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# **RAIL**INFRASTRUCTURE CORPORATION

Discipline  
**Rolling Stock Engineering Standard**

Category  
**Maintenance**

Title  
**RAILSET WAGON MAINTENANCE POLICY**

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## About This Standard

The maintenance policy applied to RSA's rolling stock was inherited from the SRA with the vesting of the rolling stock in 1996. This is specified in RSS 0011.

In 2003, a Technical Maintenance Plan was developed for railset wagons. This Wagon Maintenance Policy is based on the Technical Maintenance Plan for railset wagons.

## Version History

### Version 1.0

First issued May 2004

### Version 1.1 July 204

Instruction added to clear away all rubbish from on vehicle and in bogie frames

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# 1 Scope

This standard covers the inspection and maintenance requirements for Rail Infrastructure Corporation railset wagon fleet.

# 2 Maintenance & Inspection Policy

Applicable Vehicles	Inspection Schedule	Interval/ Trigger	Schedule Latitude	Approved Maintainer	Approved Standards
RIC Railset Wagon Fleet  Codes NDIF NDJF DNKF NDLF NDRF	General Train Inspection  Pre Trip	nil	In service by train crew	RSS 0013	RSS 0013
	R1 Routine Inspection	1 year (counter reset by each R# Inspection)	+ 0/ - 45 days	Bathurst Rail Fabrication Centre  TOU Chullora  RFS Chullora  Goulburn Rolling Stock & Fabrication Centre	RSS 0012 RSS 0020 RSS 0021 RSS 0030 RSS 0032 RSS 0040 RSS 0050 RSS 0060 RSS 0061 RSS 0064 RSS 0066
	R2 Routine Inspection	5 years (counter reset by each R2 Inspection)	+ 0/ - 90 days	Bathurst Rail Fabrication Centre  RFS Chullora  Goulburn Rolling Stock & Fabrication Centre	RSS 0012 RSS 0020 RSS 0021 RSS 0022 RSS 0023 RSS 0030 RSS 0032 RSS 0040 RSS 0041 RSS 0043 RSS 0050 RSS 0051 RSS 0060 RSS 0061 RSS 0063 RSS 0064 RSS 0066

**Table 1**

### 3 Safety Inspections

Wagons shall be inspected prior to each trip or as otherwise scheduled according to the requirements of Table 2.

<b>Standard</b>	<b>RSS Number</b>
Full Train Inspection (FX1)	RSS 0012
General Train Inspection (FX2)	RSS 0013
Roll-by Inspection	

**Table 2**



## 4 Routine Inspections

### 4.1 R1 Inspection Schedule

#### Maintenance Preparatory Action

Task ID	Task Description	Applicable Standards
1	<ol style="list-style-type: none"> <li>1. Report to Yard Controller and sign register book.</li> <li>2. Obtain safeworking and operational instructions from Yard Controller.</li> <li>3. Attach red flag to both wagon ends at each end of rake.</li> <li>4. Release air from all pneumatic systems.</li> <li>5. Observe all OH&amp;S requirements and work site specific procedures.</li> <li>6. Clear away all rubbish on vehicle and in bogie frames.</li> </ol>	

#### Additions to Scope of Work

2	<ol style="list-style-type: none"> <li>1. Review vehicle history and defect report.</li> <li>2. Add outstanding defects to schedule scope.</li> </ol>	RSS 0021
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#### Body

3	Examine access steps for tread weld fractures or distortion due to impact damage. Repair or replace as required.	RSS 0020
4	Examine all grab rails and guard rails for security or impact damage. Repair or replace as required.	RSS 0020
5	Examine wagon deck for impact damage that may create a trip hazard. Repair or replace deck plates/expanded mesh as required.	No standard
6	Assess condition of white painted areas on crew safety equipment. Paint crew safety equipment if required.	No standard
7	Lubricate the rail discharge rollers ensuring that the bearings at both ends of the rollers are greased.	No standard
8	Examine stanchion chain, split link and stanchion ring for security and integrity. Repair or replace as required.	No standard
9	Examine data plates and "Overhead Wire" warning notices for damage or degradation. Repair or replace as required.	No standard

## R1 Inspection Schedule (continued)

### Wheels

10	Examine all wheels for fatigue cracks. Respond according to severity classification of defect.	RSS 0030
11	Examine wheel flange and tread for chips or gouges. Respond according to severity classification of defect.	RSS 0030
12	Examine wheel flange and tread for thermal cracks. Respond according to severity classification of defect.	RSS 0030
13	Examine wheel profile for arrissed, steep, high or thin flanges. Respond according to severity classification of defect.	RSS 0030
14	Check wheel tread for evidence of spalling. Respond according to severity classification of defect.	RSS 0030
15	Examine the wheel tread for evidence of scaling. Respond according to the severity classification. Check operation of triple valve. Turn wheelset as required.	RSS 0030
16	Examine the wheel tread for evidence of wheel flats (skids). Respond according to the severity classification. Check operation of triple valve. Turn wheelset as required.	RSS 0030

### Bogies

17	Examine bogie sideframe for damage. Repair/replace as required.	RSS 0040
18	Examine axle box for evidence of grease leakage. Replenish grease (axlebox bearings only) and ticket for replacement if required.	RSS 0032 RSS 0040
19	Check axle box bearing grease date colour code. Grease bearings if due. Check package unit bearing installation date stamped on the bearing locking tab. If six years have elapsed since the package unit bearing installation date, inspect in accordance with the requirements of RSS 0032 Clause 5.2.	RSS 0032 RSS 0040
20	Examine bogie for any broken suspension springs. Replace as required.	RSS 0040
21	Examine horn stay for security. Replace any loose bolts, nuts and spring washers.	RSS 0040
22	Examine friction wedges and pockets for wear. Change bogie if friction wedge is within 1 mm of the condemning limit or friction wedge height is within 10 mm of the condemning limit.	RSS 0040

### Couplers

23	Examine all draft gear and coupler carriers for loose bolts. Replace all loose bolts with new bolts, nuts and spring washers or Huck Bolts.	RSS 0050
24	Examine coupler knuckle and pin for excessive wear. Replace as required.	RSS 0050

## R1 Inspection Schedule (continued)

### Air Couplings

25	Examine BP coupling hoses for signs of cracking, degradation or excessive wear at end connections. Replace as required.	RSS 0060 RSS 0064 RSS 0066
26	Check that the air brake coupling hose dummy coupler on the jumbo or other terminal wagons wagon is fitted and functional. Repair/replace as required.	No standard

### Braking System – Brake Cylinders/Slack Adjuster

27	Grease brake cylinder.	RSS 0060
28	Lubricate Type “J” slack adjuster thread with dry lubricant. Check operation of slack adjuster. Grease if grease nipple fitted. Replace if excessively worn or failed.	RSS 0060

### Braking System – Rigging

29	Examine all brake block for wear. Replace brake block if less than 20mm thick at the thinnest point.	No standard
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### Post Maintenance Functional Check

30	Conduct Single Car Air Test.	RSS 0061
31	Conduct Full Train Inspection. Brake Holding Test time assuming a 28 wagon rake of wagons.	RSS 0012 TOC Manual General Instruction Pages Section 6.

### Reinstatement Actions

32	1. Certify vehicle for release. 2. Arrange for dispatch of vehicle. 3. Record all maintenance actions. 4. Forward all components for repair/reclamation.	No standard
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### Work Completion

33	1. Remove red flags. 2. Advise Yard Controller of work completion and any outstanding faults. 3. Sign off register book.	No standard
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## 4.2 R2 Inspection Schedule

### Maintenance Preparatory Action

Task ID	Task Description	Applicable Standards
1	1. Report to Yard Controller and sign register book. 2. Obtain safeworking and operational instructions from Yard Controller. 3. Attach red flag to both wagon ends at each end of rake. 4. Release air from all pneumatic systems. 5. Observe all OH&S requirements and work site specific procedures. 6. Clear away all rubbish on vehicle and in bogie frames.	

### Additions to Scope of Work

2	1. Review vehicle history and defect report. 2. Add outstanding defects to schedule scope.	RSS 0021
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### Body - General

3	Examine car body and underframe for evidence of fatigue cracking of structural welds, and evidence of overstressed structural components. Repair as required.	No standard
4	Examine hand brake assembly mounting for security. Repair as required.	No standard
5	Check end float in handbrake operating shaft and ratchet pawl shaft. If end float exceeds 5 mm, repair/replace mounting bracket.	No standard
6	Check handbrake operating shaft mounting bracket fasteners are tight. Replace loose fasteners with new bolt, nut and spring washers.	No standard
7	Examine all underframe air pipe saddles for security of attachment. Replace/repair as required.	No standard
8	Examine all underframe air brake equipment support bracket welds for fractures. Repair as required.	No standard
9	Examine access steps for tread weld fractures and impact damage. Repair as required.	RSS 0020
10	Examine access step mounting for security. Repair as required.	RSS 0020
11	Examine external grab rails for security. Repair as required.	RSS 0020
12	Examine all grab rails and guard rails for impact damage. Repair/replace as required.	RSS 0020
13	Examine wagon deck for corrosion damage that may result in a trip hazard. Repair or replace deck plates or expanded mesh as required.	No standard
14	Examine wagon deck for impact damage that may cause a trip hazard. Repair/replace deck plates or expanded mesh as required.	No standard
15	Examine wagon deck plates for weld fatigue that may result in deck plates or expanded mesh lifting causing a trip hazard. Repair cracked welds as required.	No standard

## R2 Inspection Schedule (continued)

### Body – General (continued)

16	Examine wagon data plates for damage/degradation. Replace as required.	No standard
17	Check legibility of railset numbers stencilled to the sides and front of the end bulkhead on jumbo wagons. Re stencil numbers if degraded or damages	No standard
18	Repaint all white areas on steps, grab rails, coupler release levers, brake release lever/chains, hand brake lever and pawl, grade control valve, air brake coupling hose dummy couplings and all other crew operating equipment.	No standard
19	Examine load bolster angle bracket (timber retaining) welds for fatigue. Repair cracked welds or replace missing brackets.	No standard
20	Examine load tensioner and the ratchet and pawl arrangement for evidence of degradation. Repair/replace as required.	No standard
21	Examine stanchion chain, split link and stanchion ring for security and integrity. Repair/replace as required.	No standard
22	Examine waybill clip for degradation, loss of spring tension, damage or loss of security. Repair/replace as required.	No standard
23	Examine "Overhead Wire" warning notices for damage or degradation. Repair or replace as required.	No standard

### Body – Rail Discharge Equipment

24	Examine rail discharge mechanism entry wings and discharge chute for evidence of weld fatigue. Repair all cracked welds.	No standard
25	Examine rail discharge mechanism entry wings and discharge chute for evidence of degradation or damage. Repair as required.	No standard
26	Examine rail discharge mechanism wear plates for wear. Replace any wear plate that is worn through half of the wear plate thickness at any point.	No standard
27	Examine rail discharge mechanism wear plates for fractured welds. Replace cracked welds.	No standard
28	Lubricate the rail discharge mechanism rollers ensuring that the bearings at both ends of the rollers are greased.	No standard
29	Examine rail discharge mechanism roller bearings for evidence of abnormal operation. Replace bearing assemblies as required.	No standard

### Underframe

30	Examine headstock and sole bar welds for evidence of fractures. Repair as required.	No standard
31	Examine draft gear pocket welds for indication of possible fractures. Where fractures are suspected, remove coupler and draft gear and test draft gear pocket for cracks. Repair as required.	RSS 0051

## R2 Inspection Schedule (continued)

### Decals

32	Signwrite all decals and signage relating to operators equipment.	No standard
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### Wheels

33	Examine all wheels for fatigue cracks. Respond according to severity classification of defect.	RSS 0030
34	Examine wheel flange and tread for chips or gouges. Respond according to severity classification of defect.	RSS 0030
35	Examine wheel flange and tread for thermal cracks. Respond according to severity classification of defect.	RSS 0030
36	Examine wheel profile. For arressed, steep, high or thin flanges. Respond according to severity classification of defect.	RSS 0030
37	Check wheel tread for evidence of spalling. Respond according to severity classification of defect.	RSS 0030
38	Examine the wheel tread for evidence of scaling. Respond according to the severity classification.	RSS 0030
39	Examine wheel for evidence of hollow tread greater than 3mm. Card for wheel turn as required.	RSS 0030
40	Examine the wheel tread for evidence of wheel flats (skids). Respond according to the severity classification. Check operation of triple valve. Turn wheelset as required.	RSS 0030

### Bogies

41	Examine the bogie side frame for evidence of cracking paying particular attention to the pedestal. Conduct a dye penetrant test on all suspected cracks. Replace bogie if required.	RSS 0040
42	Examine bogie sideframe for damage. Repair/replace as required.	RSS 0040
43	Examine axle box for evidence of grease leakage. Replenish grease (axlebox bearings only) and ticket for replacement if required.	RSS 0032, RSS 0040
44	Check axle box bearing grease date colour code. Grease bearings if due. Check package unit bearing installation date stamped on the bearing locking tab. If six years have elapsed since the package unit bearing installation date, inspect in accordance with the requirements of RSS 0032 Clause 5.2.	RSS 0032 RSS 0040
45	Examine bogie for any broken suspension springs. Replace as required.	RSS 0043.
46	Check the bogie side bearer clearance is between 10 mm to 14 mm when measured on straight and level track. Where measurements can not be taken on straight and level track check that the combined side bearer clearance is between 19 mm and 29 mm (+/- 2 mm). Repack or replace the side bearer wear pad as required.	RSS 0040

## R2 Inspection Schedule

### Bogies (continued)

47	Examine horn stay for security. Replace any loose bolts, nuts and spring washers.	RSS 0040
48	Examine the king pin for excessive wear or fractures. Replace as required.	No standard
49	Check king casting and queen casting liner for wear against gauge. Repair/replace as required.	RSS 0023 RSS 0040 RSS 0041
50	Examine king casting and queen casting liner for weld fractures. Repair as required.	RSS 0023 RSS 0041
51	Examine friction wedges and pockets for wear. Change bogie if friction wedge is within 1 mm of the condemning limit or friction wedge height is within 10 mm of condemning limit.	RSS 0040 RSS 0041
52	Examine axlebox wear surfaces. Discard axle box housing if wear limits have been exceeded.	RSS 0032 RSS 0040 RSS 0041

### Couplers

53	Examine coupler knuckle, head and shank for fractures. Replace as required.	RSS 0050 RSS 0051
54	Examine yoke casting for fractures. Replace as required.	RSS 0050
55	(Concertina type draft gear only) Examine draft gear assembly for evidence of seizure. Change yoke and draft gear assembly if required. Replace with current design heavy duty draft gear.	RSS 0050
56	Examine all draft gear and coupler carriers for loose bolts. Replace all loose bolts with new bolts, nuts and spring washers.	RSS 0050
57	Examine coupler knuckle and pin for excessive wear. Replace as required.	RSS 0050
58	Replace Murray keys.	RSS 0050
59	Examine draft gear for slack indicating internal wear. Replace draw gear if required.	RSS 0050
60	Examine coupler yoke followers for wear. Replace as required.	RSS 0051
61	Examine draft gear pocket and assembly for evidence of excessive wear. If evident, remove draft gear/coupler assembly, gauge worn pocket surfaces and examine yoke pin and bush for excessive wear. Replace as required.	RSS 0050
62	Examine coupler knuckle return spring. Replace if excessively worn or broken.	RSS 0050 no reject criteria
63	Examine coupler release bar, linkages, mounting brackets for excessive wear, damaged or loose mounting bolts. Repair/replace as required.	RSS 0050 no reject criteria
64	Examine knuckle locking/release mechanism (locking block, thrower and pocket) for excess wear. Replace coupler as required.	RSS 0050 no reject criteria

## R2 Inspection Schedule (continued)

### Couplers (continued)

65	Examine coupler, draft gear, draft gear pocket and carrier plates for detached wear plates, wear plates with weld fractures or wear plates with excessive wear. Repair or replace as required.	RSS 0050
66	Examine draft gear pocket, draft gear, coupler and carrier plates for wear surfaces/wear plates worn below condemning limit. Restore worn wear surfaces if worn in excess of 3 mm. Replace worn wear plates as required.	RSS 0050

### Air Couplings

67	Examine BP coupling hoses for signs of cracking, degradation or excessive wear at end connections. Replace as required.	RSS 0060 RSS 0064 RSS 0066
68	Examine air brake coupling hose dummy coupler on the jumbo or other terminal wagons is fitted and functional. Repair/replace as required.	No standard

### Braking System - Valves

69	Check last overhaul date on triple valve. If 13 or more years have elapsed since last overhaul, or no date can be found, replace triple valve with overhauled unit.	RSS 0060
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### Braking System – Air Reservoirs

70	Inspect all air reservoirs.	RSS 0022
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### Braking System – Brake Cylinders/Slack Adjuster

71	Grease brake cylinder.	RSS 0060
72	Lubricate “J” type slack adjuster thread with dry lubricant. Check operation of slack adjuster. Grease if grease nipple fitted. Replace if excessively worn or failed.	RSS 0060

### Braking System - Handbrake

73	Examine hand brake spider wheel or spindle for damage. Repair/replace as required.	RSS 0060
74	Check free play between handbrake spider wheel and shaft. Build up square on shaft and refit new spider wheel if required.	No standard



## R2 Inspection Schedule (continued)

### Braking System - Piping

75	Clean brake line air strainer. Examine for degradation and replace as required. Westinghouse non relayed systems – combined dirt collector and strainer. Westinghouse relayed systems – supplementary reservoir in-line strainer. Davies & Metcalfe systems – strainer on distributor valve.	RSS 0060
76	(Westinghouse relayed systems only) Change brake line air filter paper element.	RSS 0060 no reject criteria
77	(Westinghouse relayed systems only) Clean brake air line dirt collector.	RSS 0060no reject criteria

### Braking System – Rigging

78	Examine all brake rigging pins and cotter pins, including safety bolt/pin for fracture. Replace as required.	RSS 0063
79	Examine all brake rigging support mounting brackets/bushes for evidence of fractured welds or loose fasteners. Repair fractured welds/replace loose fasteners as required.	No standard
80	Examine all brake and handbrake rigging pins and bushes for wear. Replace all pins and bushes on both the bogie and the wagon as required.	No standard
81	Examine for bent connecting rod (side pull rod) between slack adjuster and dead lever. Replace as required.	No standard
82	Examine bogie safety loop bolt/pin for security. Replace as required.	No standard
83	Examine all brake block for wear. Replace brake block if less than 20mm thick at the thinnest point.	No standard

### Post Maintenance Functional Check

84	Conduct single car air test.	RSS 0061
85	Conduct Full Train Inspection. Conduct brake holding test.	RSS 0012 TOC Manual General Instruction Pages Section 6

### Reinstatement Actions

86	1. Certify vehicle for release. 2. Arrange for dispatch of vehicle. 3. Record all maintenance actions. 4. Forward all components for repair/reclamation.	No standard
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### Work Completion

87	1. Remove red flags. 2. Advise Yard Controller of work completion and any outstanding faults. 3. Sign off register book.	No standard
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## 4.3 Bogie Change Inspection Schedule

Task ID	Task Description	Applicable Standards
1	Check the total bogie side bearer clearance is between 17 mm and 31 mm. Repack or replace the side bearer wear pad as required.	No standard
2	Examine king pin for excessive wear or fractures. Replace as required.	No standard
3	Check king casting and queen casting liner for wear against gauge. Repair/replace as required.	RSS 0023
4	Check king casting and queen casting liner for weld fractures. Repair as required.	RSS 0023
5	Examine bogie safety loop bolt/pin for security. Replace as required.	RSS 0063

## 4.4 Coupler Change Inspection Schedule

Task ID	Task Description	Applicable Standards
1	Examine the yoke pin and bush for excessive wear. Replace as required.	No standard

## 5 Reporting

The following reporting forms are to be completed and sent to the Train Operations Unit:

### 5.1 R1 Inspection:

- Wagon Release Data Sheet
- Freight Vehicle Single Car Air Test Report Sheet

### 5.2 R2 Inspection:

- R2 Assessment Sheet
- R Inspection Report Sheet
- Three Piece Bogie DI Report Sheet
- Out of Course Repair Report Sheet
- Wagon Release Data Sheet
- Freight Vehicle Single Car Air Test Report Sheet

The following forms are to be completed if required:

- Scheduled Maintenance & Component Change Out Sheet

## 6 Reference Documents

### 6.1 RIC Standards

RSS 0001	Minimum Operating Standards for Rolling Stock
RSS 0011	Wagon Maintenance Policy (1996)
RSS 0012	Full train Inspection
RSS 0013	General Train Inspection
RSS 0020	Examination of Steps & handrails
RSS 0021	Carding of Freight Vehicles
RSS 0022	Inspection of Unfired "Exempt" Pressure Vessels
RSS 0023	Securing of Centre Bearings
RSS 0030	Wheel Manual
RSS 0031	Wheel & Axle Reference Manual
RSS 0032	Bearing reference Manual
RSS 0040	Inspection of Freight Bogies
RSS 0041	DI Maintenance of Bogies
RSS 0043	Coil Spring Groups
RSS 0050	Inspection of Drawgear
RSS 0051	Welding Reclamation & Repair of Drawgear
RSS 0060	Air Brake Maintenance
RSS 0061	Single Car Air Test
RSS 0063	Security of Brakegear
RSS 0064	Brake Pipework Sealant Compounds
RSS 0066	Air Brake Hoses