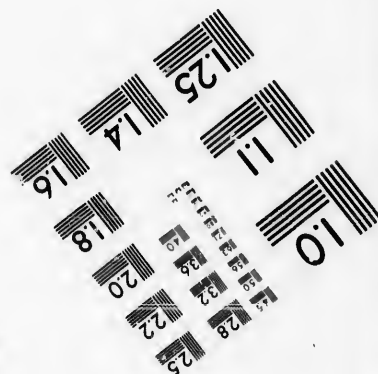
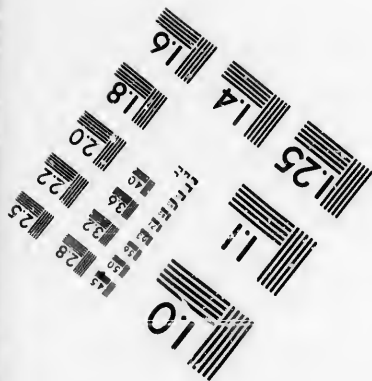
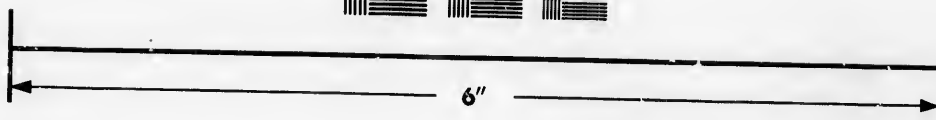
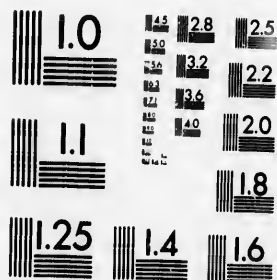


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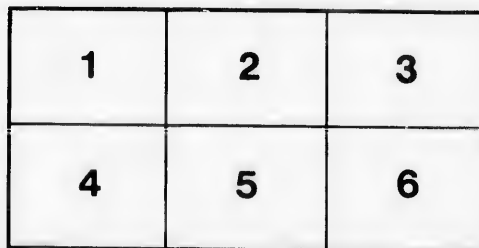
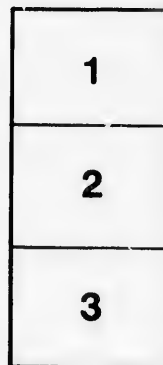
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Sup. on Westinghouse

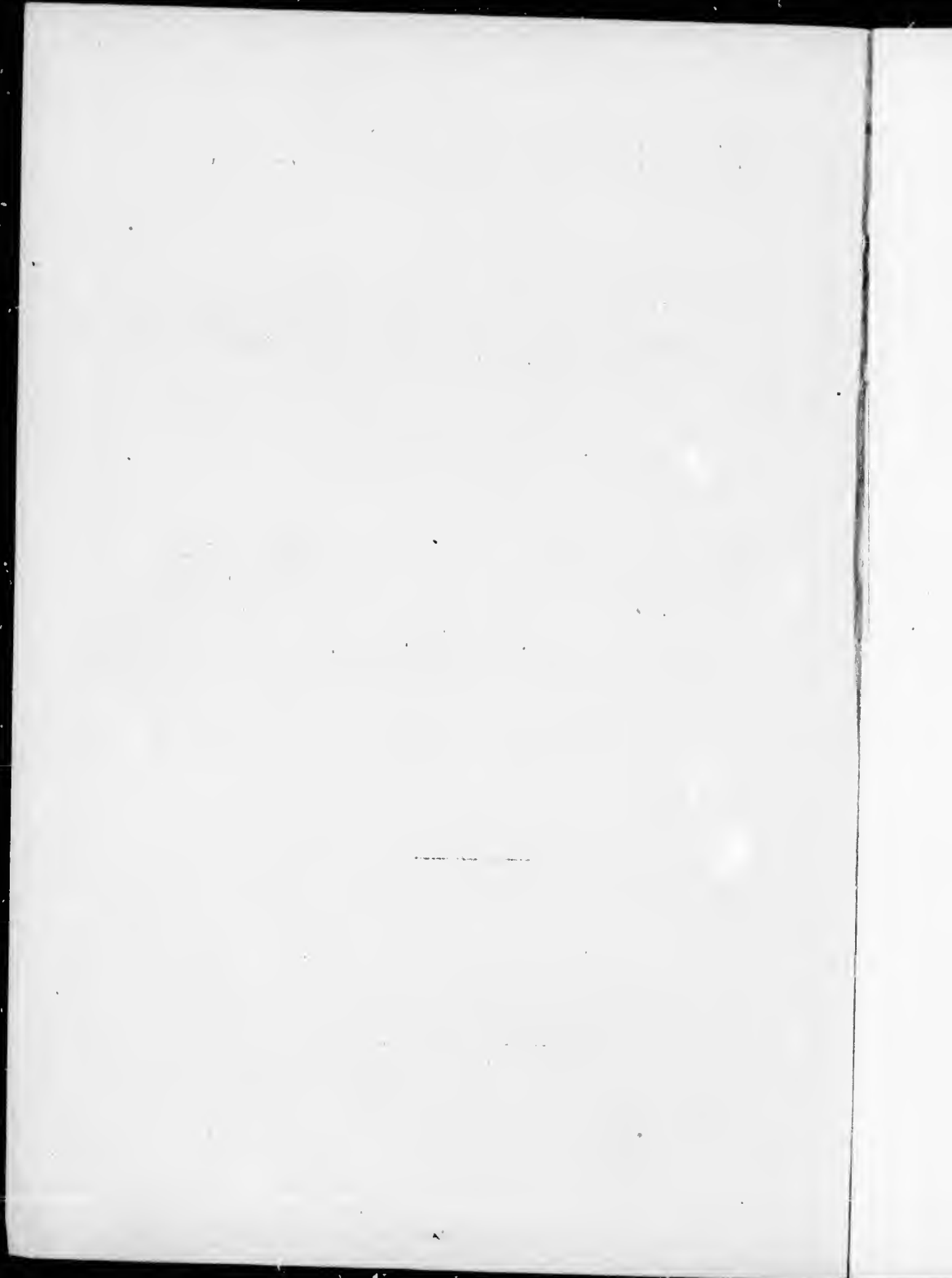
GRAND TRUNK RAILWAY.

Regulations for the Use and Care

OF THE

Westinghouse Automatic
Air Brakes.

MONTREAL, JULY 1, 1883.



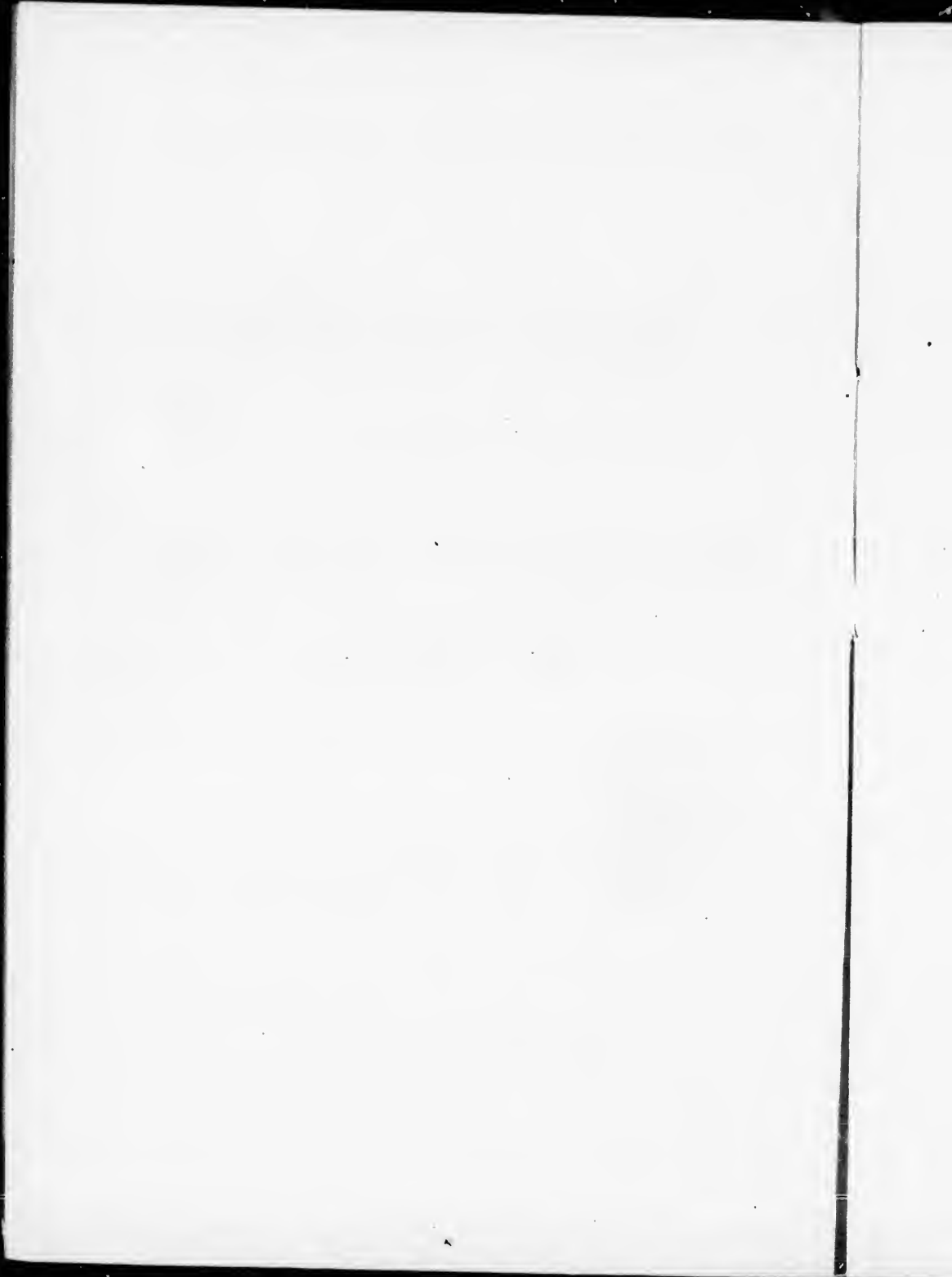
GRAND TRUNK RAILWAY.

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MONTREAL, JULY 1, 1883.



Automatic Air Brakes.

ENGINEMEN.

1. Fill the oil cup on the pipe leading to the steam cylinder, with cylinder oil ; open the cock in the bottom half a turn ; this will lubricate the steam cylinder.
2. Start the pump gradually, to allow the condensed steam to escape ; after the pump has made a few strokes, put a small quantity of cylinder oil into the cup on the air cylinder, to lubricate the air cylinder.
3. Always have a pressure of 65 pounds on the gauge before the engine is connected with the train.
4. When filling the reservoirs under the cars with air, the handle of the two-way cock must be turned to the left ; this allows the air already pumped to pass from the main reservoir, reduces the pressure, and causes the pump to work more rapidly, until the gauge again indicates 65 pounds ; the handle must then be turned to the centre position, so that the spring fits in the notch.
5. The brake is applied by turning the handle to the right from the notch, and exhausting ten or fifteen pounds of air.

6. When taking on extra cars, turn the handle to the left, to allow the reservoirs in the extra cars to fill with air ; after this is done apply the brakes and let them off suddenly, to ensure all being released.

7. In making stops at stations, exhaust small quantities of air at a time ; by so doing you reserve the air and bring the train to a stop gradually—releasing the brakes about the last revolution of the driving-wheels (as near as you can judge) ; by so doing you avoid those lurches noticeable in stopping a train with the power brake. Never apply the brakes with full force except in cases of emergency.

8. Avoid, as far as possible, applying the brakes a second time, if on the first application you find you are going to stop too soon, and you have to let them off to run a little farther ; this second application will not be as strong as the first, because the reservoirs have not had sufficient time to re-fill, and there will be difficulty in releasing.

9. Run the pump as slowly as possible, and keep up the required pressure ; the safety valve pops at 85 pounds.

10. Never use the brake in shunting trains, or when brakemen are expected to brake.

11. Keep the main reservoir free from water ; also, the triple valve under the tender should be drained daily, to let out any water that may have collected ; there are plugs for this purpose.

12. See that the tender brake hose is always hung up in the clip for the purpose whenever it is not in use ; this will prevent dust getting into the triple valve. All brake couplings must be disconnected *by hand*. Remember that you are responsible for the condition of the brakes on the engine and tender.

13. For the automatic brake, the handle on triple valve must be turned horizontally ; if turned down, will change it to the simple air brake ; if turned midway between these two positions it will close communication with the brake cylinder and reservoir, and should be so turned when desirable to have the brakes out of use on any particular car, from breaking of rods, etc. This applies to tenders and cars.

14. When, from any cause, the automatic brake cannot be used, change to the simple air brake, but in this case remember that the brake valve on engine requires to be worked the opposite way.

15. Promptly test the brakes at the request of Car Inspectors at terminal and (whenever a car is taken on or put off) at intermediate stations, and obtain a notification that all is right before starting. The pump must not be worked while test is being made.

16. Enginemen must specially report upon arrival at terminal stations, or Round House, any defect in the working of their engine, valves, pump, etc., and on trip tickets particulars of all failures of the brakes and loss of time in connection therewith. All passenger engines must carry a spare hose and couplings, as part of their equipment.

TRAINMEN.

1. In making up trains, all couplings must be united, so that the brakes will apply throughout the entire train. The cocks in the brake pipe must all be opened (handles pointing down) except that on the rear of the last car, which must be horizontal, and the coupling hung up in the clip.

2. In detaching engines or cars, the couplings must invariably be separated *by hand*; the cocks in the brake pipes must always be closed before uncoupling to prevent application of the brakes.

3. At stations where it may be necessary to cut the train, to take or leave cars, *trainmen must not turn the stop cock or disconnect hose until the brakes have been released by the engineman.*

4. If the brakes are applied when the engine is not attached to the train or car, they can be released by opening the cock in the end of the brake cylinder or air reservoir.

5. If cars are equipped with a valve for the application of the brakes from the inside it should be kept tight, and must always be examined when the car is standing at terminal stations. This valve must only be used in case of emergency.

6. The brakes must be tested at intermediate stations whenever a car is taken on or put off and inspected by the brakeman, to see that all are in working order. Conductors are responsible in such cases, and when trains start from points at which no inspectors are located, they must see that the test is properly made as per car inspector's rule number six.

7. If the packing in the couplings freeze so as to leak, thaw out with a torch.

8. Report to car inspectors any car not in working order.

9. Keep the hose coupled together or hung up in the clips provided for that purpose, when not in use.

10. The uncoupling of all brake hose is the duty of the brakemen.

11. The first duty of a Conductor, if his train should be stopped by reason of any accident to the brake gear, is to see that the rear of the train is protected, and to relieve the brakes by opening the cocks in the ends of cylinders or air reservoirs under each car as quickly as possible.

CAR INSPECTORS.

1. The adjustment of the brakes should be such that, when applied, the pistons in the brake cylinders will not travel to exceed seven or eight inches; this will allow room for wear of shoes, stretching of rods, springing of brake beams, etc., while on the road.
2. Great care must be exercised in taking up the slack in connections, to have the levers and pistons pushed back to their proper places, and the slack taken up by the under connections or dead lever.
3. The brake cylinders and triple valves must be always kept clean and free from gum, so that they will readily release when the air has been discharged; oil once a month with oil supplied for this purpose, and note the last date of oiling and station shop mark on the cylinders with chalk. A record of such oiling must be sent each week to the car superintendent at Montreal or London.
4. In damp weather the triple valve should be drained daily, to let out any water that may have collected. Slack the bottom nut about half a turn, let the water escape, and screw it up again; if there is a pet-cock, draw through that.

5. When the train is finally made up the inspector must take his position at the engine while the brake is being tested, that the engineman may inform him if any leak be discovered, which he must promptly attend to. He will then examine each car throughout the entire train, to see that the brakes have applied properly, and when all is right will notify the engineman, who requires such notification before starting.

6. Inspectors will be held responsible if trains leave stations with the air brakes not in perfect working order, and they are also responsible for the coupling of all hose.

7. Inspectors at all points must keep on hand, ready for immediate use, a supply of the parts that are liable to get out of repair, as well as tools necessary for making repairs.

Enginemen and conductors will report promptly any neglect to comply with these rules.

W. J. SPICER,

C. STIFF,

Superintendents.

HERBERT WALLIS,

C. K. DOMVILLE,

Mechanical Superintendents.

For illustration of the following, see diagram below :

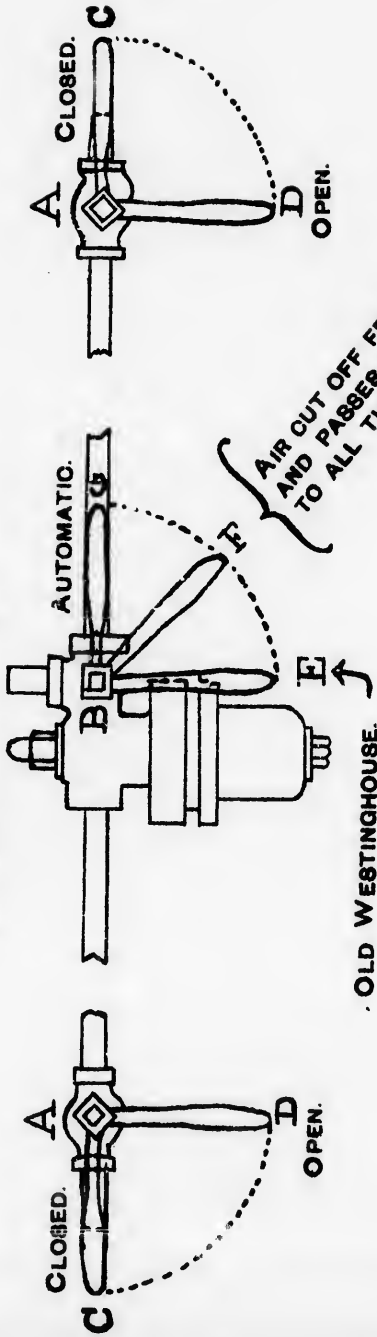
A represents valve at ends of car.

When a train is made up, the handle must be in position as shown at **D**, except at rear end of rear car, where it must be as shown at **C** before starting the train.

Before uncoupling train from engine, the handle on end of car next to engine must be as shown at **C**. Before UNCOUPLING CARS, it must also be placed at **C**.

B represents the triple valve under car. When the handle is at **G**, it is right for automatic ; when at **E**, for the old pressure brake. When any part of the brake apparatus of a car is broken or out of order, so that it cannot be used, place the handle at **F** (except in cases of BROKEN HOSE, or leaky PIPES). In case a HOSE bursts, or there is a leak in the PIPES that applies the brakes, turn the handle of valve **A** to **C** on rear end of the next car ahead of the leak ; then turn handle of valve **B** to **E** on car WITH the leak, and all cars in the rear of it.

PLAN OF WESTINGHOUSE AIR BRAKE.



OLD WESTINGHOUSE.

