

NEW ZEALAND RAILWAYS	BRAKE GEAR ON LOCOMOTIVES AND ROLLING STOCK	CODE No. 68
MECHANICAL BRANCH		Page No. 1 of 3 Issue No 3 Date Issued 1/2/73

{Includes pages from Issues 4 & 5 also. Source codes copied are an amalgamation of Issues 3 & 4 or Issues 3 & 5}

(1) GENERAL INSTRUCTIONS:

For the purposes of this Code, the term “locomotive” includes all classes of locomotives, rail type tractors, railcars, electric multiple unit coaches, road and rail mobile cranes with independent air brakes and any other rail type vehicle fitted with an independent air brake system.

Air brake equipment and brake rigging on all locomotives and rolling stock shall be periodically examined and maintained in accordance with the Consolidated Air Brake Instructions and other relevant instructions.

Brake equipment on locomotives and rolling stock must be serviced on due date or as soon as possible thereafter. Locomotives or rolling stock on which the air brake maintenance check is overdue by 10% of the due service time or mileage must not leave a depot or workshop without the authority of the District Mechanical Engineer. Where, owing to local conditions, experience has shown that some item on a particular class of vehicle requires more frequent attention than is laid down, then this is to be given.

(2) INSPECTION, OVERHAUL AND MAINTENANCE OF BRAKE GEAR:

When a locomotive is received in any workshop for A or B class overhaul, all air brake components and the brake components and the brake rigging shall be removed where practicable and examined, overhauled and tested in accordance with the Consolidated Air Brake Instructions and other relevant instructions.

When a locomotive is received in any workshop for work other than an A or B class overhaul, only brake work specified on the Loco. 133E report is required to be completed.

When rolling stock is received in any workshop for overhaul, all air brake components must be overhauled in accordance with the Consolidated Air Brake and other relevant instructions even although the vehicle may have had a brake service on a recent date. At every second overhaul the brake rigging must be completely dismantled and reconditioned.

At depots all locomotives and rolling stock are to be examined and maintained in accordance with the Consolidated Air Brake Instruction schedules for the class of stock concerned.

(3) TESTING:

(a) **Locomotives** — The brake equipment on all locomotives shall be tested in accordance with the test codes laid down in the Consolidated Air Brake Instructions and other relevant instructions prior to locomotives being passed out from workshops, when called for in the respective servicing schedules, or when any doubt exists as to the correct functioning of the brake equipment.

Testing must be carried out by an experienced Brake Fitter or under the supervision of the Sub-Foreman, Foreman or Brake Inspector.

(b) **Rolling Stock** — After the overhaul or servicing of brake and air operated equipment on cars, vans and wagons, vehicles shall not be returned to service unless they have passed the Code of Tests set out under the heading “Operation of the Single Vehicle Testing Device” in the Consolidated Air Brake Instructions. Where pass out roads are provided with a brake valve and relay valve, vehicles must pass the tests as set out under “Pass Out Test” before they are placed in traffic. New vehicles must also pass these tests.

(4) RECORDING OF AIR BRAKE OVERHAULS AND MAINTENANCE:

(a) **Locomotives** — Details of air brake overhauls and maintenance checks on locomotives shall be recorded on Loco. 118 cards.

Loco. 118 cards for main line diesel electric locomotives shall be held in the Chief Mechanical Engineer’s Office. Those for locomotives allocated to a particular district shall be held by the Locomotive Supervisor concerned. Staff carrying out air brake checks on main line diesel electric locomotives shall complete the relevant part of the Loco. 304 return. Locomotive Supervisors and Works Managers shall forward these returns to the Chief Mechanical Engineer’s Office where the information will be used to maintain the Loco. 118 records. Locomotive Supervisors, Depot Foremen and Works Managers shall maintain the Loco. 118 records for locomotives allocated to their districts or workshops. When a locomotive is permanently transferred from one district to another, the Loco. 118 card for the locomotive is to be transferred also.

When overhauls or repairs are effected to air brake parts and brake rigging on locomotives in workshops, particulars are to be recorded on the appropriate Loco. 135E reports.

(b) **Rolling Stock** — The Chief Mechanical Engineer maintains Loco. 64 registers to record, among other items, rolling stock brake overhauls and brake cleans. These registers are maintained from information included on the weekly Loco. 67 returns rendered by Works Managers, Car and Wagon Inspectors and Works Foremen and Inspectors.

All depots and workshops where cars, vans and wagons are serviced shall maintain a register in which test results obtained with the single vehicle tester and brake cylinder leakage tester are recorded. These registers shall record the vehicle number, date of test, triple valve type, brake pipe leakage, application and release test results, brake cylinder leakage and initials of the member carrying out the tests.

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(5) BRANDING:

On completion of air brake overhauls on cars, vans and wagons, the solebars at the handbrake corner and at the diagonally opposite corner of the vehicle shall be stencilled with the brake overhaul symbol followed by the workshop or depot symbol and then the month and year.

Brake overhaul symbols shall be as follows:

(i) Full overhaul of air brake parts and brake rigging or alternate overhaul of air brake parts and attention to worn brake rigging = ~~WB~~. [WhO?]

(ii) Brake servicing of air brake parts without the dismantling of the brake cylinder, but its lubrication by grease

gun = $\frac{WB}{1}$ [TO] $\frac{WB}{2[10]}$ $\frac{WB}{3}$ \neq $\frac{WB}{4}$

NOTE: Brake cylinders with grease gun facilities may be lubricated by grease gun at four consecutive brake services. ~~At each overhaul these brake cylinders must be dismantled for cleaning and examination.~~

[At $\frac{WB}{5}$ and $\frac{WB}{10}$ brake inspections, [these] brake cylinders must be dismantled for cleaning and lubricating.

At $\frac{WB}{10}$ triples are to be removed for overhaul.]

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On the complete reconditioning of brake rigging at every second overhaul the underframe shall be stencilled with the letters "BGR" (Brake gear reconditioned), except on express cars which are reconditioned at every overhaul.

Stencils are to be normally in white paint and letters and figures are to be 50mm (2") high. Where ship lashing markings coincide with the stencil location, the stencils shall be in black paint on a yellow background.

Details of depot symbols and stencils are shown on the following drawings:—

Cars W30617
Vans W30618
Wagons W30601 - W30607 and W30619.

(6) SPLIT PINS (B51574:1972)

(a) It is the responsibility of all staff to ensure that when a wagon is lifted, or having a brake clean, or when brake rigging is removed or replaced for any reason, split pins are correctly replaced and all other split pins are checked as being correctly in place with each pin end bent between 45° and 60° from the pin centre line.

(b) Care must be taken in matching split pins and holes as closely as possible according to dimensions and type, i.e. Metric pin to metric hole.

(c) Where split pins secure moving parts a washer must be placed between the split pin and the face of the secured part leaving a clearance of 2 mm (minimum) and 4 mm (maximum).

(d) Where nuts are secured by split pins, the split pin must be hard against the nut face or, in the case of castellated nuts, the pin must be secured well in the slots provided.

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(5) BRANDING

On completion of air brake overhauls on cars, vans and wagons, the solebars at the handbrake corner and at the diagonally opposite corner of the vehicle shall be stencilled with the workshop or depot symbol and then the month and year. The wagon overhaul and brake overhaul symbol will be stencilled midway along the wagon solebar.

Brake overhaul symbols shall be as follows:

(i) Full overhaul of air brake parts and brake rigging as instructed in the Air Brake Maintenance Instruction, page C3.

= OHL

(ii) Brake servicing of air brake parts.

= $\frac{WB}{1}$, $\frac{WB}{2}$, $\frac{WB}{10}$

NOTE: Brake cylinders with grease gun facilities are to be lubricated by grease gun annually and at four consecutive brake services.

At $\frac{WB}{5}$ & $\frac{WB}{10}$ brake inspections these brake cylinders must be dismantled for cleaning and examination as instructed

in the Air Brake Maintenance Instruction. Pages C4 & C5.

Brake cylinders without greasing facilities must have the piston pulled every year.

Stencils are to be normally in white paint and letters and figures are to be 50mm high. Where ship lashing markings coincide with the stencil location, the stencils shall be in black paint on a yellow background.

(6) SPLIT PINS (BS1574: 1972)

(a) It is the responsibility of all staff to ensure that when a wagon is lifted, or having a brake clean, or when brake rigging is removed or replaced for any reason. split pins are correctly replaced and all other split pins are checked as being correctly in place with each pin end bent between 45° and 60° from the pin centre line.

(b) Care must be taken in matching split pins and holes as closely as possible according to dimensions and type, i.e. Metric pin to metric hole.

~~(c) Where split pins secure moving parts a washer must be placed between the split pin and the face of the secured part leaving a clearance of 2 mm (minimum) and 4 mm (maximum).~~

[(c) washers must be placed between the split pin and the face of the secured part whether the parts are moving or not, leaving a clearance of between 2mm and 4mm. All metric pins have been rationalised in length to 10mm increments.

Standard washers of 3mm and 6mm thickness (see drawing Z/X40094/3 are to be used.]

[26/5/1987]

(d) Where nuts are secured by split pins, the split pins must be hard against the nut face or, in the case of castellated nuts, the pin must be secured well in the slots provided.

7) SKIDDED WHEELS ON WAGONS:

~~On the replacement of the wheelsets, the triple valve is to be changed and the automatic release valve diaphragm inspected and replaced where necessary.~~

[On the replacement of the wheelset, the brake system is to be checked by the single car tester. If the triple valve tests satisfactorily it need not be changed. The automatic release valve diaphragm is to be inspected and replaced if necessary. All reasonable efforts are to be made to establish the cause of the skids.]