

Includes:	The regime change applies to all High Voltage Impulse (HVI) track circuits.
Excludes:	None (the previous exclusion for TCs with a track relay that is outside the 10 year re-servicing period has been withdrawn).

**Warning**

Red bonds are very dangerous if they become disconnected. Never touch them as there could be a dangerous voltage. Report to E.C.O any found.

**Warning**

In 3rd rail DC traction areas and in dual electrified areas (3rd rail DC and AC over head line) HVI track circuit transformer/terminal boxes (known as 'bread bins') can experience a catastrophic arcing across the terminals when the 3rd rail DC traction supply is short circuited to the 'signalling' rail. As these traction short circuits can be unpredictable (they can be caused by trains, conductive rubbish etc) no preventative or corrective maintenance shall be undertaken inside the 'bread bin' with the 3rd rail DC traction current energised.

**Warning****Safety:**

If preventative or corrective maintenance requires access inside the 'bread bin' the 3rd rail DC traction current shall be isolated for the entire length of the track circuit(s) concerned. Measurements should be taken on the rails. This does not apply in non-electrified areas or if the traction supply is by DC or AC over head line only.



In 3rd rail DC traction supply areas where track access may be restricted, there may be permanent 'test leads' installed from the rails to a special test box in a position of safety. In this situation the terminations in the test box may be used to obtain measurements where the test asks for readings 'on the rails'. The resistance of the test leads (this will be stated on the test box) shall be taken into account when obtaining measurements by this method. The tests are marked with a # symbol (see following table), only the tests applicable to the traction current supply in the area of the track circuit should be carried out. If you are unsure, ask your SM(S).

General

The objective of the track circuit examination is to find and remove potential causes of track circuit failure. The extent of the examination will be dependant on:

- i. The type and complexity of track layout.
- ii. The amount of bonding.
- iii Jointed track or Continuous Welded Rail.
- iv. Steel, wooden or concrete sleepers.

NOTE:

If any adjustments or renewal of equipment have occurred then the **TRACK CIRCUIT FULL TEST (255)** shall be carried out in place of the tests listed below.

Any adjustments or repairs shall be classed as corrective maintenance (NR/SMS/Part/A02).

Service A**1.0****Examine****Traction areas only**

1.1 Negative return bonding present & connections are tight.

1.2 Aluminium plate is secure & for signs of arcing.

1.3 Impedance bonds, rail leads & debris cover are tight.

Torque Settings		
Component	Fixing Size	Torque (Nm)
Impedance bond end terminations	M16	150
Impedance bond centre tap	M16	118
Bond Connection to Rail	M12	70

2.0**Examine**

2.1 The track circuit for potential causes of track circuit failure.

2.2 Visually, all associated IBJ for degradation or damage.



2.3 Tail cables for damage, security and suitable protected.

2.4 Fishplate bonds are not broken damaged including cross bonding in S&C.

2.5 Rail to Rail, jumper & fishplate bonds.
(Disconnected 'Yellow Bonds' must be repaired immediately).

2.6 Signal wires, point rodding, and metal services (etc) are insulated and clear of rails.

2.7 Assess the condition of ballast / ground conditions.

2.8 Remove any metallic objects in close proximity to track (remove where possible).

For single Rail Track circuit**3.0 Check****3.1** Stretcher bar insulations.**3.2** Track circuit interrupters and connections.**3.1** Condition of P.Way (Report defects).**3.3** Visually, all associated IRJ for degradation or damage.**Disconnection Boxes (if fitted)****3.4** For signs of wet or dry wire degradation.**3.5** Terminations are secure and free from corrosion.**3.6** Cables are labelled correctly.**3.7** Cable glands are effective.**3.8** Lid fits securely and padlocked.**4.0 Test****4.1 IRJ TEST (041)** at a frequency set by local policy from the S&T Maintenance Engineer.IRJ Test using **one** of the following methods**1. Current probe****2. Resistance check**

HVI tracks should be powered down prior to testing to prevent possible damage to meter.