

FRONZ / ONTRACK
APPROVED CODE OF PRACTISE
FOR
HERITAGE NETWORK OPERATORS

Mechanical Code B3.2.3.01 BRAKE SERVICE SCHEDULE

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Reference Material

Source	Description	Date
NZ Railways	Brake Equipment - Servicing Schedule: All Steam Locomotives	5 June 1996
Steam Inc	COP 6 - Air Brake Code for Steam Locomotives	2 Sep 2002
Diesel Traction Group	Brake Service Schedules	
Tranz Rail	Loco-hauled Passenger Car Brake Manual	5 June 1996

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Section 1 – Introduction and General

Introduction

This schedule sets out the minimum work to be done on locomotive, railcar, carriage and service wagon brake systems at specified intervals. Operators may add extra items specific to their equipment or omit those items that are not applicable.

Variations

The time periods specified in this schedule are an average of practices for different brake systems. Times set are based on:

- Traditional brake schedules in NZ Railways service.
- Expected use

Operators may vary this schedule based on:

- More specific information for the brake system in question.
- Actual use of the vehicles.
- Experience over several years of operation.

General

Whenever a vehicle has

- had maintenance done on the braking air system; or
- has suffered skidded wheels or any other indication of an irregularity in the brake system;

then, after repairs are complete, a full air brake test shall be carried out in accordance with B3.2.1.01 - Air Brake System Test Codes.

When any other maintenance work is done on the brake system (e.g. brake block change, brake travel adjustment, pin or shoe replacement) then a brake efficiency test shall be carried out in accordance with B3.2.1.01 - Air Brake System Test Codes.

Section 2 - Steam Locomotives

"A" Check (Before each time locomotive is operated in service)

- All air piping and fittings to be examined for security and leakage.
- Check compressor(s) for pounding and uneven stroking.
- Drain water from main air reservoirs.
- Test operating efficiency of brakes (as per B3.2.1.01 - Air Brake System Test Codes).

"B" Check (Every 50 days operation or 12 months, whichever comes first).

- Clean compressor suction strainer(s).
- Check air cylinder lubricator for freedom of sleeve and cleanliness of interior.
- Clean governor air vent and air strainer (where fitted).
- Clean and lubricate feed and reducing valves.
- Lubricate brake valves at oil holes (A6ET type only).
- Examine cocks and hoses for condition.

"C" Check (Every 12 months)

- Complete "B" Checks as above.
- Dismantle driver's brake valves; clean, examine and lubricate parts. Check rotary valve lift.
- Complete a full brake test (as per B3.2.1.01 - Air Brake System Test Codes).
- Test operation of air compressor(s) using the orifice test.

"D" Check (Every 100 days operation or 2 years, whichever comes first).

- Complete "B" and "C" checks as above.
- Check and examine triple valve(s) or distributing valve.
- Check ball lubricator(s).
- Check pressure gauges against master gauge.
- Clean and lubricate interior of brake cylinders.

"E" Check (Every 250 days operation or 5 years, whichever comes first).

- Complete "B", "C" and "D" checks as above.
- Examine compressor air valves.
- Remove 10" x 10 5/8" compressor valve boxes and clean ports.
- Clean, examine and lubricate independent release valves, equalising reservoir control valve, compressor governor, safety valves, double check valves, flowmeter valves.

Section 3 - Diesel Locomotives and Railcars

"A" Check (Before each locomotive is operated in service)

- Check compressor oil level.
- Check compressor drive belts (if fitted) for tension and condition.
- Drain water from main air reservoirs.
- Test operating efficiency of brakes (as per B3.2.1.01 - Air Brake System Test Codes).

"C" Check (every 12 months)

- Complete "A" check as above.
- Check brake rigging, piping and hoses for security, leakage and fouling.
- Dismantle, clean and lubricate ITV and AF triple valves
- Clean or replace compressor air suction strainers.
- Drain water and sediment from air reservoirs.
- Check operation of automatic drain valves
- Check operation of CG, CCG, BPS and ACS switches (if fitted).
- No 4 Systems
 - Dismantle driver's brake valves; clean, examine and lubricate parts. Check rotary valve lift.
 - Clean and lubricate feed and reducing valves.
- 6SL Systems
 - Grease brake valve 3-position cock
 - Lubricate automatic brake valve
 - Clean and lubricate feed valve
- Conduct full brake test (including compressor capacity test) (as per B3.2.1.01 - Air Brake System Test Codes).

"E" Check (Every 250 days operation or 5 years, whichever comes first).

- Complete "A" and "C" checks as above.
- Change compressor oil (or test an oil sample and replace if recommended).
- Clean or replace compressor oil filter
- Examine compressor unloader valves and lubricate.
- Test relay valves (if fitted)
- Test brake release valves
- Clean and lubricate distributing valve.
- Clean air line filters.
- Examine brake gear and renew worn rigging or pins.
- Lubricate J.1. relay valve (26L only)
- Withdraw brake pistons, clean and lubricate cylinders. Stencil date on cylinders.
- Lubricate slack adjusters.
- Clean double check valve (if fitted)
- Clean dirt collectors and strainers

"F" Check (Every 10 years).

- For the 6SL brake, clean, examine, lubricate and test the

brake valves, distributing valve, feed valve, relay air valves, air regulator, flowmeter, safety valves, all check valves, automatic main reservoir drain valve, pressure reducing valve, sander, vigilance cut off valves.

- For the 26L brake, clean, examine and test the 26D control valve, MU-2A valve and F.1. selector valve (if fitted), J1 relay valve, all check valves, flowmeter, safety valves, sander air valves, air regulator, pressure reducing valves, vigilance cut off valves and automatic main reservoir drain valves.
- Remove compressor heads. Examine compressor air valves for damage and remove any carbon build-up
- Lubricate all cocks.

Section 4 - Carriages and Wagons

"A" Check (Before each vehicle is operated in service)

- Check brake block wear is within code (wear limit marks still showing).
- Check brake piston travel is within limits.
- Check for audible air leaks from triple valves, piping, cocks etc.

"C" Check (every 12 months)

- ITV and AF triple valves – dismantle, examine and lubricate.

"D" Check (Every 2 years).

- Brake cylinders with grease nipple if stencilled B/1, B/2, B/3, or B/4
 - Lubricate with correct grease.
 - Turn piston 1 ½ turns
 - On the solebar adjacent to the brake cylinder re-stencil the next B number.
- Brake cylinders with grease nipple if stencilled B/5
 - Withdraw piston, examine, clean and lubricate with correct grease.
 - On the solebar adjacent to the brake cylinder re-stencil the B number to B/1
- Brake Cylinders without Grease Nipple
 - Withdraw piston, examine, clean and lubricate with correct grease.
- On the solebar adjacent to the brake cylinder re-stencil the next B number.
- ITV and AF triple valves – dismantle, examine, clean and lubricate with correct grease. (If practical, change these to WP triple valves.)
- Change the brake service date to indicate the next due date 2 years ahead. (These are on the solebars near the headstocks on diagonally opposite corners.)
- Slack adjusters (SAB) - Examine. Grease regulator rods. Test for operation in both directions. Replace if not functioning correctly.
- Slack adjusters (Pneumatic) - Test for operation.
- Operating equipment - Examine for leaks, wear in shafts etc. Repair as necessary. Test for correct operation.
- Handbrake - Examine and test for correct operation.
- Brake rigging - Examine for wear on pins and bushes and replace as necessary. Ensure washers are fitted, split pins are of the correct size for the hole and have both legs splayed to 45°. Ensure pins are not seized.
- Test: - Conduct the single vehicle test with the single vehicle tester. (as per B3.2.1.01 - Air Brake System Test Codes).

"E" Check (Every 5 years)

- Check the accuracy of any air pressure gauges against a certified test gauge. Gauges should agree to within $\pm 2\frac{1}{2}$ per cent of nominal reading between 90 per cent and 110 per cent of working pressure.