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Instructions

as to

HEATING of TRAINS.

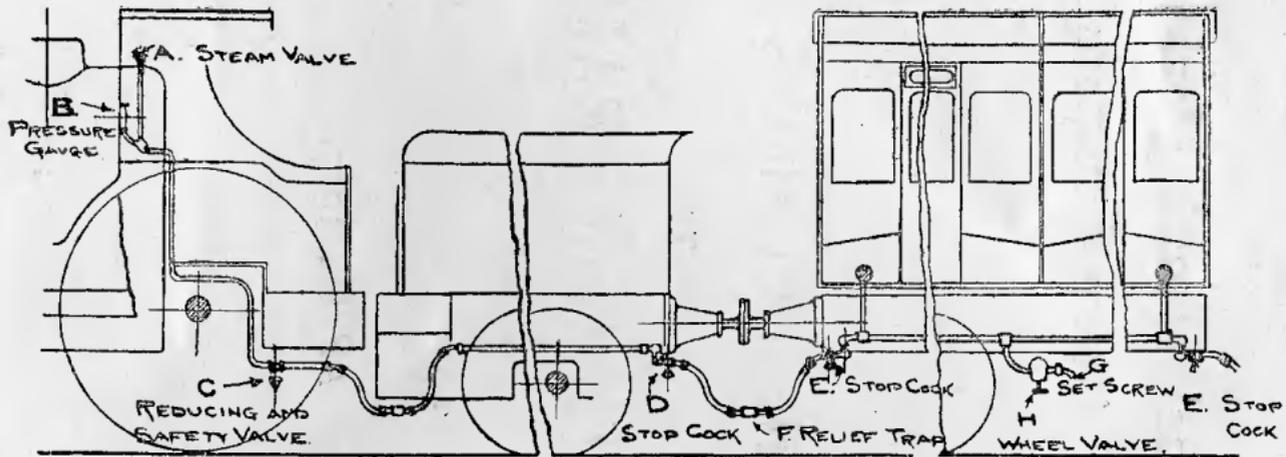
(19 Pages)



Lancashire and Yorkshire
Railway Company.

INSTRUCTIONS
AS TO
HEATING of TRAINS.

APRIL, 1917.



HEATING OF STEAM TRAINS.

1. From 1st October each year Trains will be heated by Engines when the outside temperature is below 50° and standing Engines must be used wherever possible for heating. Engines will not be called out earlier for this purpose until the beginning of November, when the pre-heating of all Trains will commence. The Staff must be prepared to heat from Boilers at Blackpool (T.R.), Blackpool (Cen.), Southport, Liverpool, Colne, Bacup, Bradford, Queen's Road, and Red Bank, if the outside temperature is below 50° . No steam should be supplied from Boilers if the outside temperature is above 50° .

2. The C. & W. Department's men, where available, will be responsible for the proper heating of Trains on their first and subsequent journeys (whether heating is done from Engine or Boiler). In cases where there is no C. & W. Staff in attendance the duty will devolve upon the Train Staff, and it is necessary that Drivers, Firemen, Guards, Shunters and others should thoroughly understand and be prepared to carry out all instructions contained in this booklet.

For list of points at which C. & W. Staff will attend to Trains, and where Trains are heated from Boilers, see paragraph 39.

3. The Van temperature must not be looked upon or taken as an indication of the temperature of the Train.

4. At Stations where Trains are stabled or stand for several hours during the day or night, arrangements will be made for Engines to be turned out earlier, or for standing Engines to be used for heating the Trains, particulars of which will be supplied each year.

5. When the heating apparatus hose pipes on Coaching Stock are not coupled up care must be taken to see that they are suspended in the correct position and that the light chain is not twisted, otherwise an acute bend will be made in the pipe and cause it to break. For the same reason attention is called to the swivel joint fitted to the hose coupling of some coaches of which full use must be made.

6. The Stop Cocks at the end of the Coaches have in some cases the words "Open" and "Shut" cast on them to indicate the position of the handle when the steam is "On" or "Off."

The majority of the Stop Cocks on the stock fitted with steel underframes, have a mark cut in the end of the plug for the same purpose.

The Stop Cocks with swivel joints on stock fitted with wood underframes bear clear indications by means of tablets fixed to the ends of the vehicles of the position of the handle when steam is " On " or " Off."

7. The standard heating couplings are of a different type to those in use by other Companies, and when a vehicle is handed to another Company, or *vice versa*, it must be accompanied by adaptors to enable the heating connections to be maintained. If no adaptors are stationed at the starting point, application must be made by the Station Staff to the Superintendent of the Line.

8. The adaptors are provided at certain Junction Stations and bear the name of the owning Station and a number. On arrival at destination they must be immediately returned to owning Station by the Station Staff, or if the foreign vehicle should be returned home by the same route the adaptors must accompany it to the Home Station. Station Masters must keep a record of the journeys of each adaptor in order that their

movements may be under strict control. An advice must be sent to the Superintendent of the Line if adaptors are not returned within a reasonable time. At York the adaptors are kept in the N.E.R. Station Master's Office, and the record of their movements is kept by the C. & W. Staff.

9. Many vehicles working regularly on foreign Companies' lines are fitted with both types of heating couplings. Adaptors are not necessary on these coaches.

10. Vehicles not fitted with heating pipes must be marshalled in the rear of Trains. Empty vehicles not intended for passengers' use, must be similarly marshalled, whenever practicable.

11. Thermometers from which the outside temperature can be obtained are fixed at the following Stations:—

Accrington.	Bradford.
Atherton.	Brighouse.
Bacup.	Burnley (Bank Top).
Barnsley.	Burscough Junc.
Blackburn.	Bury (Bolton St.).
Blackpool (C.).	Chorley.
Blackpool (T.R.).	Colne.
Bolton.	Dewsbury.

Doncaster.
 Fleetwood.
 Gisburn.
 Goole.
 Halifax.
 Hellifield.
 Huddersfield.
 Horwich.
 Holmfirth.
 Kirkby.
 Kirkham.
 Knottingley.
 Leeds.
 Littleborough.
 Liverpool.
 Low Moor.
 Manchester (Vic.).
 Middleton.
 Middleton Junc.

Mirfield.
 Normanton.
 Oldham (Mumps).
 Ormskirk.
 Poulton.
 Preston (E.L.).
 Ramsbottom.
 Rochdale.
 Salford.
 Skipton.
 Southport.
 Sowerby Bridge.
 Stalybridge.
 Todmorden.
 Wakefield.
 Walkden.
 Wigan.
 York.

12. All irregularities or defects must be reported to the C. & W. Department's Staff at the first opportunity, and a report sent to the Superintendent of the Line.

Engine Drivers.

13. To put the heating apparatus in action the Drivers must gradually open the steam valve "A."

The pressure gauge " B " should indicate about 40 lbs. per square inch when the valve " A " is fully opened.

14. As the pressure should not exceed 40 lbs. per square inch a reducing valve " C " is fixed on the piping underneath the footplate.

15. As the time required for the steam to pass through a Train depends upon the number of the vehicles and the state of the weather, it is necessary to keep the pressure on as long as possible to ensure the required temperature being obtained.

16. Drivers of Shunting and Pilot Engines, which are fitted with heating apparatus and are appointed to work empty Trains from the Sidings to Stations, must apply steam as soon as they attach to the empty coaches. The Engine must also remain coupled as long as possible and continue to apply steam in order to assist the Train Engine in raising the inside temperature.

Firemen.

17. The Fireman must assist the Driver in heating the Trains. Where there is no C. & W. Staff he must carry out the following instructions:

18. After coupling the Engine to the Train (including the coupling of the heating connection) and steam has been turned on, the Fireman must walk to the rear, noticing particularly that all the cocks between the coaches are open; and must open the end cock which will assist in accelerating the heating of the Train.

19. After steam has passed through the Train for a few minutes the rear cock must be closed.

20. Particular care should be taken to see that there are no leakages at any of the steam couplings. If there is a leakage a slight tap with a hammer on the coupling will generally rectify the matter.

21. As steam passes from coach to coach the steam traps may blow for a number of seconds after the water has passed through, but if the automatic traps subsequently refuse to close it may be owing to some dirt having got on the seat. A slight tap with a hammer on the trap will generally rectify this.

Some traps may be opened by means of a handle, and if this is done for a short time all dirt will be blown out and the leak will stop.

22. If leakages cannot be stopped by the above methods the matter must be reported to the C. & W. Staff at the first available point.

C. & W. Examiners and Heating Attendants.

23. At Stations where there are Carriage Examiners and Heating Attendants the C. & W. Dept. is responsible for seeing all Trains are properly heated, whether steam is applied from a stationary Boiler or Engine, and must carry out all the instructions relating to the other grades.

24. The C. & W. Staff must prevent, as far as possible, all escapes of steam, must see (*a*) that all heat regulators are open and windows and ventilators closed, (*b*) that all connections have been properly made, (*c*) that all traps, valves, and sediment wells are working properly, (*d*) generally regulate the heating according to the outside temperature.

25. Immediately the Guard arrives at the Train he must be informed of the temperature of the Train throughout.

26. The Driver must be requested to apply steam, if necessary, to assist in raising the inside temperature to not less than 50° or more than 60° .

27. The C. & W. Staff must regularly test the apparatus in the compartments to see that all joints are steam tight and the levers and valves are in proper working order. The "On" and "Off" movement of the regulator handle must be kept easy and smooth.

Station Masters, Inspectors, Shunters, &c.

28. Station Masters and Guards must promptly call attention to cases of unsatisfactory arrangements for heating starting or standing Trains.

29. Where steam is applied from stationary boilers (see paragraph 39) the Trains must be placed in position for heating as soon as possible; and where steam is supplied from Engines every facility must be given to allow the latter to get to their Trains.

30. When uncoupling steam hose pipes Shunters and others must see (a) that the cocks "E" are closed so as to prevent an outrush of steam; (b) that

they are not scalded by the outrush from the pipes of accumulated hot water; (c) that the brass seatings are not damaged in the slightest degree, otherwise an escape of steam will result; (d) that the brass seatings are not pulled out. The last two precautions are also necessary when coupling up.

31. Whilst Trains are standing in a Station or Siding, or when a Train has finished and before it is stabled for the night, it is the duty of the Station Staff to open all heat regulators and close the windows and ventilators.

32. Paragraph 39 will not relieve Station Masters at the places enumerated of the responsibility of ascertaining that the starting Trains are satisfactorily heated.

33. Shunters are responsible for the proper coupling up of hose pipes throughout the Train, excepting as shown in paragraph 18.

34. When Trains have finished working and are put away to stand in platform roads or sidings for a long period, and there is no C. & W. Staff on duty, the Guard or Shunter in charge must open

the cocks at each end of the Train and leave them open, in order to allow the steam and water to escape and thus prevent freezing.

Guards.

35. The Guard, on joining his Train, must ascertain from the Carriage Examiner the state of the carriages as regards inside temperature. Where no C. & W. man is in attendance the Guard must confer with the Driver and satisfy himself that everything possible has been done to heat the Train properly.

36. Should the Guard consider the compartments too warm the temperature can be lowered by turning the regulators to the " Off " position and opening the windows a little.

37. When the Train is on its journey the Guard must continue to see that it is satisfactorily warmed. He must instruct the Driver from time to time, as may be necessary, whether to apply or shut off steam.

38. The satisfactory heating of Trains in traffic depends very much upon the personal attention of the Guards, and on their supplying the Drivers

with information to enable them to regulate the supply of steam, but Station Masters and Inspectors must interest themselves in seeing that these instructions are carried out.

39. The C. & W. Staff will attend to Trains at the following places. The asterisk denotes points at which Trains are heated from stationary Boilers:—

*Accrington Carriage Shed (not Station).

*Bacup.

Blackburn.

*Blackpool (Central).

*Blackpool (Talbot Road).

Bolton.

Bradford.

*Bradford (Broomfield Sidings).

Bury (E.L.).

*Cheetham Hill Sidings.

*Colne Carriage Shed (not Station).

Fleetwood.

Hellifield.

*Irlam Carriage Sidings.

*Liverpool.

Low Moor Sidings (not Station)

- Mirfield Sidings (not Station).
- *Newtown Sidings (6-0 a.m. to 5-30 p.m.).
- Normanton (3-0 a.m. to 1-0 p.m.).
- *Preston.
- *Queen's Road Sidings.
- *Red Bank Sidings.
- Rochdale.
- Salford (Saturdays excepted).
- *Southport.
- Sowerby Bridge (6-0 a.m. to 5-30 p.m.).
- Victoria.
- *Wakefield Shed (not Station).
- Wigan.
- York.
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HEATING OF ELECTRIC TRAINS.

Central and Western Electrified Lines.

1. The instruction relating to Trains only being heated if the outside temperature is below 50° , and to a maximum of 60° , will apply also to Electric Trains. For the purpose of ascertaining the outside temperature, Thermometers will be fixed at the following Stations:—

Liverpool.	Aintree.
Bank Hall.	Ormskirk.
Hall Road.	Manchester (Vic.).
Southport.	Bury.
Crossens.	

2. The Carriage & Wagon Department are responsible for the Heating of Electric Trains starting from **Liverpool (Exchange), Southport (Chapel Street), Bury (Bolton Street), and Manchester (Victoria).**

3. At **Bank Hall** the guards are responsible for the heating of starting Trains.

4. At **Hall Road Crossens, and Aintree** the Station Staff are responsible for the heating of Electric Trains starting from those places.

5. At **Ormskirk** the Staff of the Carriage and Wagon Department arrange to heat Electric Trains starting from that Station up to 5-45 a.m. After that time the Station Staff attend to the heating.

6. The Heating Switches are under the control of the Guard.

7. Precautions should be taken not to let the temperature of the cars become too high. In order to reduce the temperature switch off the heaters. When it is necessary to further reduce the temperature, switch on the ventilator fans and open the fan-lights and ventilators.

8. The ventilating fans and ventilators should be used on approaching a terminal station to refresh the air in the cars.

9. All cases of defective heaters must be reported on one of the special forms provided, and sent to the Assistant to the District Passenger Superintendent at Liverpool, or the District Passenger Superintendent at Manchester, together with the Road Notes each day.

10. The Motormen's attention should also be called to defective heaters, who should inform the C. & W. Examiner at the first available point.

11. The Guard in charge before leaving a Train at a stabling point must put all the Lighting and

Heating Switches to the " Off " position, and close all doors and ventilators.

12. When a Train is stabled in a siding, the Live Rail cut-out switch controlling the Live Rail in the siding must be left open, otherwise considerable waste of current and danger of fire will be incurred.

13. Before disconnecting any of the electrical couplings, all Heating, Lighting, and, on the Central Electrified Lines, Rotary Transformer Switches must be put to the " Off " position, otherwise personal injury may be incurred and damage will be done to the spindles of the sockets and plugs.

14. Guards must turn off the Heater Switches throughout their Trains prior to arriving at the station where the formation of the Train has to be altered. Motormen are responsible for the operation of the Rotary Transformer Switches on the Central Electrified Lines, and the Guards must satisfy themselves that this is done. Guards must also turn the Heater Switches to the " On " position again on the next journey after shunting operations have been completed.

15. For the purpose of heating loose Electric Trailer Cars, the buffer stops of Nos. 3 and 4

Birkdale Sidings, Southport, and Aintree No. 4 Storage Sidings, have been fitted with trolley plugs and sockets, and shackle hooks .

16. The plugs must not be connected to any car until the car link has been engaged with the buffer hook. Also when additional Trailers are to be heated, the plugs must not be coupled up until the automatic couplers between the cars have been properly coupled. Disregard of this instruction may lead to serious fire and damage to the electrical equipment.

17. New fuses will be fitted on application being made to the Electric Traction Department at Southport or Bury.

18. Heaters must not be "switched on" in any car for drying purposes unless permission has been obtained from the C. & W. Foreman.