

NEW ZEALAND GOVERNMENT RAILWAYS	BRAKE-GEAR ON LOCOMOTIVES AND ROLLING-STOCK Cancelled Issue No 3 1/8/73	CODE No. 68
LOCOMOTIVE AND WORKSHOPS BRANCH		Page No. 1 of 3 Issue No 2 Date Issued 28/10/36

EXISTING LOCOMOTIVE CODES TO BE CANCELLED: 104, 105, 341.

(1) INSPECTION, [&] REPAIR, AND ANNEALING

[Annealing applied to wrought iron brake gear. For procedure to wrought iron chains see Code 19 Clause 4c (appended to the end of this code).]

(a) Locomotives.—All brake-gear on locomotives must be inspected and repaired when locomotives are shopped for class “A” repairs (Locomotive Code No 39).

Pins, bolts, and bushes that are worn must be renewed, and pin or bolt holes in brake beams, hangers, plates, links, &c., must be built up with electric welding and remachined.

All brake-gear forgings on locomotives such as beams, hangers, pull rods, links, &c., must be ~~annealed at each class “A” repair and all~~ [cleaned & examined for cracks and other defects?]. All] forgings must receive an application of [handrail] black oil paint before the locomotives return to service.

The wearing surfaces of brake-gear forgings must not be painted.

During class “A” engine repairs, all remaining Westinghouse-brake equipment on locomotives must be inspected, tested, and overhauled as directed in the Westinghouse-brake Instruction Book and the instructions concerning the intermediate examination and testing of pumps, triple valves, pressure-gauges, &c., must be strictly observed.

(b) Rolling-stock.—All brake-gear on rolling-stock must be inspected and repairs effected when vehicles are shopped for Westinghouse-brake overhauls (Locomotive Code No. 26). Worn pins and bolts must be renewed, and worn pin and bolt holes in rods, links, &c., must be built up with electric welding and remachined. Forgings must be ~~annealed and~~ painted with [handrail] black oil paint on all except wearing surfaces before the vehicles return to service.

All remaining Westinghouse-brake equipment on rolling-stock must be overhauled and tested according to the instructions outlined in the Westinghouse-brake Instruction Book. When vehicles are shopped for Westinghouse-brake overhauls, and the instructions enumerated in this handbook for the intermediate examination and testing of Westinghouse-brake equipment on rolling-stock must be strictly adhered to.

(2) TESTING AND ADJUSTING.

When finally assembled, the brake-gear on locomotives and rolling-stock must be tested to ensure free movement of all working parts and adjusted so that all brake-blocks bear evenly on the wheels.

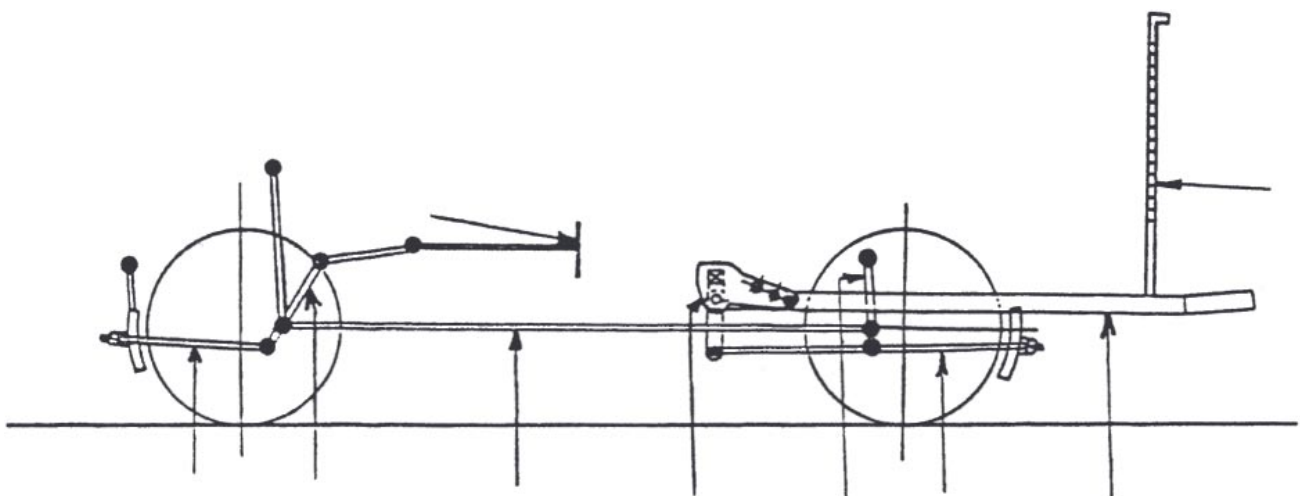
The amount of travel for brake-cylinder pistons must not be less than [6] 4-in. or more than [9] 8 2 in, for long cylinders, or less than [3 1/2] 2 in. or more than [5] 2 in. on short cylinders, when vehicles are in service. On the completion of Westinghouse-brake overhauls, the brake-cylinder-piston travel must be adjusted to the minimum limits specified.

(3) HAND-BRAKE SCREWS.

The hand-brake screws on locomotives and rolling-stock must be adjusted so that the number of turns necessary to make a brake application is not excessive.

All hand-brake screws must be lubricated at frequent intervals while in service, and examined thoroughly when the vehicles upon which they are fitted are shopped for Westinghouse-brake overhauls.

(4) HAND-BRAKE ADJUSTMENT ON FOUR-WHEEL WAGONS.



NEW ZEALAND GOVERNMENT RAILWAYS	BRAKE-GEAR ON LOCOMOTIVES AND ROLLING-STOCK Cancelled Issue No 3 1/8/73	CODE No. 68
LOCOMOTIVE AND WORKSHOPS BRANCH		Page No. 2 of 3 Issue No 2 Date Issued 28/10/36

(4) HAND-BRAKE ADJUSTMENT ON FOUR-WHEEL WAGONS—continued.

(a) It is essential for new or comparatively new brake-blocks of uniform thickness to be fitted to these vehicles before any adjustment of the hand-brake is effected.

(b) The brake lever (B. 3) must be adjusted so that the pawl will engage in the first or bottom notch on the brake-lever rack (B. 2). The nuts on the pull rod (C. 6) are then adjusted so that the brake-blocks are in contact with the wheels on the hand-brake end of the vehicle. The pin connecting the brake-lever to the slack-adjuster (B. 5) must be in the end hole in the slack adjuster during the initial adjustment of the hand-brake.

(c) The nuts on the brake-beam pull rod (C. 5) must then be adjusted so that the amount of brake-cylinder-piston travel necessary to make an effective brake application is the minimum specified in Clause 2 of this instruction.

(d) The slack-adjuster must be adjusted to provide the maximum brake application under all conditions, and the position of the slack-adjuster pin must be altered as the wear on the brake-blocks and tyres increases.

(e) The length of the tie rods (C. 4) must be checked, and the length must be such that when the brakes are “off” the clearance between the brake-levers (C. 2) and the axles is not less than 1 inch.

(5) BRANDING.

At the completion of Westinghouse-brake overhauls on cars, vans, and wagons, the sole-bars must be branded on the hand-brake end to indicate the depot at which overhauls were executed, and the month and year coinciding with the completion of overhauls.

The brands must be stencilled on the sole-bars with white paint, and letters and figures must be 2 in. in size, placed as follow.

$$\frac{N}{3-29}, \quad \frac{A}{2-36}, \text{ \&c.}$$

Westinghouse-brake brands on vehicles must not be obliterated when vehicles are shopped for painting and/or repairs.

(6) RECORDING WESTINGHOUSE-BRAKE OVERHAULS.

Officers-in-Charge at Workshops and Car and Wagon Inspectors shall render Loco./67 returns at the close of each week to the Car and Wagon Inspectors who hold the Loco./64 Registers, showing the particulars of all Westinghouse-brake overhauls effected during the week, and retain a copy of the return for reference purpose..

At the close of each period, after recording the information required by them, the Car and Wagon Inspectors who hold the Loco./64 registers shall forward all the Loco./67 returns received during the period to the remaining Car and Wagon Inspectors, to enable them to record the details of the Westinghouse-brake overhauls carried out at other depots and shops to the vehicles located on their districts.

The Loco./64 Register for the North Island is held by the Car and Wagon Inspector, Auckland, and the Car and Wagon Inspector, Christchurch, holds the South Island Loco./64 Register.

When Westinghouse-brake overhauls are effected on locomotives in shops for repairs, particulars of these overhauls must be included in the Loco./135A reports for the engines concerned.

Locomotive Foremen will record on Loco./118 cards, particulars of the six-monthly examination, testing, and lubrication of triple valves, brake-cylinders, and air-reservoirs on all locomotives under their supervision. Loco./118 cards will be retained by Locomotive Foremen, and when a locomotive is transferred from one district to another the Loco./118 card for the locomotive concerned must be forwarded also.

The Westinghouse-brake Fitters at locomotive depots will render Loco./131 returns to the Locomotive Foreman at the close of each four-weekly period, showing the particulars of all Westinghouse pumps tested during the period. At depots where a Sub-Foreman is located, this member must initial the last entry on all Loco./131 returns.

In cases where Westinghouse pumps are tested at workshops, Westinghouse-brake Fitters will render Loco./132A returns at the close of each period to the Officer-in-Charge, who shall record the particulars contained therein in the Loco./132 register.

Stationmasters-in-Charge of isolated sections will render Loco./131 returns direct to the Controlling Officer, Brake Inspectors must certify all Loco./132 Registers and Loco./131 returns, during the course of their inspections.

NEW ZEALAND GOVERNMENT RAILWAYS	BRAKE-GEAR ON LOCOMOTIVES AND ROLLING-STOCK Cancelled Issue No 3 1/8/73	CODE No. 68
LOCOMOTIVE AND WORKSHOPS BRANCH		Page No. 3 of 3 Issue No 2 Date Issued 28/10/36

NOTE ON CODE 68

Until 1964 all brake gear was annealed at each "A" class repair. This requirement dated from the time when all brake gear was made of wrought iron.

Wrought iron becomes work hardened particularly where there are high contact stresses such as pin holes and then becomes liable to fracture.

The repeated annealing of steel reduces its strength.

Wrought iron components should be annealed if they have been straightened or subject to high contact stresses.

CODE 19; Issue 4 of 20/5/55

(4) (c) part only

Wrought iron chain slings, including any attached wrought iron or mild steel end links and rings, shall then be normalized, proof-tested to twice the safe working load and finally given a thorough visual examination. The normalizing is to consist of heating slings to a cherry red heat and then cooling them off in still air. Care is to be taken to ensure that the slings are not wetted and that cooling is not accelerated in any way.