charred portion should be broken off with the finger, or with a stick, the wick being turned down so that only the charred portion is exposed above the wick tube. Should the wick fray out in this operation at the edges, it can be slightly trimmed off with scissors.

5. **Filling.**—In filling the fount, a space of from one-eighth to one-fourth of an inch at the top of the fount should be left unfilled. This will give room for the expansion of the oil as it becomes heated after the lamp is lighted and will prevent the flooding of the flame with oil, which would be forced to the wick tube if the fount were filled to the top. In the latter case the lamp would burn with a high and smoky flame, or possibly an explosion and burning out of the lamp would result.

6. **Lighting.**—The lamp should be lighted, and the flame turned to about one-half the height required to give the full light, and thus be allowed to burn five or ten minutes, so that the parts can become thoroughly warmed, after which the flame can be turned up to the height which gives the best light, and the lamp then placed in position.

If the flame is turned up to the height giving the best light before the wick tube and fount become warmed, as soon as they are warmed, a large amount of oil will be carried through the wick and supplied to the flame, thereby causing it to burn too high and to smoke, filling the inside of the lamp with soot, and rendering the light useless.

7. **New Wicks.**—The work of the wick being to convey oil through its length to the flame, it acts as a strainer, and in time accumulates a considerable quantity of dirt and thick gummy oil. This accumulation prevents that ready and smooth flow of oil which is necessary to the maintenance of a steady and uniform flame. As soon, therefore, as the wick becomes dirty and stiff from this accumulation, it should be thrown away, and replaced by a new wick. The life of a wick should be taken as thirty to sixty days, according to the oil used.

8. **Chimneys and Reflectors** should be kept clean and bright. Broken chimneys should be promptly replaced.

9. **Attention to Lamps.**—Adlake lamps and burners must be attended to weekly, or oftener if necessary.

83. PARCELS, BARROWS, ETC., ON PLATFORMS.

Goods, parcels, luggage, and platform foot-boards for narrow gauge stock, must be placed as far as possible out of the way of passengers and others moving about station platform. Barrows and platform trollies must, when not in use, be kept against a wall or fence, and secured in position to prevent their moving. Care must be exercised by the staff when moving barrows and trollies along platform to avoid collision with or inconvenience to passengers.

84. GENERAL ORDER BOOKS.

Officers-in-Charge are responsible for seeing that instructions issued for the general information and guidance of the staff are promptly posted in the General Order Books, and employees are to peruse these books when coming on and going off duty, and sign each instruction as it is noted.

Officers-in-Charge must frequently examine the General Order Books and take up with any employee who has omitted to sign instructions.

General Order Books must be kept clean and tidy, and not mutilated; instructions must be numbered consecutively, the date of posting is to be shown in each instance, and under no circumstance must they be removed from the books.

85. STATION GATES TO BE KEPT CLOSED.

Stationmasters are responsible for seeing that all gates giving access to station yards are kept closed and securely fastened when not absolutely required to be opened for traffic.

86. RATE BOOKS TO BE ACCESSIBLE TO THE PUBLIC AT STATIONS.

Goods Rates Books and Passenger Fares and Coaching Rates Books and Amendments thereto must be kept in the Stationmaster's office or other suitable room, where they may be inspected by members of the public on application being made to the Stationmaster or responsible member of his staff.

87. LIGHTING OF STATIONS.

Stations must be well lighted a reasonable time before the arrival of passenger trains and extinguished when no longer required.

Station lights must not be left burning unnecessarily.

88. BY-LAWS AND NOTICES TO BE EXHIBITED AT STATIONS.

Each Stationmaster is responsible for seeing that a legible copy of the General By-laws is exhibited at his station. Other notices to the public are to be exhibited as instructed by the Chief Traffic Manager.

89. STATION OFFICES TO BE KEPT PRIVATE.

Station offices are to be kept private and no person other than an employee in the course of his duty is to be allowed to go behind the counter.

90. SMOKING ON DUTY.

Employees in offices or on premises frequented by the public must not smoke whilst on duty.

91. LICENCES TO PLY FOR HIRE.

1. Drivers of public vehicles, plying for hire within any premises of the Commissioner, must be licensed, the fee being payable to the Stationmaster on the 1st January each year.

2. It is only intended that licences be held by Drivers of vehicles which regularly stand on Railway premises to meet trains, &c., with the object of being accepted for hire, and Stationmasters must bring under the notice of the Chief Traffic Manager any such cases in which a licence is not held.

3. The conditions relating to licences are printed on the back of certificates, and are as follows:—

- (a) Licences will be issued at a fee of 10s. per vehicle per calendar year.
- (b) Before any licence is granted, the applicant must satisfy the Commonwealth Railways Commissioner, or Officer appointed by him, that the driver is of good character, and that the vehicle, &c., to be used is in a proper and clean condition.
- (c) The Officer in charge of the station shall have absolute control of the vehicle while it is at the station, and the vehicle must stand at such place or places as he may direct.
- (d) Each driver must be clean in his clothes and person, and civil and attentive to persons seeking information.
- (e) Each vehicle, horse and harness shall be of good description, and shall be kept in a clean and proper condition to the satisfaction of the Commonwealth Railways Commissioner, or officer appointed by him, who may require the removal from railway premises of any vehicle which he may consider unfit for service.
- (f) Any driver, whilst on railway premises, shall be under the direction of the Officer in charge of the station or other person acting under his instructions, and the Commonwealth Railway Commissioner may require the Licensee to exclude from employment in connexion with his contract any person or persons with whose conduct, either within or without the station yard, the Commissioner may be dissatisfied.
- (g) No licensee or driver shall tout for luggage or parcels in or upon any railway building, wharf, or platform.
- (h) The licensee shall not assign, under-let, or transfer the licence without written consent under the hand of the Chief Traffic Manager.
- (i) Upon a breach by the licensee of any of these conditions, or any of the By-laws relating to the Commonwealth Railways now or hereafter to be in force, his licence may forthwith, and without prejudice to any proceedings against him, be cancelled by notice in writing to the licensee, and he shall have no claim for any loss occasioned by such cancellation, or for return of any part of any payment.

92. REFRESHMENT BOOTHS.

At stations where refreshment booths are leased Stationmasters are to exercise a general supervision over the premises, and bring under notice any departure from the agreement covering the tenancy.

93. COMPLAINTS FROM TRAVELLING PUBLIC.

When complaints or representations are made by the travelling public, full particulars must be noted and, where possible, the matter rectified. If the circumstances warrant such action, full report must be submitted to the Chief Traffic Manager.

94. TRAIN WARNING AND STARTING BELLS.

At stations where train warning and starting bells are provided they must be rung five minutes and one minute before the train is due to depart.

95. SWEEPING STATION PLATFORMS.

Refuse from platforms must not be swept on to the line; it must be swept into heaps and gathered into boxes or other receptacles for subsequent removal.

96. WATER FOR THE USE OF PASSENGERS AT STATIONS.

Water bags must, where provided, be kept filled with fresh water. Attention to this matter is particularly necessary prior to arrival of passenger and mixed trains during the summer months.

97. POSTAL WORK AT STATIONS.

At certain stations under arrangement with the Postmaster-General's Department, post and telegraph work is performed by the station staff.

Instructions issued by the postal authorities in regard to the work are to be observed.

98. CLAIMS.

All instances of shortages of goods and parcels, &c., received in damaged or broken condition, &c., are to be immediately brought under the notice of the sending station by wire, and the receiving station must, at the same time, fully report the matter to the Chief Traffic Manager. The sending station (if located on the Commonwealth Railways), must institute inquiries, and in addition to advising the destination station full particulars, must submit report to the Chief Traffic Manager in anticipation of a claim being lodged.

When a claim is received at a station the time and date of receipt must be marked thereon by the Stationmaster, who must promptly submit it accompanied by a report to the Chief Traffic Manager.

99. EXAMINATION AND COLLECTION OF TICKETS AND PASSES.

The examination, nipping and collection of tickets or passes held by passengers shall be carried out as under:—

*TRANS-AUSTRALIAN RAILWAY.**Passenger Trains.*

1. **Down Journey.**—The conductors must see that tickets and passes held by passengers travelling in the cars of which they are in charge are examined prior to departure from Port Augusta. The examination is to be carefully carried out with a view to seeing that each passenger is in possession of a ticket or pass, that such ticket or pass is not out of date, and that it is available for the class in which the passenger is travelling.

In regard to inter-system tickets, the back of the Commonwealth Railways coupon is to be examined to see that travel from Port Augusta is being made in accordance with the date booked for, as shown thereon. It is most desirable that this be done at the time passengers enter their compartments, thus permitting of any irregularity being detected and dealt with before departure.

2. **Up Journey.**—The conductors must similarly examine tickets and passes before departure of the train from *Parkeston*.

3. **Collection.**—(a) The Commonwealth Railways coupons of inter-system tickets must be collected by the Senior Conductor and forwarded together with the diagrams to the office of the Chief Traffic Manager. The Senior Conductor must also arrange to collect all other tickets and all passes held by passengers travelling into *Kalgoorlie*.

(b) Officers in charge at intermediate stations between Port Augusta and *Kalgoorlie* must see that passengers joining trains are in possession of proper tickets or passes, and they must also collect tickets or passes held by passengers alighting. At unattended places the guard will be held responsible for this duty and tickets and passes so collected are to be handed in at the next attended station.

(c) In the case of No. 2 Up the Guard is to confer with the Senior Conductor before the latter goes off duty on the night prior to arrival at Port Augusta, to ensure that the tickets and passes of passengers are accounted for, and the guard must collect tickets and passes of passengers (for Port Augusta or any intermediate unattended point) joining the train after the Senior Conductor finishes duty.

Mixed and Goods Trains.

4. **Down Journey.**—The examination, nipping and collection of tickets or passes held by passengers travelling by mixed trains shall be carried out as under:—

Port Augusta—Examine and nip.
Hesso—Guard to examine.
Pimba—Examine and nip.
Tarcoola—Examine and nip.
Barton—Examine.
Ooldea—Guard to Examine.

Cook—Examine and nip.
 Hughes—Guard to Examine.
 Loongana—Examine.
 Rawlinna—Examine.
 Zanthus—Examine and nip.
 Golden Ridge—Guard to collect all tickets and passes.

5. Up Journey—

Parkeston—Examine and nip.
 Golden Ridge—Guard to examine.
 Karonic—Guard to examine.
 Zanthus—Examine and nip.
 Rawlinna—Examine.
 Loongana—Examine.
 Cook—Examine and nip.
 Barton—Examine.
 Kingoonya—Examine.
 Pimba—Examine and nip.
 Hesso—Guard to collect tickets and passes for Port Augusta.

6. Except where otherwise provided above, the work of examination is to be done by Stationmasters. The collection of tickets and passes is to be made as shown in paragraph (b) of the instructions regarding the collection of tickets from passengers travelling by passenger train.

In the case of these trains the Stationmaster at Port Augusta or Parkeston accompanied by the Guard must search the whole train so as to prevent persons travelling without tickets or passes.

CENTRAL AUSTRALIA RAILWAY.

7. Quorn-Port Augusta.—

Up Journey.—

Quorn—Station Staff to examine and nip (Mixed and Passenger trains only).

Down Journey.—

Quorn—Station Staff examine and nip (Through Passenger and Mixed trains only).

8. Quorn-Alice Springs—

Down Journey.—

Quorn—Station Staff examine and nip.
 Marree—Station Staff examine and nip.

Up Journey.—

Alice Springs—Station Staff examine and nip.
 Marree—Station Staff examine and nip.
 Quorn—Examine and nip (through trains only).

9. Guards must examine and nip tickets and passes held by all passengers travelling on their trains, and are responsible for the collection of all tickets (other than those available for a through journey which have not a part applicable to the Central Australia Railway only)

The examination, nipping and collection of tickets by guards should be performed between all stations and sidings, except where, owing to gradients, curves obstructing the view, or any other cause, it is necessary for the Guard to remain in the brake-van for the safe and proper working of the train, in which cases tickets are to be collected at stopping places. Should there be an Assistant Guard on the train,

however, the duty of examining and collecting tickets in such cases may be delegated to him, whilst the Guard-in-Charge remains in attendance in the brake-van.

When a conductor is in attendance on the sleeping cars attached to the Limited Mixed, the examination and collection of tickets for passengers occupying such cars will be performed by him instead of the guard.

Tickets and Passes collected from passengers alighting at unattended stations or sidings must be handed in on arrival at the first attended station after collection. Those collected from passengers alighting at attended stations must be handed in at the station concerned.

10. Guards, after having once examined their tickets, should avoid disturbing passengers by refraining from unnecessary examinations, but they must see the tickets on several occasions between Quorn and Marree, and between Marree and Alice Springs except in the case of passengers occupying sleeping berths.

11. The examination of tickets must be carefully carried out, and each ticket or pass must be closely scrutinized in order to detect persons attempting fraud.

11A. North Australia Railway—

(a) All tickets and passes must be examined at each attended station by the Stationmaster (or station staff) just prior to departure of each train. At Birdum or other unattended place from which a train commences its journey, this duty will be carried out by the Guard.

(b) Guards must examine and nip tickets and passes at first convenient place after starting on a trip, and at such other times as may be considered necessary, to ensure that no passenger travels without the appropriate ticket or pass.

(c) In the case of Up trains arriving at Darwin, the Stationmaster there will arrange examination and collection of tickets just before arrival, and in all other cases the Guard will be responsible for collection, viz. :—

- (1) At unattended places where the passengers alight.
- (2) At last stopping place before reaching Pine Creek, Katherine, Mataranka and Birdum, respectively.
- (3) Collected tickets to be handed in at the first attended station reached after collection.
- (4) Stationmasters to forward all collected tickets and passes weekly with return (P.12) to the Manager, Darwin.

GENERAL.

12. The attention of all concerned is drawn to the instructions on pages 19 and 20 of the Accounts Instruction Book under the headings "Nipping of Tickets" and "Examination and Collection of Tickets and Passes," from which the following extracts are quoted :—

Nipping of Tickets.

1. All tickets and paper passes are to be examined and nipped in the presence of the passengers at checking and collecting stations.

2. Care must be exercised when nipping tickets to see that the date and number are not interfered with, also that the impression of the number and mark on nippers must, when the nippers employed bear distinctive numbers and marks, be made on the back of tickets.

3. Blank paper tickets and excess fare tickets must be nipped only in the spaces provided on such tickets and at each checking station in rotation.

Examination and Collection of Tickets and Passes.

2. All collected tickets and passes must be cancelled on the face by the cancellation stamp immediately after collection and after being nipped must be placed in a drawer or other place of security set apart for the purpose.

3. Under no circumstances must a collected ticket or pass be destroyed.

4. In the case of Blank Paper Tickets the Examining Staff at the first checking station must compare the coupon with the other portion to see that the particulars shown on each agree, and the coupon is then to be detached, and the remaining portion of ticket is to be returned to the passenger.

5. In cases where Blank Paper Tickets are issued to stations situated at a less distance than the first checking station, the coupon, after being checked with the other portion of ticket, is to be collected by the Examining Officer at the station at which the journey is commenced, and dealt with in accordance with instructions shown in clauses 4 and 9 under this heading.

6. Should the coupon be detached when presented by the passenger at the first checking station, the ticket is void, and the fare for the journey travelled must be collected, unless the Examining Officer is satisfied that the detachment occurred through ignorance. The fare must, however, be collected in every case where the coupon cannot be produced by the passenger at the first checking station.

100. STOWAWAYS.

Stationmasters, Guards, Conductors, and Porters must do everything possible to prevent persons travelling without proper tickets or passes, or evading payment of fare by secreting themselves in goods or live-stock wagons, &c. Should there be reason to suspect that persons are so travelling, the train must be carefully examined by the Guard, and, where possible, in company with the Stationmaster or other traffic employee. Any stowaway discovered on trains must be immediately removed therefrom. At stations where a police officer is stationed his assistance should be obtained, and the offender should be given into custody and prosecuted as provided in the By-laws.

In each case the Chief Traffic Manager must be promptly advised particulars by wire, which, at the first opportunity, must be followed by a full report.

It is very necessary owing to the peculiar conditions on the Trans-Australian and Central Australia Railways that stowaways be prevented from leaving terminal stations.

The Transportation Staff is authorized to call on the assistance of Gangers, Fettleers, or other employees, if required to assist in dealing with stowaways, and employees must render such assistance when called upon.

The check made by conductors of passenger trains on the Trans-Australian Railway should show whether there are any stowaways leaving terminal stations, and Senior Conductors should take action to have any stowaways found in passenger trains removed at the first stopping place after discovery. So far as Mixed trains are concerned, the Stationmaster at Port Augusta must examine the Down Mixed train before its departure from Port Augusta or depute some member of his staff to make the examination, and the Guard must also carefully examine the train. The Stationmaster, Parkeston, must examine the Up Mixed train before its departure from Parkeston or depute some member of his staff to make the examination, and the Guard must also carefully examine the train.

Any stowaways discovered on trains are to be removed therefrom. The circumstances applying in each case will decide what is best to be done thereafter, but generally it will be better to return the stowaway by first train to the station from which he was proceeding and prosecute him as provided in the By-laws. In all cases where practicable, instruction should be sought from the Chief Traffic Manager.

101. CONVEYANCE BY RAIL OF PERSONS SUFFERING FROM CONTAGIOUS AND INFECTIOUS DISEASES.

1. Except upon the approval of the Chief Traffic Manager, no person shall be permitted to travel on or over the Commonwealth Railways who is suffering, or suspected to be suffering, from any infectious or contagious disease, that is to say:—

Acute Anterior Poliomyelitis (Infantile Paralysis).
Anthrax.
Cerebro-spinal Meningitis.
Chicken-pox.
Cholera.
Croup (membranous).
Diphtheria.
Dysentery.
Encephalitis Lethargica.
Erysipelas.
Leprosy.
Measles.
Plague.
Pulmonary Tuberculosis.
Scarlet Fever.
Scarlatina.
Small-pox.
Trachoma.
Whooping Cough.
Yellow Fever,

and any of the fevers known by the following names or descriptions:—Typhus, typhoid, enteric, malarial, relapsing or puerperal (including all puerperal conditions depending on infection) or any other disease which has been, or may at any time be, declared to be an infectious disease.

2. All applications for permission for persons suffering from an infectious or contagious disease must be made to the Chief Traffic Manager, and the following particulars given:—

- Station party will travel from, and destination.
- Train by which party desires to travel.
- Number of patients and names.
- Number of attendants.
- Nature of disease.
- Name of person making application.

3. When authority is given for the conveyance of such patients, the approved train or vehicle must not be altered or varied without reference being made to and approval obtained from the Chief Traffic Manager.

4. Persons suffering from infectious or contagious diseases must be conveyed in a compartment or vehicle reserved and labelled for their exclusive use, and no passenger other than the attendants accompanying such persons are to be allowed to enter such compartment or vehicle. In all cases lavatory accommodation must be available in the compartment reserved for infectious cases, and under no circumstance are persons suffering from infectious or contagious diseases, or their attendants, to use the same lavatory convenience as other members of the travelling public.

5. The compartment and lavatory which have been set apart for the conveyance of the patient must remain closed and locked after the patient has been removed. Under no circumstances are passengers or employees to be allowed to enter the compartment or lavatory until the whole of the vehicle has been disinfected, fumigated, and cleansed.

6. A notice "*Not to be used until fumigated*" must be exhibited at the entrance to the isolated portion of the car immediately the patient has been removed, and this notice must continue to be displayed until the vehicle has been fumigated.

7. Immediately on the arrival of the train at the terminal station the Stationmaster must arrange for the vehicle in which the patient has travelled to be thoroughly disinfected, fumigated, and cleansed.

Under no circumstances are members of the public or employees (other than those engaged in the actual cleaning operation) to be allowed to enter the vehicle until the completion of disinfection, &c. Employees engaged on these duties must take full precautions to avoid danger of contagion or infection.

8. The whole of the carriage must be fumigated, whilst the compartment and lavatory reserved for the patient must, in addition be thoroughly sprayed with a solution of 2 per cent. formalin.

Floor coverings must, where possible, be taken up after the car has been fumigated, and treated separately with steam.

All linen and other washable articles of equipment must be boiled and must be kept apart from all other linen, &c., whilst being so treated.

Sleeping car rugs, after fumigation in the vehicle, must be thoroughly aired in sunlight as further disinfectant.

The wash-hand basin and fittings, W.C. pan, and the pail commode must be cleansed with 5 per cent. carbolic acid solution, or 2 per cent. formalin or cyllin solution.

The vehicle, after fumigation, &c., is complete, must be thoroughly aired for a period of 24 hours before again being placed in traffic.

9. The Guard of the train, on arrival at the terminal station, must personally inform the Stationmaster of the conveyance of a person suffering or suspected to be suffering from infectious or contagious disease, and point out the portion of the vehicle which has been set aside for the conveyance of the patient.

Guards must also give full particulars to other Guards by whom they are relieved at any portion of the journey.

102. DISINFECTION OF CARS AND VANS.

Cars, brake-vans, covered vans, dog-boxes and coffin chambers must be disinfected immediately after the conveyance of corpses, persons suffering from infectious or other diseases, or commodities such as fish, the refuse of which is deleterious or offensive.

The Stationmasters at Parkeston and Port Augusta are responsible for seeing that proper apparatus and supplies for disinfecting and fumigating are on hand at their stations. The Stationmaster, Quorn, is similarly responsible in respect of vehicles, &c., employed in local service on the Central Australia Railway, and the Stationmaster, Darwin, in respect of vehicles on the North Australia Railway.

Sleeping Cars.—All sleeping cars on the Trans-Australian Railway must be disinfected at Parkeston by means of Alformant lamps.

Vermin in Cars.—In all cases where Guards, Conductors or other members of the staff become aware of the presence of vermin in sleeping cars or other passenger stock, or if complaint be made by passengers in this respect, the circumstances must be reported immediately to the Chief Traffic Manager.

103. LOST PROPERTY.

Articles found on railway premises or rolling stock are the property of the Commissioner pending restoration to the owner, and such articles are to be handed in to the Stationmaster, who is to promptly advise the Chief Traffic Manager full particulars as to where, when, and by whom, found, &c.

At Port Augusta and Parkeston those employed in car cleaning will require to keep a sharp look-out, and all articles found are to be immediately handed to the employee in charge of the car cleaning, who must maintain a book record of such articles. The employee-in-charge referred to must deliver the articles to the Stationmaster concerned, who will require to initial the book and hold the property in safe custody.

At Port Augusta and Parkeston the Stationmaster must maintain a book record of articles found and handed in, other than what are referred to in the previous paragraph. The Stationmaster, Parkeston,

will arrange to maintain a similar record at the Kalgoorlie Dock Office, and the Officer-in-Charge at that point must promptly advise the former full particulars of articles handed in.

The Stationmaster at each other station must similarly maintain a book record of articles found.

The record book in use at each of the points named must show the date, train, car number, cabin number (if involved), by whom found, and how disposed of, and advice of all such articles recovered must be promptly reported to the Chief Traffic Manager.

The attention of all concerned is drawn to the instructions appearing in the Passenger Fares and Coaching Rates Book in regard to lost and unclaimed property and the sale thereof, and such instructions are to be read in conjunction with those appearing above.

104. CASH SAFES.

The instructions in the Accounts Instruction Book must be observed in regard to safes at stations and in offices and brake-vans.

Brake-van safes are not to be moved or changed without authority from the Chief Traffic Manager.

Care must be exercised in the handling of safes, so that handles and keys will not be bent or broken. When being unloaded from brake-vans they must not be allowed to drop on to the platform. Guards taking over at stations, *en route*, must examine safes, and if they are found to be damaged, or defective in any way, the matter must be brought under notice immediately. Failing such action, the Guard may be held responsible for any damage noted at the end of the trip.

When it is found that doors are working stiffly, the application of a little oil, or the removal of grit, &c., from around the hinges, will frequently overcome the trouble. On no account is undue force to be used to close a safe door.

When locks are stiff, or keys are not working properly, the matter must be reported promptly, so that necessary action may be taken.

Central Australia Railway.—Hopper safes travelling on the Central Australia Railway are to be secured in the brakevan of Mixed trains by means of a chain and Yale Lock. An eye bolt has been fixed in each brakevan, including joint rollingstock, to which the chain will be locked.

The Stationmaster, Port Augusta, must equip each safe leaving his station with a chain and lock which must accompany the safe throughout the journey.

At Quorn and other stations where it is necessary to transfer the safe, care must be taken to secure the chain and lock to the handle of the safe to prevent same from going astray.

Stationmasters, Quorn, Marree and Alice Springs, must give this matter special attention to ensure that each safe to be transferred at their station is released from the fastening on arrival and subsequently secured in the van to which it is transferred.

104A. LOCKS.

Great care must be exercised in the use of G., M., S. and V. types of locks and in cases where they do not open freely, the sand inside of them is to be knocked out to prevent damage to the inner workings of the lock when it is being opened. Damaged locks must be forwarded without delay to the Traffic Inspector, Quorn, from stations on the Central Australia Railway, and to the Chief Traffic Manager in other cases, together with a report as to—

1. How damage occurred.
2. Where lock located.
3. What action taken to secure points or building from which lock was removed.
4. Whether new lock required to replace damaged lock.

105. WATER WAGONS.

The working of and location of water wagons will be arranged by the Chief Traffic Manager. Unnecessary haulage of these wagons must be avoided. All concerned must avoid wooden water wagons remaining empty longer than is absolutely necessary, as the timbers when dry are liable to shrink, involving waste of water and expense in effecting repairs. T.C. water wagons are not to be attached to Passenger Trains.

106. INSTRUCTIONS IN REGARD TO TRUCK OR CART WEIGHBRIDGE OR WEIGHING MACHINE.

1. Every truck or cart weighbridge and weighing machine must be kept perfectly clean, and the steelyard should be kept bright so that the figures and marks may be clearly observed.

2. Each day before weighing is commenced the platform of the weighbridge, weighing machine, or scales, must be swept clean, and a scraper or piece of hoop iron passed round the platform to ensure a clear space between platform and frame.

3. Weighbridges, weighing machines, and platform scales are each fitted with one of the following description of balances:—

- (a) A screw turned by means of a loose key;
- (b) A loose ball working on a fixed screw;
- (c) A loose screw turned by means of a knob.

4. The principle of balancing the steelyard is the same in each case, and should be carried out thus:—

Bring the steelyard to rest on the bottom bearing, then adjust the balance weight and screw till steelyard rises very slowly from rest.

5. The balance should be tested at frequent intervals throughout the day, especially during wet weather.

6. A key is provided for the adjustment of all weighbridges and weighing machines, and should be kept in a secure place accessible to weighers.

7. Loose weights should be carefully handled, and must not be used for other than weighing purposes. Each weight must be examined daily, and if the adjusting lead is loose or has fallen out, it must be withdrawn from use and the defect at once reported to the Chief Traffic Manager.

8. Weights are adjusted to suit each machine, and must not be transferred to or used on any other machine.

9. Weighbridge offices must be kept clean and tidy, and no unauthorized persons are to be allowed admittance. Offices when unoccupied are to be kept locked.

10. The Stationmaster will be responsible for seeing that the duties specified in Clauses 1 to 9 inclusive are efficiently carried out by his Staff.

11. (a) The Workshops Foreman will be responsible for the efficient maintenance of weighbridges and for the safe custody of test weights. He must arrange for the weighbridges to be tested at least once every three months (except at stations north of Quorn on the Central Australia Railway, where the test is to be made once every six months) and have any adjustments necessary effected. Certificate as to the result of each test is to be furnished to the Chief Mechanical Engineer.

The Loco. Foreman at Darwin is responsible for the efficient maintenance of weighbridges, custody of test weights, and testing and adjusting of weighbridges once every six months on the North Australia Railway. Certificates as to results of tests are to be furnished to the Manager.

(b) The Traffic Superintendent or Traffic Inspector will be responsible for carrying out tests as to the accuracy of weighing machines and platform scales. Such appliances at Port Augusta are to be tested once every three months, and at other stations once every six months. A certificate as to the result of each such inspection is to be furnished to the Chief Traffic Manager.

12. Should a machine be found to be out of order between the periods of the foregoing inspections the matter must be immediately reported by the employee who discovers the defect. When the Traffic Superintendent or Traffic Inspector on his periodical inspections detects any defects or inaccuracies that require to be attended to by the Chief Mechanical Engineering Branch they must be immediately reported to that Branch.

13. The speed of any train or vehicle when passing over a weighbridge must not exceed 3 miles per hour. As speed in excess of this limit is liable to throw the bridge out of adjustment, any contravention of this instruction will be seriously regarded.

14. Care must be exercised by all concerned to ensure correct weights being obtained. Special care is necessary in the case of long vehicles requiring each bogie to be weighed separately, and to facilitate accuracy a white mark is to be painted on the centre of the bridge, and the staff concerned must see that the centre of the bogie is directly over this mark when weights are being taken.

15. A weighbridge book is to be kept at each weighbridge and particulars of the weighings are to be promptly recorded after the vehicles are passed over the bridge.

16. Weighbridges are to be thrown out of gear immediately weighing operations are complete.

Exception: 80-ton truck weighbridge at Port Augusta.

17. Weighbridge roads are not to be used unnecessarily for shunting purposes.

107. LABELLING OF TRUCKS.

The following instructions regarding the carding of trucks must be adhered to:—

- (a) Labels are to be fixed in such a manner as to prevent any possibility of their coming off the truck, and placed so that guards and shunters can see the destination of the truck.
- (b) Labels must be placed on both sides of the truck.
- (c) At unattended sidings Guards must label trucks if necessary, for which purpose they should carry a supply of labels.
- (d) When trucks, picked up at unattended sidings, have been labelled by loaders, Guards must compare labels with consignment notes.
- (e) Truck labels must be written in ink or black leadpencil. Indelible pencil must not be used.
- (f) "Perishable" or "Urgent" labels must be used when contents warrant it.
- (g) Old labels must be taken off, and kept for future reference, immediately trucks are unloaded.
- (h) When goods for more than one consignee are loaded in the same truck direct to an unattended siding, the names of the various consignees must be shown on the label.
- (i) Labels of roadside trucks must show name of each destination station.
- (j) When goods are loaded into trucks *en route* guards must label trucks or suitably endorse existing labels.
- (k) The weight of the contents of trucks outward loaded must be shown on the truck labels.
- (l) Empty live stock trucks sent to specific destinations to meet orders must be way-billed, but need not be labelled.

108. TESTING AND EXAMINATION OF CRANES, CHAINS, STEAM SHOVELS, GRABS, ETC.

NOTE.—The word "chain" must be understood to include the hook or hooks, rings and other attachments used with the chain for lifting or hauling purposes.

1. Responsibility for Safe Working and Maintaining of Appliances.—The responsibility for all cranes, chains and other lifting gear used in connexion with the Mechanical Engineering Branch shall rest with the Workshops Foreman. The Superintendent of Locomotive Running will be responsible for cranes, chains, coaling appliances, &c., used by the Locomotive Running Section. These Officers will be responsible for

seeing that they are tested and examined in accordance with these instructions. In the case of steam shovels, cranes and other appliances utilized by the Way and Works and Transportation Branches, the employee-in-charge will be responsible for seeing that they, together with any chains and slings, are tested and examined in accordance with these instructions.

On the North Australia Railway the Loco. Foreman $2\frac{1}{2}$ miles will be responsible for examination, testing, &c., of all cranes, chains and lifting gear.

2. Testing and Examination of Cranes.—All cranes, together with the chains or wire ropes working thereon, must be tested when erected by means of a test load 25 per cent. greater than the maximum working load. The structure of the crane, and particularly the jib, must be carefully examined by the employee in charge as frequently as possible. All parts of cranes and other lifting appliances, gear, jib, stays, posts, chains and slings must be examined by a qualified fitter once every six months and a report furnished to his immediate superior officer. A record of the testing and examination of all cranes of every kind described shall be kept in the office of the Mechanical Engineering Branch.

3. Lifting Capacity to be Marked on Cranes.—Each crane must bear a legible record of the maximum weight it is permitted to lift, and on no account is it to be used to lift a heavier weight. Should this record become defaced, steps must be taken at once by the employee in charge to have it renewed, and pending such renewal persons using the crane must be informed of its lifting capacity.

4. Power Cranes.—Power cranes are to be worked only by employees authorized by the Chief Mechanical Engineer.

5. Chains and Slings to be Tested and Branded.—The Stationmaster or employee in charge is responsible for seeing that chains and slings used by his staff are examined and tested in accordance with instructions, and that the safe load is clearly stamped on each. He is to keep a record showing when such examinations are due.

6. Examinations and Tests.—Chains must be annealed, tested, and examined in accordance with the following, but should they in a less period become badly worn or show any defects, they should be forwarded before the expiry of the stipulated time—

- (a) Chains working on steam cranes and other machinery to be annealed and tested every twelve months and examined every month.
- (b) Loose chains to be annealed and tested every three years and frequently examined for wear.

7. Old Rope Slings.—(a) The working loads for old rope slings in the varying conditions of wear cannot be conveniently scheduled, and stationmasters, officers in charge, foremen, and employees operating the cranes must therefore exercise proper discretion as to the strength of such slings, bearing in mind that a few months of exposed work may weaken the rope to an extent of from 20 to 50 per cent.

(b) Ropes should be taken care of, and when not in use kept in a dry place; when thoroughly wet a rope will suffer reduction in strength to an extent of about 50 per cent.

8. Ropes.—All crane ropes, rope slings, and tail ropes must be carefully examined before being used, and also specially examined on every Monday morning by the stationmaster or officer-in-charge or an employee appointed by him; the weekly examination by the person appointed will not relieve the men using the ropes, &c., from the responsibility of satisfying themselves that the articles are in proper order each time they are to be used.

Lashings are not to be used as slings.

109. TENT HOUSES AND FITTINGS.

Stationmasters or other employees of the Transportation Branch in charge of stations shall act as agents for the Way and Works Branch, in connexion with the tenancy of departmental buildings, and it will be the duty of the officer in control to keep close supervision over departmental residences, tent houses, &c., to prevent fittings being damaged or removed by unauthorized persons. Close inspection of buildings should be made by the Stationmaster or other employee-in-charge when vacated by tenants, and report made to the Chief Engineer of Way and Works, drawing his attention to any irregularities coming under notice. Each officer in control of a station must make a note in his Property Register Book of cupboards, stoves, and other movable fittings, and periodical inspections should be made to see that these are complete and in good order.

Applications regarding repairs, alterations, and improvements to tent houses must be referred to the Chief Engineer of Way and Works through the usual official channels of the branch in which the employee concerned is engaged.

110. "VALUE" LETTERS AND PARCELS CARRIED BY PASSENGER TRAIN.

The following instructions are to be observed:—

TRANS-AUSTRALIAN RAILWAY.

A safe is provided in the brake-van of each passenger train for the purpose of holding "Value" letters and packets. The Stationmaster at Port Augusta or Parkeston must hand the key of the safe over to the guard at the commencing station, as the case may be, together with any "Value" packets or letters consigned. A receipt must be obtained by the Stationmaster from the guard both for the key and the "Values".

At each station *en route* where guards are changed, the following procedure is to be observed—The guard being relieved will personally hand the key of the safe to the relieving guard. The latter will then open the safe, check and sign for the contents in the presence of the guard being relieved.

At the terminating station (Kalgoorlie or Port Augusta, as the case may be) the guard in charge will hand over the contents and key of the safe to the Officer-in-Charge and obtain a signature therefor.

In cases where the accommodation in the safe is insufficient for carrying "Value" parcels, such packets must be placed in one of the locked cupboards of the brake-van and the same procedure as to the checking and obtaining of receipts followed, as in cases of letters and packets conveyed in the safe.

CENTRAL AUSTRALIA RAILWAY.

A safe is provided in the brake-van of each Joint (S.A.R. and C.R.) mixed and passenger train, and in the brake-van of the Marree mixed and Alice Springs mixed and Limited mixed trains, for the purpose of holding "Value" letters and packets.

The keys of the safes in the Joint (S.A.R. and C.R.) brake-vans working on the Joint Service mixed and passenger trains are held by the Guards working those trains. At Quorn, where the State Guards relieve, or are relieved, a signature must be obtained, or given, for the safe keys and contents. On arrival at Port Augusta the key must be handed to the Stationmaster, who is responsible for its delivery to the Guard of the train by which the safe is again despatched.

The Stationmaster, Quorn, will hand a key of the safe to the Guard of the Marree mixed, the Alice Springs mixed and the Limited mixed train before departure from Quorn, and obtain his receipt for same. The Guard will be responsible for returning the key to the Stationmaster at Quorn on his return to that station, or in the event of his changing duty before his return, to the relieving guard, and for obtaining a receipt for same.

A receipt must be obtained by the Stationmaster or other employee concerned for each value letter or packet handed to the Guard, and the latter must obtain a receipt from the employee to whom he hands over such value letter or packet.

NORTH AUSTRALIA RAILWAY.

A safe is provided in the Brakevan of each mixed train for the purpose of holding cash bags, value letters and packets.

111. RESTRICTIONS ON THE IMPORTATION OF FRUIT, PLANTS, AND TREES FROM WESTERN AUSTRALIA TO SOUTH AUSTRALIA AND VICE VERSA.

(a) The importation of fruit from Western Australia into South Australia by rail is prohibited under State law, likewise the importation of apples, pears, and quinces into Western Australia. These commodities will not be accepted for transit over the border in either case, and passengers must refrain from the introduction of same either in luggage or otherwise.

An exception to the foregoing is permitted in the case of fruit for the dining car, which may be brought over the border from Western Australia, provided none of the unused fruit or containers is allowed to leave the train on the South Australian side of the border.

(b) Trees and plants, vegetables (including potatoes and onions), nuts and wine casks, apparatus, implements, and machines, are prohibited from entering South Australia from Western Australia. The following definitions must be observed:—

"Trees" and "Plants" include any or every part of a tree or plant.

"Fruit" means any fruit or other product of a tree or plant, and includes any or every part of such fruit or product.

"Wine Casks" include all casks and other receptacles (other than bottles) which contain or have contained wine, wine vinegar, brandy or grape juice.

"Apparatus" means all apparatus used in the manufacture of "wine, wine vinegar, brandy or grape juice."

"Implement and Machines" includes all tools, machines and equipment used in the production and manipulation of grape vines and grapes.

(c) An exception to (b) is made in the case of plants and trees (except grape vines and roots of vines) which may be consigned from any part of Western Australia by rail to Adelaide. These must not be taken off the train at any intermediate station except for transfer at break of gauge stations. Such consignments are only to be accepted on production of the approved declaration by grower, which must be attached to the entry and sent to Adelaide, as failing its receipt there delivery to the consignee will not be permitted by the State Department of Agriculture.

(d) When apples, pears, or quinces are purchased in South Australia for the dining car, any portion of same not required for consumption for dinner after leaving Cook on the Down journey must be put off at that station, and picked up again for use on the Eastbound journey. Apples, pears and quinces kept on dining car on Westbound trains for consumption leaving Cook must, if not consumed, be destroyed before reaching the border of Western Australia.

(e) Potatoes and onions may be imported into Western Australia, but are subject to inspection by an officer of the Department of Agriculture at Kalgoorlie.

112. STICKFAST FLEA.

Live poultry may be conveyed from Western Australia into any other part of the Commonwealth if accompanied by a certificate signed by the Chief Quarantine Officer (Animals) of the State of Western Australia to the effect that such poultry are free from chicken flea, more commonly known as stickfast flea, are from premises free from chicken flea, and are forwarded in new crates or receptacles.

113. PREVENTION OF SPARROWS ENTERING WESTERN AUSTRALIA.

The Government of Western Australia is extremely anxious that all possible precautions be taken to prevent the sparrow pest being introduced into that State. All employees are urged to keep a look-out for any trace of sparrows nesting in any part of rolling-stock. Any cases coming under notice, or precautionary measures which appear desirable, should be promptly reported.

113a. POULTRY.—IMPORTATION INTO NEW SOUTH WALES PROHIBITED.

Owing to the outbreak of a poultry disease known as "Newcastle Disease," New South Wales has been declared a quarantine area.

Commencing forthwith fowls, ducks, geese, turkeys, pigeons, or guinea fowls, whether alive or dressed, or the eggs of any of the foregoing must not be accepted for carriage by rail to any station in New South Wales, including Broken Hill, unless accompanied by a certificate signed by the Chief Inspector of Stock for the State in which consigned.

In the event of a certificate signed by the Chief Inspector of Stock being furnished, it must be attached to the waybill which is forwarded to the destination station.

113b. SANDALWOOD TRAFFIC.

Sandalwood traffic from the stations on the Trans-Australian and Central Australia Lines, *within the State of South Australia*, is subject to the provisions of the *Sandalwood Act 1930 (S.A.)*, which provide that no sandalwood may be cut, pulled, or removed from any land *whatever* (whether Crown lands or private lands) within the State unless a licence has been first obtained from the Department of Lands and Survey, Adelaide, and then only from the area specified in the licence and in accordance with the terms and conditions of that licence.

The regulations provide *inter alia* that:—

- (a) Wood shall be purchased from licensees only by the Co-operative Sandalwood Co. (S.A.) Ltd., Port Adelaide.
- (b) Only a certain quantity of the total each licensee is permitted to pull shall be delivered monthly to the registered dealer at Port Adelaide during the term of the licence, and in no case shall a licensee forward more than that quantity, without special authority.
- (c) Sandalwood may be pulled from private lands only under licence, and each log must be branded, and each bag sealed and signed by an officer of the Lands Department before being removed from such private property. The Lands Department will attend to inspection, &c., of wood to ensure this condition is observed.

Before Stationmasters permit sandalwood to be trucked, therefore, authority must be obtained from this office and particulars of consignor, consignee, the location and description of the property from which the sandalwood has been taken, and the approximate tonnage must be wired to this office when trucks are being ordered. Trucks must not be supplied until approval has been received.

All Guards and Acting Guards are to be specially instructed in accordance with the foregoing and informed that trucks containing sandalwood, loaded at unattended sidings, must not be attached to trains without specific instructions to that effect from the Stationmaster in charge of the accounting station for the siding.

It should be specially noted that these instructions refer only to sandalwood traffic within the State of South Australia and do not affect this traffic to Parkeston from stations on the Trans-Australian Line in Western Australia. (G.C.7/31—33/32.)

114. CONVEYANCE OF MAILS.

1. **Local Mails.**—All mails originating at and despatched from Port Augusta for Trans-Australian Line stations and Kalgoorlie must be accompanied by a mail way-bill compiled by the Post Office, Port Augusta, and this way-bill provides for a signature being given by the Postmaster at each station for the mails received.

Particulars of any mails picked up *en route* are to be entered on the mail way-bill by the guard, and the way-bill is to be handed over with the remaining mails on arrival at Kalgoorlie.

The identical form used as a way-bill on the Down journey is to be used on the next Up journey, the reverse side of the form being used for particulars of mails despatched from Kalgoorlie, which will be entered up by the Kalgoorlie staff. The same procedure as regards mails picked up *en route* and delivered at Port Augusta is to be observed as in the case of the Down journey.

2. **Inter-system Mails.**—Inter-system mails are accompanied by mail way-bills issued by the States concerned. In the case of mails *ex* Western Australia for the eastern States way-bills are made out by the Western Australian Government Railway Department, and for mails *ex* the eastern States for Western Australia way-bills are supplied by the Postal Department.

3. **General.**—The speedy conveyance and *safe custody* of mails are of the first importance, and all concerned are enjoined to give the subject special attention. Guards must afford all possible protection of mails conveyed in Brake Vans, and where possible secure them under lock and key. Mails at stations awaiting delivery or despatch must be similarly protected.

4. **Bulk Mail Vans to be Examined.**—Guards working through passenger trains are to frequently examine the locks of the doors of the bulk mail vans and see that they are properly secured. Guards in charge of trains leaving Port Augusta and Kalgoorlie are to specially examine these locks before starting train, and if any locks are missing doors must be secured before train starts. In all cases doors of Bulk Mail Vans must be sealed, in addition to being locked, and must be frequently examined *en route*. Seal numbers in and out must be recorded at terminal stations.

CENTRAL AUSTRALIA RAILWAY.

5. A leather wallet with loose letter bag attachment is provided in the brake van of the regular mixed train between Quorn and Marree for the conveyance of Postal mail matter, which is not conveyed by private mail bags, and, apart from the provision of private mailbags, the loose letter receptacle in the wallet is the only authorized means provided for the conveyance of postal mail matter between Quorn and Marree and Marree and Quorn. Guards must see that the wallet is placed conveniently in the brakevan for the reception of loose letters by persons who wish to use this service. Guards must not accept letters for postage nor permit letters intended for postage to be conveyed in the pigeon holes, drawers, or seats of brakevans.

TRANS-AUSTRALIAN RAILWAY.

6. Security of Through Mail Matter in Transit.—The following instructions are to be closely observed:—

- (a) Each door of the six doors of the bulk mailvans must be secured with "V" locks and sealed with regulation seals before departure from Port Augusta or Kalgoorlie as the case may be.
- (b) Through mails should not be loaded in other than the bulk mailvans, but should it be absolutely necessary to load mails in, say, a "V" van, the doors of the latter must also be secured with "V" locks and sealed.
- (c) Guards must examine the mailvan locks and seals before starting trains from Port Augusta and Kalgoorlie, and as frequently as possible *en route*, particularly when handing over to and taking over from other guards. Any irregularity to be at once reported.
- (d) Drivers and firemen are, as far as practicable, to watch mailvans at each watering station or other stopping place *en route* and promptly report to the guard any interference with the vans or any undue attention being paid to same by any unauthorized person, particularly at night time.
- (e) Travelling Train Examiners on Nos. 1 and 2 passenger are to examine locks and seals on mailvan doors at each stop in conjunction with the general examination of rolling-stock, with a view to raising an alarm if anything is out of place.
- (f) Any untoward incident must be promptly reported to the Chief Traffic Manager by wire if considered advisable, so that immediate steps can be taken to deal with any suspicious circumstance.
- (g) Stationmasters, Port Augusta and Parkeston, to watch supplies of "V" locks and regulation seals to ensure these being always available.

NORTH AUSTRALIA RAILWAY.

7. All mails despatched from Darwin must be accompanied by a mail waybill compiled by the Postal Department, providing for a signature being obtained by the Guard from each person receiving the mails at each place *en route*.

Particulars of any mails picked up *en route* are to be entered on mail waybills by the Guard, and the waybill is to be handed over with the remaining mails on arrival at Birdum.

A similar procedure is to be observed in the case of Up trains starting from Birdum (or other station).

115. CARE TO BE EXERCISED IN HANDLING AND STOWING PARCELS.

Parcels must be handled with care and stowed separately from mails and luggage, so that they will not be damaged *en route*.

116. DEPARTMENTAL TRAFFIC.

1. Conveyance by Passenger Train to be Avoided.—Conveyance of Departmental material by passenger trains, other than material of a very urgent nature, or perishables which cannot be conveniently despatched by Mixed Trains, must be avoided.

Employees ordering material to be conveyed by train must anticipate their requirements so that notice will, except in cases of urgency, be given to enable the material to be consigned and conveyed by Mixed Trains.

2. Consignment Note Way-bill for Departmental Material.—Form G.L.10 is a combined Consignment Note and Way-bill, and must be used for consigning and way-billing all Departmental material and provisions entitled to free carriage, but not including provisions forwarded in hired vans.

The form is to be prepared in triplicate. Two copies must be handed in at the forwarding station with the material, and the third copy must be received by the person receiving the consignment for transit, and is to be retained by the consignor.

Of the two copies handed in at the forwarding station, one is to be sent as a way-bill with the material, and the other is to be retained at that station for record purposes. These way-bills are to be numbered progressively by the forwarding station in accordance with instructions on pages 58-60 of the Station Accounts Instruction Book, and are to be treated similarly to way-bills for construction traffic, i.e., separate numbers at stations are to be given and separate abstracts rendered. All necessary particulars (including the weight) of Departmental material forwarded shall be entered on the Consignment Note Way-bill by the sender.

When forwarding from a station without resident staff, the Departmental material shall be consigned by the sender in the same manner as from a station with resident staff, but in this case the two copies shall be handed to the Guard, who will send one to the accounting station involved, and the other copy is to accompany the consignment.

When material is sent to an intermediate siding without resident accounting staff, it shall be entered on the Consignment Note Way-bill to the Accounting Station supervising such siding, and when the material is put out at the siding for which it is intended, the Guard must, when practicable, obtain the consignee's receipt. If unable to do so, the Guard must certify in the space provided:—"I certify that the above material was duly delivered at," and then forward the way-bill to the accounting station.

The Officers-in-Charge of the forwarding and receiving accounting stations shall satisfy themselves that the material entered on the Consignment Note Way-bill is entitled to free carriage, and that the work for which the material is intended is of such a nature as to come under the headings—"Working," "Repairs," "Renewals," or "Provisions."

117. COMMERCIAL ADVERTISING.

1. Stationmasters must advise the Chief Traffic Manager of names and addresses of persons likely to advertise on the railway premises, and promptly submit any application for advertising space.

2. No advertisement or other notice is to be displayed on any part of the railway premises without the authority of the Chief Traffic Manager.

3. Advertisements displayed on railway premises are the property of the Department and represent revenue. They should receive the careful attention and supervision of Stationmasters, and should any advertisements become displaced by the weather or any other cause they must be refixed immediately.

4. All breakages or shortages must be reported immediately.

5. Advertisements are not to be removed from display without instructions from the Chief Traffic Manager.

6. Advertisements are to be listed on station inventories.

7. Inter-system railway advertising matter is to be carried free.

118. CONVEYANCE OF EXPLOSIVES AND OTHER DANGEROUS GOODS.

1. The conditions under which explosives and other dangerous goods are to be carried are laid down in Book of General Rules, Goods Rates Book, and Passenger Fares and Coaching Rates Book.

2. **Portable Magazines.**—Not more than one kind of explosive shall be carried in any one portable magazine. The greatest care must be taken in handling portable magazines. They must always be carefully carried, and in no case must hand trucks be used. Before being returned all portable magazines must be opened and examined by the Stationmaster or person in charge in order to make sure that they are empty. Portable magazines must not be used for conveying or for stowing any article other than explosives.

Portable magazines are located at the undermentioned stations:—

Station.	Wooden Portable Explosive Magazines.		Iron Portable Explosive Magazines.	
	Large	Small	Large	Small
Port Augusta (Nos. 1, 2, 3 and 4)	4	..	11	5
Tarcoola (No. 5)	1	..	..	..
Parkeston (No. 6)	1	..	..	..
Quorn (Nos. 7, 8 and 9)	3	..	..	..
Darwin (Nos. 1 and 2)	1	..	1	..

Stationmasters at these stations will be held responsible for seeing that magazines are returned promptly to them; if delayed, report is to be forwarded to the Chief Traffic Manager.

Stock-taking of magazines will take place during May and November of each year, or as otherwise instructed by the Chief Traffic Manager.

3. **Conveyance of Inflammable Liquids.**—Employees are warned that consignments of kerosene, benzine, &c., are liable to be set on fire by contact with flame, and the attention of all concerned is specially directed to the following instructions:—

(a) Before receiving consignments of kerosene, benzine, benzoline, petrol, motor spirits or other inflammable liquid, each package must be closely inspected, and if any trace of leakage is detected such package must not be accepted for despatch.

(b) Inflammable liquids are not to be unloaded into or stored in goods sheds unless specially authorized by the Chief Traffic Manager, but must be placed outside the sheds apart from any inflammable goods, and notice given to the consignees on the day of arrival that such goods are at the owner's risk.

(c) Kerosene, benzine, &c., must be so loaded as to minimize risk of contaminating other goods should the receptacles leak in transit.

4. **Conveyance of Lime.**—Lime in lots of two tons or over must be loaded in iron trucks. Trucks containing lime should be carefully sheeted. When covering any consignments of lime, care must be taken to see that tarpaulins are absolutely waterproof, that a proper ridge is made, and that the tarpaulins are so arranged and secured that every portion of the contents of the truck is protected.

If, while a truck of lime (slacked or otherwise) is, on hand, heavy rain should appear, the truck is to be placed under cover, if practicable, or isolated and should be examined occasionally in order to detect and deal with any indications of fire. The most effective method of dealing with bagged lime that has fired in a truck is to remove the tarpaulin, pull the burning bags away and cut them open; the lime thus loosened will smother the fire.

Trucks containing lime must be marshalled as far as possible from passenger cars and trucks containing explosives or inflammable liquids, and the consignments must be specially examined *en route* by Stationmasters, Guards and others concerned so as to promptly detect any sign of fire. (O.C. 47/30.)

5. **Conveyance of Explosives and Dangerous Goods by Passenger Train.**—Attention is drawn to instructions in Passenger Fares and Coaching Rates Book regarding conveyance of explosives, inflammable and other dangerous goods by passenger train.

6. **Westinghouse Brake Not to be Used on Vehicles Conveying Explosives or Dangerous Goods.**—Owing to the danger of sparks from the wheels, the Westinghouse brake is not to be used on explosive vans or other vehicles used for the conveyance of explosives or inflammable goods.

Guards and train examiners must see that the continuous brake on such vehicles is cut out when under load, and that the continuous brake is cut in again when vehicles are empty.

7. **Kerosene and Benzine to be Carefully Handled.**—The staff concerned must see that cases of kerosene and benzine are loaded in such a manner as will insure that cases loaded on top of others do not fall in transit; that they are handled carefully when being loaded and unloaded or moved in truck, and that unnecessary rough shunting of vehicles in which these classes of goods are loaded is avoided.

8. **Conveyance by Passenger Train.**—Explosives and other dangerous goods must not be carried on passenger trains without the authority of the Chief Traffic Manager.

119. CONVEYANCE OF DEPARTMENTAL SUPPLIES OF KEROSENE, BENZINE, ETC.

1. In order to obviate the loss of benzine and kerosene by persons wrongfully taking delivery or by damage, all Departmental consignments are to be despatched four-weekly in a covered van from Port Augusta, and Guards must re-lock it after making deliveries therefrom.

2. As a further precaution, the van, in addition to being locked, must be sealed on both sides during the time it is standing under load at Port Augusta. Shunters and Guards concerned must examine the seals and/or locks when taking over the van, and immediately bring under notice any instance where it is not secured in accordance with these instructions.

Petrol drums loaded in the Stores Vans in use on the Trans-Australian and Central Australia Lines (VS. 737 and NVS. 504) are stacked up to a maximum height of three drums, the rows near the centre of the truck being reduced to a height of two drums and one drum. The vans are fitted with steel rods or wire rope, covered with rubber piping, which can be adjusted across the trucks so as to remove any possibility of the drums falling during transit. These rods and ropes are properly fitted when the vans are loaded in the Stores Yard, and Guards must replace them after each delivery.

It is essential that every care shall be taken so that the transit and handling of this class of traffic shall be safely performed, and any neglect which has been shown or any defect which has developed should be noted by Guards on the list of contents which accompanies each journey of the Stores Vans. (O.C. 40/31.)

3. The Storekeeper will prepare a typed list and give it to the Stationmaster showing the whole of the contents of the van in mileage sequence. This list must be obtained by the Guard running the train by which it is despatched from Port Augusta, and it is to be passed on from Guard to Guard and delivered to the Stationmaster at the Terminal Station. The latter will return it to the Storekeeper by the first available train, and will immediately report any case where such list is not received.

4. Guards must show on this list any shortages or damages which come under their notice. A column will be provided on the list for this purpose.

5. During the interval the van is not required for the conveyance of Departmental stores and oil, it may be used for Local Traffic as convenient, but in such cases the Stationmaster, Port Augusta, must make such arrangements as will ensure its return in ample time for loading and despatch on its four-weekly trip with Departmental oil and stores. Others concerned must strictly observe instructions given by the Stationmaster, Port Augusta, in regard to the movements of the van.

6. The van for this purpose on the Trans-Australian Railway will work right through to Parkeston, and is to be returned without fail to Port Augusta by first Up mixed train.

7. On the Central Australia Railway an N.V.S. van, fitted with "S" locks secured by chains to the van, has been set aside for the purpose, and is distinguished by the words "Departmental Oil and Stores Van." painted on each side.

The van will work through to Alice Springs, and is to be returned by the first Up Mixed train to Quorn, thence to Port Augusta.

The van will be despatched from Quorn by No. 5 Down to Marree, and will be attached to the Down Through Mixed train at the latter station.

120. VEHICLES LEFT STANDING ON TRIANGLES.

Vehicles must not be allowed to stand (except temporarily during shunting operations) on the Triangle at any station, unless the circumstances specially warrant it, and the triangle is equipped with choke blocks. The choke blocks must be securely locked across the rails when the triangle is occupied by vehicles.

121. TELEGRAPH AND TELEPHONE BUSINESS.

1. **Necessity for Promptness and Accuracy.**—Prompt attention to telegraph and telephone instruments is most important.

Employees should bear in mind that any delay in answering telegraph or telephone calls means wasting the time of other employees, and may cause delays to trains, or serious hindrance to railway business. All concerned with the transmission of messages by telegraph or telephone, either directly or indirectly, must make every effort to have the business conducted with accuracy and despatch.

2. **Messages Strictly Private.**—Employees must treat all telegraph and telephone business as strictly private; by divulging the contents thereof they are liable to dismissal from the service. No person unless specially authorized is to be admitted to telegraph rooms or other places where messages are sent or received.

3. **For Official Use Only.**—Telegraph and telephone instruments are to be used for official business only, and it is the duty of operators and telephone attendants to call attention to any violation of this instruction.

4. **Trunk Line Telephone Calls.**—Trunk line telephone calls are not to be made by means of departmental instruments except for strictly official business, and the officer concerned is to keep a record of the call and the business which necessitated it.

5. **Hours of Attendance.**—The hours of attendance at telegraph and telephone instruments will be as arranged by the Chief Traffic Manager, and these hours must be strictly adhered to. Any neglect in this respect will be treated as a serious dereliction of duty.

6. **Messages for the Public.**—On no account are messages to be sent or received, or questions asked, for the public free of charge. All such communications must be paid for at the postal rates, and the message stamped and treated in the same manner as an ordinary telegram.

7. **Inquiries re Missing Luggage, Parcels, &c.**—Inquiries by telegraph or telephone for missing luggage are to be paid for by passengers if the luggage goes astray through their own neglect. If sent to more than one station, full rates are to be charged for each station to which the message is sent.

8. **"Collect" Wires not to be Accepted.**—On no account are telegrams received from the travelling public to be made "Collect." In all cases the charges must be collected.

9. **Messages Transmitted through Telephone.**—Messages transmitted over the telephone are to be repeated by the person receiving. The sender is responsible for having the message repeated, and for satisfying himself that it has been correctly transmitted.

10. **Telegraph and Telephone Business to be Curtailed.**—Attention is called to the necessity for restricting the use of telegraph and telephone messages to those cases where the business is of such urgency as to justify a resort to this mode of communication, and in which a less expeditious means will not answer the purpose.

It is difficult to lay down any specific rules as to when and under what circumstances it may be necessary for telegrams to be despatched, but every employee is expected to exercise due discretion in the matter and to observe the following general directions:—

- (a) Telegrams are not to be sent when a letter by train will suffice.
- (b) They should be made as short and concise as possible.
- (c) Full advantage must in all cases be taken of code abbreviations.
- (d) Words such as "Mr.", "Please", &c., must be omitted, and such omission is not to be regarded as discourteous.
- (e) References to correspondence to be left out as far as practicable.
- (f) Prompt attention must be given telegrams, and a reply, if necessary, sent quickly to avoid repetition.

The officer in charge at stations must exercise a close supervision over the despatch of messages, and, where necessary, report the receipt of telegrams which have been sent in contravention of these regulations.

11. Method of Transmitting and Receiving Messages.—When a station has a message to send he will call three times in succession the station to which message is to be sent, and will then sign by giving his own station call.

The operator at the station called will then reply "G.A." (Go ahead), and sign with his station call.

The message will then be transmitted in following order:—

- Number of words.
- Station from.
- Charges paid or O.S., as the case may be.
- Name and address of person to whom message is to be delivered.
- Full stop.
- Body of message then to be sent.
- Full stop or the letter "x".
- Signature of sender.
- Time lodged.
- Sending station call to be signed.

The system to be adopted in counting railway service telegrams is to count the text of the message and add four words for the address and signature.

If two or more messages are to be sent, "A.R." signal is to be given after "Time lodged" has been sent, and the station sending the messages must not sign until the business for the station to which he is sending is completed. He will then quote number of messages sent and sign his station call.

The receiving operator—if message (or messages) be clearly received and the number of words including address and signature correspond with the number given by the sending station—will give the signal "O.K.", repeat the number received, and sign with his station call. The sending operator will then mark the message (or messages) with time sent and his initials. The receiving operator will show the time received and initial the messages.

If, after calling for some time, the transmitting station is unable to raise station required, he must note on the message "station out of call" (O/c) and time called, and, whenever practicable, get another station (preferably one beyond station called) to note the station out of call. The telephone, where available, must be used to assist in obtaining the attention of the station required. This is essential, as in case of delay to message, the sending operator must show what action he took to transmit it. When a station is called, the operator must at once attend to the instrument, and, if unable to take the message, must give the signal—

(1) . — — — — (wait).

Any such signal received must be noted on the message by transmitting station.

Officers who, whilst engaged at the telegraph instrument, may be hurriedly called away by arrival of train or other urgent matter, must not leave the key open. If it is absolutely necessary to leave the instrument, the "Wait" signal must be given, and the key at once closed.

Where tape instruments are in use, all messages sent and received must be recorded on the tape for purpose of reference.

As the telegraph record is likely to be destroyed if the tape is in any way mutilated, pieces must not be cut off the tape for reference purposes. If necessary to produce the record and send it to the Head Office or elsewhere, the whole roll of tape must be forwarded, and the place required to be examined carefully marked with red ink. The tape must be carefully handled whilst undergoing examination, and must be securely packed in suitable parcel before being sent away.

It will be the duty of an officer who thus sends a tape away to see that he gets it back within a reasonable time, or, if it be retained at the Head Office, or elsewhere, that he receives an advice to that effect.

Telegraph tapes must be carefully preserved for purposes of reference for twelve months, and must then be burnt.

A record must be kept, in a book provided for the purpose, of all messages received, and a signature must be obtained in every instance from the person to whom the message is delivered unless otherwise instructed by the Chief Traffic Manager.

Tapes must be properly timed and dated and initialed on the lines by each operator when taking up duty, and also when turned from one side to the other.

The tape must also be marked when brought into use and finished.

All messages are to be distinctly written in ink or indelible pencil and the proper telegraph form must be used where supplied.

Each station must keep at least two spare tapes.

Telegraph messages addressed X must be curtailed except in very special cases. Telegrams of this character must be sent only with the personal approval of the officer in charge. When the call is used all stations must answer.

At stations where certain members of the staff are authorized to send telegrams, the officer in charge must periodically examine several days' messages, and take up any case in which a telegram has been sent unnecessarily, or has not been made as short as possible.

In the event of defective working of the line preventing stations at great distances apart from working as usual, employees at intermediate

stations are directed to render every assistance in their power to the station on either side, by repeating the business or assisting to "break" for the receiving station, and otherwise as may be required.

Operators must send plainly, and proper spacing must be observed. Clearness of signals is the first consideration, and speed must be subordinated to it.

12. **Attention to Instruments.**—Employees must give as much attention as possible to their instruments. At stations where there is only one operator in charge he must attend his instrument during his hours of duty as often as practicable.

When a failure of Telegraph or Telephone communication occurs, steps must be taken at once to locate and rectify the fault. The District Lineman for the district must be immediately informed either in person or by telegram. In addition, the circumstances (including the time of the failure) must be promptly telegraphed "G.M." by the Stationmaster concerned to Port Augusta, using the code address "Fail." When the fault is rectified a telegram similarly addressed is to be promptly sent quoting the time of removal and briefly the cause of the failure. Subsequently full reports of the occurrence must be forwarded to: (a) the Chief Traffic Manager by the Stationmaster; and (b) the Superintendent of Signals and Lighting by the District Lineman on the prescribed Form (C.R. 92).

The Superintendent of Signals and Lighting will in turn forward the District Lineman's report to the Chief Mechanical Engineer with any comment that may be necessary.

13. **Abbreviated Telegraph Addresses.**—The following code words are to be used for telegraph addresses and signatures:—

Code.	Interpretation.
C.T.M.	.. Chief Traffic Manager
C.M.E.	.. Chief Mechanical Engineer
ENGR.	.. Chief Engineer of Way and Works
STORES	.. Comptroller of Stores
JOINT	.. Heads of Branches
FAIL	.. Chief Traffic Manager, Chief Mechanical Engineer and Superintendent of Signals and Lighting
TRACO.	.. Chief Traffic Manager, Superintendent Locomotive Running
LOCO.	.. Superintendent Locomotive Running
ACCTS.	.. Accounts and Audit Officer
ELEC.	.. Superintendent of Signals and Lighting
PROV.	.. Manager, General Stores
MTCE.	.. Superintendent of Maintenance
ROAD	.. Roadmaster
SUPR.	.. Supervisor, Dining and Sleeping Service
BLDGS.	.. Superintendent of Buildings
W.O.	.. Welfare Officer
MED.	.. General Secretary, Medical and Provident Fund
SHED	.. Shed Foreman
LINE	.. District Lineman
GOODS	.. Goods Office
BOOK	.. Booking Office

14. Universal Morse Code.—

Letters.

a — — —	h — — — —	o — — — —	u — — — —
b — — — —	i — — —	p — — — —	v — — — —
c — — — —	j — — — —	q — — — —	w — — — —
d — — — —	k — — — —	r — — — —	x — — — —
e — — — —	l — — — —	s — — — —	y — — — —
f — — — —	m — — — —	t — — — —	z — — — —
g — — — —	n — — — —		

Figures.

1 — — — — —	6 — — — — —
2 — — — — —	7 — — — — —
3 — — — — —	8 — — — — —
4 — — — — —	9 — — — — —
5 — — — — —	0 — — — — —
Bar of division	— — — — —

Punctuation and other Signs.

Full stop	.. .. .	(.) — — — — —
Semicolon	.. .. .	(;) — — — — —
Comma	.. .. .	(,) — — — — —
Colon	.. .. .	(:) — — — — —
Note of interrogation or request for the repetition of anything transmitted which is not understood	.. .. .	(?) — — — — —
Note of exclamation	.. .. .	(!) — — — — —
Apostrophe	.. .. .	(') — — — — —
Fresh paragraph	.. .. .	— — — — —
Hyphen	.. .. .	(-) — — — — —
Parentheses (to precede and follow the words placed between)	.. .. .	() — — — — —
Inverted commas	.. .. .	(") — — — — —
Underline (to precede and follow the word or sentence)	.. .. .	— — — — —

15. **Abbreviated Signals.**—The following abbreviated signals may be used in repeating figures, but never otherwise:—

1 — — —	4 — — — —	7 — — — —	0 — — —
2 — — —	5 — — — —	8 — — — —	Bar of
3 — — —	6 — — — —	9 — — — —	division — — —

16. Special Signals.—

1	-----	Wait a minute.
2	-----	What is the time?
4	-----	Where shall I go ahead?
7	-----	I do not know.
9	-----	Obtain a reply at once
		Waiting.
10	-----	Close your key.
25	-----	Make dots.
28	-----	Do you get my signals O.K.?
34	-----	I shall be absent for a
		short time. Inform any
		station calling.
35	-----	Have returned. Have you
		any business?
77	-----	Am busy. Will call you.
48	-----	Heavy thunderstorm. Am
		cutting out.
AR	-----	Another.
G.A.	-----	Go ahead.
O.K.	-----	Message duly received.
G.B.	-----	Good-bye (when all clear.)

17. Length of Signals and Spacing.—

A dot is the unit of length.

A dash is equal to three dots.

The space between the signals forming a letter is equal to one dot.

The space between each letter is equal to three dots.

The space between each word is equal to five dots.

18. Code of Prefixes, &c.—

D --- G --- This prefix is to be used only in cases of utmost urgency or accident, and will take precedence over all other business. Upon receipt of this signal the transmission of all business on the line must cease.

"L.C." is to be used for Staff "Authority", Authorization Orders, or Line Clear, and is only superseded by "D.G." Signal.

G --- M --- is for matters of urgency, and will take precedence over all ordinary business and ranks next in importance to "L.C." Signal.

T --- A --- This signal takes precedence over ordinary business, and may be used when actually necessary for obtaining circuit to report trains in and out or in connexion with special train advices, &c.

D --- B --- Ordinary Departmental message.

S --- Postal telegram.

19. If any of these signals are improperly used to obtain the circuit, a report must be submitted to the Chief Traffic Manager by the stations interrupted. Discrimination must be exercised in connexion with the use of special prefixes, which are only provided for emergencies.

20. (1) The following are the names of the stations on each circuit and the calls applicable to each:—

(a). Port Augusta—Kalgoorlie Circuit.

Port Augusta Post Office	..	P.R.	-----
Port Augusta Railway	..	A.	-----
Pimba	..	C.	-----
Kingoonya	..	F.	-----
Tarcoola	..	G.	-----
Tarcoola Post Office	..	T.X.	-----
Barton	..	J.	-----
Cook	..	L.	-----
Cook Post Office	..	O.	-----
Forrest	..	F.R.	-----
Loongana	..	L.O.	-----
Rawlinna	..	R.A.	-----
Rawlinna Post Office	..	R.X.	-----
Zanthus	..	Z.	-----
Parkeston	..	P.N.	-----
Kalgoorlie Post Office	..	K.A.	-----

(b). Port Augusta—Alice Springs Circuit.

Port Augusta	..	A.	-----
Quorn	..	Q.	-----
Hawker	..	K.	-----
Parachilna	..	R.	-----
Beltana	..	B.	-----
Copley	..	Y.	-----
Farina	..	N.	-----
Marree	..	M.	-----
Edwards Creek	..	W.	-----
Oodnadatta	..	O.D.	-----
Rumbalara	..	R.L.	-----
Alice Springs	..	S.A.	-----

(c). Quorn—Adelaide (S.A.R.) Circuit.

Quorn	..	Q.	-----
Bruce	..	B.U.	-----
Hammond	..	H.M.	-----
Carrieton	..	C.N.	-----
Eurelia	..	E.R.	-----
Orroroo	..	O.	-----
Peterborough	..	P.	-----
Adelaide	..	A.R.	-----

(d). Darwin—Katherine Circuit.

Darwin	..	P.D.	-----
Pine Creek	..	R.K.	-----
Katherine	..	K.N.	-----

NOTE.—The connexions to Post Offices have been granted the Postal Department on the distinct understanding that the Railway Department has priority at all times to use the Railway circuit, and that the Postal Department will only make use of the circuit from the Repeater Stations at Tarcoola, Cook and Rawlinna as a means of communication between those offices in connexion with the arrangement of patches, testing, &c., in the event of a fault in the Postal Circuits, and for the transmission of public telegrams to and from intermediate Post Offices.

The arrangement is a reciprocal one in that this Department will, in cases of emergency, be granted the use of any facilities belonging to the Postal Department.

Operators must mutually arrange with Postal Operators the granting of circuit to the latter when required, to the best advantage to Postal requirements and Railway business. Any undue interruption to Railway business on account of Postal offices being on circuit must be promptly reported.

The Post Offices at Tarcoola, Cook and Rawlinna are looped in on the Railway Circuit, and the circuit to each is controlled by a screw plug in the Railway Station office. The insertion of the plug cuts the Post Office off the circuit in each case.

21. Telegraph Code.—Full use must be made of the telegraph code. It is the duty of employees despatching or receiving messages to have a copy of the code in their possession whether at their home station or away on duty.

22. Adjustment of Instruments.—(a) During thunderstorms the operators at stations within the disturbed area should plug the lines through, i.e. plug out their instruments, until the severe lightning discharges cease, so as to minimize the possibility of damage to instruments.

(b) At stations located away from the area of the electrical disturbance, the operators must pay particular attention to the adjustment of the instrument relays, and when not actually using the line, make frequent calls to Port Augusta, and frequently observe the galvanometer to ensure that proper adjustment is maintained to promptly detect faults which may occur as a result of the storm.

(c) Owing to the variation in the adjustment of the relay necessary during damp weather and at night time, it is necessary at all times that operators should pay close attention to the adjustment of their instruments and in this regard they should be on the alert to notice whether the sound signals are coming through clearly when the instrument is working, and when the instrument is at rest they should pay attention to the galvanometer and occasionally test the adjustment with Port Augusta.

(d) At night time it is particularly important that close attention to the adjustment with Port Augusta be given, and in order to ensure that this is given, the operator at each station must during his hours of duty at night time, test the adjustment with Port Augusta at least once every hour.

The Operator at Port Augusta must be in close attendance to promptly answer the calls, and if calls are not received regularly he must endeavour to raise the stations concerned.

(e) Should the line be faulty, and a station, after calling a reasonable time, be unable to raise Port Augusta, the Operator should endeavour to raise the nearest station to Port Augusta where there is an Operator on duty and endeavour to establish communication through that station. If this is unsuccessful the Operator must take such steps as are necessary to ensure that, in the event of an emergency, messages of urgency may be transmitted to Port Augusta by alternative means with the least possible delay.

(f) All interruptions or faults in the Telegraph or Telephone circuits must be immediately reported to the District Lineman concerned and particulars wired to code address "FAIL" so that the least possible delay will occur in restoring communication.

23. Control of Circuit.—In order that greater efficiency in the transaction of telegraph business may be obtained, the Operator at Port Augusta will control Telegraph Circuits terminating there, so far as the conduct of the business is concerned. The control to be exercised by the Operator at Port Augusta will be—

- (a) To decide which station shall have circuit when otherwise time might be wasted by two or more stations contesting circuit.
- (b) To grant permission to any station to use the earth plug for any purpose other than testing.
- (c) To arrange as necessary when a faulty circuit renders it necessary for an intermediate station to repeat business.
- (d) To see that such action as is necessary is taken to advise the District Lineman or others concerned when a fault exists. In this connexion the Operator at Port Augusta must keep in touch with action taken by Operators at stations outside Port Augusta to have the fault removed. He must as necessary and as far as possible direct or carry out the tests required in order to localize the fault, and Operators at other stations must be in readiness when a fault exists to assist him as he may request.

At the first opportunity after coming on duty each Operator must test the adjustment of the instrument with Port Augusta, and exchange the "Good Morning" signal with the Operator there.

Before going off duty Operators at stations outside Port Augusta should call Port Augusta, inquire if there is any business and get the "Good Night" signal.

A book must be kept at each station in which must be recorded time "Good Morning" and "Good Night" signals are given and received, all details in connexion with faults, date and times adjustments with Port Augusta are tested, and matters out of the ordinary routine. These books must be available for inspection at any time.

24. Telephone Service.—

Trans-Australian Railway.—To facilitate communication between adjacent attended Electric Staff Stations, or by portable telephone, with the attended station on either side from any point within the circuit, Western Electric Wall telephones connected with Electric Staff Circuits, in place of telephonettes and transformers, have been installed at *Attended Electric Staff Stations*.

The circuits and call signals are as under:—

Circuit No. 1.	*Port Augusta	..	1 long.
	*Pimba	..	2 long.
Circuit No. 2.	*Pimba	..	2 long.
	Post Office, Wirra-	1 long, 1 short, 1 long.	
	minna		
	*Kingoonya	..	3 short.
Circuit No. 3.	*Tarcoola	..	1 long, 2 short.
	*Barton	..	2 long.
Circuit No. 4.	*Barton	..	2 long.
	District Lineman,		
	Watson	..	3 long.
	*Cook	..	1 long.
Circuit No. 5.	*Cook	..	1 long.
	632 miles	..	1 long, 1 short, 1 long.
	Forrest (Operator's		
	residence)	..	1 long, 2 short.
Circuit No. 6.	*Loongana	..	2 long.
	*Loongana	..	2 long.
	*Rawlinna	..	1 long, 2 short.
Circuit No. 7.	*Rawlinna	..	1 long, 2 short.
	*Zanthus	..	2 long.
Circuit No. 8.	*Zanthus	..	2 long.
	District Lineman,		
	Karonie	..	3 long.
	*Parkeston	..	1 long.

It should be noted that telephonettes have not been removed from unattended stations and are still available for communication with the Electric Staff Stations on each side. To obtain the maximum of efficiency from these instruments it is necessary to depress the magneto generator plunger on the side with which conversation is being carried out. This increases the volume of speech at both ends of the circuit.

The telephone communication between attended stations must be tested daily, and in the event of failure, advice must be forwarded in accordance with Clause 12 of this Regulation. The test must be made by exchange of bell calls and conversation between the stations at each end of the circuit.

* Wall Telephones connected with the circuits are also provided in Station Masters' residences at these places. The Code ring is as for the Station office in each case.

At Port Augusta, Tarcoola, Cook, Rawlinna and Parkeston telephone connexion between the Station office and the Post Office is provided, which may be switched on to the Electric Staff Circuit to enable the District Lineman to communicate direct with the Post Office in connexion with faults, &c., on postal lines. The Stationmaster will switch the line through when required for this purpose, and must be careful to disconnect the line from the Electric Staff Circuit immediately the conversation is completed.

Central Australia Railway.—Phonopores are installed on the Port Augusta-Quorn telephone circuit at the locations shown below. The calls for the various offices are as follow:—

Port Augusta—

Chief Traffic Manager (General	..	..	1 short 1 long.
Office)	..	..
Chief Engineer of Way and Works	..	..	1 long 1 short 1 long.
(General Office)	..	..
Stationmaster's Office	..	..	2 long.
Telegraph Office	..	..	1 long.
Supt. of Locomotive Running	..	..	1 long 1 short.
<i>Stirling</i>	..	..	1 long 2 short.
<i>Saltia</i>	..	..	2 long 1 short.
<i>Woolshed Flat</i>	..	..	2 short 1 long.

Quorn—

Telephone Room	..	..	2 short.
Traffic Inspector	}	..	1 short 1 long 1 short.
Roadmaster		..	
Stationmaster	..	..	2 short.
Station Master's Residence	..	..	5 short.
Shed Foreman	..	..	3 short.

Direct connexion from the phonopore circuit to any telephone at Port Augusta can be obtained by calling Port Augusta telegraph office, and asking to be connected through switchboard.

The Telephone calls between Quorn and Alice Springs are:—

† Willochra	..	..	1 short 1 long.
† Gordon	..	..	1 long, 3 short.
† Wilson	..	..	1 short 2 long.
Hawker	..	..	2 short 1 long.
† Hookina	..	..	1 long 1 short.
† Mern Merna	..	..	2 short 1 long 1 short.
Mern Merna Cottages (Gang			
No. 6)	..	..	3 short 1 long.
† Edeowie	..	..	2 long 1 short.
† Brachina	..	..	3 long.

† Unattended.

Meadows Cottages (Gang No. 7)	1 long 2 short.
Parachilna	4 short.
335 Miles (Gang No. 8)	1 short 1 long 2 short.
† Nilpena	2 long.
* Beltana Station	1 long.
Copley	1 long 1 short.
383 Miles Cottages (Gang No. 10)	2 short 1 long.
† Lyndhurst	1 long 2 short.
Farina	2 long 1 short.
Farina Cottages (Gang No. 11)	3 short.
* Marree—	
Station	1 long 1 short 1 long.
Roadmaster	1 short 1 long 1 short.
No. 13 Flying Gang (Wangianna)	3 short.
No. 14 Flying Gang (Curdimurka)	1 short 2 long.
† Coward Springs	4 short.
No. 15 Flying Gang (Irrappatana)	2 short 1 long.
† William Creek	1 long 3 short.
No. 16 Flying Gang (Anna Creek)	1 long 1 short.
Mt. Dutton	2 long 1 short.
* Edwards Creek	1 long 2 short.
* Oodnadatta Station	2 long.
Oodnadatta Roadmaster	1 long 2 short.
No. 19 Flying Gang (Wire Creek)	3 short.
No. 20 Flying Gang (Pedirka) ..	3 long.
† Abminga	2 long 1 short.
No. 21 Flying Gang (Abminga)	1 short 1 long 1 short.
No. 22 Flying Gang (Finke) ..	1 long 3 short.
Rumbalara	1 long.
No. 23 Flying Gang (878 Mile) ..	1 short 1 long.
Bundooma	2 short 1 long.
No. 24 Flying Gang (Rodinga) ..	3 short 1 long.
No. 25 Flying Gang (Ewaninga)	1 long 1 short 1 long.
Alice Springs	1 long 2 short.

North Australia Railway.—The telephone calls between Darwin and Birdum are:—

Darwin	1 long.
Roadmaster	4 short.
Loco. Shops	3 long
22 Mile	2 long 2 short.
Adelaide River	1 long 1 short.
Burrundie	2 long 1 short.

* Repeating stations. † Unattended.

Pine Creek	2 long.
Cullen River	1 long 2 short.
Edith River	1 long 3 short.
191 Mile	2 short 1 long.
Katherine	3 short.
Mataranka	4 long.
Birdum	2 short 2 long.

122. PORTABLE TELEPHONES.

1. Allocation of Portable Telephones.—Portable telephones and rods are to be carried—

- (a) in the brake-van of each train;
- (b) by each Fettingling Ganger in charge of motor section car length on Trans-Australian and Central Australia Railways; on the North Australia Railway Portable Telephone is carried on each motor section car or quadricycle used for inspection purposes;
- (c) by each Roadmaster;
- (d) by each District Lineman;
- (e) on the Engineer's motor inspection car;
- (f) on the breakdown cars at Rawlinna and Tarcoola;
- (g) on hospital car, Central Australia Railway;
- (h) on rail motor cars, and Sentinel Car on North Australia Railway;
- (j) for relief purposes, a telephone is to be held by the Stationmasters at Parkeston and Cook on the Trans-Australian Railway; two telephones are to be held by the Stationmaster at Quorn, and one by the Stationmasters at Marree and Alice Springs, on the Central Australia Railway; on the North Australia Railway a relief Portable Telephone is held by the Stationmaster at Darwin.

2. Reason for Provision of Portable Telephones.—The portable telephones have been provided to make available a ready means of communication.

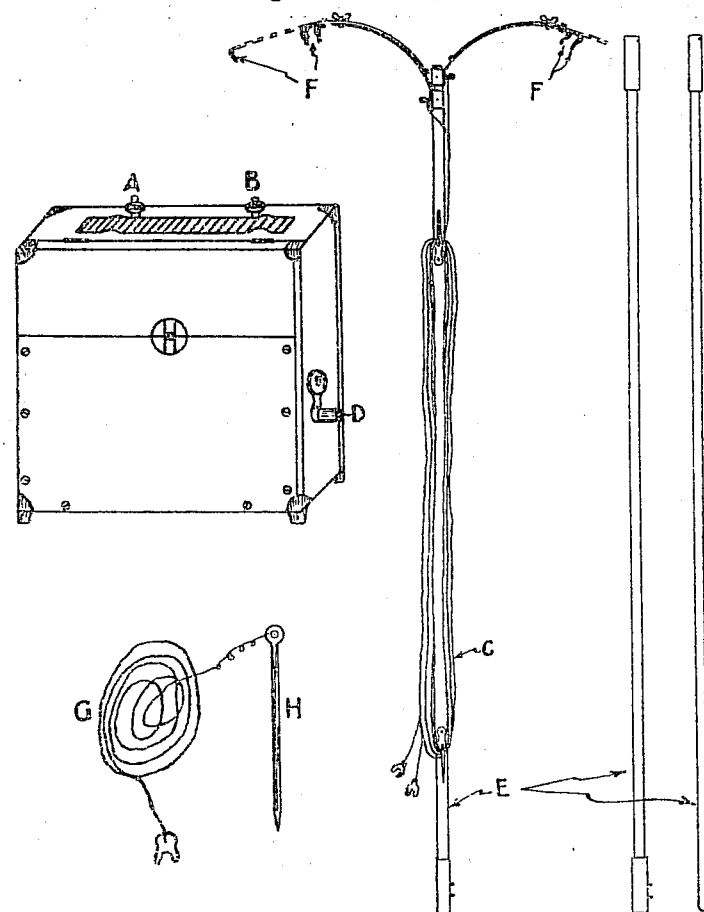
In the event of a train being delayed for 30 minutes or more between stations, or any occurrence of a serious nature, the portable telephone is to be utilized to immediately advise the officer in charge of the station on either side.

Reference is also made to the instructions in clause 155 of this Appendix applying to the use of portable telephones by maintenance gangs.

3. Description.—The portable telephone apparatus consists of one telephone, one coil of twin flexible wire, and three rods with snap connexions—the top section is fitted with two brass hooks for the purpose of making contact with the overhead wires.

An earth spear with flexible wire must also be carried as part of portable telephone equipment, between Quorn and Port Augusta.

The handle of the magneto generator must be kept in the telephone box when not in use. A diagram of the apparatus is shown below:—



NOTE.—F—Adjustable arms for use only on Central Australia Railway north of Hookina.

4. Directions for Use.—(a) *Metallic Circuits*.—Connect the loose end of twin flexible wire "C" to terminals "A" and "B" on the telephone, then connect the rods "E" together and attach to the line wires indicated in (d) below, by means of two brass hooks "F." Slide the hooks along the wires backwards and forwards several times to remove dust and so ensure a good contact.

When it is necessary to use portable telephone away from stations or sidings the collapsible rod is to be attached to both wires by means of the two brass hooks provided.

(b) *Earth Circuits*.—Connect both loose ends of flexible wire "C" to terminal "B" marked "line" on the apparatus, and then connect rods "E" together and attach to the line wire indicated in (d), by means of one of the brass hooks on the rods; slide the hook along the wire as in (a). To provide an earth from a brakevan, connect a piece

of heavy insulated copper wire from terminal "A" of the apparatus to the steel frame of the undercarriage (in the case of a telephone not operated from a brakevan, an "earth" is made by connecting loose end of flexible wire "G" to terminal "A" of apparatus, and driving spear "H" into the ground).

(c) When the apparatus is connected, as described in (a) or (b) give the code ring, repeating same until the attention of the station is secured.

When the station on either side can be heard in the receiver, the person using the portable telephone must depress the button in the hand piece of the combination. In this way, the transmitter circuit is closed and speech can be made to either end of the lines.

(d) The sections in which metallic and earth circuits are provided, and the wires to which rods are to be connected, as described in (a) and (b), are as under:—

(i) *Metallic Circuits*—

Trans-Australian Railway (Port Augusta-Parkeston)—

The two overhead electric staff wires, i.e., the two wires nearest the rails on the top cross-arm.

Central Australia Railway (Quorn-Alice Springs)—

Quorn-Oodnadatta:

The two right-hand wires on top cross-arm on the right-hand side of the pole when facing north or towards Oodnadatta.

Oodnadatta-Rumbalara:

The two wires on the pole route on the left-hand side of the railway facing north, or towards Alice Springs.

Rumbalara-Alice Springs:

Where the lines are run on railway poles, the two railway wires only are erected, and connexion is to be made to these. In certain places, however, the railway wires have been placed on the Postal Department's poles, and in such cases the railway wires are the two wires on the western side of the cross-arm. Special care must be exercised as the pole route does not run on the western side of the railway throughout the section.

The following details show the location of the wires:—

From.	To.	On Railway or Postal poles.	Side of Line poles erected.	Location of wires on postal poles.
Rumbalara	919 miles 4 chains ..	Railway	Western	2 wires farthest from line
919 miles 4 chains ..	921 miles 12 chains ..	Postal	Western	2 wires farthest from line
921 miles 12 chains ..	932 miles 16 chains ..	Railway	Western	2 wires nearest line
932 miles 16 chains ..	955 miles 51 chains ..	Postal	Eastern	2 wires nearest line
955 miles 51 chains ..	962 miles ..	Railway	Western	2 wires nearest line
962 miles ..	965 miles 4 chains ..	Postal	Eastern	2 wires nearest line
965 miles 4 chains ..	974 miles 72 chains ..	Railway	Western	2 wires farthest from line
974 miles 72 chains ..	979 miles 72 chains ..	Postal	Western	2 wires farthest from line
979 miles 72 chains ..	Alice Springs	Railway	Eastern	2 wires farthest from line

At Train Record Book Stations, cabinets have been erected in which the necessary wires have been provided for connecting the terminals of the portable telephones together with baseboards on which portable telephones taken from the brake-vans can rest.

(ii) *Earth Circuits*—

Central Australia Railway (Port Augusta-Quorn)—

Port Augusta-Saltia:

The wire running along the tops of the poles, i.e., the highest wire on the route.

Saltia-Quorn:

The outside wire on the right-hand side of the cross-arm, facing Port Augusta.

North Australia Railway.—Connexion is made (earth circuit) with the third line wire from the Railway between Darwin and Pine Creek and with the single line wire between Pine Creek and Birdum.

Stationmaster, Darwin (if lineman not available), tests the portable telephone for each train before departure.

5. *Portable Telephones in Brakevans*.—(a) Guards must see that the apparatus is complete before departure from depot stations, or when taking over from other Guards at intermediate stations.

(b) At Port Augusta, the portable telephone in the brakevan of each westbound train must be examined and tested by an authorized employee of the Chief Mechanical Engineer's Branch.

(c) At Parkeston, the portable telephone in the brakevan of each eastbound train must be tested by the Transportation Branch on the day of departure. This test must be made, when practicable, by a transportation employee ringing on the portable telephone on the Parkeston-Karonie staff circuit. The Stationmaster or other transportation employee at Parkeston will require to attend to the call, and record in the Train Register Book particulars as to the time the test is made, results obtained, &c., which entry must be initialed by that official, and also by the employee who makes the call.

The call signal must be, 3, pause, 5, pause, 3, which will indicate to the stationmaster, Zanthus, that a test with Parkeston station is being made, and that there will be no necessity for him to attend if he is off duty.

If the portable telephone does not satisfactorily answer the test, the relief instrument held by the stationmaster, Parkeston, must be used until such time as the defective telephone is put in order.

(d) The Stationmasters at Quorn, Marree, Oodnadatta and Alice Springs must examine and test the portable telephone apparatus in the brake-vans of all trains commencing the journey from their stations on the day of departure. Each test must be noted in the Train Record Book at the testing station, and at the station communicated with.

If a portable telephone of a train does not satisfactorily answer the test, a relief instrument held by the stationmaster must be used until the defective instrument is put in order.

(e) District linemen must examine the portable telephone on each train on which they travel, and wherever possible, make practical tests to see if the instrument is in proper working order. An examination and test must also be made if trains are detained long enough at stations where district linemen may be engaged. It must be understood that district linemen are not required to book on duty on Sundays and public holidays specially for this work.

The result of each examination is to be recorded on the instrument card by the district lineman, and in the case of practical tests a record of such is to be made in the Train Register or Train Record Book by stationmasters when on duty, and entries initialed where practicable by district linemen.

6. *Failure to Raise Stations with Portable Telephones*.—If the station on either side cannot be raised within a reasonable time, the person using the instrument must test the apparatus as follows:—

(a) *To Test Generator and Bells*.—Disconnect flexible wire from telephone instrument and turn the generator handle. If the bell rings, and the pull on the handle is only slight, the generator and the bells are in good order.

(b) *To Test Flexible Lead*.—Disconnect ends of twin flexible wire lead from rod and join bare ends together. Connect other ends of flexible wire lead to terminals "A" and "B" of the telephone, and turn the generator handle several times. The bell should not ring, and "pull" should be more pronounced than in test under (a). If, however, the bell rings, the line terminals "A" and "B" must be connected across with a piece of bare wire or other metal such as a table knife, spoon, or fork, and the generator handle again turned. If the bell rings, it is an indication that the telephone instrument is out of order. If the bell does not ring, a break in the flexible wire "C" exists, and attempts should be made by feeling with the fingers to ascertain the place of the break. If located the wire should be cut, and the two ends bared and joined.

(c) *To Test Transmitter and Receiver*.—Where a station can be heard answering a call, but it is evident that the station cannot hear the station calling, it indicates that the transmitter of the portable telephone instrument is out of order, and speech may be transmitted to the distant station by speaking loudly into the receiver which to hear replies must be transferred quickly to the ear after speaking. The transmitter and receiver can be tested by connecting the line terminals "A" and "B" of the instrument by a piece of bare wire or knife, &c., as in test (b), and then "blowing" in the transmitter. The "side-tone" or noise of the "blowing" should then be clearly heard in the receiver. If there is no "side-tone" it is an indication that the transmitter or receiver is out of order.

(d) If the tests under (a) to (c) indicate that the portions of the apparatus examined are satisfactory, and communication cannot be established with the station on either side on an earth circuit, the indications may be that a sufficient "earth" is not being made through wheel of the brakevan on to the rail. An auxiliary earth should then be provided in the following way—Connect flexible wire "G" attached to earth spear "H" to terminal "A" of instrument, and drive earth spear "H" into the ground, which should be soaked with water, if available, in order to afford a better earth connexion to the circuit.

If wire or earth spear is not available to make the connexion, one end of a bar or other piece of metal should be driven into the ground, the other end left resting on the rail, and the portion of the ground into which the bar is driven should then be watered as freely as circumstances permit. The latter operation will tend to assist the "earth" connexion.

If all these efforts prove unsuccessful, either the operators at the stations are out of call, the apparatus at the stations is out of order, or a fault exists on the line.

7. **Portable Telephones, excluding those carried in Brakevans.**—At least once each month the District Lineman must examine and test the portable telephone apparatus in his district as set out in (b) to (g), clause 1.

8. **Relief Portable Telephones.**—The relief portable telephones held by stationmasters are to be examined and tested by the District Lineman concerned at every opportunity, the instrument card being signed accordingly.

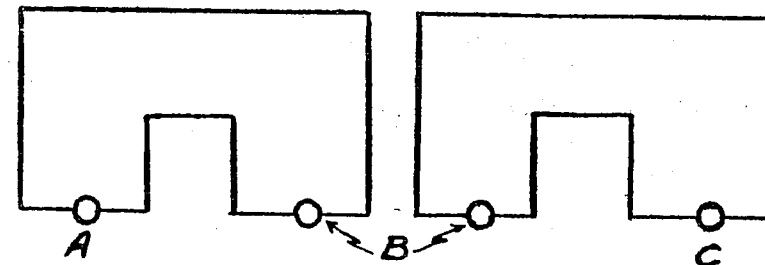
A relief telephone is to be brought into use on any occasion when a brakevan portable telephone has been found to be working unsatisfactorily.

9. **Attention to Defective Instruments.**—In every case where the apparatus is found to be defective or communication cannot be established, the matter must be reported to the Head of the Branch concerned, the Superintendent of Signals and Lighting, and District Lineman, by telegram. Defective portable telephones must be sent to the District Lineman of the section in which the telephone is located, except those located between Port Augusta and Bookaloo, and Port Augusta and Parachilna, which must be forwarded to the Superintendent of Signals and Lighting.

10. **Portable Telephones Working in Automatic Electric Staff Areas.**—As shown by diagram hereunder, automatic electric staff working is in operation between "A" and "B" and "B" and "C" of which "A" is the attended station from which relief is required, "B" an automatic station, and "C," although an attended station, has no means of providing relief. This makes it necessary for communication to be made with "A" at any point between "A" and "C."

Between "A" and "B" the ordinary course is adopted, but between "B" and "C" it may sometimes be necessary to request the attendant at "C" to hold open the circuit breaker on his staff instrument to ensure

that the maximum amount of current passes through the apparatus at "B" which repeats the call to "A." "C" should listen in and not again close circuit until "A" has answered.



123. TELEGRAPH AND TELEPHONE LINES: TRANS-AUSTRALIAN AND CENTRAL AUSTRALIA RAILWAYS.

TRANS-AUSTRALIAN RAILWAY.

Postal Telegraph wires have been erected on Railway poles between Port Augusta and Kalgoorlie, and this Department is responsible for:—

- (a) The ordinary maintenance of the postal wires.
- (b) Restoration of communication in the event of interruptions to the portion of the postal circuit on the railway poles.

Faults are to be reported to and rectified by Railway District Linemen as under:—

Section:

Port Augusta—Bookaloo
Bookaloo—Kingoonya
Kingoonya—Barton
Barton—539 mile
539 Mile—Loongana
Loongana—Kitchener
Kitchener—Kalgoorlie

Faults to be reported to:

"Fail" Port Augusta.
"Line" Pimba.
"Line" Tarcoola.
"Line" Watson.
"Line" Forrest.
"Line" Rawlinna.
"Line" Karonie.

In addition, telegraphic advice must be sent to "FAIL" Port Augusta (Chief Mechanical Engineer, Chief Traffic Manager, and Superintendent of Signals and Lighting), and Senior Telegraphist, Port Augusta Post Office.

Immediately a fault occurs on a postal circuit the Postmaster at Cook will telegraph particulars to all attended stations in the section or sections concerned, and this information is to be conveyed by Stationmasters to the District Linemen when the latter ring up to ascertain the condition of postal circuits. In the absence of any advice of a fault from the Postmaster at Cook the Stationmasters may assume that the postal circuits are satisfactory always provided that there has been no interruption to the railway telegraph circuit which would prevent the despatch of such advice in the event of a fault having occurred.

District Linemen will require to ring the nearest attended station as set out in the following for the purpose of obtaining advice from Stationmasters as to the condition of postal lines:—

District.	Stations.	Times of Calling.
Bookaloo - Kingoonya	Pimba .. Kingoonya ..	As advised by Circular or General Notice from time to time.
Kingoonya - Barton	Kingoonya ..	
	Tarcoola ..	
	Barton ..	
Barton - 539 Mile	Barton ..	
	Cook ..	
539 Mile - Loongana	Forrest ..	
	Loongana ..	
Loongana - Kitchener	Loongana ..	
	Rawlinna ..	
Kitchener - Kalgoorlie	Zanthus ..	
	Parkeston ..	

District Linemen must keep in touch with the hours of duty of Stationmasters and in cases where a traffic employee is not on duty at the hours specified the District Linemen must ring up at a convenient hour which is to be ascertained the previous day from the Stationmaster.

The Stationmaster, or other station staff on duty, must record daily in the Train Register Book, the times at which District Linemen ring up to ascertain the condition of postal lines.

District Linemen must make every possible effort to remove line faults as speedily as possible. Where a line fault appears on the end of a Lineman's district, and it is known that the Lineman for the district is at the opposite end of the district to that in which the fault appears, the Lineman of the adjoining district to the fault must render the necessary attention, if a saving in time in the clearance of the fault will result.

Advice of restoration of circuit should be telegraphed by District Lineman in every instance to "FAIL", Port Augusta, and nearest Postmaster or Postal Testing Officer, showing briefly cause of fault, mileage and time the circuit was restored. Correct zone times must be used.

To facilitate quick restoration of communication a member of each fettling gang has been suitably instructed in the method of detecting faults and effecting temporary repairs. Gangers are to wire promptly the District Linemen when temporary repairs are effected, and report fully to the Roadmaster.

Gangers are to inquire from Stationmasters each morning (at the time stipulated for inquiry *re* trains, &c.) if any faults exist, similarly between the hours of 11.55 a.m. and 1.0 p.m., and at 4.30 p.m. each day. Special attention should be given to Rule 221, Book of General Rules.

District Linemen are urged to exercise initiative and discretion in getting in touch with Gangers in all cases where there is a possibility of lengthsmen being in a position to remove faults during the patrol of their lengths and prior to the arrival of District Linemen.

A Morse set has been provided by the Postal Department in the Repeating Office at Cook, Tarcoola, and Rawlinna. This can be cut in on the Railway Circuit by means of a switch in the Station building, when necessary for the transmission of Public Telegrams to Trans-Australian Line Stations, or to communicate with the Kalgoorlie and Port Augusta Post Offices in case of emergency. The Stationmaster will grant circuit to the Postal Department when required, but so as not to interfere with railway business.

CENTRAL AUSTRALIA RAILWAY.

Maintenance of telegraph and telephone lines, instruments and batteries and clearance of faults &c., will be attended to as under:—

PORT AUGUSTA TO PARACHILNA (exclusive of these stations).

(Maintenance by Postal Department).

All Railway instrument faults, line failures, or attention required to batteries, &c., must be reported by "G.M." telegram to "FAIL," Port Augusta (Chief Mechanical Engineer, Chief Traffic Manager, and Superintendent of Signals and Lighting), and Senior Telegraphist, Port Augusta Post Office, and the latter will arrange for the necessary attention to be given.

PARACHILNA TO ALICE SPRINGS (Maintenance by Commonwealth Railways).

Three Railway District Linemen will be stationed on this section, one each at Farina, Edwards Creek and Rumbalara. The respective sections are:—

Section:	Faults to be reported to:
Parachilna—Curdimurka.	"Line" Farina.
Curdimurka—Oodnadatta.	"Line" Edwards Creek.
Oodnadatta—Alice Springs.	"Line" Rumbalara.

In addition, telegraphic advice of all faults and failures must be sent to "FAIL" Port Augusta.

The three Railway District Linemen on this section will be responsible for the maintenance of Postal and Railway telephone and telegraph wires on the main telegraph line between Parachilna and Oodnadatta, the Railway wires only between Oodnadatta and Alice Springs and Railway instruments, batteries, &c., for the whole section, Parachilna to Alice Springs. Wherever applicable the instructions issued for the Trans-Australian Railway in regard to the expeditious removal of line faults, will also apply to the Central Australia Railway.

Gangers and others concerned are to give particular attention to Rule No. 221, Book of General Rules.

NORTH AUSTRALIA RAILWAY.

Between Darwin and Pine Creek the Railway telegraph and telephone line wire runs on the overland Telegraph Line, and the Postal Department is responsible for its maintenance. Between Pine Creek and Birdum the line wire runs on Railway poles. The Railway Department maintains its own instruments and batteries between Darwin and Birdum, also the line wires, &c., between Pine Creek and Birdum.

Any fault must be immediately reported to the Manager, Darwin, and, where the Postal Department is concerned, to the Postmaster, Darwin. Any work performed by the Railway staff in connexion with the line wire between Darwin and Pine Creek must be clearly indicated on time-sheets, &c.

Fettling gangs and other employees should, wherever possible, effect temporary repairs.

LOCAL INSTRUCTIONS.

124. PORT AUGUSTA.

GENERAL.

1. **Footboards, Station Platform.**—In order to avoid damage to footboards for narrow-gauge trains, care must be exercised in their handling when being removed from and placed on to the carriages; they are not to be thrown about, but handled carefully.

2. **Vehicles on Platform.**—All concerned are to note that motor or horse vehicles are not allowed on the platform. Any member of the station staff observing a vehicle about to enter the platform is to approach the driver and instruct him that it is not allowed thereon. Should the vehicle be on the platform, the name and address of the owner is to be taken and submitted to the Stationmaster.

3. **Narrow-Gauge Coaches.**—Narrow-gauge express coaches are to be shunted under cover in the shed by the train engine on the night of arrival. Shunters are to exercise every care in placing coaches.

Employees cleaning these coaches are to see that same are securely locked and windows closed, as it is not desirable that the public should have access to them when not on trains.

When narrow-gauge brake-vans on mixed trains are changed at this station, the portable letter-boxes are also to be transferred in order that the brake-vans on the mixed trains will have letter boxes therein.

4. **Tassie-street.**—Trucks must not be left standing in front of business premises in Tassie-street, except for the purpose of unloading, and when unloaded they must be promptly removed.

5. **Shunting, Carlton-parade.**—In view of the risk of accident to pedestrians and vehicular traffic, fly-shunting over Carlton-parade is prohibited.

6. **Goods Traffic.**—Partly loaded covered vehicles are not to be left open during meal hours. An employee is to be detailed to keep a close watch over goods sheds and goods under load, during mid-day meal hour as necessary.

7. **Number-taking—Vehicles Arriving at and Leaving Port Augusta.**—The Stationmaster, Port Augusta, will arrange for a proper record to be kept of the numbers of all vehicles arriving at and departing from his station. The following particulars are to be recorded:—

Date train.
No. of vehicle.
Class.
Contents.
Station from.
Station to.

In the case of wheat the distinguishing letter on the vehicle card which denotes the name of the consignee must also be recorded.

8. **Narrow-gauge Road crossed by Broad-gauge Road in Vicinity of Harbormaster's Residence.**—All engines and trains having to pass over the intersection of the broad and narrow gauge roads in the vicinity of the Harbormaster's residence must be brought to a stand by the shunter in charge of the operations at a point well clear of the fouling point of the two roads, and he must not signal his train or engine to proceed until he has satisfied himself that this may be done with safety.

8A. **Narrow-gauge Roads, Tassie-street.**—Locomotives are not to be permitted to run over the turntables located on the inner road (nearest wharf) opposite Young and Gordon's Bulk Store, Geddes' Timber Mill, or Thomas' Flour Mill, and under no circumstances are locomotives to be permitted to run inside the gates of Thomas' Flour Mill yard. (4252/1—5.2.31.)

9. **Platform Tickets.**—The Stationmaster is to arrange for the barrier to be attended at Port Augusta during suitable times extending over arrivals and departures of passenger and mixed trains, as directed from time to time by the Chief Traffic Manager.

No person, unless in possession of gold pass, card pass, platform pass, or pass or ticket available for the train which is about to depart is to be allowed on the platform without a platform ticket. The station staff are to see that the side gates are locked and must take the names and addresses of persons (either employees or members of the public) attempting to evade the barrier by gaining access to the platform other than by the main entrance.

A list is supplied to the Stationmaster showing the names of employees holding platform passes, and this list is to be posted for the information of the staff engaged on the barrier.

10. Port Augusta Wharf.—K, Ka, G, and NB class locomotives must not be allowed on wharf. 5-ton crane and 30-ton crane are not allowed on the wharf without the special approval of the Chief Engineer of Way and Works.

Special care must be exercised when shunting on wharf in order to avoid accidents. Shunters should warn persons on the wharf before making movements with vehicles, particularly in cases where strings of trucks are being moved, or where the engine is out of sight. Engine-drivers must sound the whistle before moving.

11. Yuda-street Crossing.—All concerned must at all times exercise great care when shunting in the vicinity of Yuda-street crossing in order to avoid collision with road vehicles or injury to pedestrians. Should either of the electric gongs at any time fail to ring the matter must be reported immediately. Shunters must not perform shunting operations over the crossing unless the lights are burning or, in the event of electric light failure, the crossing is protected by red lights.

12. Shunting of Passenger Coaches into the Standard Gauge Carriage Shed.—Special care is to be exercised by engine-drivers and shunters when shunting passenger coaches into the carriage shed to avoid damage to doors, buffer stops and to cars.

13. Standard Gauge Road to Way and Works Shop near Narrow Gauge Carriage Shed to be Kept Clear.—Shunters must not foul the line between the Way and Works Shop and the points leading from the carriage shed by leaving trucks standing thereon unnecessarily.

14. Standard Gauge Shunting Neck.—Movements on the shunting neck between the station and points leading to the main wharf road and sidings in the vicinity are to be performed with care, as it may be necessary for vehicles to be left standing on the shunting neck, more particularly in the vicinity of the stock yards. Vehicles are not to be left on the shunting neck at night time except in case of emergency, when a red light must be placed at both ends of the vehicle. The shunter in charge of any movement on the shunting neck must warn the engine-driver of the presence of any vehicle standing thereon. Engines proceeding to the station along the shunting neck must come to a stand at the Flinders Terrace Bridge so that it may be ascertained if any conflicting movement is being made in the vicinity. The engine-driver must sound his whistle as he approaches the bridge.

In order to prevent a collision between engines proceeding in different directions on the shunting neck, the Shunter in charge of any engine proceeding from Tassie-street to the station must telephone the Stationmaster and ascertain that the road is clear. After he has been informed that the road is clear no other engine is to be allowed on the shunting neck until the arrival of the engine from Tassie-street. Shunters in charge of engines proceeding from the station to Tassie-street may regard the shunting neck as clear if, on inquiry from the Stationmaster, they are informed that no engine is proceeding to the station from Tassie-street.

15. Marshalling of TBP Car to and from Port Augusta.—Until further notice, the TBP car which works on the mixed train to and from Port Augusta is to be marshalled in the rear of the brake-van.

16. Salt Traffic.—In order to avoid damage through coal dust blowing on to it, salt, when it is received at Port Augusta and has to remain on trucks for some time before being unloaded on to stacking site or transferred direct to vessel at the wharf, must not be placed on roads adjacent to the coal pit when other accommodation is available.

17. Interlocking 4-ft. 8½-in. Gauge.—The points of sidings connected with the main line in the vicinity of Tassie-street are interlocked, and subsidiary electric staff instruments are provided at Port Augusta station, and in the signal cabin near Tassie-street, to facilitate the working of trains to and from these sidings when it is necessary to cross the main line.

Point Indicators.—Point indicators are connected to and work in conjunction with the points of the sidings mentioned. When the points are in normal position the point indicators, both front and back, will show a red disc by day and a red light by night. When the points are in the reverse position a white band will be exhibited both front and back by day, and a white light at night. These point indicators are only to indicate the direction for which points are set, and drivers must not proceed over them before receiving a hand signal from the employees conducting the shunting operations. The point indicators will not be lighted at night unless actually in use.

Point Levers.—The apparatus in the signal cabin consists of a five-lever frame controlled by a Staff Drawer Lock, the levers being arranged as follows:—

- Lever No. 1—Spare.
- " " 2—Shunting Neck.
- " " 3—Sidings on East side.
- " " 4—Release Lever.
- " " 5—Spare.

Lever No. 4 is released by the insertion of an electric staff in the drawer lock. Levers Nos. 2 and 3 are released by No. 4.

Method of Working.—(a) The subsidiary staff instruments at Port Augusta and at Tassie-street signal cabin are normally out of phase. When it is desired to conduct shunting operations over the main line the shunter will ask Port Augusta for a staff. Port Augusta will withdraw a staff from the main line instrument, and transfer it to the subsidiary instrument, thus placing the subsidiary instruments at Tassie-street and Port Augusta in phase. The shunter can now obtain a staff from the subsidiary instrument, with the permission of Port Augusta; the interlocking frame is released by the staff, and on the completion of the work the interlocking frame is to be again locked, the staff replaced in the subsidiary instrument, and Port Augusta given permission to withdraw the staff from his subsidiary instrument to place in the main line instrument, and thus restore normal working between Port Augusta and Bookaloo.

(b) In the case of a train requiring to leave the subsidiary sidings for Bookaloo, the Guard will ask Port Augusta for a staff. Port Augusta will then obtain a staff from the main line instrument, and transfer it to his subsidiary instrument.

The Guard will then be able to obtain a staff, with permission from Port Augusta; and release the interlocking frame. After the train has moved out on the main line the interlocking frame is to be locked and the staff handed to the Driver. Immediately before departure for Bookaloo, the Guard must give the "Train Departure" signal (2 beats) on the subsidiary instrument, which signal Port Augusta will at once record. On arrival at Bookaloo the staff is to be placed in the instrument there, thus restoring normal working between Port Augusta and Bookaloo.

(c) In the case of a train leaving Bookaloo for the subsidiary sidings a staff will be obtained from Port Augusta in the usual manner and handed to the Driver. On arrival at the subsidiary siding, the interlocking frame will be released by the staff, and, after the train has entered the siding and the interlocking frame is locked, the staff will be inserted in the subsidiary instrument, and the Guard will give Port Augusta permission to withdraw a staff from his subsidiary instrument. Port Augusta will transfer this staff to the main line instrument, and thus restore normal working between Port Augusta and Bookaloo. As the subsidiary sidings are outside the Up Distant Signal at Port Augusta, the Driver and Guard must be advised, before leaving Bookaloo, that the train is to stop at the signal cabin until admitted by the shunter.

(d) Drivers of light engines or trains travelling on the main line between Port Augusta station and the signal cabin near Tassie-street must be in the possession of a staff for the Port Augusta-Bookaloo Section.

In the case of an engine requiring to run from the signal cabin to the station via the main line, the Shunter will obtain a staff from the subsidiary instrument by the method laid down in paragraph (a), and, on arrival at the station, staff will be inserted in the main line instrument. This will put the main line instrument in phase again.

Similarly, when an engine requires to run from the station to the signal cabin via the main line and then pass into the subsidiary sidings, a staff must be obtained from main line instrument, and, after the engine has cleared the main line at the signal cabin, staff is to be inserted in the subsidiary instrument there. The Shunter will then permit the station to withdraw a staff from the station subsidiary instrument and replace it in the main line instrument to restore normal working.

The signal cabin at Tassie-street must be secured with an "M" lock when not in actual use.

All bell signals on the subsidiary instruments must be given in accordance with the code laid down for electric staff train working. They are to be acknowledged and recorded in the respective Train Register Books in the usual way.

18. Signalling of Standard Gauge Turntable.—The disc signals installed on the standard gauge turntable are operated by the same lever as, and in conjunction with, the turntable locks. These signals are for the purpose of indicating to a driver that the turntable is "Free" or "Locked," as the case may be.

When the turntable is "Free" the red disc faces the driver, giving the "Danger" indication. When the turntable is "Locked" the green disc faces the driver, giving the "All Right" indication.

It is to be distinctly understood that when the green disc faces the driver, giving the "All Right" indication, it is not to be regarded as a signal to proceed, but as an indication that the turntable is locked for any particular track to the round house, and before approaching the turntable a driver must satisfy himself that the turntable is set for his particular track.

19. Direct Road Leading to Loco. Workshops from Station Yard.—

(1) This road, after leaving the apex of the triangle, crosses—

- (a) Maintenance yard siding,
- (b) Main narrow-gauge road to the wharf,
- (c) Narrow-gauge road to Stores Yard,

and connects with the standard-gauge road to the Stores Yard near the northern end of Loco. Workshops Yard.

(2) Shunters in charge of engines operating on or in the vicinity of the fouling points of the crossings referred to must exercise particular care so as to avoid any possibility of accident; and Enginemen must also be particularly cautious.

(3) The main narrow-gauge road to the wharf will be regarded as open for movement at any time, unless such movement is prohibited in the manner set out in paragraph 4; but this will not free Shunters and Enginemen from the necessity for the exercise of care as referred to in paragraph 2.

(4) An engine proceeding to Loco. Workshops Yard over the direct road referred to must stop at the red disc or light provided to protect the main narrow-gauge road to the wharf. The Shunter in charge of the engine will not allow the engine to proceed until he has satisfied himself that the narrow-gauge road can be crossed with safety, and should any movement on the narrow-gauge road be in course at this time, he must protect the crossing of his engine by the exhibition of the necessary hand signals. After having satisfied himself that the road is clear for his passage without danger, the engine may be signalled to go forward.

(5) An engine proceeding from the Loco. Workshops Yard must also stop before reaching the narrow-gauge road to the wharf, for which purpose a red disc or red light will be exhibited. After satisfying himself that the road is clear for his engine to pass over, the Shunter will instruct the Driver accordingly, but the engine must again be stopped clear of the road leading from the apex of the triangle so as to avoid any possibility of colliding with an engine or vehicles shunting on the triangle. A red disc or light will indicate the clearance point. Before allowing his engine to enter on to the road leading to the triangle the Shunter must satisfy himself that this can be done without risk.

(6) All movements from the Station Yard to the Carriage Shed Yard, or to the direct road must be made via the south leg of the triangle, and movements in the opposite direction must be made via the north leg of the triangle. The engine placing the passenger train

at the platform from the carriage shed may enter the carriage shed yard via the north leg of the triangle. In this case the shunter must be careful to satisfy himself that the movement can be made with safety.

(7) Shunters must keep themselves acquainted, not only with the work which has to be performed by the engines under their control, but also with the work which has to be done by other engines; and the Stationmaster, Port Augusta, must see that the instructions which he issues daily to the staff are such that all persons likely to be in charge of train or engine movements will know what trains are running, and generally what shunting is likely to be performed during their shift.

(8) Drivers in charge of engines proceeding from the Station Yard via the triangle must sound their whistles when approaching the apex of the triangle as follows:—

- (a) When proceeding to the Carriage Shed—three long whistles.
- (b) When proceeding to the Carriage Shed Yard or direct road—three short whistles.

(9) The speed of engines using the direct road is not to exceed ten miles per hour.

(10) Instructions regarding engines proceeding beyond loco. boundaries are to be strictly observed.

(11) Narrow-gauge vehicles of any description must not, except during shunting operations, be left on the main line leading to the Wharf. They must be stowed in adjacent sidings pending removal to the wharf, goods shed, &c.

20. Roundhouse.—The roundhouse and workshops adjacent thereto at Port Augusta are to be used for the accommodation of locomotives in running, and running repairs are to be effected there.

The Shed Foreman will be responsible for seeing that all locomotives going into traffic are in a satisfactory condition. He will be responsible for requisitioning material required for attending to repairs under his control, and will roster Drivers, Firemen, Cleaners and any other running staff located between Port Augusta and Wirraminna inclusive.

Locomotives requiring overhaul, or extensive repairs, which cannot be carried out by the roundhouse staff, will be dealt with at the Workshops.

Crews of shunting engines and narrow-gauge train engines must clean out fires, rake out ash pans, and place engines in the roundhouse before signing off duty. Crews of standard gauge engines arriving ex the Trans-Australian line must also clean out fires, rake out ash pans, empty smoke boxes, and stable engines in shed before signing off duty, unless otherwise specially directed by the Shed Foreman.

Special attention is directed to paragraph 18 above in regard to the turntable at the roundhouse. Before an engine is moved the driver must satisfy himself that the turntable is set and locked for the particular track on which the engine is to move. The necessity for

care in this connexion cannot be too strongly stressed, as an accident in connexion with the turntable would cause untold inconvenience by throwing the whole of the engines in the roundhouse temporarily out of commission.

No unauthorized person must be permitted to move a locomotive. See clause 137 of this Appendix.

Locomotive parts for repairs arriving at Port Augusta from both standard and narrow-gauge lines must be sent to the roundhouse on the train engines.

125. IMMARNA.

When it is necessary to pick up or detach and place vehicles from Up trains in the dead-end sidings at Immarna, the train must be drawn inside the western-end facing points, and the engine detached and run around to the rear of the train. The shunting necessary to attach or detach vehicles is then to be carried out at the rear of the train.

Owing to the falling gradient, trains or portions of trains with the engine detached for shunting purposes must not be allowed to stand outside the facing points at Immarna. Fly-shunting is not permitted.

126. WYNBRING.

Owing to the falling gradient towards Tarcoola, vehicles being detached from Down trains for placing in the Dead-end Siding off the crossing loop at Wynbring, must not be "loose shunted," but must be kept coupled to the engine until securely placed in the siding.

127. LAKE HART.

Owing to the falling gradient into the siding at Lake Hart, Guards of trains must adhere strictly to the instruction contained in General Rules 169 (a) and (b) when shunting at this location. Before an engine is set back on to any vehicle standing in the siding the Guard must see that the handbrakes are fully applied. Three sprags are located at this siding and they are to be used as additional means of securing wagons.

128. SIDING AT FIVE MILES—OCEAN SALT COMPANY.

In connexion with the working of the Ocean Salt Company's siding by the shunting engine from Port Augusta, authority is given for vehicles to be conveyed to and from the siding without a brake-van attached.

When this method of working is adopted the following instructions must be observed:—

- (a) The vehicles must be hauled, not propelled.
- (b) The string of vehicles must be controlled by the Westinghouse brake—the last vehicle being fitted with brake complete.
- (c) The Guard in charge of the train must ride on the rear vehicle and be ready to act in case of emergency.
- (d) A tail signal must be carried on the rear of the last vehicle.

129. SHUNTING SERVICES, KALGOORLIE-PARKESTON.

In connexion with shunting services between Parkeston and Kalgoorlie, the following special instructions must be observed:—

1. When a vehicle (or vehicles) is run between the two points named, it must be hauled and not propelled.
2. (a) When a brakevan is not used, brake vehicles sufficient to hold the whole rake must be marshalled at the rear.
(b) An employee must ride on the rear vehicle.
3. When the requirements of Clause 2 cannot be met, a brakevan must be used in accordance with General Rule 189 (a).
4. So far as possible, train signals in accordance with General Rule 111 (a) and (b) must be exhibited on preceding trains to indicate the running of a shunt service between the two stations named.

The Stationmaster, or other employee, working signals at Parkeston, must advise the Signalman at Kalgoorlie when an employee is in the section with a tricycle, quadricycle, or other rail vehicle. This safeguard is to be adopted irrespective of whether the crew of any train or engine proceeding into the section has already been warned. Arrangements have been made with the Western Australian Railways authorities for the Signalman at Kalgoorlie to give similar notice to the Stationmaster, Parkeston, when rail vehicles enter the section at that end. The Signalman at Kalgoorlie will warn engine-men entering the section from his end of the presence of the vehicle in the section; and the Stationmaster, Parkeston, is to arrange for the Signalman to be advised when the section is cleared other than at Kalgoorlie.

All persons entering the section on tricycles, &c., must advise the Stationmaster at Parkeston, or the Signalman at Kalgoorlie, when about to enter the section, and also when they have cleared the section. Any breach of this instruction must immediately be brought under the notice of the Chief Traffic Manager.

130. WORKING OF TRAINS AND LIGHT ENGINES (3 ft. 6 in. GAUGE RAILWAY LINE), KALGOORLIE-PARKESTON.

1. Narrow-gauge trains and light engines proceeding from Kalgoorlie to Parkeston must be brought to a stand 20 yards on the western side of Kanowna-road level crossing, and must not enter the Parkeston yard unless piloted by a competent Commonwealth Railway employee.

2. The Signalman at Kalgoorlie will advise the Stationmaster, Parkeston, by Staff Telephone, of the departure of each train or light engine, and the latter will depute a competent employee to admit the train or light engine, and direct its movement whilst in the Parkeston yard.

3. A temporary signal, i.e., a red disc fitted to a post, will be erected 20 yards on the western side of the Kanowna-road Level Crossing, to indicate to Drivers the point at which trains must be brought to a stand as provided in paragraph 1 above.

131. FIXED SIGNALS—CENTRAL AUSTRALIA RAILWAY.

The normal position of main line points, and the application of Home and Distant signals and subsidiary signals at stations shown hereunder, must be strictly observed.

PORT AUGUSTA.

Two Home Signals are provided, one for the platform road and the other for the goods road. Both signals are on the same post, and the arm on the left-hand bracket as seen by the driver of an approaching train applies to the goods road, while that on the right-hand side applies to the platform road. One distant signal is provided, and this applies to both roads, but is not to be lowered unless the Home Signal for the road on which it is desired to admit a train, is previously lowered.

QUORN.

The Down South Line Home and Distant Signals (Terowie-Quorn line) apply to the south road, i.e., the road nearest the station platform.

The Down North Line Home and Distant Signals (Port Augusta-Quorn line) apply to the south road, i.e., the road nearest the station platform.

The Up North Line Home and Distant Signals (Alice Springs-Quorn line) apply to the north road, i.e., the road next to the south road or second road from the station platform.

NOTE.—*The Down South Line Home Signal* and the *Up North Line Home Signal* are fixed to two arms on the same signal post at the Terowie end of the Quorn yard. The arm on the left-hand bracket as seen by the driver of an approaching train is the *Down South Line Home Signal* and applies to trains approaching from the direction of Terowie, and the arm on the right-hand bracket or inside arm is the *Up North Line Home Signal* and applies to trains approaching from the Alice Springs-Quorn line.

Normal Position of Main Line Points.—The main line points are normally set for the south road, i.e., the road nearest the station platform. The main line catch points are to be kept open, except when required to be shut for the passage of trains or for shunting operations.

STATIONS NORTH OF QUORN.

The Home and Distant Signals where provided at stations north of Quorn apply to the road for which the main line points are normally set as indicated hereunder:—

Hawker.—Straight road (i.e., second road from the station platform).

Beltana.—Straight road (i.e., second road from the station platform).

Farina.—Road nearest Station platform.

Parachilna.—Middle road.

Marree.—Middle road, i.e., second road from Station platform.

Edwards Creek.—Straight road (i.e., road nearest the station platform).

Oodnadatta.—Middle road (i.e., second road from the station platform).

Rumbalara.—Straight road (i.e., road nearest the station platform).

Alice Springs.—Straight road (i.e., road nearest the station platform).

The Home and Distant Signals must be lowered only to admit a train on to the road to which they are applicable, and when it is necessary to admit a train on to any other road, it must be admitted by hand signal as provided in Rule 40 of Book General Rules.

GENERAL.

Hawker.—*Stock Yard Road.*—The points leading from the Stock Yard road to the main line must be kept normally set and locked for the straight road to the Goods Shed. A chain and staple are provided to secure the controlling points lever.

Goods Shed Road.—A choke block is provided at the northern end of the Goods Shed road to prevent vehicles moving from this road and fouling the main line.

Parachilna.—The Up Home and Distant Signals can only be worked when the Annetts key is in the signal frame. When the key is withdrawn from the frame it can be used to release the levers which work the points on the main line leading to both ends of the triangle. The north and south legs of the triangle are fitted with choke blocks. These choke blocks work independently of the Annetts lock and must be removed before opening the points for shunting or other operations.

Marree.—Two Annetts locks control the working of the points leading to the two legs of the triangle, and the key is kept in the Stationmaster's office. There is a miniature Home Signal north of the northerly points of the triangle, and the normal position of this signal is "all right," and when in this position it indicates that the points leading to the triangle are closed, and that the road is made for the main line. When the points leading to the north leg of the triangle are set for that road, this signal automatically goes to danger.

132. WOOLSHED FLAT—CROSSING OF TRAINS.

1. The main line points at the Quorn end of the yard must not be used for the passage of trains to or from the loop, or for shunting purposes.

2. Down trains must be admitted to the crossing loop, and Up trains must be admitted to the main line.

After the Up train has left, the Down train must back out at the Port Augusta end of the loop and continue the journey on the main line.

3. When a Down train is backed out on to the main line after crossing a train, the Guard must ride in the Brakevan and be prepared to apply hand brakes if necessary. The Fireman must turn the points for the train to travel forward on the main line, and after the train has pulled clear it is to be brought to a stand, and the Guard will secure the points before departure, in accordance with Rule 166 (c).

4. Both Down and Up trains must proceed cautiously into Woolshed Flat, and the speed of Up trains when entering the yard must not exceed four (4) miles per hour.

5. When both trains arrive at the same time, or if the Up train arrives first, the Up train must be the first train admitted.

6. Provided the Driver can see that the line ahead is clear, Up trains need not come to a standstill at the facing points, but may proceed cautiously into the yard in accordance with Sub-clause 4.

7. Should it be necessary for the Up train to come to a standstill outside the facing points and the passenger cars or brakevan have not cleared the bridge, the Guard must warn passengers not to attempt to leave the cars.

8. Rules 43 and 166, and Regulation 11—Permissive and Absolute Telephone Block Regulations—are modified accordingly.

133. QUORN.

When necessary, engines proceeding from Quorn station yard to Quorn Loco. running shed take precedence over those leaving Loco. for the station yard.

Shunting, Quorn Yard.—After vehicles have been drawn out at the Port Augusta end of yard to be set back onto a passenger or mixed train, the Shunter, or his assistant, must ride on the rear vehicle while the setting back movement is being made. This instruction applies whether the whole or any portion of the string of vehicles is to be put on the train.

The vehicles to be drawn out must be coupled together with chains, as well as choppers, before being moved on the Up grade, and in those cases in which they are coupled to vehicles already attached to the engine, the chain couplings must be used as well as the choppers. (2759/96—24.3.32.)

134. OVERHEAD COAL BIN—MARREE.

The maximum load to be taken up the coal-bin ramp is not to exceed equal to three four-wheeled trucks. The load is to be lifted from a dead start at the south end of the carriage shed.

The propelling of loaded trucks to, and removal of empty trucks from the bin, are to be performed during the hours of daylight only and with the engine funnel facing south. No trucks are to be propelled up the ramp while other trucks, loaded or empty, are standing over the bin.

The sand-gear and Westinghouse brake on locomotives working the bin must be tested by Drivers before moving past the south end of the carriage shed, and must be in proper working order. When trucks to be placed over the bin are fitted with the W.H.B. complete, this is to be in operation on all such vehicles. Should the trucks be not fitted with W.H.B. complete, the maximum load is not to exceed equal to two four-wheeled trucks; provided that one four-wheeled truck fitted with pipe only can be placed with equal to two other four-wheeled trucks which are fitted with W.H.B. complete, but in such case the leading vehicle must be fitted with W.H.B. complete. Drivers will be responsible for testing truck brakes before moving from the south end of the carriage shed.

The Shunter must not ride on vehicles which are being propelled up the coal bin ramp, but he must take up a position at top of ramp and give the necessary signals from that point for setting trucks over the bin. All vehicles left on the bin must have hand-brakes fully applied before the engine is disconnected.

A portable skid has been supplied, and must be placed on the rails on the ramp one rail length from first trestle clear of rail joint. It is to remain there except during shunting operations, and must be replaced immediately these are completed. Vehicles must not be stowed on the carriage-shed road leading to the bin, whilst trucks are standing on the bin. The Fuelman must exercise care when moving trucks standing on the elevated road.

Owing to the short distance between the top of the ramp and the dead end, Drivers must exercise extreme caution approaching the top of the ramp.

Empty vehicles (*with the exception of NG. wagons*) at the bin, may be hand-shunted to the yard, and it will not be necessary to specially light up a locomotive to perform such shunting.

The following instructions, however, are to be strictly observed:—

- (a) This work is to be performed during daylight only.
- (b) The hand brakes on all vehicles are to be carefully examined and the Stationmaster at Marree is to assure himself that these are working correctly.
- (c) The movement is to be made only at such times as no trains are approaching Marree from either the up or down direction.

- (d) The movement is to be made only at such times the coal bin road is clear, and the choke block protecting the main line is in proper position.
- (e) The portable skid is to be placed in position on the rails at the foot of the grade, and removed only when vehicles are under proper control when approaching that point.
- (f) Trucks must not be removed from the coal bin except on instructions from, and in the presence of, the Stationmaster, Marree.

Under no circumstances are NG. wagons to be removed from the overhead road by hand, as when the side doors are down on these vehicles the hand brake cannot be operated, and the doors cannot be put up whilst the vehicles are on the coal bin. (O.C. 5/30.)

WORKING OF LOCOS. TO AND FROM COAL CHUTES, ETC.

Special care must be taken to keep the choke block at the entrance to Loco. locked in normal safety position, except when it has to be taken off rail to permit of shunting movements. The position of the choke block protecting the depressed road leading to the coal chute must also be similarly maintained. This choke block will not be secured by an S. lock, but it will be the duty of each Driver to see that it is removed from off the rail before he proceeds to the coal chutes, and replaced thereon after coaling is completed.

A red light is to be placed on the dead end of the depressed road when engines are to be coaled during the night. Enginemen must exercise care when proceeding to the coal chutes, and must not have water gin attached to the engine. All engines are to be coaled before stabling at Marree.

134a. STOCK YARDS—WILLIAM CREEK.

Troughing has been provided in the cattle yards at William Creek connected with the pipe line to the cattle yard siding.

A hose with connexions for coupling to water gins is located in the station office.

Guards of live-stock trains will arrange for fixing the hose in position for watering stock when required and be responsible for replacing hose and connexions in the station office after use.

134b. ABMINGA SIDING.

To avoid loss of time by Up trains which have to attach empty wagons from Loco. roads at Abminga, owing to the layout of the yard and to trucks of coal being placed on top of empties standing on Loco. roads, Guards of down trains must shunt any empty vehicles standing on the Loco. roads at Abminga to the loop, and advise the Stationmaster, Rumbalara, the position of the wagons when handing in siding reports. The Stationmaster, Rumbalara, must arrange for the empty wagons on the loop to be picked up by the first available Up train. (O.C. 78/29—T.3416/98.)

135. FREE PASSES.

Gold, book, and paper passes are issued as follows:—

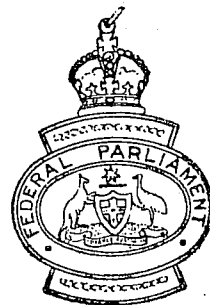
1. GOLD PASSES.

(a) To members of the Federal and State Parliaments—



Obverse

First
Class.



Reverse

The passes are engraved as follows:—

"Railways of Australia" and the name of the State in which the member's electorate is situated.

"Federal (or State) Parliament" and name of electorate. *Note.*—In certain States the passes have been numbered and do not show name of electorate.

Note.—Passes issued to Senators are engraved on the obverse as above and on the reverse "Senate," and are numbered consecutively from 1 to 36.

The passes are available over Commonwealth and all State Railways and for sleeping berths, lounge car (Trans-Australian Railway), reserved seats, free cloakroom, and for the van of any train.

(b) To Governor-General and State Governors—

Passes similar to that illustrated above are also issued to their Excellencies the Governor-General and Lady and to each State Governor and Lady.

In such cases, the passes are engraved:—

Obverse.

Reverse.

"Railways of Australia." Name of holder and word "Pass."

and carry the same privileges and are to be honoured in the same way as passes issued to Members of Parliament.

(c) To ex-Ministers, &c.—

Life Passes similar in design to that illustrated above but having on the Reverse side name of holder and words "Life Pass," are issued to ex-Prime Ministers, ex-Premiers, ex-Presidents of the Senate and

Legislative Councils, ex-Speakers of the House of Representatives and Legislative Assemblies, ex-Ministers of the Crown who have served in office for a certain specified period, and Members who have served in the Commonwealth Parliament for 25 years continuously.

These passes carry the same privileges and are to be honoured in the same way as passes issued to Members of Parliament.

(d) To Members of the New Zealand Parliament:—



Obverse.



Reverse.

NOTE.—Passes issued to members of the Legislative Council are engraved as above on the reverse side, and on the obverse have thereon "Legislative Council" instead of "House of Representatives."

The passes are available over Commonwealth and all State Railways, and for sleeping berths, lounge car (Trans-Australian Railway), reserved seats, free cloak-room, and for the van of any train.

NOTE.—*Central Australia Railway*—In connexion with Gold Passes mentioned in (a), (b), (c) and (d) above, a careful record must be maintained by Guards or checking staff, as the case may be, of all such passes presented for travel over the Central Australia Railway. The record must be in the following form:—

Train Date.	Pass Holder.		Name of Passenger.	Member of Parliament for—	Representing Electorate of—	If Sleeping Berth occupied.
	Joined at—	Alighted at—				

Each passenger presenting a Gold Pass must be asked, courteously, for

- his name,
- whether Federal, or State Member, or Life Pass holder, &c.,
- if member of Parliament, the Electorate represented,
- if Life pass holder, State in which resident.

If passenger is holder of Life pass, the words "Life pass," issued in (Name of State) should be shown in columns "Member of Parliament for" and "Representing Electorate of" respectively.

The foregoing particulars must be carefully entered on the return mentioned above. Guards must carry a supply of these forms, and hand in completed forms at end of each trip. The statement is to be forwarded to the Chief Traffic Manager by the Stationmaster concerned by next train. "Nil" returns must be supplied.

Stationmasters at stations where Gold Pass holders join trains should notify Guards accordingly, so that the latter may obtain necessary particulars.

Sleeping Berth Arrangements.—Members of Parliament and Life Pass holders are entitled to free sleeping berths, and arrangements must be made accordingly on application. Free sleeping berth certificates for issue to such persons are stocked at Kalgoorlie, Port Augusta, Quorn, and Marree. A signature must be taken on back of sleeping car diagram from Gold pass holders who have occupied free sleeping berths.

(e) To Railway Commissioners, Commonwealth and State Railways:—

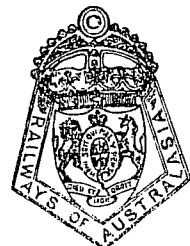


First
Class.



Available over Commonwealth and all State Railways and for the van of any train, parlor, observation and lounge cars, reserved seats and sleeping berths.

(f) To Heads of Branches of Commonwealth and State Railways:—



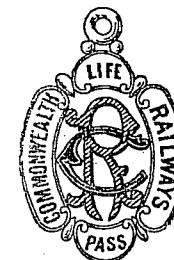
First
Class



Available over Commonwealth and all State Railways, and for sleeping berths and the van of any train.

(g) Commonwealth Railways Life Pass, issued to certain ex-Ministers of the Crown, &c.:—

First Class.



Available for travel over Commonwealth Railways only, including sleeping berths and lounge car.

2. TRANS-AUSTRALIAN RAILWAY BOOK PASS.

A leather book-pass, coloured dark green, is issued to distinguished visitors, &c., to whom free travel over Trans-Australian Railway is extended.

An illustration of the pass appears hereunder.

Two types of the pass have been issued, the one covering travel "between Quorn and Kalgoorlie" and printed accordingly, the other "available between.....and.....," the names of the respective stations being written in ink.

In each case the pass is available for sleeping berth and lounge car, but not meals.

OUTSIDE.


INSIDE.

<p>TRANS-AUSTRALIAN RAILWAY FREE PASS</p> <p>TRANS-AUSTRALIAN RAILWAY FREE PASS</p>	<p>TRANS-AUSTRALIAN RAILWAY First Class</p> <p>No.</p> <p>Available between QUORN and KALGOORLIE.</p> <p>Issued to</p> <p>Available from till</p> <p>Pass issued subject to no liability on the part of the Commonwealth Railways Commissioner.</p> <p>Secretary</p>
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Similar passes available for travel over the Central Australia Railway will be issued at a later date, but in the meantime Trans-Australian Railway Book passes, as shown above, and suitably amended, will be issued in such cases as free travel over the Central Australia Railway is extended.


3. AUSTRALIAN STANDARD BOOK PASS.

Inside.


No. 	
GOVERNMENT RAILWAYS OF AUSTRALIA	
FIRST CLASS.	
AVAILABLE FOR SLEEPING BERTH AND RESERVED SEAT.	Issued to

TRANSFERABLE.	For travel

NOT	Available from 19
	to 19
	This Ticket is issued subject to the By-laws and Regulations in operation on the Railways over which it is available.
Secretary for Railways.	
H. J. Green, Govt. Print., Melb.	

Outside (FRONT).


FIRST CLASS
(INTERSTATE)

(BACK.)


FIRST CLASS

The Australian Standard Book Pass is of maroon leather, and is issued to—

Distinguished visitors to the Commonwealth or a State.
Members of Parliament pending the issue of a gold pass.
Members of the Staff of the Governor-General.
Certain officers of the Postmaster-General's Department and
Other persons as may be notified from time to time.

The availability of the pass will be as written on the inside thereof and may cover the whole of the Railways of Australia, including Commonwealth Railways, the railways of two or more States, or a single or return journey only between certain capital cities or other specified points. It is available for the lounge car (Trans-Australian Railway), sleeping berths and reserved seats.

The staff must examine carefully any pass of this type presented for travel over the Commonwealth Railways to ascertain whether it is actually available for the journey for which it is presented.

It should be noted that this pass may be issued by the Commonwealth or any State Railway Administration.

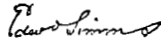
4. COMMONWEALTH RAILWAYS BOOK PASSES.

Book passes are issued as follows:—

(a) First Class.—Brown Leather—

*Inside.**Outside.*

Gilt lettering.

P. 15.	
No.	NOT TRANSFERABLE.
COMMONWEALTH RAILWAYS.	
FIRST CLASS.	
Pass Mr.	
Between.....	
And.....	
Available till 19	
Issued by.....	
This Pass is issued and accepted subject to the condition that the user or users travel entirely at his, her, or their own risk. It must be shown when required, and returned to the issuing officer at the expiration of the period available.	
By order of the Commissioner,  Secretary.	
H. J. Green, Govt. Printer.	

COMMONWEALTH RAILWAYS.
PASS
FIRST CLASS.
FIRST CLASS.
PASS
COMMONWEALTH RAILWAYS.

(b) Second Class.—Blue Cloth—

*Inside.**Outside.*

Black lettering.

P. 15.

No. _____ NOT TRANSFERABLE.

COMMONWEALTH RAILWAYS.
SECOND CLASS.

Pass Mr. _____

Between _____

And _____

Available till _____ 19

Issued by _____

This Pass is issued and accepted subject to the condition that the user or users travel entirely at his, her, or their own risk. It must be shown when required, and returned to the issuing officer at the expiration of the period available.

By order of the Commissioner,
Edward Simms
Secretary.

H. J. Green, Govt. Printer.

COMMONWEALTH RAILWAYS.

PASS
SECOND CLASS.

SECOND CLASS.

PASS
COMMONWEALTH RAILWAYS.

Book passes are *not* available for sleeping berth, lounge car, brake-van, or engine unless so endorsed.

5. PAPER PASSES.

First and second class paper passes are issued as follows:—

First Class	..	White.
Second Class	..	Green.

P. 16.

COMMONWEALTH RAILWAYS.

No. _____

Office, _____ 19

Pass Mr. _____

from _____

to _____

Period Available _____

Class. _____

Issued by _____

NOT TRANSFERABLE.

This Pass is issued and accepted subject to the condition that the user or users travel entirely at his, her, or their own risk. It must be shown when required, and delivered to the Collector at the end of the journey; and, if not collected, it is to be forwarded to the Chief Traffic Manager.

By order of the Commissioner,
Edward Simms
Secretary.

By Authority: H. J. GREEN, Government Printer, Melbourne.



These passes are *not* available by passenger train, or for sleeping berths, lounge car, brake van, or engine unless so endorsed.

INSTRUCTIONS TO ENGINEMEN.

136. RESPONSIBILITY OF FIREMEN FOR OBSERVANCE OF SIGNALS.

Firemen are notified that they are held responsible with the drivers for carefully observing all signals, as provided in the Book of General Rules, safe working, and other train running instructions.

137. UNAUTHORIZED PERSONS NOT TO MOVE LOCOMOTIVES.

Only Drivers, Firemen, Cleaners passed as Firemen, and others who may be specially authorized from time to time by the Chief Mechanical Engineer shall move engines, and then only when it is their duty to do so. Any breach of this instruction will be very seriously regarded, and the person at fault will be held liable for any damage or injury that may result.

138. UNAUTHORIZED PERSONS NOT TO RIDE ON LOCOMOTIVES.

Any person, apart from Enginemen and Shunters actually doing so in the course of their duty, must, when riding on a locomotive, hold a pass endorsed "Available for Engine," or be in possession of special authority from the Chief Mechanical Engineer. Any person riding on a locomotive (except the employees mentioned above) must be in possession of a pass or ticket in addition to the authority referred to.

139. PRECAUTIONS TO BE TAKEN BEFORE MOVING A LOCOMOTIVE.

Employees authorized to move engines are directed to exercise special care in order to avoid accident to cleaners and others who may be working under engines or about them. Before moving an engine in locomotive yards or sheds the employee so doing must assure himself, by personally looking and calling out, that no one is underneath or in any position where injury is likely to result by the movement of such engine. The whistle must also be sounded loudly before starting. If it is intended to place an engine in contact with, or very close to another engine, the men employed on that other engine must be informed as to what is to be done, and must see that the brakes are hard on to prevent its movement. If it is intended to move the other engine also, the men working on it must be specially informed of the intention to move it, and whoever is in charge of the movements of the engines must satisfy himself that all employees are clear of both engines. Special care must be taken when moving superheated engines to see that the cylinder cocks are open.

140. UNNECESSARY WHISTLING, EMISSION OF SMOKE, AND ENGINES BLOWING OFF.

In order to avoid annoyance to and complaints from residents in the vicinity of the lines, drivers must avoid using the engine whistles unnecessarily; and the greatest care must be exercised to prevent the emission of smoke when in proximity to platforms and public roads.

In many instances engines are allowed to blow off steam at the safety-valves when there is no necessity whatever for such wastefulness. This is particularly noticeable at terminal stations where engines have to stand for some time, and also with engines having light trains running over fairly level roads, resulting in waste of fuel and water. The practice is objectionable, as, apart from the waste of fuel and water, it causes annoyance to passengers, and tends to frighten horses. The priming of boilers or throwing out of hot water from the chimney when opening the blower or starting the air pump should be avoided, and this can easily be done if Drivers and Firemen exercise a little forethought and judgment.

141. ENGINE HEADLAMPS.

Enginemen must ensure that their engine headlamps show a good light at night time, by keeping the cisterns supplied with oil, the wicks properly trimmed, and the glasses and reflectors in clean condition. Lamps must be securely fixed to brackets.

142. CARE AND MAINTENANCE OF PYLE NATIONAL ELECTRIC HEADLIGHT EQUIPMENT.

Before Commencing Journey.

Oil wells are to be examined and ordinary clean cylinder oil added when required. A small quantity of any heavy oil is to be poured into turbine casing through the plug hole at top of turbine.

Starting-up.

The turbine should be started up by opening steam valve in cab slowly, so as to permit condensation to get away through drain pipe. Steam valve should not be turned on fully until some few minutes have elapsed, this permitting of turbine being heated up. After steam valve has been opened fully and turbine has attained full speed, main switch in cab may then be turned on to headlight. Should the turbine refuse to start, the cap over governor valve should be removed and steam turned on for a moment. This action will result in any scale lodged around the screen being blown through. If turbine is not running at right speed when the steam valve is wide open at full boiler pressure a light tap with a hammer should be given to the outside of the valve chamber.

When Stabling.

When stabling locomotives that are fitted with electric headlights, Enginemen must test the equipment and see that the headlight and all other lights burn correctly. Any defects must be entered in the Driver's Repair Book.

General.

Shed Foremen, or Chargemen, should also, when possible, test the electric headlight equipment on outgoing engines before the crew sign on duty. In cases where the electric headlight has not been tested by the Shed Foreman or Chargeman, the Engine-driver must test it as soon as possible after signing on duty. This instruction is to be carried out whether the engine is being stabled or prepared at night time, or during hours of daylight. The headlight equipment must not be used unnecessarily in Locomotive Depots, and must be used only for testing in accordance with the above and for locomotive shunting at night.

When running into stations or when crossing trains at sidings, and during shunting operations, when requested by the Shunter, main headlight should be switched off, and switch placed in rear position so as to switch on dimmer.

The headlights must also be dimmed when two engines are shunting in the same vicinity.

In the event of it being found that lamps in cab become over-bright (indicating that turbine is running at a too high rate of speed), the steam valve in cab should be throttled down until turbine is made to run at correct speed. This defect should be reported at depot so as to permit of necessary governor adjustment. If the turbine still shows excessive speed with steam valve adjustment correct, it is possible the governor sleeve may have seized on the shaft and will require to be released.

Under ordinary circumstances, steam valve in cab should be left in wide open position when headlight is in use.

When the headlight equipment is out of use the steam valve controlling the steam supply to the turbo-generator must be closed off tightly to prevent steam from blowing through slightly, causing condensation and damage to interior of turbine.

The flexible conduit between engine and tender must not be allowed to trail on the ground when tender is moving independently of engine.

General Maintenance.

Oil wells should be drained occasionally and water condensation drained. If engine should be placed out of traffic for any time, a little crude oil should be poured into valve chamber and also in turbine casing through the plug hole, thus preventing rust and corrosion.

Each month the steam governor is to be examined for any adjustment that may be necessary, and report on examination is to be submitted to the Chief Mechanical Engineer. To effect any adjustment it will be necessary to remove valve casing cap and strainer, and if it is found that the valve is not exactly flush with the top of the valve cage the valve is to be removed from turbine and adjusted by altering the nuts on the bottom of valve spindle, after which the nuts are to be securely locked. Should the valve cage be found to be sticking, great care must be exercised in its removal.

If turbine is found to be heated, cold water is to be poured on top of cage, and this will loosen the cage which can then be removed, but a light tap with a hammer may be required on the outside of cage chamber. If this action does not release the valve cage a puller will be required. A cold valve must not be replaced in a hot turbine casing.

Conduit and Light Fittings.

All clamps supporting conduit and light fittings are to be kept tight. Care must be taken when replacing burnt-out lamps to see they are not screwed in too tightly. If a new lamp fitted to a socket does not burn, it may be necessary to raise slightly the bottom contact at the bottom of the lamp socket.

When fitting plugs in side lamp sockets the flex must not be allowed to twist.

When the lights are showing a dull red wire only when the turbine is running at correct speed, this indicates a short circuit in the installation, probably either in a lamp socket or in one of the flexible connections.

The governor valves are to be examined monthly and a return submitted in duplicate on L.62 dockets to the Superintendent Locomotive Running. The L.62 dockets used for this purpose may include the examination of a governor valve on more than one locomotive, the engine number in each case being stated. Other periodical engine examinations are not to be shown on same dockets as the examination of governor valves.

The Shed Foreman at Quorn will submit dockets for all examinations of governor valves made on narrow-gauge engines, and the Shed Foremen at Port Augusta, Cook, and Parkerton will submit examination dockets for all governor valves on standard engines examined at their depots.

143. TRAINS APPROACHING TERMINAL STATIONS.

In connection with Rule 137, Book of General Rules, extreme care must be exercised by Drivers when approaching terminal stations, particularly at Kalgoorlie. This station is approached on a steep falling grade. Should the distant signal be at "Danger," Drivers must comply with Rule 37, and then keep the speed down sufficiently low to enable the train to be taken in from the home signal to the platform on hand brakes, holding the air brake in reserve. Engines, when attached to a train, must not approach within five (5) yards of dead end.

144. FIRE PREVENTION APPLIANCES ON LOCOMOTIVES.

In order to ensure that the fire prevention appliances on locomotives are being maintained in proper working order, it is necessary that Enginemen inspect spark arresters, ashpans, and ashpan slides, and test ash wetters, to see that same are working satisfactorily each time an engine is prepared and stabled by them.

The Driver is to report, in remarks column at foot of daily timesheet, the condition of these appliances when engine was prepared or taken over by him, and the condition of these appliances when engine was stabled or handed over by him to another Driver. Any defect found to exist when an engine is stabled at a Depot must also be reported in the Repair Book by the Driver. When engines are taken over on the main line, these appliances must be inspected and tested as well as circumstances permit without causing unnecessary delay to the trains.

Before lighting up a locomotive boiler the employee concerned must see that the ashpan and smoke-box have been emptied, and that the fire-bars are in good order and are in their proper position. On engines fitted with rocker bars and dump grates, care must be taken to see that the rocker bars are lying level in the fire-box and that the dump grate is properly closed; the smoke-box door must also be properly closed and the clips around the edge of the door securely tightened up. The regulator valve and all other valves must be closed, the reversing gear placed in centre position, and the hand-brake screwed hard on. After sufficient steam has been raised in the boiler to work the injector, the ash wetter must be used until it is seen that all live ashes in the ashpan have been quenched; the ash wetter must be used from time to time so long as there is a fire in the fire-box.

The engine crew after coming on duty must see that the appliances, as mentioned above, are in good order, and that the ash wetter and slides are working satisfactorily; the ashpan must be emptied before leaving Loco. The ash-wetter valve should be fully opened for approximately one minute each time it is used, and this should be done more frequently at the commencement of the journey, or when the fire is thin, than after the fire has become thick; the ash wetter must be used when the fire is being cleaned so as to prevent over-heating the ashpan. The ashpan slides must be kept closed whilst the engine is in motion, and, wherever possible, ashpans should be emptied in the ash pits. Engine-men must see that no live ashes are left on the permanent way.

If these instructions are strictly adhered to, the risk of ashpans becoming overheated and buckling, ash slides becoming jammed, or live ashes falling out on to the permanent way, will be reduced to the absolute minimum.

Shed Foremen must arrange for a proper inspection to be made of all fire prevention appliances on all engines stabling at their depots, and a proper record of these inspections is to be kept by them, so that the condition of fire prevention appliances on any particular locomotive may be ascertained. Every effort must be made by Shed Foremen to keep ashpans, ashpan slides, ash wetters, and spark arrestors in perfect order.

Engine-men are warned that very serious notice will be taken of any instance where it is proved that these instructions have been disregarded.

Attention is also drawn to the instructions in clause 166, page 328 of this Appendix.

145. LOAD OF TRAIN TO BE ASCERTAINED BY DRIVER.

The Guard must, before commencing a journey, notify the Engine-driver the tonnage load of the train, and the Engine-driver must in every case obtain the information before starting.

If the Driver is not satisfied that the load given by the Guard is correct he must notify him accordingly, and the load must be checked by the Driver.

146. L.8 DRIVER'S REPAIR BOOK.

Arrangements have been made for each G, Ka. and NM locomotive to be fitted with a galvanized iron case in the cab to contain an L.8 Driver's Repair Book.

Drivers must, on completion of their trip, when relieved on traffic or when stabling their engine, enter up particulars of repairs required in the L.8 Repair Book carried on the engine. It is not necessary to record this information in the Shed L.8 Repair Book.

It will be the responsibility of the Shed Foreman at each Locomotive Depot to obtain the L.8 Repair Book from the engine and re-enter particulars of repairs required into the Shed Repair Book, to see that the repairs are duly effected and that the tradesmen concerned enter, in both the Engine and Shed Repair Books, particulars of the repairs effected. It is also the responsibility of the Shed Foreman to see that the Book is again placed on the locomotive prior to its departure from the depot.

Engine-men are specially instructed that—

- (1) All defects located by them on the engine which they are working are to be shown in the L.8 Repair Book attached to that engine.
- (2) They must examine Repair Book when preparing their engine for traffic and see that all repairs booked by the previous driver have been effected and duly signed off.
- (3) Where repairs have been previously booked and have been signed off as completed but an examination discloses that these repairs have obviously not been carried out, the Shed Foreman's attention must be drawn to the matter and a notation is to be made in the Repair Book accordingly. The repairs must also be again booked.
- (4) In the event of repairs previously booked not being effected, nor being signed off, similar action is to be taken to that outlined in (3).

In regard to paragraphs (3) and (4) above, Shed Foremen are to forward to this office a report regarding any instance where thier attention is drawn to repairs not being effected prior to engines going onto traffic.

The lid of L.8 Repair Book case must be kept closed as books are likely to be damaged as a result of rain or water from coal spray entering the case.

Immediately on arrival at Port Augusta and after particulars of repairs required have been entered into the Shed Repair Book, the locomotive L.8 Repair Books are to be forwarded to the office of the Superintendent of Locomotive Running in every instance for perusal, after which they will be returned to the Shed Foreman, Port Augusta, for completion in accordance with the above.

It will not be necessary for the Shed Foreman, Quorn, to forward L.8 Repair Books to Port Augusta for inspection. This will be done by the Superintendent of Locomotive Running or the Travelling Foreman as opportunity offers.

147. EQUIPMENT TO BE KEPT BY DRIVERS.

The undermentioned equipment is to be supplied to each Driver and Acting Driver, who will be held responsible for its safe custody. Tool boxes are to be kept locked, and Shed Foremen will hold duplicate keys.

In case of a transfer to another Depot, a Driver is to take his kit with him, and the Shed Foreman is to send duplicate key to the Depot to which the driver is transferred.

Shed Foremen are to check over Drivers' equipments each month and make good any shortages. Any serious losses must be reported and Drivers' explanations forwarded.

Shed Foremen are to requisition from time to time such articles as are necessary to maintain complete equipments.

At Depots where lockers are provided for Drivers, Drivers' kits are to be locked up before crew go off duty. Where lockers are not provided, kits are to be placed in a clean position in Loco. Store:—

- 1 Tool box and lock.
- 1 Hand-hammer.
- 2 Flat cold chisels, $\frac{1}{2}$ face.
- 1 Cross-cut chisel, $\frac{3}{8}$ face.
- 1 Syringe.
- 2 Pin punches, $\frac{1}{4}$ diameter.
- 2 Pin punches, $\frac{3}{8}$ diameter.
- 1 Pair trimming tongs.
- 1 16-in. Clyburn spanner.
- 1 $\frac{3}{8}$ -in., $\frac{1}{2}$ -in. double-ended spanner.
- 1 W.H.B. "C" spanner.
- 2 Spindle gland spanners.
- 2 Piston gland spanners.
- 1 Oil cap ring spanner, 2-in. square.
- 1 Box, containing 2 gauge glasses and rubber rings to suit.
- 1 Packing drawer.
- 1 Packet detonators.
- 1 Red flag.
- 1 Flare lamp.
- 1 Gauge lamp.
- Copper wire and wool and lamp cotton.
- 1 Hand marline.
- 1 Firemen's shovel, 1 hand brush.
- 1 2-gallon oil bottle (bearing).
- 1 1-gallon oil bottle (cylinder).
- 1 1-pint kerosene bottle.
- 1 3-pint cylinder oil kettle.
- 1 3-pint box feeder and $1\frac{1}{2}$ -pint spring feeder.

148. TOOL EQUIPMENT TO BE KEPT ON LOCOMOTIVES.

"G", "NG" AND "NM" CLASS.

- 2 Engine jacks.
- 2 Engine jack ratchets.
- 2 Pinch bars with jack bar ends.
- 1 $2\frac{1}{4}$ -in. spanner.
- 1 2-in. spanner.
- 1 $1\frac{1}{2}$ -in. spanner.
- 1 $1\frac{3}{8}$ -in. spanner.
- 1 $1\frac{1}{4}$ -in. spanner.
- 1 1-in. spanner.
- 1 Water hose connexion to be attached to back of tender for coupling to water gin.
- 1 Pricker.
- 1 Clunker shovel.
- 1 Dart.
- 1 Ash pan rake.

"K" AND "KA" CLASS.

- 2 Engine jacks.
- 2 Engine jack ratchets.
- 2 Pinch bars with jack bar ends.
- 1 3-in. spanner.
- 1 2-in. spanner.
- 1 $1\frac{1}{2}$ -in. spanner.
- 1 $1\frac{3}{8}$ -in. spanner.
- 1 $1\frac{1}{4}$ -in. spanner.
- 1 1-in. spanner.
- 1 Water hose connexion to be attached to back of tender for coupling to water gin.
- 1 Pricker.
- 1 Clunker shovel.
- 1 Dart.
- 1 Ash pan rake.

Engines fitted with grease lubrication are equipped with a portable box containing:—

- 1 Heavy grease gun.
- 1 Light grease gun.
- 1 Tin for heavy grease.
- 1 Tin for light grease.

When Engines so fitted are stabled at Locomotive Depots, this box and contents must be removed from Engine and placed in the Oil Store until again required. At points where Standby Engines are located, it must be handed over to the custody of the Stationmaster.

149. RESPONSIBILITY FOR TOOL EQUIPMENT.

The Shed Foreman, Port Augusta, must arrange to fully equip each standard gauge engine working out of Port Augusta.

Shed Foremen at out depots on the Trans-Australian Railway are to collect all spare engine tools in their district and have placed in the engine tool boxes. On arrival at Port Augusta, the Shed Foreman there is to remove surplus equipment, and keep it on hand for use as required in equipping other locomotives.

The Shed Foreman, Quorn, and Shed Foreman, Port Augusta, is to see that tool equipment on "NM" class locomotives is maintained, in their respective Depots.

The Shed Foreman is responsible for the equipment of each engine on the North Australia Railway.

Enginememen on the Trans-Australian and Central and North Australia Railways are to exercise the greatest care in seeing that tool equipment is replaced after use on the locomotive to which it belongs. They must collect any spare engine tools that are lying about sub-depots and other places along the line, and return them to the nearest Shed Foreman.

Mechanics when using engine tool equipment must also see that same is replaced in tool box after use.

The tool boxes on locomotives are to be secured with a $\frac{3}{8}$ -in. split link, and Enginememen or other staff should only open these when necessity arises for using tool equipment. The split link on tool boxes is to be secured in position and closed when tools have been replaced after use.

The Shed Foreman, Port Augusta, must have tool equipment checked on each standard and narrow gauge engine prior to leaving his depot, and the Shed Foreman, Quorn, must have tool equipment checked on each "NM" class engine before leaving Quorn. Any case where loss has occurred must be reported, and the Driver's explanation is to be forwarded with report.

Pumpers and Train Examiners and other locomotive running staff should return any spare locomotive tools located by them to the nearest Shed Foreman.

150. DUTIES OF ENGINE CLEANERS.

Locomotives.—Engine Cleaners are to sign on duty in the attendance book at the time they are rostered for duty. They must then carefully peruse the Roster Sheet and the General Order Book, and note carefully any instructions that have been posted for their observance. They are then to examine all locomotives which they have to light up and see that there is ample water in the boilers. The bottom water gauge cock should be opened, the water allowed to run out of waste water pipe, and the cock then closed. The water should then come back into the gauge glass correctly.

The regulator valve, steam valve to injectors, Westinghouse brake pump and blower should be closed, lever out of gear, cylinder cocks open and the hand brake applied.

The smoke box doors should be examined to see if they are properly closed and secured.

The ashpans should be examined to see if ashes are clear of firebars, and if not, they should be raked out before a fire is placed in the fire box. Ash slides on "NM" class locomotives can be opened from underneath by using a bar, when no air pressure is available.

When lighting up engines a good wood fire should be placed in the fire box, and coal should not be added until a good clear wood fire has been made, and then only a few lumps should be used. It is not advisable to place much coal in the fire box until sufficient steam has been raised to use the blower. If excessive coal is used the tubes and spark arrester will become choked with soot, and difficulty will be experienced in raising steam. There should be from 40 to 60 lb. of steam registering on the steam gauge when the crew come on duty to take over their locomotive.

Should Cleaners experience trouble which will result in an engine being late on traffic, they must get in touch with the Shed Foreman, or Chargeman, at the earliest possible moment, and explain the circumstances.

Engine crews, who are required to sign on duty after 9 p.m. or before 7 a.m., must be called in ample time to permit of their taking up duty at the rostered time.

Cleaners must devote as much of their time as possible to the cleaning of locomotives, and where time does not permit of the whole of a locomotive being cleaned, the cleaner must first clean motion gear and side rods, after which the boiler and running board should receive attention. The cleaning of the wheels and underframe should be left till last.

The importance of having steam raised in locomotives, and of having crews called at the correct time, cannot be too strongly emphasized, and any circumstance or condition which unduly hampers the work, must be immediately brought under the notice of the Shed Foreman, or Chargeman.

150a. AVOIDANCE OF BOILER TROUBLE.

Cases of Engine failures have occurred which, it is considered, could have been avoided had correct practices been followed by the Engine-driver.

With a view to avoiding boiler trouble, the following instructions are to be observed by Enginememen:—

- (1) On arriving at stations where time is allowed for coaling, &c., the water level in boilers must be maintained while the fire has sufficient coal on to enable the blower to be used, so that it will not be necessary to use the injector during the process of cleaning the fire. The ash-pan slides on NM. engines should be closed immediately the cleaning of the fire is completed.

- (2) During the running of trains, the fire should not be allowed to become low, particularly when the engine is rolling out of steam and the injector is on. Coal should be applied intermittently, and the blower used sufficiently to prevent the pressure from falling below a reasonable variation.
- (3) When locomotives are being stabled the boilers should be as near full as possible when coming off traffic, so that the need for further supplies of comparatively cold water can be avoided when the fire is low.

151. WAY AND WORKS INSTRUCTIONS.

1. *Examination of Maintenance Lengths.*—The safety of the line must be the first consideration.

Rule 220 (a) of Book of General Rules provides that each Ganger must regularly inspect his length on such days as are directed by the Head of the Branch controlling Way and Works operations. All concerned are advised that lengths are to be patrolled and examined in accordance with the following instructions, which must be read in conjunction with General Rule No. 220.

TRANS-AUSTRALIAN RAILWAY.

All Roadmasters Districts:—

Port Augusta to Kalgoorlie .. Each section of the length on either side of the Camp must be patrolled and examined alternately on each week day throughout the week. This is equivalent to each length being patrolled and examined from end to end three times per week.

CENTRAL AUSTRALIA RAILWAY.

Port Augusta to Quorn .. Each gang length between Port Augusta and Quorn, including mileage from Quorn to 234 miles 28 chains 5 links on Quorn to Terowie line, must be patrolled and examined from end to end daily (Sundays excluded).

Quorn to Marree .. Each section of the length on either side of the Camp must be patrolled and examined alternately from Mondays (inclusive) to Fridays (inclusive). On Saturdays the full distance of the length must be patrolled and examined.

Marree to Alice Springs .. Each length must be patrolled and examined from end to end every day on which a train is run thereon.

NORTH AUSTRALIA RAILWAY.

Darwin to Birdum .. Each length must be patrolled and examined from end to end every day on which a train is run thereon.

GENERAL INSTRUCTIONS.

No definite hours have been set down for the patrol and examination of lengths, but as far as possible each Ganger should use his discretion as to the time his length should be patrolled and examined in accordance with these instructions, having in view the necessity for such patrol and examination being undertaken prior to the running of trains.

In the case of patrol and examination of each section of length on alternate days, the section of the length to be patrolled is also left to the discretion of the Ganger.

The whole of the instructions laid down in Rules Nos. 220, 226, and 227 of Book of General Rules must be very closely observed.

It is strongly impressed upon all Gangers and others responsible that they are called upon to exercise the utmost vigilance and care in wet weather, both day and night, to watch and carry out the investigations of their lengths especially in accordance with Rule 226; and it must be clearly and distinctly understood that such employees are held personally responsible for the exercise of the closest watchfulness and caution as the circumstances warrant.

Gangers must exercise the utmost vigilance and care in the examination of their lengths at such time when it is considered that drift sand is likely to occur as the result of high winds, so that the safe passage of trains may be assured.

When the Roadmaster makes an inspection of a length by motor vehicle the Ganger in charge of that length may regard it as having been patrolled and examined on that day. Any examination of the length by the Roadmaster, however, will not release the Ganger from the responsibility for undertaking any additional examinations of his length which may be required as the result of wet weather or heavy thunderstorms or high winds through drift sand country.

2. *Fettling Gangs' Petrol Stores.*—Roadmasters must inspect all Fettling Gangs' petrol stores once each four-weekly period, and see that no material is allowed to accumulate which might render them unsafe.

3. *Trolley Sheds.*—Gangers must keep trolley sheds tidy, and see that they are securely locked when the gang is not engaged in the immediate vicinity. Roadmasters are held responsible for seeing that this instruction is properly observed.

152. LOCATIONS OF FETTLING GANGS.

All concerned are notified that the locations of Fetting Gangs are as follow:—

TRANS-AUSTRALIAN RAILWAY.

Gang No.	Mileage.		Location of Camp.	Gang No.	Mileage.		Location of Camp.
	From—	To—			From—	To—	
No. 1 District—Roadmaster, Port Augusta.				No. 3 District—Roadmaster, Cook.			
1	0	4	Port Augusta	22	466	493	Fisher
2	4	24	17 Mile	23	493	526	Cook
3	24	45	Hesso	24	526	551	539 Mile
4	45	66	Bookaloo	25	551	584	Hughes
5	66	86	Woocalla	26	584	611	Deakin
6	86	106	Wirrappa	27	611	644	632 Mile
7	106	127	Pimba	28	644	671	Forrest
8	127	148	Burando	29	671	698	686 Mile
9	148	173	Wirraminna	30	698	731	Loongana
10	173	198	Kultanaby	31	731	765	744 Mile
No. 2 District—Roadmaster, Tarcoola.				No. 4 District—Roadmaster, Parkeston.			
11	198	224	Kingoonya	32	765	793	Haig
12	224	249	240 Mile	33	793	828	Rawlinna
13	249	275	Tarcoola	34	828	855	Naretha
14	275	305	299 Mile	35	855	881	870 Mile
15	305	330	Wynbring	36	881	906	894 Mile
16	330	354	340 Mile	37	906	940	Zanthus
17	354	374	360 Mile	38	940	964	946 Mile
18	374	396	Barton	39	964	996	Karonie
19	396	417	Immarna	40	996	1,020	Randells
20	417	439	Ooldea	41	1,020	1,045	Golden Ridge
21	439	466	Watson	42	1,045	1,051	Parkeston

CENTRAL AUSTRALIA RAILWAY.

Gang No.	Mileage.		Location of Camp.
	From—	To—	
District No. 1—Roadmaster, Port Augusta.			
	m. ch.	m. ch.	
1	258 43	247 60	Port Augusta
2	247 60	239 40	Woolshed Flat
District No. 2—Roadmaster, Quorn.			
		{ 240 00* 234 28† }	Quorn
3	239 40		
4	240 0	260 0	Willochra
5	260 0	290 0	Hawker
6	290 0	320 0	Mernmerna
7	320 0	350 0	335 Mile
8	350 0	372 0	360 Mile
9	372 0	394 0	383½ Mile
10	394 0	419 0	Farina
District No. 3—Roadmaster, Marree.			
	m. ch.	m. ch.	
11	419 0	444 0	Marree
12	444 0	484 0	Wangianna
13	484 0	524 0	Curdimurka
14	524 0	564 0	Irrappatana
15	564 0	604 0	Anna Creek
16	604 0	646 0	Edwards Creek
17	646 0	688 0	Mount Dutton

* Central Australia Railway.

† Adelaide line.

CENTRAL AUSTRALIA RAILWAY—continued.

Gang No.	Mileage.		Location of Camp.			
	From—	To—				
<i>District No. 4—Roadmaster, Oodnadatta.</i>						
	m.	ch.	m.	ch.		
18	..	688	0	730	0	Wire Creek
19	..	730	0	772	0	Pedirka
20	..	772	0	814	0	Abminga
21	..	814	0	855	7	Finke
22	..	855	7	897	7	878 mile
23	..	897	7	939	7	Rodinga
24	..	939	7	982	7	Ewaninga

NORTH AUSTRALIA RAILWAY.

Gang No.	Mileage.		Location of Camp.		
	From—	To—			
(Roadmaster, Darwin.)					
	m.	ch.	m.	ch.	
1	0	0	22	0	Darwin
2	22	0	58	0	22 mile
3	58	0	94	0	58 mile
4	94	0	130	0	Burrundie
5	130	0	163	0	Pine Creek
6	163	0	181	0	Ferguson River
7	181	0	200	0	191 mile
8	200	0	230	0	Katherine
9	230	0	265	0	Mataranka
10	265	0	291	0	Mataranka
11	291	0	316	0	Birdum

153. STANDARD LIST OF TOOLS AND EQUIPMENT TO BE HELD BY EACH MAINTENANCE GANG.

TRANS-AUSTRALIAN RAILWAY.

Item.	No.	Item.	No.
Adze	1	Chisels, Cold (Cross-cut) ..	2
Augers, 13 in.	6	Cover (Canvas), for M.S. Car	1
„ 1 in.	2	Cranks, Auger	3
Axe	1	Detonators	36
Bars, Claw	3	Dog Lifters	2
„ Plain	6	Drifts, Hand	2
Beaters, Packing (per man)		Feeders, Oil (½ pint)	2
on ballasted road	3	Files, Auger	2
Beaters, Packing (per man)		„ Flat	1
on unballasted road	1	Flags, Green	3
Bits, Ratchet	3	„ Red	3
Boards, Caution	4	Gauge, Track	1
Box, Ambulance	1	Grease	7 lb.
„ Provision	1	Grindstone	1
„ Tool	1	Hammer, Claw	1
Brace, Ratchet	1	„ Napping	4
Can, Oil (1 gal.)	1	„ Spiking	3
Can Board and Straight		„ Striking	2
Edge	1	Handles, Hammer (36 in.)	2
Chains, for Cars, Tricycles,		„ Pick (per man)	2
and Trolley	2	Jacks, Track	3

TRANS-AUSTRALIAN RAILWAY—continued.

Item.	No.	Item.	No.
Kerosene	1 gal.	Shovels (S.M.) (per man) ..	1
Labels (addressed), for Consigning Tools ..	2	Spanner, Box ..	1
Lamps, Hand Signal ..	3	Clyburn ..	1
" Caution Board ..	4	" Crescent ..	1
Level, Spirit	1	" Fish-up ..	3
Mattocks	6	Square, Rail ..	1
Nicking Line	1	Tanks, 400 gal. ..	3
Oil, Black	1 gal.	Tape, 66 feet ..	1
Padlocks	4	Telephone, Portable, with Rods	1
Petrol Magazine ..	1	Tongs (for cold set) ..	2
Picks (per man) ..	1	Tool Carrier ..	2
Planks, Barrow ..	3	Tripod, for Water Bag ..	1
Punch, Centre ..	1	Vehicles—	
Rasp, Wood	1	Motor Section Car ..	1
Ratchet, Cramp ..	1	Hand Section Car ..	1
Rule (2 feet) ..	1	Tricycles ..	2
Saw, Cross-cut, 5 feet ..	1	Trolley and Top ..	1
Sets, Cold	6	Water Bag (3 galls.) ..	2
Shelter, Canvas (where necessary) ..	1	Water Drum ..	1
Shovels, (R.M.) (per man) ..	2	Wedges, Expansion ..	6
		Wheelbarrows ..	3

Jim Crows will be held by Gangers at each of the following locations:—

Port Augusta.	Barton.	Rawlinna.
Pimba.	Ooldea.	Naretha.
Wirraminna.	Cook.	Zanthus.
Kingoonya.	Hughes.	Karonie.
Tarcoola.	Loongana.	Parkeston.
Wynbring.		

The Roadmaster on each section will hold the following material and spare tools, &c., which will be drawn upon as required by Gangers. Tools and plant not consumed are to be returned to Roadmasters when finished with:—

Adze Handles ..	2
Axe Handles ..	4
Hack Saw Frames ..	4 and 24 blades
Jim Crow ..	1
Kerosene ..	1 case
Lamps, Hurricane ..	4
Saws, Hand ..	2
Shovels, L.H. ..	4

With regard to issue of kerosene and other consumable material, Roadmasters will send in fortnightly returns on forms supplied for the purpose showing issues to Gangs.

In addition to the above, each Fettling Gang will be equipped with spare permanent way material as follows:—

Six rails, corresponding to the length of rails on the section.
Fastenings as necessary.
Thirty standard sleepers.

A separate instruction will be issued in respect of any departure from the foregoing list, as in the case of the hand-section car length at Port Augusta and at Parkeston Depot.

CENTRAL AND NORTH AUSTRALIA RAILWAYS.

Item.	Number.
Adze	1
Auger, $\frac{1}{2}$ ", $\frac{5}{8}$ ", $\frac{3}{4}$ " ..	2 each
" 11/16" ..	6
Axe	1
*Bars, Claw, $\frac{1}{2}$ ", $\frac{5}{8}$ ", 13/16" ..	2 each
Beaters, Packing (per man) on ballasted road	3
†Beaters, Fire (per man) ..	1 Port Augusta to Marree
Bits, Ratchet, 1" ..	3
Boards, Caution ..	4
Box, Ambulance—M.S. car gangs ..	1
Box, Tool ..	1
Brace, Ratchet ..	1
Can, Oil (1 gallon) ..	1
Cant Board and Straight Edge ..	1
Chains, for Cars, Tricycles and Trolley ..	2
Chisels, Cold (Cross-cut) ..	2
Cover (Canvas) for M.S. car ..	1
Cranks, Auger ..	3
Detonators ..	36
*Dog Lifters, $\frac{1}{2}$ ", $\frac{5}{8}$ ", 13/16" ..	2 each
Drifts, Hand ..	2
Feeders, Oil ($\frac{1}{2}$ pint) ..	2
Files, Auger ..	2
Files, Flat ..	1
Flag, Green ..	3
Flag, Red ..	3
Gauge, Track, 3' 6", 3' 6 $\frac{1}{2}$ " ..	1 each
Grease ..	7 lb.
Grindstone and Stand ..	1
Hammer, Claw ..	1
Hammer, Napping ..	4
Hammer, Spiking ..	3
Hammer, Striking ..	2
Handles, Hammer (36") ..	2
Handles, Pick (per man) ..	2
Jacks, Track ..	2
Kerosene ..	1 gallon
Labels (addressed), for Consigning Tools ..	2
Lamps, Hand Signal ..	3
Lamps, Caution Board ..	4
Level, Spirit ..	1
Mattocks ..	4 Gangs Port Augusta to Marree
Nicking Line ..	1

*North of Oodnadatta only 13/16 inch claw bars and dog lifters required.
†Fire beaters not required north of Marree.

CENTRAL AND NORTH AUSTRALIA RAILWAYS—continued.

Item.	Number.
Oil, Black	1 gallon
Padlocks	4
Picks (per man)	1
Planks, Barrow, 20'	3
Punch, Centre	1
Rasp, Wood	1
Ratchet, Cramp	1
Rule, 2'	1
Saw, Cross-cut, 5'	1
Saw, Hand	1
Sets, cold	6
Shade, Canvas	1
Shovels, (R.M.) (per man)	2
Shovels (S.M.) (per man)	1
Spanner, Clyburn, 15"	1
Spanner, Crescent, 9"	1
Spanner, Fish-up	3
Spanner, Box	1 where necessary
Stretchers (one per man)	1 Flying Gangs
Square, Rail	1
Tape, 66'	1
Telephone, Portable	1
Tongs (for cold set)	2
Tripod for Water Bag	1
Vehicles—	
Motor Section Car	1 except Quorn
Hand Section Car	1
Tricycles	1 each at 360 miles and Marree
Tricycles	3 each at Woolshed Flat and Hawker
Tricycles	2 each at all other Gangs
Trolley and Top	2 for gangs 4, 6, 11 and 13
Trolley and Top	1 for all other Gangs
Trolley, Sand	1 for Flying Gangs
Water Bag (3 gallons)	2
Water Bag, Hand	1 for each Flying Gang
Water Drum	1
Wedges, Expansion	6
Wheelbarrows	3
Bars, Pulling	4
Petrol Magazine	1
Standard Trolley Shed with Tank 200 gallon G.I.	1
Tanks, 400 gallon	3 except where there are underground Tanks
Templates, Sleeper	1
Tool Carrier	2

Jim Crows will be held by Gangers at each of the following locations :—

2 .. Port Augusta	1 .. Copley
1 .. Woolshed Flat	1 .. 383½ Mile
2 .. Quorn	1 .. Farina
1 .. Hawker	1 .. Each Flying Gang
1 .. 347 Mile	

Torches for burning off will be held by Gangers at each of the following locations :—

2 .. Port Augusta	2 .. 347 Mile
2 .. Woolshed Flat	1 .. Copley
2 .. Quorn	2 .. Marree
1 .. Hawker	2 .. Each Flying Gang
2 .. Mern Merna	

GENERAL.

The Roadmaster on each section will hold the following material and spare tools, &c., which will be drawn upon as required by Gangers. Tools and plant not consumed must be returned to Roadmaster when finished with :—

Adze Handles .. 2	Kerosene .. 1 case
Axe Handles .. 4	Lamps, Hurricane .. 4
Hack Saw Frames .. 4	Saws, Hand .. 2
Hack Saw Blades .. 24	Shovels, L.H. .. 4
Jim Crow .. 1	Spanners, Fang Bolt .. 2
Fencing Tools sets 4	

In addition to the above, each Fetting Gang will be equipped with spare rails, fastenings and sleepers as found necessary by the Roadmaster.

Stretchers and cooking equipment according to strength will be held for gangs north of Marree.

With regard to issue of kerosene and other consumable material, Roadmasters will send in fortnightly return on form supplied for the purpose showing issue to Gangs.

Care of Tools and Equipment.—Tools and equipment must be kept in good order, and as far as possible when not in use properly stored in trolley sheds or tool boxes under lock and key. Roadmasters must frequently inspect and check the tools and equipment and see that they are complete and properly cared for.

154. GANGERS TO COMMUNICATE WITH STATIONS DAILY.

Gangs not Located at Attended Stations.—Gangers must communicate daily with the stations and at the times set out in the following tables in order to—

- ascertain the movement of trains.
- ascertain condition of telegraph line, and if necessary to remove any faults.
- obtain instructions from Roadmasters, &c.

In all cases where Gangers are unable to raise stations within the appointed times, the circumstances must be reported to the Roadmaster.

In all cases, unless specially authorized by the Chief Engineer of Way and Works, and when the hours of duty of the adjacent Traffic Officer will permit, the call must be made before the Gang departs from home stations for the day's work. When the attendance at the adjacent station will not permit of such action the call must be made immediately following the commencement of duty according to the rostered hours of the Traffic Officer concerned.

The Stationmaster or other station staff must record in the train register book daily the time at which gangers ring up to ascertain the movements of trains, &c., and must report promptly to the Chief Traffic Manager any failure on the part of gangers to so communicate.

Gangers Located at Attended Stations.—Gangers must, before the departure of the Gang each morning, ascertain from the employee in charge of the station particulars as to movements of trains, and obtain any instructions which may have been received from the Roadmaster, &c.

In case the employee in charge is not available, the station must be communicated with by portable telephone during the day as provided for in the case of Gangs not located at attended stations.

General.—Every Ganger must satisfy himself before leaving camp in the morning that the portable telephone outfit is complete.

The greatest care must be taken of the instruments; they must always be carried right side up and handled gently, and when not in use kept in box provided for the purpose, with lid closed. On no account should they be allowed to get wet.

Any defects in portable telephones must be immediately reported to the District Lineman of the District concerned.

TIMES GANGERS SHOULD COMMUNICATE WITH STATIONS.

TRANS-AUSTRALIAN RAILWAY.

Gang No.	Location.		Communicate with Station.	Time.	Method of Communication.
	Miles.	Station.			
1	..	Port Augusta	Port Augusta	From 7.30 a.m. ..	Inquire at station before proceeding on length
2	17	.. ..	} Pimba ..	7.30 a.m. to 9 a.m. ..	Communicate by telephone
3	34	Hesso ..			
4	52	Bookaloo..			
5	71	Woocalla..			
6	94	Wirrappa ..	}	7.30 a.m. to 9 a.m. ..	Inquire at station before proceeding on length, or by telephone
7	113	Pimba ..			
8	128	Burando ..	.. ..	7.30 a.m. to 9 a.m. ..	Communicate by telephone
9	157	Wirraminna	} Kingoonya	7.30 a.m. to 9 a.m. ..	" " "
10	189	Kultanaby			

TRANS-AUSTRALIAN RAILWAY—continued.

Gang No.	Location		Communicate with Station.	Time.	Method of Communication.
	Miles.	Station.			
11	209	Kingoonya	Kingoonya	7.30 a.m. to 9 a.m. ..	Inquire at station before proceeding on length, or by telephone
12	240	.. ..	Tareoola ..	7.30 a.m. to 9.30 a.m.	Communicate by telephone
13	257	Tareoola ..	" ..	7.30 a.m. to 9.30 a.m.	Inquire at station before proceeding on length, or by telephone
14	298	.. ..	" ..	7.30 a.m. to 9.30 a.m.	Communicate by telephone
15	321	Wynbring	} Barton ..	9 a.m. to 9.30 a.m. ..	" " "
16	340	.. ..		
17	360	.. ..		
18	376	Barton ..			
19	407	Immarna..	} Barton ..	9 a.m. to 9.30 a.m. ..	Communicate by telephone
20	427	Ooldea ..			
21	445	Watson ..	} Cook ..	7.30 a.m. to 8.30 a.m.	" " "
22	479	Fisher ..			
23	513	Cook ..	" ..	7.30 a.m. to 8.30 a.m.	Inquire at station before proceeding on length, or by telephone
24	539	.. ..	} .. ..	7.30 a.m. to 8.30 a.m.	Communicate by telephone
25	567	Hughes ..			
26	599	Deakin ..			
27	632	.. ..		
28	651	Forrest ..	} Loongana	9 a.m. to 9.30 a.m. ..	" " "
29	686	.. ..		
30	715	Loongana	" ..	9 a.m. to 9.30 a.m. ..	Inquire at station before proceeding on length, or by telephone
31	744	.. ..	" ..	9 a.m. to 9.30 a.m. ..	Communicate by telephone
32	771	Haig ..	Rawlinna	7.30 a.m. to 9.30 a.m.	Communicate by telephone
33	816	Rawlinna	" ..	7.30 a.m. to 9.30 a.m.	Inquire at station before proceeding on length, or by telephone
34	846	Naretha ..	" ..	7.30 a.m. to 9.30 a.m.	Communicate by telephone
35	870	.. ..	} Zanthus..	9 a.m. to 9.30 a.m. ..	" " "
36	894	.. ..		
37	921	Zanthus ..			
38	946	.. ..	} .. ..	9 a.m. to 9.30 a.m. ..	Communicate by telephone
39	983	Karonie ..			
40	1,000	Randells ..			
41	1,036	Golden Ridge ..			
42	1,049	Parkeston	" ..	7.30 a.m. to 9 a.m. ..	Inquire at station before proceeding on length, or by telephone

CENTRAL AUSTRALIA RAILWAY.

Gang No.	Mileage of Length.		Home Station.	Communicate with		Method of Communication.
	From.	To.		Station.	Time.	
1	M. C. 258 43	M. C. 247 60	Port Augusta	Port Augusta	From 7.30 a.m.	Inquire at station before proceeding on length
2	247 60	239 40	Woolshed Flat	"	7.30 a.m. to 9 a.m.	Communicate by telephone
3	239 40	240 04 234 28†	Quorn	Quorn	From 7.30 a.m.	Inquire at station before proceeding on length
4	240 0	230 0	Willochra	"	7.30 a.m. to 9 a.m.	Communicate by telephone
5	200 0	200 0	Hawker	Hawker	"	Inquire at station before proceeding on length, or communicate by telephone
6	290 0	320 0	Merumerna	"	"	Communicate by telephone
7	320 0	350 0	385 Mile	Parachilna	"	"
8	350 0	372 0	360 Mile	Beltana and Copley	"	"
9	372 0	394 0	383½ Mile	Copley and Farina	"	"
10	394 0	419 0	Farina	Farina	9 a.m. to 9.30 a.m.	Inquire at station before proceeding on length, or communicate by telephone
11	419 0	444 0	Marree	Marree	"	Communicate by telephone
12	444 0	484 0	Wanglanna	"	"	"
13	484 0	524 0	Curdinmurka	"	"	"
14	524 0	564 0	Irrappatana	Edwards Creek	"	"
15	564 0	604 0	Anna Creek	"	"	Inquire at station before proceeding on length, or communicate by telephone
16	604 0	646 0	Edwards Creek	"	"	Communicate by telephone
17	646 0	688 0	Mt. Dutton	Oodnadatta	"	"
18	688 0	730 0	Wire Creek	"	"	"
19	730 0	772 0	Pedricka	"	"	"
20	772 0	814 0	Abmunga	Rumbalara	"	"
21	814 0	855 7	Finke	"	"	"
22	855 7	897 7	878 Mile	"	"	"
23	897 7	939 7	Rodlinga	Alice Springs	"	"
24	939 7	982 7	Ewaninga	"	"	"

* Quorn—Oodnadatta Section.

† Adelaide Line.

In addition to the times shown above, Gangers must also ring up between the hours of 11.55 a.m. and 1 p.m., and at 4.30 p.m. This instruction applies to both the Trans-Australian and Central Australia Railways.

Gangers at unattended places should keep in touch with the hours of duty of Stationmasters concerned. In cases where the traffic employee is not on duty at the hours specified, the Ganger must ring up at a convenient hour, which is to be ascertained from the Stationmaster.

In some cases, the Stationmaster at the station specified for a certain gang may be off duty at the time shown, but the Stationmaster at the next attended station in the opposite direction will probably be available, and should be communicated with.

It will, however, still be necessary for the station specified to be communicated with during the day.

NORTH AUSTRALIA RAILWAY.

In addition to enquiring or communicating with Stationmaster, as provided for in the foregoing instructions, Gangers are, wherever possible, to communicate with the Roadmaster's Office, Darwin, at 7.30 a.m. daily.

155. LOCATIONS OF DISTRICT LINEMEN.

The locations of District Linemen and the Districts under their supervision are shown hereunder:—

TRANS-AUSTRALIAN RAILWAY.

Location.	District Supervised.
Pimba	Bookaloo—Kingoonya.
Tarcoola	Kingoonya—Barton.
Watson	Barton—539 Mile.
Forrest	539 Mile—Loongana.
Rawlinna	Loongana—Kitchener.
Karonie	Kitchener—Parkleston.

CENTRAL AUSTRALIA RAILWAY.

Location.	District Supervised.
Farina	Parachilna—Curdinmurka.
Edwards Creek	Curdinmurka—Oodnadatta.
Finke	Oodnadatta—Alice Springs.

The district between Port Augusta and Bookaloo is maintained by the staff at Port Augusta.

The district between Port Augusta and Parachilna (exclusive of both stations) is maintained by the Postal Department.

Instructions relating to maintenance of telegraph circuits, &c., are contained under "Telegraph and Telephone Business".

156. WIRES CROSSING RAILWAY.

Where telegraph, electric staff, and telephone wires cross the railway they are placed at 22 feet above rail level on the Trans-Australian Railway. In existing crossings on Central or North Australia Railway 18 feet above rail level is permissible, but all new crossings must be at least 22 feet above rail level.

District Linesmen must see that all such wires are maintained at this height.

Inspecting officers, gangers, enginemen, and others should promptly bring under the notice of the District Linesman concerned any instance in which they consider a wire crossing a railway is lower than 20 feet from rail level. This action is also to be taken should it be noticed that a wire is insecurely fastened to the poles on either side of the railway.

157. MARKING OF SLEEPERS TO INDICATE YEAR PLACED IN ROAD.

It is essential that the period sleepers have been in the road shall be ascertainable, and all sleepers so placed shall be marked in accordance with the following sketches.

On the Central Australia Railway holes are to be bored right through the sleeper with a 11/16-inch auger, and on the Trans-Australian Railway with a 13/16-inch auger, in positions approximately as shown in sketches, 2½ inches from outer edge of sleeper.

Transoms and crossing timbers are to be treated as sleepers for the purpose of age identification, and must be bored similarly. It will be noted that the position of holes in sleepers on the Central Australia Railway from 1927 to 1935 correspond with the arrangements on the Trans-Australian Railway. Care must be exercised to see that sleepers are marked in accordance with these instructions:—

TRANS-AUSTRALIAN RAILWAY.

KALGOORLIE.

1912	1913	1914		1915	1916	1917	1918	1919	1920		1921	1922	1923
:	:	:		:	:	:	DOWN	:	:		:	:	:
o	o	o		o	o	o	o	o	o		o	o	o
o	o	o		o	o	o	o	o	o		o	o	o
:	:	:		:	:	:	UP	:	:		:	:	:
1924	1925	1926		1927	1928	1929	1930	1931	1932		1933	1934	1935

PORT AUGUSTA.

CENTRAL AUSTRALIA RAILWAY.

DOWN.

ALICE SPRINGS

1936	1937	1938		1939	1940	1941	1942	1943	1944		1945	1946	1947
3"	4"	:		6"	:	:	:	:	:		:	:	:
o	o	o		o	o	o	o	o	o		o	o	o
o	o	o		o	o	o	o	o	o		o	o	o
:	:	:		:	:	:	:	:	:		:	:	:
1948	1949	1950		1927	1928	1929	1930	1931	1932		1933	1934	1935

PORT AUGUSTA.

UP

153. NOXIOUS WEEDS.

Gangers must take steps to eradicate any noxious weed found in the length, special attention being paid to the destruction of "Bathurst Burr."

MISCELLANEOUS INSTRUCTIONS.**159. INQUESTS.**

In the event of its being necessary for the Department to be represented at any Coronal inquiry a responsible employee of the Transportation Branch will act, and other Branches must supply him in good time with all their papers bearing on the subject of the inquiry.

The officer conducting the case for the Department will arrange for the calling of such departmental evidence as may be expedient, including the evidence of officers of other Branches if considered necessary.

160. TREES.

It is desired that efforts be made to grow trees at stations and on other railway lands. The trees will be planted by the Engineering Branch, but it is the duty of Stationmasters and other Officers in charge to see that they are watered and cared for until firmly established. Employees generally are asked to co-operate in this work and forward applications for trees as required.

161. RESTHOUSES.

1. With the exception of the Locomotive Resthouse at Quorn, Resthouses are under the control of Stationmasters and other traffic employees in charge, and the caretaker or employee to whom the duty is allotted are, under their direction, responsible for the care of premises and safe custody of equipment.

The Shed Foreman at Quorn will carry out the duties in connexion with the Locomotive Resthouse at Quorn, submitting reports direct to the Chief Traffic Manager.

2. A record, in a book kept specially for the purpose must be kept of all equipment in Resthouses, and of all additions to, or withdrawals of equipment. At the close of each month, the Caretaker must prepare (or where a Caretaker is not employed it must be prepared by the Stationmaster himself), a return showing:—

- Additions to the equipment during the month.
- Equipment withdrawn during the month and the reason.
- Stores and equipment requiring renewal.
- Condition of the premises and repairs necessary.

This return must be handed to the Stationmaster who must verify, and if necessary, correct the information, countersign and forward it to the Chief Traffic Manager.

3. Equipment withdrawn must not be destroyed. It must be kept until instructions as to its disposal are received from the Chief Traffic Manager.

4. Resthouses at a station where a traffic employee is not located are under the direction of the Stationmaster at the Accounting Station, and the return referred to in paragraph 2, and rejected equipment must be forwarded through him. At locations where a caretaker is not appointed and where there is no staff to attend the resthouse, the visiting crews will be responsible for reporting any requirements to the Stationmaster at the Accounting Station.

5. Matters requiring attention must be brought under the notice of the Stationmaster by those concerned, and the Stationmaster must submit such matters to the Chief Traffic Manager.

6. Resthouses are provided for the use of Drivers, Firemen, and Guards, off duty away from their home stations. If accommodation is available other employees may be given accommodation provided they are not stationed at that location. Train crews are in all cases to be given preference.

7. Stationmasters are to make a regular daily inspection of the resthouses under their supervision to see that they are kept clean and tidy, and that equipment is being properly cared for.

8. Employees occupying resthouses must take all possible care of the resthouses and equipment; they must be clean in their habits, and must avoid as far as possible disturbing other employees who may be resting.

9. Stationmasters must advise Caretakers of any additional crews to be provided for, and of any late running of trains, or other matters affecting resthouse arrangements.

10. Resthouses must not be occupied except as provided above.

162. DOG AND RABBIT TRAPS.

The attention of all employees is called to the danger of setting dog and rabbit traps within station limits owing to the attendant danger to young children and domestic animals.

Employees are warned that traps must not be set within one mile of and railway station or camp situated on railway land.

163. POISON IN THE VICINITY OF STATIONS AND CAMPS.

Employees are notified that in consequence of the danger to domestic animals, &c., the laying of poison within one mile of a station or camp is prohibited.

164. METEOROLOGICAL OBSERVATIONS—TRANS-AUSTRALIAN RAILWAY.

1. Rain gauges are located at the following stations and mileages:—

Hesso.	Tarcoola.	Deakin.
Bookaroo.	Wynbring.	Forrest.
Woocalla.	348 Miles.	Loongana.
Wirrappa.	Barton.	744 Miles.
Pimba.	Immarna.	Haig.
Buraudo.	Ooldea.	Rawlinna.
Wirraminna.	Watson.	Naretha.
Kultanaby.	Cook.	Zanthus.
Kingoonya.	Hughes.	Karonie.
Wilgena.		

Readings are to be taken by Stationmasters at 8.30 a.m. in respect of attended stations, and at other points by Engineering Branch employees at 7.30 a.m. In the case of rainfall, information is to be telegraphed "collect" to the Meteorologist of the State concerned, and to "Joint," Port Augusta.

The telegram to "Joint," in addition to particulars of rainfall in points, must also show whether fall was light or heavy, continuous or intermittent, whether the result of thunderstorms, &c. The state of the weather at time the telegram is despatched must also be stated—i.e., whether fine and clear, fine but cloudy, still raining heavily, lightly, &c. Where reservoirs are concerned, the benefit should be included. If this is not known when rainfall wire is despatched a further telegram must be sent immediately the information is available.

2. Meteorological Form No. 2 is to be compiled each month and forwarded direct to the Commonwealth Meteorologist, Melbourne. A copy is to be sent to the Chief Traffic Manager.

3. One dry bulb, one wet bulb, and one maximum and minimum thermometer are installed at Tarcoola, Cook, and Rawlinna; two evaporation tanks at Cook, and barometers at Tarcoola and Rawlinna. Readings, together with cloud observations, are to be entered in a field book specially provided. This field book must be forwarded at the close of the month direct to the Commonwealth Meteorologist, Melbourne.

4. General instructions in regard to the times readings are to be taken, re-setting of instruments, &c., will be found in booklet "Instructions to Country Observers," which is issued by the Meteorological Department. These instructions are to be carefully observed by all concerned in order that accurate records may be obtained.

CENTRAL AUSTRALIA RAILWAY.

1. Rain gauges are located at the following stations:—

Copley.	Mt. Dutton.	Finke.
Lyndhurst.	Oodnadatta.	Rumbalara.
Alberrie Creek.	Alberga.	Bundooma.
Beresford.	Pedirka.	Rodinga.
Edwards Creek.	Ilbunga.	Ewaninga.

These gauges are to be read daily by Stationmasters and Gangers as provided for on Trans-Australian line except at Finke where the Pumper will be responsible and information telegraphed to Commonwealth Meteorologist, Adelaide, and to "Joint". Monthly returns are to be compiled and forwarded to Commonwealth Meteorologist, Melbourne. A copy is to be sent to the Chief Traffic Manager.

2. At other attended stations on Central Australia Railway the Stationmasters should ascertain details of rainfall from the local Postmaster at 9 a.m. daily, and in each case of rainfall telegraph particulars to "Joint."

165. FIRE PROTECTION.

1. As an outbreak of fire may lead to very serious damage to departmental property, it is the duty of all employees to exercise every reasonable precaution, and should a fire occur, prompt action is most necessary, in order that valuable buildings, rolling stock, and

other departmental property may be protected. It is the duty of all employees to make themselves conversant with the fire alarm arrangements at the depot or station at which they are employed.

2. Fire Hose and Equipment.—Under no circumstance must hoses, fire buckets, or other fire appliances be used for purposes other than fire. "Grinnell" Sprinklers have been installed in the Wood Shop, Sawmill, Paint Shop, Pattern Store, Timber Shed, and Car Barn at Port Augusta, and in the Car Barn at Parkeston; and in the event of a fire occurring in these buildings sprinkler heads will fuse, allowing water to play on the fire, at the same time causing automatic alarm bell to ring continuously at the scene of the fire and at the Town Fire Brigade Station.

The attention of Enginemen, Shunters, and others is drawn to the fact that heat causes the heads of "Grinnell" Sprinkler Installations to fuse, and when this occurs the alarm at the town fire station is automatically sounded.

To reduce the possibility of the brigades being called out by false alarms, locomotives under steam must not be allowed to stand under the heads of the sprinkler installations.

3. Fire Protection at Principal Depots.—Departmental Fire Brigades have been formed at Port Augusta, Parkeston, and Quorn, and similar brigades will be established at other depots as may be necessary. These brigades will engage in weekly practice in the department's time, and will be responsible for seeing that fire boxes, fire buckets, hoses, nozzles, coupling washers, reel, and other equipment are kept in good order, and ready for immediate use. They must also have an intimate knowledge of water mains, reticulation, and plugs.

The leader of the Fire Brigade will be in charge of operations in the event of fire occurring on departmental property, and all concerned will take directions from him for the control and extinguishing of fire, and the safety of property, until arrival of Town or City Fire Brigades. The names of the Fire Brigade Leaders must be posted on notice boards at the depots.

In the event of the removal of a fire brigade leader from the depot, either permanently or temporarily, it is the duty of the District Officer to make a recommendation regarding the appointment of a successor or acting leader, as may be required.

Where "Grinnell" Sprinklers are installed, it is the duty of the Leader of the Fire Brigade to carry out weekly tests of the installation and report on the form supplied for the purpose.

4. Alarms.—At Port Augusta the alarm will be sounded on the air whistle situated at the Workshops Power House by the Watchman during his hours of duty, or by any person discovering the fire.

A continuous blast is to be sounded in the event of a fire at Workshops, General Store, District Store, or Residences at Conwaytown.

The alarm for an outbreak of fire at Car Barn will be a quick intermittent blast sounded on the air whistle at the Workshops. To permit of this alarm being promptly given, a switch has been fixed to the main door of the Car Barn. When this is cut in it causes a gong at the Workshops to ring continuously, and the person hearing this gong must give quick intermittent blasts on the air whistle. After the alarm is

sounded, the most important precaution to be taken is to ensure safety of the passenger cars stabled in Workshops or Car Barn. All cars on each road of Car Barn are to be kept coupled except when otherwise necessary during the day-time for repairs, cleaning, &c. The Shed Foreman, or other officer in charge of Loco. running, should be communicated with at once for an engine under steam to be sent to the scene of the fire, but arrangements should be made to hand-shunt the vehicles clear of the fire without waiting for a locomotive.

The gong referred to above is to be periodically tested, and maintained in good order by the Superintendent of Signals and Lighting.

In the event of a fire in a departmental residence at Conwaytown, the quickest available means should be employed for raising the alarm, and in the event of the Town Fire Brigade being first notified by telephone, the alarm at the Workshops should also be sounded to notify the departmental brigade.

Should an outbreak occur at Parkeston depot, or at departmental residences, steps should be taken to give the alarm on the bell fixed to the "Grinnell" Sprinkler Tank stand, at the eastern end of the Carriage Shed. This bell is rung by a rope. Pending arrival of the Kalgoorlie Fire Brigade, action should be taken to protect rolling-stock in the manner described for Port Augusta.

5. Smoking Prohibited.—Smoking is strictly prohibited in the Workshops (ironshops excepted), Car Barn, Rolling-stock, Timber Stacks, Stores, or other departmental premises where there is a risk of fire. Any employee detected breaking this rule will be severely dealt with.

6. Lockers in Workshops and Running Sheds to be kept Free of Inflammable Material.—All lockers must be kept tidy, and free of all accumulation of inflammable material. Lockers containing benzine, turpentine, or other inflammable material must be inspected by the Foreman or Leading Hand monthly, or more often if necessary, and if any contain such an accumulation of material as to render the locker unsafe, the employee concerned will be suitably dealt with.

7. Open Lights and Lamps.—The use of candles, open lights, torches, or lamps in connexion with the building or repair of carriages, vans, or other wood stock is strictly forbidden; and every possible care must be taken to prevent fires arising from the materials or tools used.

8. Rubbish not to be Allowed to Accumulate.—All undergrowth, rubbish, or anything which may cause fire, must be removed from the vicinity of the buildings, timber stacks, or rolling-stock.

All rubbish, particularly of an inflammable nature, must not be allowed to accumulate in the shops, but must be collected each day, and, before work ceases, taken to the steam-bending plant or other approved place to be burnt. Inflammable material must not be deposited on rubbish tips.

9. Burning Rubbish.—When it is necessary to burn rubbish, the greatest precaution must be taken to do so in a safe position, away from all buildings and other inflammable material, and an employee must be in constant attendance until such fire has been properly extinguished.

10. **Workshop Fires to be Extinguished.**—The fires of all stationary boilers, and Blacksmiths' and Boilermakers' fires must be thoroughly extinguished when not in use, and all live ashes quenched with water. Every care must also be taken to prevent sparks or other inflammable material flying about.

11. **Locomotives in Shops.**—Particular care must be taken when locomotives or steam cranes are taken into the Car and Wagon Shop, Saw-mills, or other places, where sparks or ashes from the locomotives may cause fire.

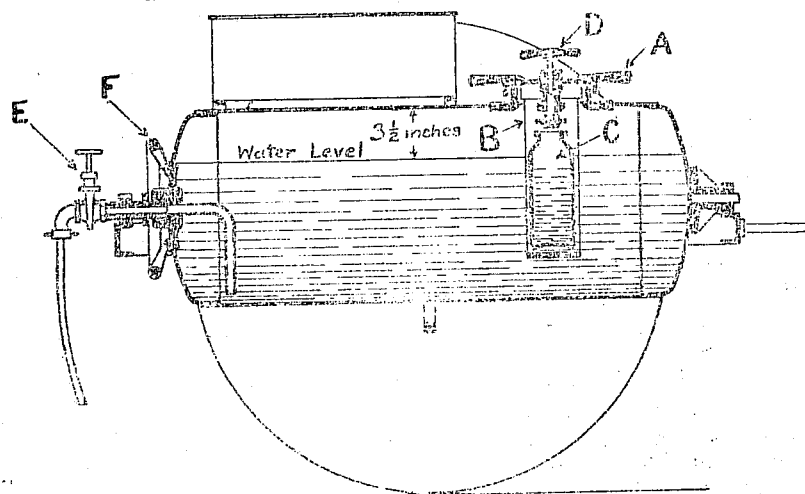
12. **Roads and Sidings not to be Blocked.**—Fouling or blocking of roads and sidings where rolling-stock is being repaired must, as far as practicable, be avoided, and the work should be so arranged as to provide free access to the fire-fighting appliances.

It is the duty of the Leader of the Fire Brigade to draw attention to any non-compliance with this instruction.

13. **"Waterloo" Chemical Fire Extinguishers.**—These are located at Bulk Store, Port Augusta, and at Tarcoola, Cook, and Rawlinna.

The Roadmasters are responsible for examination of these extinguishers and for their being kept in good order. Stationmasters and officers in charge are responsible for their respective staffs being supplied with copies of the following instructions regarding the manipulation of the extinguisher, and it is the duty of those officers to satisfy themselves from time to time that employees who are most likely to be available in the event of an outbreak of fire are competent to operate the extinguisher.

THE "WATERLOO" CHEMICAL FIRE EXTINGUISHER.



Each machine must be discharged, examined, and recharged once in every six months, namely, on the 1st of April and 1st of October each year, following on which operation the Roadmaster must advise the Chief Engineer of Way and Works that such duty has been carried out.

The machine must be discharged under what might be fire conditions in order to accustom employees in the handling of the extinguisher in an emergency.

Care should be taken that the nozzle is quite free from any corrosive action and the discharging mechanism of the acid bottle freely working.

INSTRUCTIONS.

To charge the machine—

1. Remove cover (A).
2. Lift out cage (B) and acid bottle (C).
3. Place in cylinder 16 lb. of bi-carbonate of soda, and pour in water to about 3½ inches from top of cylinder.
4. Pour into acid bottle 32 fluid ounces of sulphuric acid (to level marked outside same).
5. Lower cage and acid bottle into position through charging opening.
6. Replace cover (A) and screw down *tight*, also tightly close stopper of acid bottle by turning handle (D) to *right*.
7. See that outlet valve (E) is strapped *shut*, and that cylinder is held with charging opening on top, by strap on hand-wheel (F).

In case of Fire—

1. Wheel machine as near as possible to outbreak.
2. Raise stopper from mouth of acid bottle by turning handle (D) to *left* as far as it will go, and remove strap from hand-wheel (F) and outlet valve (E). *Important.*—The latter should not be opened until full pressure is generated.
3. Rotate cylinder sharply several times by hand-wheel (F), and allow same to remain *inverted* until maximum pressure is reached, as indicated by red line on gauge, viz., 100 lb. per square inch.
4. Unwind hose, open outlet valve (E), and direct the stream at seat of fire. After use, clean water should be run through the hose, and the cylinder should also be well flushed out with clean water to remove all traces of acid. Allow all water to drain from hose before coiling up.

14. **Hand Chemical Fire Extinguishers.**—The method of manipulating some of the Extinguishers in use is simply to turn the instrument upside-down, which causes the sulphuric acid to pour from the bottle into the water and soda, expelling the mixture from the nozzle. The stream is then directed at the base of the fire.

In other types, such as the "Gold Medal" type, the instrument is turned upside-down, and the cap struck sharply on the floor or ground, which causes the bottle containing the acid to break, thus bringing about the mixture of the sulphuric acid with the water and soda.

The instructions in each case are written on the Extinguisher.

Extinguishers are to be painted red and numbered consecutively.

When Hand Chemical Fire Extinguishers are being carried to the scene of fire they must be carried with the *top end uppermost* and not turned upside-down until the fire is actually reached, otherwise the fluid is liable to be wasted.

Hand Chemical Fire Extinguishers must be re-charged immediately after use. The Stationmaster or other employee in charge of the Extinguishers will be held responsible for this being carried out.

To re-charge Extinguishers, the following procedure is to be observed:—

- (a) Thoroughly cleanse the cylinder by washing with clean water in order to remove any acid that may be left inside after use.
- (b) Dissolve 1½ lb. bicarbonate of soda in sufficient water to fill the cylinder to within 4½ inches of the top. Carefully half-fill the acid bottle in the cage with sulphuric acid (4 fluid ounces are actually required), replace the lead stopper and screw the head-piece down tightly.
- (c) In the case of the "Gold Medal" type of Extinguisher, the acid bottle requires renewing after the Extinguisher has been used.

Three charges are supplied to each station with the Extinguishers, and requisitions must be submitted when further supplies are necessary.

The Extinguishers will be allotted to the various locations by the Mechanical Engineering Branch, and it is the duty of Stationmasters or other employees in charge of the premises to see that they are kept in their allotted positions.

15. Inspection of Hand Chemical Fire Extinguishers.—At Stations, &c.—Each Station Building, Office, Goods Shed, Bakery, &c., is equipped with a Chemical Fire Extinguisher for use in connection with a possible outbreak of fire. Except as shown in the next paragraph, the responsibility for seeing that these Fire Extinguishers are in good order rests, in the case of Station Buildings and Goods Sheds, with the Local Traffic Officer-in-charge. The leading Storeman at each store along the railway will be responsible for seeing that Fire Extinguishers in the Stores and in the Bakeries are in good order. Inspections must be made once a month, and similar information to that kept by Stationmasters in regard to Extinguishers on rolling-stock must be recorded by the officers responsible.

Chemical Fire Extinguishers in Recreation Halls and Schools will be examined monthly by Roadmasters.

At Port Augusta the whole of the Hand Chemical Fire Extinguishers must be examined once every three months by an employee of the Mechanical Engineering Branch.

The monthly and three-monthly inspections must be made by unscrewing the cap to see that the bottle contains the stipulated quantity of sulphuric acid, that the metal cage is intact and free from corrosion, and that the container holds sufficient water.

On Trains.—Each passenger vehicle and brake-van is equipped with a Chemical Fire Extinguisher.

It is the responsibility of the Stationmasters to see that each hand fire extinguisher (with the exception of the "Gold Medal" type) in each brakevan and each passenger vehicle is tested by a member of the Station Staff deputed for the work, prior to the commencement of each journey, by the method laid down for annual tests. Care must be taken to see that the bottle contains the stipulated quantity of sulphuric acid. The employee who carries out the test must mark the date of the test and his initials on the label fixed to the extinguisher.

In addition, responsibility for inspection of fire extinguishers rests, in the case of brakevans and of passenger vehicles other than sleeping cars, with the Guard, and in the case of sleeping cars, the Senior Conductor. These employees must make an inspection of all chemical fire extinguishers before commencing the train journey, and any defect or shortage must be immediately reported to the Stationmaster concerned.

Stationmasters will *once a month* inspect all Chemical Fire Extinguishers in brake-vans and passenger vehicles located at their stations, and record result in Station Inventory Book, giving individual numbers of Extinguishers, location and date of inspection. In the case of passenger vehicles on the Trans-Australian Railway the examination must be made by Stationmasters at both Port Augusta and Parkerton.

The inspections must be made in the same manner as prescribed for Fire Extinguishers in Station Buildings.

All concerned are enjoined to be on the alert to take prompt measures to extinguish fire which may break out on any passenger train or brake-van.

Should any defect be discovered as a result of the inspections referred to in the two preceding sections (i.e., on Trains, at Stations, &c.), the Chief Mechanical Engineer must be informed at once, so that immediate action may be taken to have the matter remedied.

Annual Test.

In addition to the above, the contents of all hand chemical and Waterloo chemical fire extinguishers must be tested at least once every twelve months by the employees deputed by the various sections referred to. The method to be adopted in testing is to pour two or three drops only of the sulphuric acid already contained in the bottle in the extinguisher into the soda solution. Effervescence should result, which will indicate that the mixtures have retained their efficiency. In the case of the "Gold Medal" type, which is supplied with a sealed bottle which must not be broken for testing purposes, other sulphuric acid will be necessary.

The inspecting officer must mark the date of the test and place his initials on a label which will be fixed to the Extinguisher for the purpose. The date of last re-charge must also be shown on the label, and Extinguishers must be re-charged every three years.

16. Lamps, &c.—Stationmasters and the staff concerned must see that kerosene lamps, where used in offices or other structures, are carefully and properly extinguished before leaving for the night, or when building is left without attendance for any period in excess of 30 minutes.

17. Fires in Stoves or Fireplaces of buildings or brake vans must be similarly extinguished.

18. Fire Buckets.—Stationmasters and other officers in charge are responsible for seeing that fire buckets are kept filled and in their proper locations, ready for use in case of emergency.

19. Use of Naked Lights in Lamp Rooms, Oil Store Rooms, &c.—The use of naked lights in lamp rooms, store rooms, or other places where inflammable material is stored, is strictly prohibited.

A notice, warning employees of the danger of fire through the use of naked lights, is to be placed by the Officer-in-Charge in a conspicuous place in such buildings, but the absence of such notice will not relieve the employees concerned from responsibility in the event of any breach of this instruction.

166. PREVENTION OF BUSH FIRES.

1. Drivers during dry seasons must exercise every care to prevent as far as possible the escape of sparks from their engines so as to avoid damage to property along the line through fire. Spark arresters and ashpan cages should be examined by Shed Foremen personally before each trip, and by the Driver when stabling the engine. The latter must report their condition on daily time-sheet. On no account must lighted waste, hot cinders or clinkers be thrown from engines when passing over bridges, culverts, or plank floors, neither should the fire iron be used when passing over such structures.

2. In the case of fire occurring along the line or in the vicinity of bridges, or where it is seen that loss may occur or property be endangered, Drivers must take such immediate action as the circumstances of the case warrant. They must also carry out the instructions given in Book of General Rules by informing the first Fetting Gang or station officer. Drivers must sound one short, one long, and one short whistle to attract the attention of residents or Fettlers so that they may have the earliest opportunity of preventing the fire spreading.

3. Persons using fires in vehicles or in the vicinity of the line must be careful that coals or sparks are not allowed to escape, that fires are safe to leave when left unattended, and that they are extinguished if left unattended for a period in excess of 30 minutes.

4. Care must be exercised with matches; and lighted cigarettes, cigars, and tobacco should be extinguished before being discarded. Conductors and Guards should exercise such supervision as they can to prevent passengers creating risks by carelessness when smoking.

5. The following instructions, in addition to those already referred to, must be observed:—

Mechanical Engineering Branch—(a) Smokeboxes must be emptied at Marree on all NM. engines stabling at that point and on engines working through Marree on Up trains, and at any turn around point between Parachilna and Farina before commencing the return journey. NM. class engines working from Port Augusta to Quorn must have smokeboxes emptied at Quorn before the engines are returned to Port Augusta, and Quorn engines working to Port Augusta must have smokebox ashes removed before returning to Quorn.

(b) K., Ka., and G. class engines must have smokeboxes emptied when stabling at sub-depots or other intermediate points in addition to being done at main depots.

(c) When this work is done care must be taken to see that all spark arresting appliances are intact and that smokebox doors are properly closed and secured.

(d) Fires are not to be cleaned more frequently than is necessary, and free use must be made of the ash wetter while live fire is likely to be falling through the bars when running. Under no circumstances are fires to be cleaned while locomotives are running.

(e) When it is necessary to rake out, and an engine pit is not available, enginemem must see that no live ashes are left on the permanent way.

(f) Engines are not to be unduly forced when passing over grassy country or in the vicinity of crops if this can be avoided, and efforts must be made to work the engine as lightly as possible consistent with hauling the load and maintaining schedule time.

(g) A wet sack is to be carried on the footplates of each locomotive to be used by the engine crew for extinguishing fire should this course be necessary.

(h) Blast pipe nozzles must be cleaned each time that a locomotive is stabled at a main depot.

(i) In addition to the monthly statement of attention to fire prevention appliances, a daily certificate must be forwarded to the Superintendent of Locomotive Running certifying to the condition of ashpans and doors, ash arresters, ashpan slides, ash wetters, spark arresters, firebars, &c. This certificate must be filled in daily by all employees in charge of depots for each engine *which must be examined prior to it going on traffic on that particular day.*

(j) No opening in spark arrester appliances is to be greater than the mesh provided.

(k) All space around steam pipes and blower pipes, &c., to be covered with wire mesh or plates.

(l) A supply of certificates and Drivers' fire report forms are being forwarded to officers in charge of locomotive depots and these are to be brought into use forthwith.

Way and Works Branch—(m) Roadmasters must take steps to see that burning off operations on either side of the railway line are carried out wherever the growth is such that there is a danger of fire starting through any cause and spreading over the surrounding country, whether on Crown or private lands.

(n) Burning off operations are to be carried out in accordance with extracts from the *South Australian Bush Fires Act 1913-1926*, copy of which has been forwarded to all Roadmasters and Gangers, special attention being drawn to section 6. (III.), and Roadmasters must take up with the owners concerned with a view to their providing additional labour to co-operate with the Gangers when burning off.

(o) Where possible, Roadmasters and/or Gangers must examine the fire prevention appliances of engines which, it is considered, have been the cause of fires, and the result of such examination must be communicated to the Chief Engineer of Way and Works as early as practicable.

(p) The Fetting Ganger or Fettler first noticing a bush fire caused by sparks emitted from the engine must communicate with the Chief Engineer of Way and Works by telegram (subsequently confirmed by letter).

167. SUGGESTIONS AND INVENTIONS BOARD.

With the view of securing the co-operation of the Staff to promote the success of the Department's operations, and to encourage initiative on their part, employees are invited to submit suggestions and inventions affecting railway work in any of its various branches. A Board has been created to promptly and efficiently deal with suggestions and inventions submitted. The following rules should be complied with:—

Suggestions.

1. All suggestions should be written or typed on sheets of letter pad or memo. size—one side only of such sheets to be used. Suggested amendments to any Departmental forms should be indicated by a sample.

2. Each suggestion should be submitted separately, but as many suggestions as desired may be forwarded at the one time.

It is important that full particulars be given regarding the objects to be served by the suggestion, and the manner in which it is proposed to be introduced.

3. The Departmental position and location of the Suggestor should be shown below his signature.

4. All suggestions should be addressed to—

“The Secretary,
Suggestions and Inventions Board,
c/o Chief Mechanical Engineer,
Port Augusta.”

5. A gratuity or other suitable acknowledgment may be granted by the Commissioner in any case in which the suggestion is recommended by the Board for adoption, irrespective of whether it is eventually put into operation or not. The Commissioner will reserve the right to make use of all suggestions in any manner he may deem fit.

6. A notification of any gratuity awarded, and of any other acknowledgement, will be published in the *General Notice*, and a record made on the official history card of the Suggestor.

Inventions.

7. The foregoing rules will apply also to inventions, together with the following:—

8. All inventions sent to the Secretary of the Board must be fully described, and be accompanied by sketches or models.

9. After consideration by the Board, which may make any inquiries considered necessary to determine the novelty and usefulness of the invention, the employee will be notified whether the invention is recommended for adoption or not. When an invention relating to machinery, or any article, or appliance, likely to be of use to the Department, appears to be novel and worth patenting, the Commissioner may assist the employee to obtain Letters Patent in the Commonwealth, by preparing the Specifications and Drawings, and by paying the Patent Fees up to and including the fee payable on the sealing of the Patent, but not afterwards.

10. Before any employee will be granted assistance in accordance with the provisions of Clause 9 he will be required to execute an Agreement in terms to be decided by the Commissioner, in which will be embodied, amongst other things:—

(a) A provision that upon the grant to him of a patent in respect of the particular invention the employee will grant unto the Commissioner free of charge a licence to make use of and exercise the invention during the term of the patent or any prolonged or extended term thereof.

(b) A provision that the employee will not deal with the patent in any way until the licence to the Commissioner shall have been registered at the Patents Office.

Awards.

All the circumstances in regard to each case, such as originality, labour, zeal and initiative displayed, and the monetary saving to the Department by reason of the adoption of the suggestion, will be taken into account in determining the amount of the Award, if any, to be recommended.

PARTICULARS OF ROLLING-STOCK.**168. LOCOMOTIVE RATINGS.**

TRANS-AUSTRALIAN RAILWAY—4 FT. 8½ IN. GAUGE.

Class.	Rating.
G.	100 per cent.
D.	55 per cent.
K. and Ka.	135 per cent.

CENTRAL AUSTRALIA RAILWAYS—3 FT. 6 IN. GAUGE.

N.M.	100 per cent.
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169. CLASSIFICATION OF LOCOMOTIVES.

Class.	Nos.
D.	158 to 163
G.	1 to 26
K.	27 to 34
Ka.	{ 35 to 54 and 56 to 61
N.B.	29 and 30
N.G.	10
N.J.A.B. (Steam Motor)	1
N.M.	{ 15 to 28 and 31 to 37
Cranes, Loco.	1 and 2

170. PARTICULARS OF LOCOMOTIVES.

TRANS-AUSTRALIAN RAILWAY—4 FT. 8½ IN. GAUGE.

Class.	Type.	Boiler pressure.	Total weight (roadworthy).	Length over coupling points.	Coal capacity.	Water capacity.	Diameter of driving wheels.	Diameter of cylinders.
		lb. sq. in.	tons cwt. qrs.	ft. in.	tons	gals.	ft. in.	in. in.
D. ...	4 4 0	150	58 15 0	46 0	4½	2,000	5 0	16 x 24
G. Nos. 1 to 4 ...	4 6 0	160	106 4 0	59 8	7½	3,650	5 0	20 x 26
Others ...	4 6 0	160	106 4 0	59 4½	8½	4,500	5 0	20 x 26
K. ...	2 8 0	150	115 13 0	59 4½	8½	4,500	4 3	22 x 26
Ka. ...	2 8 0	150	119 7 0	60 3	8½	4,500	4 3	22 x 26
Cranes, Loco. No. 1 ...	0 4 0	160	40 0 0	24 0	14 cwt.	520	3 3½	14 x 20
No. 2 ...	0 4 0	160	40 0 0	24 0	7 cwt.	750	3 5	14 x 22

NOTE.—The lifting capacity of No. 1 crane is 5 tons at 15 ft. radius. The lifting capacity of No. 2 crane is 5 tons at 14 ft. radius.

CENTRAL AUSTRALIA RAILWAY—3 FT. 6 IN. GAUGE.

Class.	Type.	Boiler pressure.	Total weight (roadworthy).	Length over coupling points.	Coal capacity.	Water capacity.	Diameter of driving wheels.	Diameter of cylinders.
		lb. sq. in.	tons cwt. qrs.	ft. in.	tons	gals.	ft. in.	in. in.
N.B. ...	0 6 0	140	29 4 0	26 10	1,400 lbs.	1,100	3 0	13 x 18
N.G. ...	4 6 0	140	49 10 0	43 6	4	1,400	3 3	13 x 20
N.M. ...	4 8 0	160	81 0 0	53 0½	6½	3,000	3 9	17 x 22
N.J.A.B. (Steam Motor)	...	175	21 18 1	39 11½	800 lbs.	600	2 4½	9½ x 6½
			Plus 22 passengers					

NORTH AUSTRALIA RAILWAY—3 FT. 6 IN. GAUGE.

Class.	Type.	Boiler pressure.	Total weight (roadworthy).	Length over coupling points.	Coal capacity.	Water capacity.	Diameter of driving wheels.	Diameter of cylinders.
		lb. sq. in.	tons cwt. qrs.	ft. in.	tons cwt.	gals.	ft. in.	in. in.
N.A. 1 ...	0 4 0	150	9 10 0	18 6	0 4	330	2 3	8 x 12
N.F. Nos. 2 to 7	2 6 0	130	29 7 0	35 6	2 15	820	3 3	12 x 20
N.G. 9 ...	4 6 0	140	49 2 0	43 4	5 10	1,400	3 3	13 x 20
Nos. 11 to 14	4 6 0	140	49 6 0	44 6	4 0	1,500	3 3	13 x 20
N.M. 38 ...	4 8 0	160	78 5 0	53 0½	4 10	3,000	3 9	17 x 22
Sentinel Steam Motor	0 4 0	275	20 13 1	57 3	0 15	300	2 6	6½ x 10
			Plus 40 passengers					

171. PARTICULARS OF COACHING AND BRAKEVAN STOCK.

TRANS-AUSTRALIAN RAILWAY—4 FT. 8½ IN. GAUGE.

Description.	Classification.	Number in stock.	Average tare (for computation of train load) Empty.	Passenger accommodation.		Extreme.		Length.	
				Sleeping.	Sitting up.	Width.	Height.	Over body.	Over coupling points.
Special Car, No. 1 ...	S.S. ...	1	tons 50	8 plus 2 attendants	10	ft. in. 10 6	ft. in. 14 2	ft. in. 76 7	ft. in. 78 11½
Special Car, No. 2 ...	A.F.R.	1	30	2 plus 2 attendants	..	10 0½	14 3½	51 2	53 0½
First Class Sleeping Car	A.R. ...	5	46	20 plus 1 attendant	..	10 1	14 2	76 7	78 11½
Lounge Car	A.F. ...	3	30	..	34	10 0½	14 3½	51 2	53 0½
Lounge Car	A.F. (No. 49)	1	30	..	34	10 6	14 1½	51 2	53 6½
First Class Sleeping Car	A.R.P.	10	35	16 plus 1 attendant	..	10 0½	14 2	65 2	67 4½
Second Class Sleeping Car	B.R. ...	4	46	34	..	10 1	14 2	76 7	78 11½
Second Class Sleeping Car (with platform)	B.R.P.	5	35	28	..	10 0½	14 2	65 2	67 4½
Second Class Sleeping Car (with saloon)	B.R.P.P.	4	35	20	18	10 0½	14 2	65 2	67 4½
Dining Car	D. ...	4	40	..	40	10 0½	14 2	65 2	67 4½
Dining Car	D.A. ...	1	50	..	48	10 6	14 6	76 7	78 11½
Temporary Second Class Car	T.B.P.	4	21	..	46	10 6	14 7	40 7	47 6½
Bogie Brake Van (sleeping)	H.R. ...	5	25	8 train crew	..	10 6	13 5½	35 0	37 0½
Mail Bulk Vans	M. ...	4	*20 (45 tons loaded)	..	..	10 0½	14 2	45 2	47 6½

* When gross weight exceeds 45 tons load to be credited accordingly.

CENTRAL AUSTRALIA RAILWAY—3 FT. 6 IN. GAUGE.

Description.	Classification.	Number in stock.	Average tare (for computation of train load) Empty.	Passenger accommodation.		Extreme.		Length.	
				Sleeping.	Sitting up.	Width.	Height.	Over body.	Over coupling points.
First and Second Class Sitting-up Car	N.A.B.P.	5	16	..	38	8 4½	11 9½	35 5½	42 10½
First and Second Class Sleeping Car (with platform)	N.R.C.	1	29	10 First 12 Second 1 Attendant	23	9 4	12 5½	60 0	62 8
Second Class Sitting-up Car	N.R.P.	1	16	..	40	8 4½	11 9½	35 5½	42 10½
First and Second Class Sitting-up Car	N.A.B.P.A.	3	18	26 First 26 Second	52	8 4½	11 9½	45 3	52 8
Dining Car	N.D.	1	28	3	18	9 1½	12 5½	50 0	52 8
First Class Sleeping Car "Warilla"	N.R.P.	1	20	18	..	8 0	11 1½	42 0	49 4
Bogie Brake Van (without acc.)	N.H. ...	1	14½	..	..	9 4	11 9½	32 2	34 8
Special Car	N.S.S.	1	30	8 and 2 Attendants	..	9 4	12 5½	60 0	62 8
Bogie Brake Van—First and Second Class	N.Y.A.B.	2	15	..	14	9 4	11 9½	32 2	34 8
Bogie Brake Van—Second Class	N.Y.B.A.	2	15	..	16	9 4	11 9½	32 2	34 8
Bogie Brake Van—Second Class	N.Y.B.	1	15	..	8	9 4	11 9½	32 2	34 8
Composite Bogie Relay Van	N.H.B.R.	4	19½	..	..	8 1	12 5½	44 0	49 0½
Composite Bogie Relay Van	N.H.B.R.	4	18	..	..	9 4	11 9½	44 0	48 11½

NORTH AUSTRALIA RAILWAY—3 FT. 6 IN. GAUGE.

Description.	Classification.	Number in Stock.	Average tare (for computation of train load) Empty.	Passenger Accommodation.	Extreme.		Length.	
					Width.	Height.	Over Body.	Over Coupling Points.
First Class Sitting-up Car	N.A.P.	1	tons 12	28	ft. in. 8 2	ft. in. 11 9½	ft. in. 36 0	ft. in. 38 8
First and Second Class Sitting-up Car	N.A.B.P.	2	10½	28	8 2	11 8½	36 0	38 8
First and Second Class Sitting-up Car	N.A.B.P.	1	16	38	8 4½	12 0	35 5½	42 10½
Second Class Sitting-up Car	N.B.P.	1	10½	28	8 2	11 8½	36 0	38 8
Brakevan (without accommodation)	Y.S. . .	1	8	..	8 0	10 4	15 0	17 8
Brakevan (without accommodation)	N.H.S.	2	9½	..	8 3	12 7½	15 0	17 8
Brakevan (without accommodation)	N.V. . .	1	12	..	9 3	11 0½	32 6	34 10
Mail Van . . .	N.H.S.	1	4½	..	8 1	10 1½	15 0	17 9
Fettlers' Van . .	Y.S. . .	1	8	..	8 0	9 8½	15 0	17 9
Sentinel Car . .	..	1	..	40	8 4½	11 5	58 6	58 6
Trailer for Sentinel Car	..	1	..	..	6 11½	10 7½	15 0	17 4

172. PARTICULARS OF SERVICE AND MISCELLANEOUS STOCK.

TRANS-AUSTRALIAN RAILWAY—4 FT. 8½ IN. GAUGE.

Description.	Classification.	Number in Stock.	Average tare (for computation of train load) Empty.	Extreme.		Length.		Other particulars.
				Width.	Height.	Over body.	Over coupling points.	
Pay car	..	1	tons 22	ft. in. 10 6	ft. in. 12 6½	ft. in. 33 0	ft. in. 35 0½	6 berths
Inspection and eyesight testing van	..	1	18	10 6	14 3	35 0	37 0½	6 berths
Dispenser's car	..	1	28	10 6	14 7½	45 0	47 0½	
Laboratory Store van	..	1	9	10 6	14 7½	18 0	20 4	
Hospital van	O. . .	1	20	10 6	14 7½	45 0	47 0½	
Hospital van	O. . .	1	20	10 6	14 6	35 0	37 0½	
Hopper ballast wagon, complete, self-discharging	B.A.S.	125	7	8 6	6 7½	15 3½	20 6½	Capacity 15 tons 15 cubic yards
Hopper ballast wagon, partial self-discharging	B.S. . .	182	6½	9 0½	5 6½	16 5½	20 6½	Capacity 10 tons 10½ cubic yards
Hopper ballast wagon (wooden)	B.W.S.	26	5½	9 1	..	13 5½	17 1	Capacity 6 cubic yards 10 tons
Ballast plough (bogie)	B.P. . .	2	..	10 0	..	35 0	37 6½	
Ballast plough (4-wheel)	B.P.S.	7	..	9 0	..	18 0	20 6½	
Ballast plough (wooden)	B.P.W.S.	3	..	..	..	..	..
Employees' van	E. . .	2	18	10 6	14 6	35 6	37 6½	1 Contains accommodation for 12 men, and 1 for 8 men.
Travelling butcher's shop	S.A. . .	2	20	9 11	13 7½	35 0	37 6½	
General stores van	V.P. . .	2	18	10 0	12 6½	35 0	37 6½	
Water tank wagon (wooden)	T.S.A.	2	..	..	..	..	..	Capacity 2,400 gallons
Water tank wagon (steel)	T.S.B.	60	10	8 8	8 10½	18 6	20 6½	Capacity 4,000 gallons
Water tank wagon (wooden)	TC. . .	5	20	9 6	9 4½	35 0	37 6½	Capacity 7,000 gallons
Water tank wagon (steel)	TD. . .	30	20	9 8	9 4½	35 0	37 6½	Capacity 8,000 gallons
Breakdown van	X.S. . .	1	..	9 9	12 2½	24 6	26 6½	
Breakdown accommodation van	X.S. . .	1	..	10 6	12 2½	24 6	26 6½	
Breakdown and accommodation van	X. . .	1	21	9 10	12 2½	35 6	37 6½	4 employees
Breakdown match wagon	..	1	..	..	..	..	..

CENTRAL AUSTRALIA RAILWAY—3 FT. 6 IN. GAUGE.

Description.	Classification.	Number in Stock.	Average tare (for computation of train load) Empty.	Load.	Extreme.		Length.		Other Particulars.
					Width.	Height.	Over Body.	Over Coupling.	
Hospital Van	N.O. . .	1	tons 13	tons ..	ft. in. 8 0	ft. in. 11 5½	ft. in. 32 2	ft. in. 34 8	8 patients and attendant
Bogie Water Tank Wagon (4,000 gal.)	N.T.B.	18	12½	16½	7 11½	6 11½	32 0	34 8	
Water Tank Wagon (4-wheel) 2,000 gal.	N.T.S.A.	25	6½	8½	6 11½	7 3½	15 0	17 8	

NORTH AUSTRALIA RAILWAY—3 FT. 6 IN. GAUGE.

Description.	Classification.	Number in Stock.	Average tare (for computation of train load) Empty.	Load.	Extreme.		Length.		Other Particulars.
					Width.	Height.	Over Body.	Over Coupling.	
Ballast Plough	N.B.S.	2	tons 40*	tons ..	ft. in. 7 6	ft. in. 5 7	ft. in. 16 0	ft. in. 18 8	
Ballast Hoppers, Steel, 4-wheeled	..	40*	4½	10	9 0	..	15 0	17 8	
Hospital Van	N.O.S.	1	4½	..	8 9	10 7½	13 0	16 2	1 patient and 1 attendant (3 old boilers)
Water Tank Wagon, 1,200 gallons, 4-wheeled	N.T.S.	4	4	5	8 6	8 5½	14 0	16 8	
Travelling Crane	..	1	..	..	..	..	..	..	10 tons cap. 6 wheeled for local use only
Travelling Crane (Steam)	..	1	..	..	..	..	..	..	1½ tons cap. 4 wheeled for local use only
Travelling Crane, Hand	..	1	..	..	..	..	..	..	½ ton cap. 4 wheeled

* Note.—Seven of these wagons temporarily converted for conveyance of rails.

173. PARTICULARS OF GOODS STOCK.

TRANS-AUSTRALIAN RAILWAY—4 FT. 8½ IN. GAUGE.

Description.	Classification.	Number on Hand.	Average Tare (for computation of train load) Empty.	Extreme.		Length.		Carrying Capacity.	Inside Dimensions.
				Width.	Height.	Over Body.	Over Coupling Points.		
Bogie Brake Van	Y.B. . .	3	t. c. q. 22 0 0	ft. in. 10 6	ft. in. 14 1½	ft. in. 35 0	ft. in. 37 0½	4 tons	Goods compartment 14' 9½" x 8' 4"
Brake Van	Y.B. . .	8	14 0 0	8 10	13 3½	24 0	26 4½	2 tons	Goods compartment 10' 8" x 7' 11"
Cattle Wagon (with partition)	C.b. . .	5	17 0 0	9 6	12 3½	35 1	38 6½	18 to 24 cattle	Two compartments 17' 5" x 8' 3½" 17' 3½" x 8' 3½"
Cattle Wagon (roofed)	C. . .	15	16 0 0	9 0	12 2½	35 0	37 6½	18 to 24 cattle, 9 tons	34' 9½" x 8' 3½" x 8' 2½"
Cattle Wagon . .	C.A. . .	6	18 0 0	9 1	11 8½	35 0	37 6½	9 tons	34' 9½" x 8' 3½"
Open Goods Wagon	G. . .	66	7 0 0	9 10½	7 5½	35 0	37 6½	38 tons	34' 8" x 9' 2" x 3' 6"
Louvre Van . .	L.S. . .	3	8 0 0	9 6	11 10½	18 0	20 6½	11 tons	17' 3" x 7' 5" x 7'
Louvre Van (Temp.)	L. . .	1	20 15 0	9 6	11 10½	45 0	47 6½	40 tons	17' 3" x 7' 5" x 7' (2 L.S. bodies)
Rail Wagon . .	R. . .	89	14 0 0	9 3	3 11½	33 0	35 0½	40 tons	
Rail Wagon . .	R.A. . .	10	16 0 0	9 6	3 11½	45 0	47 6½	40 tons	
Sheep Wagon . .	S. . .	36	18 0 0	9 0	12 2½	35 0	37 6½	200 sheep	34' 11" x 8' 5"
Covered Goods Wagon	V. . .	14	17 0 0	9 8	12 0½	35 0	37 6½	26 tons	34' 4½" x 8' 3½" x 9"
Louvre Goods Wagon (Bogie)	L. . .	1	19 0 0	9 2	13 0½	35 8	37 6½	36 tons	34' 10½" x 8' 4½" x 8' 3"
Covered Goods Wagon, 18'	V.S. . .	3	8 0 0	9 8	12 7½	18 7½	20 6½	10 tons	17' 4½" x 8' 1½" x 8' 0½"
Covered Goods Wagon, 24'	V.S. . .	10	8 0 0	10 1	12 10	24 0	26 6½	12 tons	23' 5" x 7' 10½" x 8' 0½"

CENTRAL AUSTRALIA RAILWAY—3 FT. 6 IN. GAUGE.

Description.	Classification.	Number in Stock.	Average Tare (for computation of train load) Empty.	Carrying Capacity.	Extreme.		Length.		Inside Dimensions.
					Width.	Height.	Over Body.	Over Coupling Points.	
Bogie Cattle Wagon (without partition)	N.C. . .	26	10 tons	18 cattle	8 0	9 11	32 5	34 8	31' 9" x 7' 5"
Bogie Cattle Wagon (with partition)	N.C.A. . .	6	10 tons	18 cattle	8 0	9 11	32 5	34 8	31' 9" x 7' 5"
Cattle Wagon (4-wheel)	N.C.S. . .	6	7 tons	9 cattle	8 0	10 3	19 6½	22 2	19' 3½" x 7' 2½"
High Side Bogie Open Goods Wagon	N.G. . .	10	10 tons	20 tons	8 5	6 4	32 0	34 8	31' 8½" x 7' 8½" x 3' 0"
High-side Open Goods Wagon (4-wheel)	N.G.A.S. . .	30	5 tons	12 tons	7 10½	6 0½	15 0	17 8	14' 7½" x 7' 1½" x 2' 9"
Low-side Open Goods Wagon (4-wheel)	N.G.B.S. . .	22	3½ tons	6½ tons	7 0	4 6½	14 3½	16 8	13' 7½" x 6' 9" x 1' 6"
" " "	N.G.B.S. . .	3	3½ tons	4 tons	7 0	4 6½	14 3½	16 8	13' 7½" x 6' 9" x 1' 6"
" " "	N.G.S. . .	38	4½ tons	12 tons	7 10½	5 3½	15 0	17 8	14' 7½" x 7' 1½" x 2' 0"
High-side Open Goods Wagon (4-wheel)	N.G.C.S. . .	6	5½ tons	11½ tons	7 10	5 9½	16 0	20 8	16' 0" x 7' 4" x 2' 8"
Louvre Van (4-wheel)	N.L.S. . .	8	6 tons	9½ tons	8 0	10 2½	20 0	22 2	19' 2" x 7' 2½" x 5 11½"
Bogie Rail Wagon	N.R. . .	2	8 tons	20 tons	8 0	3 3½	32 0	34 8	
" " "	N.R.A. . .	32	9½ tons	23½ tons	8 0	3 4½	40 0	42 8	

CENTRAL AUSTRALIA RAILWAY—3 FT. 6 IN. GAUGE—continued.

Description.	Classification.	Number in Stock.	Average Tare (for computation of train load) Empty.	Carrying Capacity.	Extreme.		Length.		Inside Dimensions.
					Width.	Height.	Over Body.	Over Coupling Points.	
Flat-top Wagon (4-wheel)	N.R.S. . .	6	3 tons	6½ tons	7 0	3 0	13 11	16 8	
Bogie Sheep Wagon	N.S. . .	7	12½ tons	200 sheep	7 11½	11 2½	36 1	38 2	35' 6" x 7' 0"
Sheep Wagon (4-wheel)	N.S.S. . .	11	6½ tons	100 sheep	7 11½	11 0	19 6	22 2	18' 11" x 7' 0"
Covered Goods Wagon	N.V. . .	2	11 tons	20 tons	8 3	10 9½	32 2	34 8	31' 6½" x 7' 4½"
Covered Goods Wagon (4-wheel)	N.V.S. . .	5	6 tons	9½ tons	8 9	10 4½	20 0	22 2	19' 5" x 7' 5"
Coal Hopper Wagon	N.B. . .	1	11 tons	20 tons	7 6	7 4½	32 0	34 8	27' 5" x 7' 0" x 4' 3"
Bogie Sheep Wagon	N.S.a . .	5	14 tons	200 sheep	8 4½	11 4½	36 5	38 8	36' x 7' 6" x 7' 6"
Bogie Cattle Wagon (with partition)	N.C.b. . .	26	12 tons	18 beasts	8 0	10 7½	30 1	38 8	Two compartments 17' 11" x 7' 3½" 17' 9½" x 7' 3½"

NORTH AUSTRALIA RAILWAY—3 FT. 6 IN. GAUGE.

Description.	Classification.	Number in Stock.	Average Tare (for computation of train load) Empty.	Load in Tons and Capacity.	Extreme.		Length.		Inside Dimensions.
					Width.	Height.	Over Body.	Over Coupling Points.	
Bogie Cattle Wagon (without partition)	N.C. . .	34	10 tons	18 beasts	ft. in. 8 0	ft. in. 9 10½	ft. in. 32 4	ft. in. 35 0	31' 9" x 6' 7½"
Bogie Cattle Brake Vans (without partition)	N.C.Y. . .	5	11 tons	14 beasts	9 3	11 0½	32 6	35 0	31' 5½" x 7' 3½"
Cattle Wagon (4-wheel)	N.C.S. . .	7	3½ tons	6 beasts	7 0	9 5½	14 0	16 8	13' 11" x 6' 4"
Goods Wagon, High Side Open (4-wheel)	N.G.S. . .	10	4½ tons	6	7 6	5 5½	16 3	18 11	15' 7½" x 6' 10" x 2' 2½"
Goods Wagon, High Side Open (4-wheel)	N.G.S.A. . .	20	4½ tons	10	7 4	5 7	15 0	17 10	14' 8½" x 6' 7½" x 2' 5½"
Goods Wagon, Low Side Open (4-wheel)	N.G.S.A. . .	10	3½ tons	10	7 6	4 7	13 10	16 0	13' 8" x 6' 9" x 1' 6"
Goods Wagon, Low Side Open (4-wheel)	N.G.S. . .	105	3½ tons	6	7 5	4 7½	14 0	16 8	13' 6½" x 6' 7½" x 1' 6"
Louvre Van (4-wheel)	N.L.S. . .	2	7 tons	7	8' 0	10 7	20 0	22 0	19' 2½" x 7' 2½" x 6' 5½"
Bogie Rail Wagon	N.R.A. . .	10	9½ tons	20½ tons	8 0	3 10½	40 0	42 8	
Bogie Flat Wagon	N.R. . .	1	7½ tons	11½ tons	8 0	5 9½	32 4	35 0	
Bogie Bolster Wagon	N.R. . .	2	8 tons	12 tons	7 0	3 10	30 0	32 6	
Bolster Wagon for Timber	N.R.S. . .	5	3 tons	5	7 5	3 3½	14 2	16 8	
Bolster Wagon for Timber (Steel Frame)	N.R.S. . .	12	3 tons	5	7 5	5 11	14 6	14 6	
Flat Top Wagon Steel Frame	N.R.S. . .	3	3 tons	5	7 5	5 4½	11 0	13 8	
Insulated Wagon	N.I.S. . .	24	7 tons	9	7 10	10 11½	16 0	17 10	15' 1" x 6' 11½"
Explosives Van	N.P.S. . .	1	4 tons	5	7 6	9 1½	18 11	16 8	13' 4½" x 6' 6"

CLASSIFICATION OF ROLLING-STOCK.

174. INSTRUCTIONS REGARDING CLASSIFICATION OF ROLLING-STOCK.

Groups.—All rolling-stock is divided into the following groups:—

Locomotives.
Cranes.
Passenger stock.
Goods brake-vans.
Wagon stock.

Numbering.—The vehicles of each group are numbered consecutively in order of introduction regardless of class.

Narrow Gauge.—Narrow gauge rolling-stock has similar classification to 4-ft. 8½-in. gauge stock with prefix N. The grouping and method of numbering is similar also.

Conversions.—*In Same Group.*—When a vehicle is converted from one class to another in the same group (say from a ballast wagon to a tank wagon) it will retain the same number, but the class letters will be changed as required.

To Another Group.—When a vehicle is converted from one group to another group (say from a goods to a passenger vehicle) it will have both number and class changed. It will then be listed in the new group and struck off the list of the original group.

Locomotives.—Locomotives are classified according to wheel arrangement as follows:—

Class.	Type.	Wheel Arrangement.	Class.	Type.	Wheel Arrangement.
A.	0-4-0	00	F.	2-6-0	o000
B.	0-6-0	000	G.	4-6-0	oo000
C.	0-8-0	0000	H.	4-6-2	oo000o
D.	4-4-0	oo00	J.	4-6-4	oo000oo
E.	4-4-2	oo00o	K.	2-8-0	o0000
			M.	4-8-0	oo0000

All locomotives are to be numbered consecutively (regardless of type) in order of introduction, except D class locomotives now in commission, which are to retain their existing numbers.

Any engine, the power of which is increased by re-boiling, re-cylindering, &c., also new engines of different power or wheel diameter within any one class of wheel arrangement, are to have a suffix in addition to class letter. The suffixes are to be allotted alphabetically, commencing with A in order of introduction of new engine, &c.

Locomotive, Breakdown, and Portable Cranes.—Locomotive, breakdown, and portable cranes are numbered separately and known as Crane No. 1, &c., the numbers being allotted consecutively in order of introduction.

Unclassified.—Steam shovels.

Passenger Stock.—The classification is arranged for bogie stock; a suffix (S) being added to denote 4-wheel stock.

It is assumed that all passenger stock have lavatories, corridors or passages, vestibules, and connections between cars, hence no special letters have been provided to indicate these features.

The base code letters by which the various types of vehicles are indicated are as follows:—

Base Code-Letter.	To Denote.
A.	1st class.
B.	2nd class.
(C) suffix	1st and 2nd class.
D.	Dining.
E.	Sorting (mail).
(F) suffix	Saloon.
H.	Brake Van.
M.	Mail.
O.	Ambulance.
(P) suffix	Platform.
R.	Sleeping.
(S) suffix	4-wheel stock.
(T) prefix	Temporary.

Passenger stock is classified as follows:—

Class.	Description.
A.	1st class car with seats only.
A.B.	1st and 2nd class car with seats only.
A.B.P.	1st and 2nd class car with platform only (no vestibules).
A.B.R.	1st and 2nd class car with seats and sleeping berths.
A.F.	1st class lounge car.
A.F.R.	Special car (No. 2) (with saloon and sleeping accommodation only).
A.R.	1st class car with seats and sleeping berths.
A.R.P.	1st class car with seats, sleeping berths and platform ends.
B.	2nd class car with seats only.
B.R.	2nd class car with seats and sleeping berths.
B.R.P.	2nd class car with seats, sleeping berths and platform ends.
B.R.P.F.	2nd class car with seats, sleeping berths, platform ends and saloon.
D.	Dining car.
E.	Mail sorting van.
H.	Passenger brake-van.
H.A.	Passenger brake-van with 1st class sitting compartments.
H.A.R.	Passenger brake-van with 1st class sleeping berths.
H.B.	Passenger brake-van with 2nd class sitting compartment.
H.E.	Passenger brake-van with mail-sorting compartment.
H.M.	Passenger brake-van with bulk mail compartment.

Class.	Description.
H.R.	Passenger brake-van with attendants' sleeping compartments.
J.	Steam motor coach.
M.	Bulk mail van.
M.E.	Bulk mail and sorting van.
O.	Hospital and ambulance van.
S.S.	Special car (No. 1) (with saloon and sleeping accommodation, and kitchen and dining facilities.)
T.B.P.	Temporary 2nd class car with seats only, and platform ends.

Unclassified.—Pay Car, Inspection and Eye-sight Testing Van, Dispensary Van and Laboratory Car.

Goods Brake Vans.—Goods brake vans are classified as follows:—

Class.	Description.
Y.	Goods brake-van, bogie.
Y.B.	Goods brake-van, bogie, with 2nd class compartments.
Y.S.	Goods brake-van, 4-wheel.
Z.	Temporary brake-van.

Wagons.—Arrangement of wagon stock classification is based on bogie stock. When the design of a particular class of vehicle is altered in any important particular such as extension of length, or introduction of some new feature, the suffix A is to be used. In the event of a still further alteration, the suffix B is to be used and so on.

Four-wheel stock is to have the suffix S.

Base Code Letter.	To Denote.
B.	Ballast.
C.	Cattle.
(C) suffix	Composite vehicle.
G.	Goods (open).
L.	Louvre.
(N) prefix	Narrow Gauge.
P.	Explosives.
R.	Flat top.
S.	Sheep.
(S) suffix	4-wheel stock.
T.	Tank.
V.	Covered goods.
(W) suffix	Wooden vehicles.
E.	Employees' accommodation van.

On this basis wagon stock is classified as follows:—

Base Code Letter.	To Denote.
B.	Ballast hopper wagon.
B.A.S.	Ballast hopper wagon (4-wheel, steel, complete self-discharging).
B.S.	Ballast hopper wagon (4-wheel, steel, partial, self-discharging).

Base Code Letter.	To Denote.
B.S.C.	Ballast hopper wagon (4-wheel, steel, composite).
B.W.S.	Ballast hopper wagon, 4-wheel (wood).
B.P.	Ballast spreader.
B.P.S.	Ballast spreader, 4-wheel (steel).
B.P.W.S.	Ballast spreader, 4-wheel (wood).
C.	Cattle wagon with roof.
C.A.	Cattle wagon without roof.
F.	Refrigerator wagon.
F.S.	Refrigerator wagon, 4-wheel.
G.	Goods wagon (open).
G.S.	Goods wagon (open), 4-wheel.
L.	Louvre wagon.
L.S.	Louvre wagon, 4-wheel.
P.	Explosive wagon.
P.S.	Explosive wagon, 4-wheel.
P.W.S.	Explosive wagon, 4-wheel (wood).
R.	Flat top, 33 and 35 feet.
R.A.	Flat top, 45 feet.
R.S.	Flat top wagon, 4-wheel.
S.	Sheep wagon.
S.A.	Butchers' van.
T.A.	Tank wagon, 2,000 to 3,000 gallons.
T.S.A.	Tank wagon, 4-wheel, 2,000 to 3,000 gallons.
T.B.	Tank wagon, 3,000 to 5,000 gallons.
T.S.B.	Tank wagon, 4-wheel, 3,000 to 5,000 gallons.
T.C.	Tank wagon, 5,000 to 7,000 gallons.
T.D.	Tank wagon, 7,000 to 9,000 gallons.
V.	Goods wagon (covered).
V.P.	General Stores wagon (covered).
V.S.	Goods wagon (covered), 4-wheel.
W.	Well wagon, bogie.
X.	Breakdown vans.

Unclassified.—Laboratory Store Van, Breakdown Match Wagon.

CLEANING OF ROLLING-STOCK.

175. INSTRUCTIONS IN REGARD TO CLEANING OF ROLLING-STOCK.

TRANS-AUSTRALIAN RAILWAY.

Coaching Stock.—Stationmasters at Port Augusta and Parkerton are responsible for the proper cleaning of passenger cars and vans inside and outside before leaving on each trip. A record is to be kept showing the name of the employee cleaning each portion of the car so

that the responsibility can be readily placed in the event of any complaints being made in regard to the work. The work to be performed at Port Augusta and Parkeston (each trip unless otherwise specified) is detailed hereunder, but other details are to be attended to as directed from time to time by the Chief Traffic Manager:—

1. All rugs, mats, cushions and carpets must first be removed and cleaned outside the car sufficiently far away to prevent dust entering the compartments.

2. Each compartment must then be well swept, particular attention being given to all crevices and louvres, and to flooring and receptacles under the seats. The lavatory pans, basins, metal fittings and floors must be thoroughly cleaned, and all metal fittings polished with "Brilliantshine," "Snow Glow," or a similar preparation. Oil must not be used on brasswork.

3. Windows, mirrors, &c., must be cleaned with "Bon Ami," or other preparation, and well polished.

4. Floors must be mopped or scrubbed out regularly as required, and walls or woodwork well rubbed with clean cloths.

5. Lavatory compartments must be disinfected, and care is to be exercised to see that the pans are properly flushed. Car Cleaners are not to place their feet on the handles of flushing valves when flushing pans, as this is liable to loosen the screws at the bracket. Lavatories of cars after being cleaned must be deodorized with "Phenol," or some other similar preparation.

6. When compartments have been cleaned and dried off after scrubbing, mats, carpets, cushions, &c., are to be replaced, and any necessary dusting thoroughly performed, attention being given to window ledges, louvres, racks, ventilators, panels and every part of the interior where dust is likely to accumulate. Leather work must be well rubbed with clean cloths.

7. Shortages of, or damage to portable articles or fittings must be promptly reported. Water bottles and tumblers are to be cleaned and polished each trip. Crockery, empty bottles, &c., are to be forwarded to the Supervisor of Dining and Sleeping Services.

8. The water in filter tanks is to be drained off each trip and tanks refilled.

9. Water is to be replenished in tanks.

10. Special care is to be taken in car cleaning operations to avoid damage to paint and varnish surfaces, or to interior fittings and decorations.

11. In addition to other instructions herein, the following duties are to be performed at Parkeston each trip:—

- (a) Dining-car runners beaten.
- (b) Rugs, mattresses and pillows aired.
- (c) All cars disinfected unless otherwise instructed.

12. All carpets are to be cleaned each trip, both at Port Augusta and Parkeston.

13. Before proceeding to clean the outside of cars all doors, windows and ventilators are to be closed. A bag must be placed at the opening under the end doors to avoid water entering and damaging linoleums. The employee in charge of operations must regulate the water pressure, as if too great it is liable to damage the paint.

14. Clean water and sponges must be used for washing down, the water being well wiped off with chamois cloths and cloths frequently rinsed, so as to get rid of the accumulated dirt during such wiping. Soap must not be used, except to wash off grease or other objectionable matter. All parts whereon soap is used must be washed so as to remove every particle of it. This precaution is necessary to prevent the alkali contained in the soap causing the paint and varnish to perish. When cars are not washed they must be thoroughly wiped on the outside with clean dry chamois cloths, which must be well and frequently shaken to get rid of accumulated dust, otherwise the surface will be injured through being rubbed with dusty or gritty cloth. Chamois cloths must be washed with soap and dried in spare time, to enable them to be used from time to time until worn, when they may be further utilized for other purposes.

15. Ventilator lights are to be kept clean, and any accumulation of engine ash regularly swept or brushed off the roofs to prevent it being blown inside when ventilators are opened by passengers.

16. Car platforms, gates, steps, &c., are to be swept clean and wiped with old or worn cloths damped with oil or kerosene.

17. Brake-vans and mail vans are to be cleaned similarly to carriages. Dog boxes are to be scrubbed and regularly disinfected. Guards' look-out windows are to be kept clean. Ice chests used for the conveyance of butter in brake-vans are to be cleaned out regularly.

18. When new rubber mats are placed in cars they must be washed with soap and water regularly for about five weeks before being polished with wax or lino paste; this will allow the mats to become hard.

19. A proper standard of cleanliness in passenger rolling-stock must be maintained. Stationmasters and employees in charge of car cleaning operations are to inspect the train before going into traffic to see that the work is thoroughly done.

Goods and Live Stock Vehicles.—The Stationmaster, Port Augusta, is responsible for having the floors of live stock wagons cleaned, but in cases where vehicles at Parkeston are required for east-bound loading the Stationmaster, Parkeston, must have the work carried out at his station. Goods vehicles are to be swept as necessary by employees concerned before loading is commenced.

Carriage Sheds to be Kept Clean.—Carriage sheds must be kept clean and in a sanitary condition.

CENTRAL AND NORTH AUSTRALIA RAILWAYS.

1. The cleaning of rolling-stock on the Central and North Australia Railways must be arranged by the Stationmasters at Port Augusta, Quorn and Darwin, in accordance with the foregoing instructions, as appropriate.

GENERAL.

1. Passenger cars and brakevans detached at other stations must be suitably cleaned and equipped before being again attached to trains.

176. FUMIGATION OF COACHING STOCK.

For the destruction of cockroaches and other vermin, Dining and Passenger Cars are to be fumigated with a solution of water, sulphuric acid, and potassium cyanide. Owing to the danger of hydro-cyanic (prussic acid) gas—a virulent poison—generated by this solution, special care during the process is necessary on the part of persons engaged in carrying out the fumigation, and the following instructions are issued for their guidance:—

1. *Employee Responsible for Fumigation.*—The Car Builder located at the Carriage Shed at Port Augusta, or other employee as approved by the Chief Traffic Manager, is responsible for supervising the fumigation of cars under this process, and he must satisfy himself that any employee required to assist him is thoroughly conversant with these instructions.

2. *Quantities to be used in Fumigation.*—A number of earthenware dishes are required, according to the type of car to be fumigated, as set out in paragraph 3, and the following quantities are required for each dish:—

- 20 oz. water to each dish.
- 16 oz. sulphuric acid to each dish.
- 12 oz. potassium cyanide to each dish.

3. *Number of dishes required for various types of cars:—*

AR.	}	3 dishes each car.
ARP.		
BR.		
BRP.		
BRPF.		
D.	}	2 dishes.
AF.		
HR.		
		1 dish.

NOTE.—Earthenware dishes only must be used.

4. *Preparation of Cars.*—As far as possible cars must be sheltered from wind in the Car Barn during the process of fumigation. A red painted notice indicating "*Danger—this car being fumigated*" must be conspicuously placed on each end and on each side of the car prior to fumigation. All doors, windows, ventilators, and other air passages must first be blocked up and the car made thoroughly air-tight. Strips of paper should be gummed over the cracks around the edges of doors, &c., other passages being blocked with waste, &c., as necessary to render the car air-tight. The closing of windows and doors, blocking up of crevices, &c. (with the exception of the one door required to be left open to enable the person carrying out the operations to escape before the gas commences to generate), must be completed before the solution is mixed. The door by which the fumigator leaves must then be securely closed and locked to prevent gas escaping.

5. *Mixing of the Solution.*—The earthenware dishes should be placed equidistant along the corridor floor or so that the best distribution of the gas will be obtained. The ingredients must be placed in the dishes in the following order:—

- | | | |
|-----------------------|---|---|
| (a) Water | } | If more than one dish is used the water must be first placed in all the dishes, then the sulphuric acid and potassium cyanide in the order named. |
| (b) Sulphuric Acid | | |
| (c) Potassium Cyanide | | |

The potassium cyanide should be added commencing with the dish furthest away from the door which has been left open for the fumigator's exit, so that when completed he will be able to leave the car with the least possible delay and before the gas has had sufficient time to circulate.

Care should be taken not to inhale any of the fumes, which will commence to generate immediately after adding the sulphuric acid and potassium cyanide.

6. The Stationmaster, Port Augusta, must arrange for any employee required to assist in fumigating cars by this process to be properly instructed beforehand. It is necessary that there should be at least two men proficient in this regard.

The fumigator must not leave unattended the cars which are being fumigated until the dishes have been removed. Doors and windows must be opened and all fumes allowed to escape before dishes are removed.

Rubber gloves are to be used by fumigator and all residue from dishes buried in soil.

The gas will kill any vermin in about two or three hours. At least four hours must elapse after completion of the fumigation before any passengers are allowed to enter the car.

177. EXAMINATION AND TESTING OF LOCOMOTIVE AND STATIONARY BOILERS.

Inspection and Tests.—All new boilers must be carefully inspected and tested by hydraulic pressure with warm water to 50 per cent. above their working pressure.

If the hydraulic test is satisfactory, the boiler must be subjected to a steam test of 10 per cent. above its working pressure, such pressure to be maintained for at least one hour.

On the satisfactory completion of both tests, a certificate in duplicate, giving date and result of examination and test, and stating that the boiler is satisfactory, must be made out by the Boiler Inspector on Form L. 52. Original must be forwarded immediately to the Head Office.

Boilers: Numbering of.—All new locomotive boilers will take the number of the engine into which they are first placed, and, in addition, a suffix will be added, viz., A., B. or C., &c., according to whether it is the first, second or third boiler installed in the engine. For example,

the original boiler of engine G2 would be known as Boiler 2A, and would retain this number and suffix throughout its life, even if placed into another engine, and should engine G2 receive another new boiler (second) it would be numbered 2B.

The boilers of narrow-gauge engines are to be numbered in a similar manner, but in addition the prefix N. is placed before the number, indicating that the boiler belongs to narrow-gauge stock, as N.10A.

When a boiler is placed out of service it must be emptied, and all plugs, mud-hole door, smoke box, and fire-hole doors opened to allow of free passage of air, and the time will not be included for calculating the period between examinations; but if out of service for two years or longer a test is to be made before the boiler is again brought into use.

The time a boiler is in the workshops will also be excluded when calculating periods between examinations.

Examination with Tubes Drawn.—The tubes of all locomotive boilers must be withdrawn and the boilers and the fire-boxes thoroughly examined internally and externally by the Boiler Inspector under the following conditions, and at the intervals stated:—

STANDARD GAUGE LOCOMOTIVES.

Boilers of Passenger Engines.—The first internal examination must be made when the boiler mileage reaches 100,000, but irrespective of the mileage run three years must not be exceeded.

The second internal examination must be made when the second period of mileage reaches 65,000 (which may be run in two years), but three years must not be exceeded.

NOTE.—The examination may be more frequent should experience with the waters dictate, and careful observation must be made to determine the frequency. Approval of the Chief Mechanical Engineer must be obtained for special examinations.

Boilers of Goods Engines.—The first internal examination must be made when the boiler mileage reaches 80,000, but, irrespective of the mileage, three years must not be exceeded.

The second internal examination must be made when the second period of mileage reaches 56,000 (which may be run in two years), but three years must not be exceeded.

On the expiry of the foregoing periods, all locomotive boilers must be subjected to a thorough internal and external examination at periods of not more than two years, unless the engine has run a very low mileage. In such cases the Chief Mechanical Engineer only may grant an extension of time.

The Boiler Inspector must prepare in duplicate a complete report on the prescribed Form L. 52, showing in detail the condition of the boiler, fire-box, &c., together with any recommendations, and forward the original to the Chief Mechanical Engineer, who shall decide what repairs, &c., are to be executed.

After the repairs have been executed, the boiler shall be tested with warm water to 25 per cent. above the working pressure, and a certificate must be forwarded to the Chief Mechanical Engineer's office showing what repairs have been effected, and that the boiler is again in roadworthy condition.

When the boiler of a passenger engine has run 300,000 miles, and a goods engine 240,000 miles (which may be reached in nine years), the Boiler Inspector will submit a special report, together with any recommendations, to the Chief Mechanical Engineer, who will decide if the boiler is to be continued in use.

NARROW-GAUGE ENGINES.

Central Australia Railway.

In the case of locomotives working on the Central Australia Railway the first internal examination must be made when the boiler mileage reaches 150,000 (which may be run in five years), but, irrespective of the mileage run, six years must not be exceeded.

The second internal examination must be made when the second period of the mileage reaches 90,000 (which may be run in three years), but, irrespective of mileage, four years must not be exceeded.

On the expiry of the foregoing periods, all the above boilers must be subjected to a thorough internal and external examination at periods of not more than three years, unless the engine has run a very low mileage. In such cases the Chief Mechanical Engineer only may grant an extension of time.

When the boilers of the above engines have run 360,000 miles (which may be reached in twelve years), the Boiler Inspector will submit a special report, together with any recommendation, to the Chief Mechanical Engineer, who will decide if the boiler is to be continued in use.

North Australia Railway.

In the case of locomotive boilers working on the North Australia Railway the first internal examination must be made when the boiler mileage reaches 200,000 (which may be run in six years), but irrespective of the mileage run, seven years must not be exceeded.

The second internal examination must be made when the second period of the mileage reaches 120,000, but, irrespective of mileage, four years must not be exceeded.

On the expiry of the foregoing periods, locomotive boilers must be subjected to a thorough internal and external examination at periods of not more than three years, unless the engine has run a very low mileage, in which case the Chief Mechanical Engineer only may grant an extension of time.

When a boiler has run 360,000 miles (which may be reached in twelve years), the Boiler Inspector will submit a special report together with recommendation to the Chief Mechanical Engineer, who will decide if it is to be continued in use.

Fire-boxes and Water-spaces, &c.: Examination by Boiler Inspector.—All locomotive boilers will have their fire-boxes and water-spaces inspected by the Boiler Inspector as far as possible every six months. All plugs will be withdrawn, the fire-bars removed, and the smoke-box, fire-box and water-spaces properly cleaned to facilitate the inspection. The Boiler Inspector must immediately furnish a report on Form L. 52 to the Chief Mechanical Engineer, showing the condition of the boiler.

Boilers, Fire-boxes, &c.: Examination of.—In addition to the foregoing examination, all locomotive engines must have their boilers, fire-boxes, &c., thoroughly examined inside and outside as far as practicable, by removing dome and safety valve covers, fire-bars, plugs, &c., at intervals of not less than eighteen months for boilers under three years, and twelve months for boilers over three years. The inspection will be carried out by the Boiler Inspector, who will, after such examination, test the boiler with warm water to 25 per cent. above its working pressure.

Any light repairs which the examination shows to be necessary must be executed by the Boiler Foreman or other officer-in-charge before the hydraulic test is applied. Boilers requiring heavy repairs are to be taken out of running, and, where necessary, instructions sought.

Renewal of Stays, Tubes, &c.—Every precaution must be exercised in the renewal of defective wall stays, crown stays, tubes, &c. When removing defective stays, care must be taken not to damage the thread in copper plate, and every endeavour must be made to replace the stay at the smallest possible diameter compatible with tightness. All renewals of copper stays to be recorded on chart and forwarded to Chief Mechanical Engineer fortnightly.

Tubes should be well slackened both ends before driving, so that the tube plates may not be damaged, and on no account must the tools used be allowed to touch the tube holes.

Tube drifts must not be used to tighten tubes, but they must be expanded with a roller expander of approved pattern, great care being taken so as not to enlarge or elongate the tube holes. Only qualified employees are to be permitted to expand or bend tubes, and boilers must be reasonably cool when repairs are being executed.

Boiler Repairs to be Recorded.—All repairs executed to boilers in running sheds must be entered in the Drivers' Running Repair Book (L. 8) and a return of all repairs to boilers and fire-boxes must be prepared on the proper form (L. 60), showing particulars of the repairs effected and by whom, and despatched to the Superintendent of Locomotive Running and then made available for the Boiler Inspector's perusal.

Water-spaces, Fire-boxes, Brick Arches, Smoke-boxes, &c.: Examination of.—Officers in charge of depots will be held personally responsible for examination of boilers and fire-boxes for leaks, broken stays, fractures, bulges, &c., and for the examination of water-spaces, smoke-boxes, spark arresters, ash-pans and doors, baffle plates and brick arches on each occasion engines pass through Port Augusta, Cook,

Parkeston and Quorn, and in the case of engines not working "through" trains, these examinations are to be made at least fortnightly at the depot where engines are stabled. Particulars of these examinations are to be entered on L. 62 docket in duplicate, one copy to be forwarded to Head Office without delay, and one retained at the depot concerned.

In addition to above examination, a boiler, after being washed out, must, wherever possible, be thoroughly examined by a competent boilermaker before the boiler is again closed up and filled. In all such cases the boilermaker in charge of the examination will be held responsible for the work of washing out being efficiently performed and the clearing of water-spaces.

Fusible Plugs.—Fusible plugs must be taken out and examined at least once a fortnight, and refilled with pure lead.

When refilling plugs, lead must be always cleaned from the threads, and the hot lead poured in with the plug held in the snap provided for the purpose. Lead must then be punched down while the plug is still in the snap.

When using bad water, the plugs must receive extra attention, and the examinations and refills effected more often, if necessary. Spare plugs must be kept ready for use to obviate any unnecessary delay in preparing the boiler for traffic. A record of the examinations and refills must be kept and reported to the Chief Mechanical Engineer's Office promptly on the proper form.

When a fusible plug is dropped in the fire-box, or where there are any indications that the crown of the boiler has been short of water, the Chief Mechanical Engineer must be immediately notified by telegram, if necessary, and he will arrange for an inspection to be made by the Boiler Inspector or leading boilermaker, and no boiler should again commence work until the fire-box has been carefully examined by him and certified fit for traffic. The fusible plugs belonging to the boiler must be obtained by the Boiler Inspector or leading boilermaker, who will also make an examination of the test and gauge glass cocks. The complete information together with reports from the officers and employees concerned must be forwarded through departmental channels to the Chief Mechanical Engineer.

Cooling Down Boilers Prior to Washout.—Engines should be stabled with as nearly a full glass of water as possible; steam pressure allowed to reduce to zero with fire-hole door, damper, smoke-box door, blower and all other steam valves closed, and water then allowed to cool to atmospheric temperature before washing out.

Where cold water only is available for washing out, or when boilers are required to be cooled down for repair purposes, or when time does not permit of cooling as above, boilers are to be filled as full as possible by means of the injectors, and steam pressure reduced to zero by means of injector steam valves with fire-hole door, damper and smoke-box doors and blower valve closed. The engine must be allowed to stand as long as possible before cooling down, and in no case, less than four hours after the fire has been drawn.

Cold water is then to be introduced into the top of the boiler, and blow-down cock opened, allowing as much water to escape as is flowing into the boiler. The boiler will be cooled down gradually in this

manner, and water is not to be allowed to fall below the level of the crown until the temperature of the water escaping from the boiler is as low as that flowing in.

The plugs provided for introducing water into the various boilers are as under:—

K. and KA. Class	..	Plugs in corner pads on both sides of boiler above fire-box.
G. Class	..	Plugs in corner pads on both sides of boiler above fire-box, with the exception of the latest boilers in service which are fitted with one plug on top of the barrel in the middle course in front of the dome.
D. Class	..	Plug on top of barrel in first course.
NM. Class	..	One plug on top of the barrel behind and adjacent to the dome.
NB. Class	..	One plug on back casing plate near the round of the flange.

During cooling-down process, which shall be as slowly as time permits, no plugs shall be removed, with the exception of those set out above. When the boiler is cool, all plugs must then be removed for the purpose of washout.

Washing Out of Boilers.—Locomotives in regular work, unless otherwise directed by the Chief Mechanical Engineer, must have all plugs, &c., drawn, and the boiler thoroughly washed out after running 300 miles or thereabouts.

On the Central Australia Railway, boilers are to be washed out after running 250 miles or thereabouts between Port Augusta and Quorn. At Port Augusta and Quorn, when engines are engaged exclusively on shunting work, they are to be washed out twice weekly: and when they are engaged partly on main-line and partly on shunting work, the mileage involved in shunting (five miles per hour) is to be taken into account.

On both lines, the periods or mileages which can be run by locomotives working special trains away from washout points will be as determined by the Shed Foreman, but in no case is a boiler to be under steam for more than six days without being washed out—circumstances may require a shorter interval. When work trains are engaged away from washout points, the Shed Foreman will be responsible for changing engines over as necessary; and should occasion require, he will submit any particular case to the Chief Mechanical Engineer for direction.

At depots where the sump system is in operation and boilers are required at short notice, cooling must be performed as outlined under section on "Cooling Down". Washing out will then be done with water from the sump, and finally with fresh water. Boilers allowed to cool down naturally shall be washed out with the water from the boiler which has been allowed to escape into the sump, and finally with fresh water. The sump system when properly used is an economic method of providing a washout with a minimum of water, and every effort should be made to prevent any undue wastage in this direction.

Prior to any boiler being washed out, the Shed Foreman or other officer-in-charge will arrange for a boilermaker to examine the fire-box while the boiler is full of water, and harden up any leaky stays: the boilermaker must lightly hammer the fire-box with a view to loosening any scale that may be adhering to the water side, at the same time, straightening out any corrugations.

All mudhole doors, belly pads, corner fire-box pads, washout caps, and plugs in front tube-plate, barrel, casing plate, throat-plate, and back-plate must be removed before washing out is commenced. The crown of the boiler must be thoroughly washed down and scraped if any scale is adhering either to the crown or to the base of crown or link bolts.

The sediment must then be cleaned from the tubes through the top washout holes in the front tube-plate, and in case of N.M. boilers, through hole on top of barrel, after which the boiler barrel and the water-spaces around the fire-box must be thoroughly washed out, and all scale and sediment removed.

In the event of any boiler repair work being performed after washing out has been completed, the boiler must be again swilled out thoroughly so as to remove any scale, &c., that may have been brought down. The boilermaker must thoroughly inspect all water-spaces after the washout has been completed, and satisfy himself that these are clear, and that all scale, &c. has been removed. Shed Foreman must personally see that a proper inspection is made by the boilermaker, and must, from time to time, make a personal inspection of boilers after same have been washed out, to satisfy themselves that the work has been performed thoroughly, and if any indications of "make-up" exist, which cannot be removed through ordinary washout plugs, one or more tubes should be removed in order to make further examination and clear obstruction.

The boilers of engines after having been to the workshops must be washed out at the roundhouse before being placed in traffic.

In the event of boilers being washed out at places where a boilermaker is not available, the employee performing the washout must make a thorough examination of the water-spaces, and satisfy himself that all scale and sediment have been removed.

The washout man must run a wire through all water columns and test cock passages on each occasion.

In view of the damage which may be caused by rapid and unequal contraction, boilers must not, under any consideration, be blown down for washing out.

Blowing Down of Boilers.—Blowing down of boilers must be performed regularly after an engine has travelled 50 miles from the point where it was last washed out, and regularly thereafter at intervals of not more than 50 miles. The blow-down cocks should be opened more frequently in bad-water districts than in good-water districts. It is pointed out that much better results can be obtained by opening the blow-down cocks at short intervals and for short periods than by blowing the boiler down for long periods at infrequent intervals.

Brick Arch.—Care must be taken to see that the brick arch is fairly cool before washing out is proceeded with.

Washout Record.—A record of washouts, which must include mileage run since previous washout, must be kept and copy forwarded to the Chief Mechanical Engineer's Office fortnightly.

Use of Injectors.—Injectors whilst engine is running should be put on as soon as necessary after opening of regulator and adjusted to supply sufficient water to the boiler to meet the requirements of the engine. Care should be taken not to over-supply the boiler with water, otherwise water will be carried into the cylinders, remove lubrication and probably cause damage to cylinder walls and covers.

Both injectors must be tested by Drivers prior to commencement and completion of trip, and necessary repairs booked and attended to. It is essential that injectors must be worked alternately daily, whether engine is employed running train or performing yard shunting work.

Every care must be exercised to avoid the use of injectors while the engine is stationary and circulation of the water has stopped, but if it becomes essential to use the injector whilst standing, a bright, even fire should be maintained with minimum use of blower, and steam pressure on gauge should not be allowed to reduce. At all times care must be taken to maintain even temperature in fire-box and even pressure on steam gauge.

Prior to stabling of engines sufficient water should be injected into boiler while fire is bright to enable engine to come over pit and be stabled without further use of injectors when fire is dead or cleaned out.

Enginemmen must at all times pay special attention to the correct use of injectors in order to avoid damage to tube plates and tubes, as a result of cold water coming in contact with hot surfaces when the circulation of the water has stopped.

Use of Blower.—Special attention must be given to use of blower in order to prevent waste of steam at safety valves, and unnecessary and detrimental use of injectors whilst engine is standing.

When engine is rolling, and with use of blower, a bright even fire must be maintained all over grate and specially under tubeplate.

The blower valve must not be opened when the fire has been cleaned out.

The blower must be used with care when necessary to stimulate fire or prevent gasses from passing into cab, and an even fire should be maintained on grates to prevent entry of cold air into fire-box.

Cleaning Out of Tenders.—The tenders and side tanks of all engines must be cleaned out at least once every two months to obviate trouble on the road with injectors.

The Shed Foreman at Parkeston is to arrange for the tenders on all G. class engines and for the tender on the K. class engine stationed at Zanthus to be washed out at Parkeston in accordance with these instructions. The Shed Foreman at Tarcoola is to arrange for the tenders on K. and Ka. class engines to be washed out at Tarcoola similarly. The Shed Foreman at Port Augusta must arrange for the tenders on narrow-gauge engines attached to Port Augusta depot, and

tenders on shunting engines employed at Port Augusta to be similarly dealt with, and the Shed Foreman at Quorn is to arrange for the tenders on all other narrow-gauge locomotives to be washed out regularly at Quorn in accordance with the instructions quoted.

When tenders are being washed out an inspection must be made of the perforated screen around the tender outlet valve to see that these are in proper order. If defective, these screens must be repaired before the engine is again sent into traffic.

A record is to be kept at each of the depots mentioned of all tenders that have been washed out, and a return submitted to the Chief Mechanical Engineer's office each month showing what tenders have been washed out and what engines they are attached to.

Enginemmen are to see that tender lids are kept closed, except when water is being taken.

Cleaning Out of Water Gins.—All water gins must be cleaned out at least every four months.

Water Columns and Test Cocks.—Care must be taken to see that all water columns and test cocks are left in good order and perfectly free, and with the plugs properly screwed up.

Safety Valves and Pressure Gauges.—The safety valves and pressure gauges must be checked with the standard pressure gauge by the Depot Foreman or other officer-in-charge, and the safety valve connexions must also be examined, cleaned and oiled once every three months, and a record kept of same. The pressure gauges must not be taken to pieces at out-stations, but must be forwarded to the workshops for attention.

Boiler Mounting Joints.—All joints of safety valves and boiler mountings must be made with gauze wire and red lead, and not with asbestos or india-rubber insertion. Before any other special jointing material is used, approval in writing must be obtained from the Chief Mechanical Engineer. The dome joints may be made with a copper ring when practicable, or with gauze wire and red lead. This must receive strict attention.

Position of Gauge Mountings.—In fixing the gauge mountings, they are to be so adjusted that the level of the water, when just visible above the packing nut of the lower mounting, shall be $2\frac{1}{2}$ inches deep over the highest part of the crown of the fire-box. The position of the lower mounting being thus fixed, the upper mounting must be placed in such a position that, where practicable, 6 inches of clear glass is shown between the packing nuts.

Engines Temporarily Out of Traffic.—Should an engine not be required for running for more than a week, all the water must be run out, and all plugs left out until the engine is required again. A board with "Empty Boiler" painted thereon must be placed in front of the fire-hole door. Officers-in-charge of sheds will be held responsible for seeing that one of these boards is placed in the position stated as soon as the boiler is emptied, and that it remains in position until the boiler is refilled with water.

Cleaning of Smoke-boxes, Ash-pans and Tubes.—Smoke-boxes, ash-pans and tubes should be cleaned out at least daily, or more often if necessary. When closing smoke-box doors, care must be taken to see that the recess for the door is properly cleaned, and that the door closes perfectly tight. Ash-pan doors must be kept straight and in good working condition, and should efficiently damper the fire when in the closed position.

Examination of Spark and Ash Arresters and Ash-pan Doors.—No engine must be permitted to run unless fitted with a spark arrester in good condition, unless authorized in writing by the Chief Mechanical Engineer. They must be kept perfectly clean and brushed with a wire brush supplied for the purpose at least once every day by the fireman. The driver is responsible for seeing that this is done.

The Boiler Inspector must examine the spark arresters of all engines when visiting locomotive stations, and every facility and assistance must be given him to carry out this work. This instruction does not in any way relieve the Shed Foreman, boilermakers, drivers, firemen, or other officers or employees concerned from any responsibility in connexion with spark arresters, and they will be held responsible for any neglect of duty in regard thereto.

Purchase of Stationary Boilers.—When stationary boilers, new or second-hand, for which no drawings are available, are being purchased by the department, they must be examined and tested as provided in instructions, and, in addition, a sketch must be made giving dimensions and sizes of the various portions of the boiler necessary for computing the working pressure. Also a list of mountings and their sizes must be supplied, and the complete information must be checked to the satisfaction of the Chief Mechanical Engineer before the purchase is approved.

Stationary Engine Boilers: Examination of.—All stationary pumping and portable boilers must be maintained in good order by the Officer-in-charge of the district in which the boilers are situated. They will be examined inside and outside by the Boiler Inspector every year, and every two (2) years tested with warm water to a pressure of 25 per cent. above the working pressure. On the latter occasion the boiler shall have the lagging removed to admit of a thorough external examination.

The Boiler Inspector will report on the condition of all stationary boilers, and, if necessary, determine the working pressure. A brass plate must be affixed to each boiler, on which is to be marked the approved working pressure and the date of inspection.

The Chief Engineer of Way and Works will advise the Chief Mechanical Engineer as boilers under his control are placed in and out of service, so that arrangements can be made with the Boiler Inspector for the necessary testing to be carried out.

Washing Out Stationary Engine Boilers.—Stationary boilers in regular work must have man-hole and mud-hole doors removed and washed out at least once a fortnight, or more often when necessary.

The surface exposed to the flame must be also cleaned, the fire-bars lifted, and the ashes cleaned away from the ledge which supports the bars.

When a boiler is being worked intermittently, the water must be run off at each interval, and the boiler left sufficiently open to create a current of air. The boiler must not be refilled until again required.

Boiler Instructions to be Observed.—The absolute necessity of carrying out these instructions must be impressed upon all concerned, since the safety and efficiency of boilers, &c., is wholly dependent upon their observance.

Examinations to be Recorded.—Employees must report all examinations carried out by them on Examination Docket L. 62 and forward to Head Office, duplicate being retained in depot.

178. ACCOMMODATION

TRANS-AUSTRALIAN

Location.	Station Building—S. Shelter Shed—W. Ladies Waiting Room—L.	Staff Stations—Home and Distant Signals.	Automatic Staff Instruments and Land Marks.	Staff drawer locks.	Crossing loop standing room.	Private Siding length (in clear).	Goods Sidings Total Standing room in feet.	Refreshment room.	Lamp room.	Latrines— Ladies—L. Gents—G.	Goods shed.	Carriage shed.	Engine shed.	Rest houses— Maintenance—M. Traffic Crew—T.C.	Ash Pits— Main In.—M.L. Loco.—L.O.
Port Augusta*	S W L	Yes	..	..	feet 1,200	..	21,800	Yes	Yes	L G	Yes	Yes	Yes	M TC	L O
5 miles Salt Sid- ing	..	..	..	Yes	..	400	..	..	..	..	..	..	..	..	..
17 Miles	..	..	..	Yes	..	..	1,050	..	..	..	..	..	..	..	..
Hesso	S L	..	..	Yes	..	..	1,623	..	Yes	G	Yes	..	..	..	..
42½ Mile Wood Siding	..	..	..	Yes	..	227	..	..	..	..	..	..	..	..	..
Bookaloo	S	..	Yes	Yes	1,380	..	1,474	..	..	G	Yes	..	..	..	ML
62 Mile (Wood) Siding	..	..	..	Yes	..	..	530	..	..	..	..	..	..	..	..
Wooralla	S	..	..	Yes	..	..	7,064	..	Yes	G	..	..	..	M	..
Birthday	W	..	..	Yes	..	..	1,040	..	..	..	..	..	..	M	..
Wirrappa	..	..	..	Yes	..	..	1,420	..	..	..	..	..	..	M TC	ML LO
Pimba	S W L	Yes	..	..	1,405	..	2,400	..	Yes	..	Yes	..	..	..	..
Burando	..	..	..	Yes	..	..	1,200	..	..	..	..	..	..	..	..
Lake Hart	..	..	..	Yes	..	400	..	..	..	..	..	..	..	..	..
Wirraminna	S W L	..	Yes	Yes	1,386	..	1,540	..	Yes	..	..	..	..	M	ML
Coondambo	..	..	..	Yes	..	..	1,320	..	..	..	..	..	..	..	..
Kultanaby	..	..	..	Yes	..	..	625	..	..	..	..	..	..	..	..
Kingoonya	S	Yes	..	..	1,400	..	1,065	..	Yes	G	Yes	..	..	M TC	ML LO
Wilgena	..	..	..	Yes	..	..	900	..	..	..	..	..	..	..	..
Tarcoola	S W L	Yes	..	..	1,500	..	1,410	Yes	Yes	L G	Yes	Hospital Car Shed	Yes	TC	ML LO
262 Miles Quarry Siding	..	..	..	Yes	..	..	2,775	..	..	..	..	..	..	..	..
298 Miles	..	..	..	Yes	..	..	205	..	..	..	..	..	..	M	ML LO
Wynbring	S	..	Yes	Yes	1,380	..	400	..	Yes	..	..	..	..	..	..

The following additional accommodation is provided at Port Augusta :—1 two-unit 80 tons weighbridge, mixed 6 tons;

Telephones are installed at staff stations

AT STATIONS.

RAILWAY.

Water Crane—C. Elephant Trunk—E. Stand Pipe—S.	Reservoir Capacity.	Water Storage Capacity.	Sumps Capacity.	Bores—B. Springs—S.	Wells—W.	Pumping Plants. Engine—E. Windmill—W.	Turntable or Triangle.	Coal Storage Capacity.	Oil Store Loco.	Carriage Watering Facilities.	Car Dock—D. Loading Bank—L.	Cattle Yard Capacity.	Sheep Yard Capacity.	Location.
C S	gallons Per- manent Supply	gallons 60,000	gallons 100,000	BS	E	..	Both	tons Pit 16,000 Bin 100	Yes	Yes	D	300	3,000	Port Augusta
..	..	..	..	..	..	..	..	..	..	..	..	..	..	5 Miles Salt Siding
..	..	..	..	..	..	..	..	..	..	..	..	..	2,000	.. 17 Miles
..	..	..	..	..	..	..	..	..	..	..	DB	..	2,000	.. Hesso
2C	6,250,000	20,000	..	..	EW	..	..	..	..	..	DB	312	1,560	42½ Mile Wood Siding
..	..	..	..	..	..	..	..	..	..	..	..	..	..	.. Bookaloo
..	Tank 97,000	..	..	..	E	..	..	80	..	..	DB	..	..	62 Mile Wood Siding
..	..	..	..	..	..	..	..	..	..	..	..	..	..	.. Wooralla
C	5,248,000	26,000	..	..	EW	..	..	..	..	..	B	..	2,400	.. Birthday
..	..	..	..	..	..	..	Tri.	50	Yes	..	B	312	1,560	.. Wirrappa
..	..	..	..	..	E	..	..	..	..	..	..	..	..	.. Pimba
..	..	..	..	..	..	..	..	..	..	..	..	..	..	.. Burando
2C	..	26,000	..	W	W	..	Tri.	..	..	..	B	100	500	.. Lake Hart
..	..	..	..	..	..	..	..	..	..	..	..	..	..	.. Wirraminna
CS	7,987,000	26,000	..	..	E	..	..	..	..	..	..	..	5,000	.. Coondambo
2C 2ES	..	treated 106,000 and softener un- treated 36,000	..	W	E	..	Tri.	130	..	..	B	300	2,000	.. Kultanaby
E	..	..	..	..	..	..	..	..	..	..	..	..	..	.. Kingoonya
E	6,882,000 5,407,000	46,000	20,000	..	EW	..	Tri.	200	Yes	Yes	B	..	..	.. Wilgena
..	..	..	..	..	..	..	..	..	..	..	..	..	..	.. Tarcoola
E	..	10,000	..	W	WE	..	..	..	..	..	..	..	..	.. 262 Miles Quarry Siding
ES	1,633,600	40,000	20,000	..	E	..	Tri.	140	..	..	..	..	..	.. 298 Miles
..	..	..	..	..	..	..	..	..	..	..	..	..	..	.. Wynbring

gauge; 2 weighbridges, 3' 6" gauge, 10 and 12 tons respectively; 1 crane, 3' 6" gauge, 5 tons; 1 crane, mixed gauge, passenger platform, 1,000".

and at automatic staff stations.

ACCOMMODATION

TRANS-AUSTRALIAN

Location.	Station Building—S. Shelter Shed—W. Ladies Waiting Room—L.	Staff Stations—Home and Distant Signals.	Automatic Staff Instruments and Land Marks.	Staff drawer locks.	Crossing loop standing room.	Private Siding length (in clear).	Goods Sidings Total Standing room (in feet).	Refreshment room.	Lamp room.	Lairrines— Ladies—L. Gents—G.	Goods shed.	Carriage shed.	Engine shed.	Rest houses— Maintenance—M. Train Crew—T.C.	Ash Pits— Main line—M.L. Loco.—L.O.
Barton	S	Yes	..	..	1,380	..	365	..	Yes	..	..	..	..	MTC	LO
Immarna	S	..	Yes	Yes	1,385	..	2,525	..	Yes	G	..	..	..	..	..
Ooldea	S	..	Yes	Yes	1,340	..	1,145	..	Yes	..	..	..	..	MTC	ML
Watson	..	..	..	Yes	..	..	1,030	..	..	..	..	..	..	..	..
Fisher	..	..	..	Yes	..	..	1,280	..	Yes	..	..	..	..	..	..
Cook	S	Yes	..	..	1,340	..	1,768	..	Yes	G	..	Yes	Yes	MTC	LO
Hughes	..	..	Yes	Yes	1,621	..	960	..	Yes	..	..	..	..	T.C.	LO
632 Mile Siding	..	..	..	Yes	..	..	640	..	..	..	..	..	..	..	ML
Forrest	S	..	Yes	Yes	1,470	..	..	..	Yes	G	Yes	..	..	..	..
Loongana	S	Yes	..	..	1,180	..	1,680	..	Yes	G	..	..	..	MTC	ML LO
744 Mile Siding	..	..	..	Yes	..	..	908	..	..	..	..	..	..	..	..
Halg	S	..	Yes	Yes	1,390	..	445	..	Yes	..	..	..	..	M	..
Rawlinna	S	Yes	..	..	1,330	..	900	..	Yes	G	..	Hospital Car Shed	Yes	MTC	LO
Naretha	S	..	Yes	Yes	1,360	..	6,635	..	Yes	..	..	..	..	..	LO
862 Mile Siding	S	..	..	Yes	..	..	1,350	..	..	..	..	..	..	..	..
Kitchener	S	..	..	Yes	..	..	1,340	..	..	..	..	..	..	..	..
Zanthus	S	Yes	..	..	1,440	..	735	..	Yes	G	Yes	..	..	MTC	ML LO
946 Mile Siding	S	..	..	Yes	..	..	1,775	..	Yes	..	..	..	..	..	ML
Karonie	S	..	Yes	Yes	1,420	..	700	..	Yes	..	..	..	..	M	ML
Randells	..	..	..	Yes	..	..	600	..	..	..	..	..	..	..	..
Golden Ridge	S W	..	..	Yes	..	..	1,410	..	Yes	..	..	..	..	..	..
†Parkeston	S	Yes	..	..	800	..	11,080	..	Yes	G	Yes	Yes	Yes	MTC	LO
Kalgoorlie	..	..	..	..	..	..	500	..	..	..	..	..	..	..	..

† At Parkeston, a ramp is provided to facilitate the transfer

AT STATIONS—continued.

RAILWAY—continued.

	Water crane—C. Elephant trunk—B. Stand pipe—S.	Reservoir capacity.	Water Storage capacity.	Stumps capacity.	Wells—W. Bore—B.	Pumping plants— Engine—E. Windmill—W.	Turntable or Triangle.	Coal Stage capacity.	Oil store Locn.	Carriage watering facilities.	Car dock—D. Loading bank—B.	Cattle Yard Capacity.	Sheep Yard Capacity.	Location.
E	gallons.	gallons	gallons	gallons	..	E	Tri.	tons	Yes	..	..	..	..	Barton
..	..	45,000	20,000	..	..	..	..	50	..	..	..	..	..	Immarna
OE	..	..	20,000	..	W	E	..	25	..	Yes	..	3,600	..	Ooldea
..	..	..	..	..	..	..	..	..	..	..	..	..	..	Watson
..	..	..	..	..	..	..	..	..	..	..	..	4,800	..	Fisher
E	..	30,000	50,000	B	WE	..	Tri.	200	Yes	Yes	..	..	..	Cook
E	..	..	..	B	E	..	Tri.	500	..	..	..	..	..	Hughes
2ES	..	60,000	..	B	E	..	..	..	..	..	..	..	..	632 Mile Siding
E	..	12,000	..	B	E	..	..	..	..	..	..	700	..	Forrest
2CS	..	20,000	..	B	E	..	Tri.	50	Yes	..	..	240	..	Loongana
EC	5,757,000	26,000	..	..	WE	..	..	..	..	..	..	..	..	744 Mile Siding
..	..	..	..	..	..	..	..	..	..	..	..	..	..	Halg
E	..	56,000	7,000	W	WE	..	Tri.	200	Yes	Yes	..	..	..	Rawlinna
..	..	13,000	10,000	..	E	..	Tri.	280	..	..	..	17	..	Naretha
..	..	..	..	..	..	..	..	..	..	..	..	..	..	862 Mile Siding
..	..	..	..	..	..	..	..	..	..	..	..	..	..	Kitchener
2CS	3,800,000	26,000	..	..	E	..	Tri.	50	..	..	..	40	200	Zanthus
E	10,745,000	40,000	..	..	E	..	..	..	..	..	..	..	..	946 Miles Siding
SC	6,902,000	26,000	..	..	Syphon and E	..	..	..	..	..	..	200	..	Karonie
..	..	..	..	..	..	..	..	..	..	DB	200	..	..	Randells
..	..	..	..	..	..	..	..	..	..	..	..	..	..	Golden Ridge
2C	Per- manent	70,000	..	..	..	..	Tri.	260	Yes	Yes	..	200	5,600	†Parkeston
..	..	..	..	..	..	..	..	..	..	..	..	..	..	Kalgoorlie

of cattle from 3' 6" gauge to 4' 8½" gauge vans, and vice versa.

ACCOMMODATION

CENTRAL AUSTRALIA

Location.	Station Building and Class = S Shelter Shed = W. Ladies' Waiting Room. = L Heavy Inactive Block System Control Station = C. Train Record Book Station = P. Home and Distant Signal = S. Designation Boards = B.	C.P.	S.	Crossing Loop Standing Room (feet).	Goods Sidings. Total Standing Room (in feet).	Private Sidings.	Refreshment Room.	Attended Station = A.	Closet and Urinal.	Goods Shed and Class.	Goods Platform = P. With Office = P. & O.	Carriage Shed.	Engine Shed.	S.M. Residence.	Resthouse.
Port Augusta	S.L.	C.P.	S.	534	5,700	3	Yes	A.	Yes	1st	P.&O.	Yes	Yes	Yes	Yes
Stirling North	W.	—	B.	545	730	..	..	..	..	..	P.&O.	..	..	..	..
Saltillo ..	W.	—	B.	..	325	..	..	..	..	..	..	..	..	..	..
Woolshed Flat	W.	P.	B.	665	268	..	..	..	..	..	..	..	..	..	..
Quorn ..	1st S.L.	C.P.	S.	930 930	5,385	2	Yes	A.	Yes	1st & Cream Shed	P.	Yes	Yes	Yes	Yes
Willochra ..	..	—	B.	520	493	..	..	..	Yes	..	P.&O.	..	..	..	..
Gordon ..	..	P.	B.	455	675	..	..	..	Yes	..	P.&O.	..	..	..	..
Wilson ..	2nd S.L.	P.	S.	590	595	..	..	..	Yes	3rd & Cream Shed	P.	..	..	Yes	..
Hawker ..	1st S.L.	C.P.†	S.	620	2,190	1	Booth	A.	Yes	1st	P.	..	..	Yes	Yes
Hookina ..	..	P.†	B.	540	528	..	..	..	Yes	..	P.&O.	..	..	..	..
Mernmerna ..	..	P.	B.	625	625	..	..	..	Yes	..	P.&O.	..	..	..	..
Edcowie ..	..	—	B.	485	790	..	..	..	Yes	..	P.&O.	..	..	..	..
Brachina ..	..	P.	B.	932	..	..	..	..	..	..	..	..	..	..	..
Meadows ..	..	..	B.	540	540	..	..	..	Yes	Small	P.	..	..	..	..
Parachilna ..	3rd S.	C.P.	S.	960	800	..	..	A.	Yes	2nd	P.	..	..	Yes	Yes
Nilpena ..	..	..	B.	990	..	..	..	..	Yes	Small	P.	..	..	..	..
Beltana ..	1st S.L.	C.P.†	S.	1,036	1,340	..	..	A.	Yes	1st	P.	..	Yes	Yes	Yes
Copley ..	3rd S.	C.P.†	B.	600	600	..	..	A.	Yes	3rd	P.	..	..	Yes	..
Telford ..	..	..	B.	705	..	..	..	..	..	..	..	..	..	..	..
Lyndhurst ..	..	P.	S.	903	855	..	..	..	Yes	Small	P. & O.	..	..	Yes	..
Farina ..	2nd S.L.	C.P.	S.	850	1,643	..	..	A.	Yes	1st	P.	..	Yes	Yes	Yes
Wirrawilla ..	..	P.	B.	1,021	..	..	..	..	U.	..	P.	..	..	..	..
Mundowdna ..	..	..	B.	1,006	..	..	..	..	U.	..	P.	..	..	..	..
Marree ..	2nd S.	C.P.	S.	870	1,512	..	..	A.	Yes	1st	P.	..	Yes	Yes	Yes
Callana ..	..	P.	B.	990	..	..	..	..	Yes	..	P.	..	..	..	..

AT STATIONS.—*continued.*
RAILWAY.

[illegible]

ACCOMMODATION CENTRAL AUSTRALIA

Location.	Station Building and Class = S. Shelter Shed = W. Ladies' Waiting Room = L. Permissive Block System Control Station = C. Train Record Book Station = P. Home and Distant Signal = S. Designation Boards = B.	Crossing Loop Standing Room (feet).	Goods Sidings. Total Standing Room (in feet).	Private Sidings.	Refreshment Room.	Attended Station = A.	Closet and Urinal.	Goods Shed and Class.	Goods Platform = P. With Office = P. & O.	Carriage Shed.	Engine Shed.	S.M. Residence.	Resthouse.
Wangianna ..	..	B.	470	..	..	..	Yes	..	..	..	..	..	..
Alberrie Creek ..	..	P.	630	..	..	..	..	..	P.	..	..	..	..
Bopeechee ..	..	..	480	..	..	..	Yes	..	..	..	..	..	..
Curdimurka ..	..	P.	1,040	..	..	..	Yes	..	P.	..	..	..	..
Coward Springs	3rd S.	P.	575	2,800	..	..	Yes	Small	P.	..	..	Yes	Yes
Deresford ..	..	P.	630	..	..	..	..	..	..	..	..	..	..
Strangways Springs	..	..	515	..	..	..	Yes	..	P.	..	..	..	..
Irrappatana ..	..	P.	470	..	..	..	..	..	..	..	..	..	..
William Creek	3rd S.	P.	565	3,170	..	..	Yes	..	P.	..	Yes	Yes	Yes
Anna Creek ..	..	P.	600	520	..	..	Yes	..	..	..	..	..	..
Boorthana ..	..	P.	615	..	..	..	Yes	..	..	..	..	..	..
Edwards Creek	2nd S.	C.P.	1,015	..	..	A.	Yes	..	..	Yes	Yes	..	..
Warrina ..	3rd S.	P.	655	2,968	..	..	U	..	P. & O.	..	..	..	..
Algebuckina ..	..	..	640	..	..	..	Yes	..	..	..	..	..	..
Mt. Dutton ..	..	P.	665	3,970	..	..	Yes	..	..	..	..	..	..
Oodnadatta ..	S.	C.P.	660	1,760	..	A.	Yes	2nd	P.	..	Yes	Yes	Yes
Alberga ..	..	P.	1,000	..	..	..	..	..	..	..	..	..	..
Pedirka ..	..	P.	1,600	..	..	..	..	..	..	..	..	..	..
Ilbunga ..	..	P.	1,000	..	..	..	..	..	..	..	..	..	..
Abminga ..	W.	P.	1,000	..	..	..	Yes	..	..	Yes	..	..	..
Pinke ..	..	P.	1,000	..	..	..	..	..	..	..	..	..	..
Rumbalara ..	1st S.L.	C.P.	1,000	600	..	A.	Yes	1st	..	..	..	Yes	..
Bundooma ..	..	P.	1,000	..	..	..	..	..	..	..	..	..	..
Rodinga ..	..	P.	1,000	..	..	..	..	..	..	..	..	..	..
Ewaninga ..	..	P.	1,000	..	..	..	..	..	..	..	..	..	..
Alice Springs	1st. S.L.	C.P.	1,000	760	1	A.	Yes	1st.	..	Yes	..	Yes	Yes

† Absolute telephone block working between Hookina-Hawker section
ONTES.—High level platform 750 feet long is provided at Port Augusta.

AT STATIONS—continued.

RAILWAY—continued.

Ash Pit Main Line = M.L. Loco. = LO.	Water Column Main Line = M.L. Loco or Siding = LO.	Reservoir Capacity.	Capacity Overhead Tanks Elephant Trunk = E. Leather Hose = H.	Wells = W. Bore = B.	Pumping Plant Steam-engine = S. Oil Engine = O. Windmill = W.	Triangle = Tri. Turntable = Turn.	Coal Stage Capacity.	Oil Store.	Weightbridge Tonnage.	Crane Tonnage.	Cattle Yards Capacity.	Sheep Yards Class and Capacity.	Location.
..	Wangianna
M.L.	M.L.	4,963,200	25,000	..	S.	..	..	..	..	..	..	..	Alberrie Creek
..	Bopeechee
M.L.	Curdimurka
LO.	B.	..	Tri.	..	..	..	..	460	1st, 2,400	Coward Springs
M.L.	M.L.	8,141,500	25,000	..	S.	..	..	..	..	..	..	..	Beresford
..	Strangways Springs
..	Irrappatana
LO.	Tri.	150	Yes	..	..	400	1st, 4,000	William Creek
..	M.L.	..	25,000	W.	S.	..	..	..	..	..	..	..	Anna Creek
..	Boorthana
L.O. M.L.	L.O. M.L.	..	25,000	W.	S.	Tri.	200	Yes	..	..	..	..	Edwards Creek
LO.	12,500	W. Stock only	W.O.	Tri.	..	..	..	..	400	..	Warrina
..	Algebuckina
LO.	M.L.	7,400,000	25,000	..	S.	Tri.	25	..	..	..	400	..	Mt. Dutton
LO.	Tri.	..	Yes	10	5	160	2nd, 600	Oodnadatta
M.L.	..	18,000,000	E27,000	..	O.	..	..	..	..	..	..	..	Alberga
M.L.	..	38,000,000	{E13,000 13,000}	W.	W.O.	..	..	..	..	..	..	..	Pedirka
M.L.	E26,000	..	O.	..	..	..	..	..	..	..	Ilbunga
M.L. L.O.	E27,000	B.	O.	Tri.	100	..	..	..	500	..	Abminga
M.L.	E26,000	B.	O.	..	..	..	..	..	..	..	Finke
M.L.	B.	..	Tri.	..	..	..	..	500	..	Rumbalara
M.L.	E26,000	W.	..	..	..	..	..	..	..	..	Bundooma
..	Rodinga
..	Ewaninga
L.O.	E40,000	W.	O.	Tri.	100	..	..	5	500	..	Alice Springs

and between Beltana-Copley and Copley-Beltana section.

The standing room in goods sidings is exclusive of triangles and loco. sidings.

ACCOMMODATION NORTH AUSTRALIA

Station.	Station Buildings and Class = S. Shelter Shed = W. Ladies' Waiting Room = L.	Staff and Ticket System.	Home and Distant Signals = S. Destination Boards = B.	Crossing Loop Standing Room (in feet).	Goods Siding Total Standing Room (in feet).	Private Sidings.	Refreshment Rooms.	Attended Station = A.	Closet and Urinal.	Goods Shed and Class.	Goods Platform = P. With Office = P & O.	Carriage Shed.	Engine Shed.	Stationmaster's Residence.	Beathouse.
Darwin ..	2nd	Yes	S.	585	6,952	..	..	A.	Yes	1st	P. & O.	Yes	..	Yes	..
One and Half Mile ..	..	..	..	..	369	..	..	..	..	..	..	..	..	..	..
B.I.O. Co. Oil Store ..	..	..	..	..	215	Yes	..	..	..	..	..	..	..	..	..
North Australian Meat Company Ltd.	Meat	..	..	..	..	Yes	..	..	..	..	..	..	..	..	..
Loco. Shops ..	..	Yes	B.	..	800	..	..	..	..	..	..	Yes	..	..	..
Three Miles ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Knuckey's Lagoon ..	..	Yes	B.	..	1,075	..	..	..	..	..	O.	..	..	..	..
McMinn's Lagoon ..	..	Yes	B.	..	639	..	..	..	..	..	O.	..	..	..	..
Southport Road ..	..	..	..	..	651	..	..	..	..	..	..	..	..	..	..
Darwin River ..	..	..	B.	..	..	..	..	..	..	..	..	..	..	..	..
Rum Jungle ..	..	..	B.	..	669	..	..	..	..	..	O.	..	..	..	..
Batchelor ..	..	..	..	..	298	..	..	..	Yes	..	O.	..	..	..	..
Stapleton ..	..	..	..	..	1,122	..	..	..	..	..	O.	..	..	..	..
Adelaide River ..	W	Yes	B.	706	728	..	Yes	..	Yes	..	P. & O.	..	..	Yes	..
Howley ..	..	Yes	B.	712	730	..	..	..	..	..	O.	..	..	..	..
Brock's Creek ..	3rd	..	..	..	300	..	..	..	Yes	..	P. & O.	..	..	..	..
Fountain Head ..	..	Yes	B.	711	693	..	..	..	..	..	O.	..	..	..	..
Grove Hill ..	..	Yes	B.	744	726	..	..	..	..	..	P. & O.	..	..	..	..
Burrundle ..	3rd	..	B.	714	709	..	..	..	Yes	Small	P.	..	..	..	..
Boomleera ..	..	..	..	..	768	..	..	..	..	..	P. & O.	..	..	..	..
Union Reefs ..	..	..	..	..	723	..	..	..	..	..	..	..	..	..	..
Pine Creek ..	2nd	Yes	S.	711	1,165	..	..	A.	Yes	Small	P.	..	Yes	Yes	Yes
Cullen ..	W	..	..	..	..	..	..	..	Yes	..	..	..	..	..	..
Ferguson River ..	..	..	B.	..	..	..	..	..	..	..	..	..	..	..	..
Horseshoe Creek ..	W	..	..	..	761	..	..	..	Yes	..	..	..	..	..	..
Edith River ..	..	..	B.	..	918	..	..	..	..	..	..	..	..	..	..
Emungalan ..	..	..	..	..	582	..	..	..	..	..	P.	..	..	..	..
Katherine ..	1st L	Yes	S.	1,352	721	..	..	A.	Yes	Small	P.	..	..	Yes	Yes
Marranboy ..	W	..	B.	830	..	..	..	..	Yes	..	..	..	..	..	..
Mataranka ..	2nd	..	S.	376	..	..	..	A.	Yes	2nd	P. & O.	..	..	Yes	Yes
Birdum ..	2nd	..	B.	1,030	..	..	..	..	Yes	2nd	..	..	Yes	..	Yes

AT STATIONS.—continued.

RAILWAY.

Ash Pit, Main Line = M.L. Loco = LO.	Reservoir Capacity, in Gallons.	Water Column, Main Line = M.L. Loco = LO.	Wells = W. Bore = B. River Storage = R.	Capacity Overhead Tank, in Gallons. Elephant's Trunk = E. Leather Hose = H.	Pumping Plant— Steam Engine = S. Oil = O. Windmill = W.	Triangle = Tri. Turntable = Turn.	Coal Stage Capacity, in Tons.	Oil Store.	Lamp Room.	Weightbridge Tonnage.	Crane Tonnage.	Cattle Yards Capacity.	Station.
..	5,000,000	In Sdg	..	H 25,000	O.	..	..	Yes	Yes	24	10	537	Darwin
..	One and Half Mile
..	B.I.O. Oil Store
..	Tri.	..	..	..	..	..	Private	North Australian Meat Company Ltd.
LO.	2,332,000	LO.	..	H 25,000	O.	Turn	..	..	..	..	..	..	Loco. Shop
..	1,097	Three Miles
..	Knuckey's Lagoon
..	McMinn's Lagoon
..	Southport Road
..	..	M.L.	R.	H 25,000	S.	..	..	..	..	..	..	..	Darwin River
..	Rum Jungle
..	Batchelor
..	Stapleton
M.L.	3,800,000	M.L.	..	H 25,000	O.	Tri.	..	..	..	..	..	635	Adelaide River
..	3,534,300	M.L.	..	H 25,000	W.	..	..	..	..	..	..	..	Howley
..	Brock's Creek
..	450	Fountain Head
..	5	..	Grove Hill
..	8,892,000	M.L.	..	H 25,000	S. & W.	..	..	..	..	..	..	..	Burrundle
..	Boomleera
..	Union Reefs
LO.	2,832,000	M.L.	..	H 25,000	S.	Tri.	24	..	Yes	12	5	..	Pine Creek
..	Cullen
..	..	M.L.	R.	E 25,000	S.	..	..	..	..	..	..	..	Ferguson River
..	Horseshoe Creek
..	Edith River
..	Emungalan
M.L.	..	M.L.	R	E 25,000	S.	Tri.	35	Yes	Yes	..	..	695	Katherine
..	Marranboy
M.L.	..	M.L.	R.	E 26,000	O.	Tri.	..	..	..	..	..	610	Mataranka
M.L.	26,000	O.	Tri.	60	..	..	..	..	..	Birdum

179. BY-LAW No. 47.

Governing the protection and preservation of the Railways and all other property of the Commissioner; the protection preservation of property in the custody of the Commissioner; the maintenance of order on the railways and the prohibition of any interference with the railways or any other property of the Commissioner, or of any interference with or obstruction of any employee.

PART I.—PRELIMINARY.

1. *Short Title.*—This By-law may be cited as the Commonwealth Railways General By-law.

2. *Parts.*—This By-law is divided into parts, as follows:—

Part I.—Preliminary.

Part II.—Use of Tickets.

Part III.—Offences by and in respect of passengers.

Part IV.—Protection of railway property.

Part V.—General.

3. *Definitions.*—In this By-law unless the contrary intention appears:—

“Carriage” includes passenger carriage, goods truck, horse-box, and any other vehicle, including motor vehicles, on the railway.

“Commissioner” means the Commonwealth Railway Commissioner, and includes the Deputy Commissioner and Acting Commissioner.

“Employee” means any person employed by the Commissioner under the Act.

“Railway” means any railway vested in the Commissioner, and includes all lands, buildings, works, and things connected therewith or appurtenant thereto.

“The Act” means the *Commonwealth Railways Act 1917-25*.

4. *Penalties for Offences.*—The penalty set out at the foot of any clause of this By-law indicates that any contravention of the clause, whether by act or omission, is punishable upon conviction by a penalty not exceeding the penalty set out.

5. *Variance of By-law not Permitted.*—The provisions of this By-law shall not be varied or dispensed with unless with the permission in writing of the Commissioner.

PART II.—USE OF TICKETS.

6. *Issue of Tickets.*—Any person who travels upon the railway in any carriage of the Commissioner, unless supplied with a pass or ticket for that purpose, shall be guilty of an offence.

Penalty: Ten pounds in addition to payment of fare.

7. *Inspection and Surrender of Tickets.*—Any passenger who—

(1) fails to show his pass or ticket to, and allow it to be marked by, an authorized employee of the Commissioner whenever so required by the employee;

(2) holding a return ticket, fails, if so required, to produce the return half on the forward journey; and

(3) on the demand of an employee, fails to deliver up his pass or ticket, whether single, return or periodical, shall be guilty of an offence.

Penalty: Ten pounds.

8. *Travelling Without Proper Ticket.*—

(1) Any ticket, or return half of a ticket, not used on the day, within the period, or for the journey, as the case may be, for which it was issued, shall be deemed cancelled.

(2) Any person who uses or attempts to use a ticket otherwise than on the day, within the period, or for the journey for which it was issued, shall be guilty of an offence.

(3) A person shall not be allowed to travel to or from stations between those mentioned on his ticket, unless by so doing he derives no advantage as regards fare.

(4) Excursion tickets shall not be used for any other trains than those for which they have been issued.

(5) Any person who travels between stations other than those appearing on his ticket shall pay (in addition to the penalty prescribed by this by-law) the excess (if any) of the fare for the journey actually travelled over the fare actually paid.

Penalty: Ten pounds in addition to payment of fare.

9. *Defaced Tickets will not be Recognized.*—

(1) Tickets on which the number, date, or names of stations are illegible shall not be accepted.

(2) Any person who uses or attempts to use, a ticket which is defaced, mutilated, altered, or illegible as regards number, date, or names of stations, shall be guilty of an offence.

Penalty (in addition to payment of fare in cases where the person has travelled with the ticket): Ten pounds.

10. *Breaking Journey.*—Subject to this or any other By-law governing traffic on a railway, any passenger who, unless the permission of an employee has first been obtained, breaks his journey at an intermediate station and thereafter proceeds by a subsequent train on the same ticket, shall be guilty of an offence.

Penalty: Ten pounds, in addition to payment of fare.

11. *Platform Tickets.*—In respect of any station the entrance to which is governed by the issue of platform tickets, any person not being in possession of a passenger ticket who obtains admission to such a platform without first purchasing a platform ticket, shall be guilty of an offence.

Penalty: Two pounds.

12. *Tickets the Property of Commissioner.*—Any person who uses or attempts to use a pass, ticket, or portion of a return ticket, which has not been issued to him by the Commissioner or by a properly authorized agent of the Commissioner, or a pass or ticket the time for using which has expired, shall be guilty of an offence.

Penalty: Twenty pounds, in addition to payment of fare.

13. Making incorrect statements on Concession Fare Certificates.—Any person who tenders any certificate or application for a concession ticket, or a reduction in fare, containing an incorrect or misleading statement respecting the age or occupation of the person therein named, or respecting any other matter on which the charge for a ticket is dependent, shall be guilty of an offence.

Penalty: Five pounds, in addition to payment of difference between the reduced fare and the ordinary fare for the journey.

14. Charges while in Quarantine—

(1) Where, in consequence of the outbreak of any infectious or contagious disease, a passenger is ordered into quarantine he shall pay, for the period during which he is performing quarantine, such charges as the Commissioner requires.

(2) The rates of the charges which the passenger is liable to pay under the last preceding sub-clause shall be notified to the passenger at the time at which the ticket for his journey is issued to him. A notification printed on the back of "Meal Ticket" issued to him shall be deemed to be a sufficient compliance with the provisions of this clause.

(3) Any charges payable under this By-Law may be recovered from the passenger so ordered into quarantine by action in any State or Federal Court of competent jurisdiction as a debt due to the Commissioner.

PART III.—OFFENCES BY AND IN RESPECT OF PASSENGERS.

15.—Women's Carriages.—No male person shall enter any room, carriage, or place set apart for the accommodation of women.

Penalty: Ten pounds.

16. (1) Special Accommodation.—The Commissioner may, in respect of any person or class of persons, direct that only such trains, carriages, or class and extent of accommodation as are specified in the direction, shall be available for the conveyance of, or use by, that person or class of persons.

(2) Any person, to whom a direction given in pursuance of the last preceding sub-clause applies, who enters any train or carriage other than that specified in the direction, or uses any accommodation of a class other than, or to an extent beyond, that specified in the direction, shall be guilty of a breach of this By-law.

Penalty: Twenty pounds.

17. Entering or Leaving Carriages when in Motion.—No person, other than an employee shall, without reasonable excuse, enter or leave, or attempt to enter or leave, any carriage which is in motion or elsewhere than at the place appointed by the Commissioner for persons to enter or leave the carriage.

Penalty: Five pounds.

18. Getting Through Windows, &c.—No person, other than an employee shall, without reasonable excuse, enter or leave any carriage of the Commissioner by getting through a window, open a locked door

with a key or other instrument, or open any carriage door while the train is in motion, or enter and refuse to leave any reserved compartment, seat, or sleeping berth.

Penalty: Ten pounds.

19. Travelling on Roofs, Steps, &c.—No person, other than an employee, shall without reasonable excuse, travel on the roof, steps, or footboard of any carriage, or on an engine, or on any vehicle not intended for the conveyance of passengers.

Penalty: Ten pounds.

20. Conveyance of Animals in Carriages.—(a) No person shall take into or have in his charge in a carriage intended for the conveyance of passengers, any dog or other animal, except under the conditions imposed by the Commissioner for the conveyance of the dog or animal.

Penalty: Five pounds.

(b) Any dog or animal found in any carriage in contravention of this clause may be forthwith removed.

21. Smoking in places not set apart for the purpose.—No person shall smoke in any carriage, or compartment not specially provided for that purpose, or in any shed, or building, or on any pier, jetty, or wharf of the Commissioner.

Penalty: Two pounds.

22. Persons Intoxicated or Committing a Nuisance.—(a) No person in a state of intoxication shall enter or remain in a carriage, or be upon any station or premises of the Commissioner.

(b) No person shall, in or upon any carriage, station, or premises, commit any nuisance, or write or use any insulting, indecent, obscene, blasphemous, abusive, or offensive words, or wilfully interfere with the comfort of any passenger.

Penalty for any breach of this clause: Ten pounds.

23. Gambling in Carriages or on Railway Premises.—No person shall, upon any premises vested in the Commissioner, nor in any carriage of the Commissioner, play or take part in any game for money, or other stakes having monetary value.

Penalty: Five pounds.

24. Expectoring in Carriages or on Station Premises.—No person shall expectorate upon the floor or any other part of any carriage, waiting-room, or platform of the Commissioner.

Penalty: Two pounds.

25. Persons with Certain Diseases not to Travel.—(a) The Commissioner may refuse to allow any person who is suffering from any infectious or contagious disease to travel on the railway.

(b) No person who is suffering from any infectious or contagious disease shall, without the authority of the Commissioner, resort to or come upon any premises of the Commissioner, or travel, or attempt to travel, on the railway.

(c) No person who has charge of any person who is suffering from any infectious or contagious disease shall, without the authority of the Commissioner, aid or assist the person so suffering to travel or attempt to travel on the railway.

Penalty for any breach of this clause: Ten pounds, in addition to forfeiture of any fare that has been paid.

26. *Power to Remove Offenders.*—Any person who is guilty of a contravention of Clauses Nos. 7, 8, 9, 15, 19, 21, 22, 23 or 25 may, in addition to the prescribed penalty, be removed from any carriage or premises of the Commissioner.

27. *Lost Property to be Handed Over.*—Any person who finds any lost property in or upon any station or premises, or in or upon any carriage of the Commissioner, shall immediately hand over the property to the officer in charge of the railway station at or nearest the place where the property is found, or where the property is found in or upon a carriage, to the guard in charge of the train of which the carriage forms part.

Penalty: Ten pounds.

28. *Persons taking other Passengers' Seats.*—No person shall continue to occupy a seat in any carriage which is claimed by a passenger who has temporarily vacated it for refreshments or any other purpose, and who has left upon the seat some thing to indicate that it is claimed by him.

Penalty: Two pounds.

29. *Placing of Feet upon Seats.*—No passenger shall place his foot or feet upon any seat or part of a seat in any carriage of the Commissioner.

Penalty: Two pounds.

30. *Passengers not to apply Brakes.*—No passenger shall apply any brake upon any carriage or take action whereby the brakes upon any carriage may be applied, without reasonable excuse.

Penalty: Five pounds.

31. *Loaded Firearms.*—No person shall have in his possession within or upon any carriage any loaded firearm.

Penalty: Five pounds.

32. *Dangerous Goods.*—No person shall place or carry in or upon any carriage, or deposit in any waiting-room or shed, or upon any platform or part of railway premises used for passengers, any goods which, in the judgment of the Commissioner, or any of his officers, are of a dangerous nature.

Penalty: Twenty pounds.

PART IV.—PROTECTION OF RAILWAY PROPERTY.

33. *Traction Engines, &c., Crossing Line.*—No person shall take or attempt to take across any railway on the level, any traction engine, road engine, or any vehicle of whatsoever description the weight of which on any wheel exceeds 3 tons, or 6 tons on any axle, or any vehicle

or contrivance having thereon any load exceeding 16 feet in height or 10 feet in width, or any load that is exceptional and will cause, or will be likely to cause, an obstruction of the railway unless such person has given 24 hours' previous notice, in writing, of his intention so to cross, giving particulars of the place and time where and when he intends to cross, and the name and address of the owner of such engine, vehicle, or load, to the stationmaster or officer in charge of any railway station, which is also a telegraph station, or the railway station next adjacent to the point at which such person proposes to cross the railway, if there is an employee of the Commissioner in charge of such station, and unless and until the person has made such provision as is required by the Commissioner to prevent any injury being done to the railway or railway property by reason of the crossing of the engine, vehicle, or load.

Penalty: Ten pounds.

34. *Removing Survey Pegs or Marks.*—No person shall, without the written consent of the Commissioner, pull up, remove, destroy, or injure any peg or other survey mark heretofore or hereafter driven, made, or put up, by or under the direction of the Commissioner or an officer or surveyor employed by him, in connexion with the railway.

Penalty: Five pounds.

35. *Polluting Reservoirs, &c.*—No person shall bathe in any reservoir or tank or pollute in any manner whatsoever any water vested in the Commissioner.

Penalty: Five pounds.

36. *Interference with Railway Property.*—No person shall remove, damage, or deface any notice or advertisement, or remove or extinguish any lamp, or interfere with or damage any signal or points, or interfere with or damage any property vested in the Commissioner.

Penalty: Twenty pounds, in addition to the cost of repairing any damage caused.

37. *Drainage not to be Emptied on Railway Premises.*—No person shall empty, place, or permit to flow, or cause or suffer to be emptied, placed, or permitted to flow, upon any railway premises, any sewage, night-soil, or other offensive matter, or any drainage.

Penalty: Five pounds.

38. *Missiles, Rubbish, &c., not to be thrown on Carriage or Railway.*—(a) No person shall throw or cause to be thrown at or from any carriage or other vehicle of the Commissioner any glass, stone, or other missile or thing.

(b) No person shall without the authority of the Commissioner throw or deposit or cause to be thrown or deposited on any railway, any filth, dirt, rubbish or other matter or thing.

Penalty: For any breach of this clause, Ten pounds (in addition to the cost of repairing any damage caused).

PART V.—GENERAL.

39. *Selling Goods or Soliciting Custom.*—No person shall, unless authorized by the Commissioner, sell, or attempt to sell, any article or solicit custom on any railway premises.

Penalty: Two pounds.

40. *Trespassing on Railway Premises.*—(a) No person shall wilfully trespass on any railway premises.

(b) No person shall remain on any railway premises when required to leave by any employee, and any person refusing to so leave may be removed from the railway premises, in addition to being liable to the penalty shown hereunder.

Penalty for any breach of this clause: Five pounds.

41. (1) *Residing, &c., on Railway Premises without Authority.*—No person shall, without the permission in writing of the Commissioner (proof whereof shall lie upon the person alleging such permission), or after the revocation of any such permission, reside upon the railway.

Penalty: Twenty pounds.

(2) No building, erection, or material shall, without the permission in writing of the Commissioner (proof whereof shall lie upon the person alleging such permission), or after the revocation of any such permission, be erected, placed, had, occupied, maintained, or allowed to remain upon the railway.

Penalty: Twenty pounds.

(3) Any permission of the Commissioner referred to in this clause shall be revocable at will.

(4) Any person who, on demand by the Commissioner or by any employee, servant, or agent of the Commissioner, fails to forthwith remove from the railway any building, erection, or material erected, placed, had, occupied, maintained, or allowed to remain by him thereon in contravention of this clause, shall be guilty of an offence.

Penalty: Twenty pounds.

(5) Any person residing upon the railway in contravention of this clause may be removed therefrom by any employee, servant, or agent of the Commissioner.

(6) Any building, erection, or material upon the railway in contravention of this clause may be demolished and removed therefrom by any employee, servant, or agent of the Commissioner.

(7) A Court of Summary Jurisdiction having jurisdiction in the place where a contravention of this clause occurs, may, on the application of the Commissioner—

(a) order any person contravening this clause to forthwith quit and vacate the railway;

(b) order the removal from the railway of any buildings, erections, and material being thereon in contravention of this clause; and

(c) by warrant authorize any member of the Police Force of the Commonwealth or the State, or any employee or servant of the Commissioner, to—

(i) remove from the railway any person contravening this clause; and

(ii) demolish and remove from the railway any buildings, erections, and material being thereon in contravention of this clause.

(8) Action may be taken under sub-clauses (5), (6), or (7) of this clause whether or not any prosecution has been instituted against any person for a contravention of this clause.

(9) Any permission, revocation of permission, demand, or communication under this clause shall be deemed to have been duly given or made by the Commissioner, if given or made for and on behalf of the Commissioner, by any employee of the Commissioner.

42. *Giving False Consignment-note or Way-bill.*—No person shall make or cause to be made an understatement, or insert or cause to be inserted any misdescription as to the nature, quantity, weight, measurement, or value of any goods delivered upon the railway, in any consignment note, or other document which he is required to deliver in respect of such goods.

Penalty: Twenty pounds, and, in addition, payment of double rates on the goods in respect of which the offence is committed.

43. *Drivers of Vehicles to be Licensed.*—No driver of any public vehicle shall ply for hire within any premises of the Commissioner without a licence in writing signed by the proper officer of the Commissioner.

Penalty: Five pounds.

44. *Drivers of Vehicles to Obey Instructions.*—The driver of any vehicle shall, while in or upon any station yard or other premises of the Commissioner, obey the directions of any authorized employee of the Commissioner.

Penalty: Five pounds.

45. *Obstructing Employees in the Execution of their Duty.*—No person shall use obscene, threatening, or insulting language to any employee or wilfully obstruct or impede any employee in the execution of his duty.

Penalty: Ten pounds.

46. *Diseased Animals on Railway Premises.*—The Commissioner may refuse to carry any horse, cattle, sheep, swine, bird, or other live stock which he reasonably believes to be diseased. No person shall wilfully or negligently drive or bring, or cause or permit to be driven or brought, upon or into any station yard, shed, or premises of the Commissioner, any horse, cattle, sheep, swine, bird, or other live stock having or suffering from any disease whatsoever.

Penalty: Ten pounds.

47. *Animals not to be driven across the line at unauthorized places.*—No person, whether with or without a vehicle, shall ride or drive, or attempt to ride or drive, any horse, cattle, sheep, or other animal across any line of railway on the level thereof when a train is in sight and in motion coming towards such place, or when warning of its approach has been given by a whistle, or when warned not to do so by an employee of the Commissioner. Every person when crossing the line shall use all possible despatch.

Penalty: Ten pounds.

48. *Posting Placards on Railway Property or Premises.*—No person, unless authorized in writing by the Commissioner, shall post, stick, paint, write, or cause to be posted, stuck, painted, or written, any placard, bill, advertisement, or other matter within or on any post, fence, gate, platform, wall, building, or other property or premises of the Commissioner.

Penalty: Ten pounds.

49. *Gratuities not to be offered to Employees.*—No person shall give or offer a gratuity to any employee of the Commissioner.

Penalty: Five pounds.

180. OFFENCES AGAINST THE BY-LAWS.

1. When an offence against the By-laws is committed, sufficient evidence to secure a conviction must be collected promptly, and the names and addresses of witnesses (preferably employees) must be obtained. The Chief Traffic Manager must be immediately advised by telegram.

(2) The fullest details must be obtained, particularly in regard to—

- (a) Christian and surname of offender.
- (b) Occupation or calling.
- (c) Full postal address.
- (d) Age of offender if under eighteen years.

(3) Should the necessity arise any employee is empowered to apprehend and detain a person detected fraudulently travelling, but the services of the police should be obtained at the first opportunity.

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