TURNOUT DETAILED INSPECTION – Swing Nose

Location:	**Turnout Number:**	**Equipment No.:**	**Kilometrage:**
Inspector Name:	**Date:**	**Work Order:**	**Track:**

OVERVIEW INSPECTION These tasks apply generically to all points and crossings assemblies					
ELEMENT	**MEASURE**	**COMMENT**	**CONDITION**		**RESPONSE**
Component Damage			Any component loose, missing or broken.	A6	Increase monitoring, prioritise repair
Track geometry, Pumping in Critical Areas			5 – 20 mm	A6	Increase monitoring, prioritise repair
			20 mm or more	A6	Increase monitoring, prioritise repair
Track Geometry, Overall Condition			Visible deterioration	A6	Increase monitoring, prioritise repair
			Single Measured defect	-	ETS-05-00 5.4 table 5-15
			Multiple measured defects	-	ETS-05-00 5.4 table 5-15
Bearers and Fasteners, Ineffective in Critical Areas			1	A6	Increase monitoring, prioritise repair
			2 consecutive	A3	40 km/h TSR until repaired
			> 2 consecutive	A1	10 km/h TSR until repaired
Bearers and Fasteners, Overall Condition			< 20% loose clips, screws or spikes, timbers degraded	A6	Increase monitoring, prioritise repair
			Pads and insulators skewed some fasteners missing 1 in 4 timbers deteriorating	A6	Increase monitoring, prioritise repair
			> 50% loose clips, screws or spikes, 1 in 3 timbers degraded missing fasteners	A6	Increase monitoring, prioritise repair
Ballast, condition and profile			Fines on surface. Ballast shoulder reduced.	A6	Increase monitoring, prioritise repair
			Trapped moisture, mud and track pumping. Ballast low, ends of multiple bearers visible.	A6	Increase monitoring, prioritise repair
Ballast, Excess			Ballast < 25 mm from moving parts. Ballast loose on sleepers.	A6	Increase monitoring, prioritise repair
			Ballast touching moving parts or ballast obstructing inspection of fasteners. Ballast fallen into trough.	A6	Increase monitoring, prioritise repair

OVERVIEW INSPECTION These tasks apply generically to all points and crossings assemblies					
ELEMENT	**MEASURE**	**COMMENT**	**CONDITION**		**RESPONSE**
Rail, Creep			Any of below Misalignment at heel Signs of rail movement Blade up out of square. Greater than 15 mm clearance of moving drive locking and detection equipment from fixed parts. Anti creep device not correctly positioned for current rail temp	A6	Increase monitoring, prioritise repair
Rail, Condition			Irregular contact band. Minor RCF, wheel burns or top / side wear. Evidence of bent rail. Severe RCF likely to interfere with Ultrasonic testing. Advanced wear. Corrugations. Other rail defects requiring a response.	A6 A6 A6	Increase monitoring, prioritise repair Increase monitoring, prioritise repair Increase monitoring, prioritise repair
Rail, Remaining Head Height			35mm to 26 mm 24 to 26 mm and without defect per Section 1 Rail Head height defect	A7 A6 -	Routine scheduled inspection Increase monitoring, prioritise repair Section 1 Rail

POINTS INSPECTION					
ELEMENT	**MEASURE**	**COMMENT**	**CONDITION**		**RESPONSE ACTION**
Switch Opening, actual	LEFT		85 mm to < 95 mm	A6	Increase monitoring, prioritise repair
			80 mm to < 85 mm	A2	20 km/h TSR until repaired
	RIGHT		< 80 mm	A1	10 km/h TSR until repaired
Track gauge (at the switch tip)			≥ 1456 mm	-	Assess as per ETS-05-00 Table 5-15
			1445 mm to < 1456 mm	A6	Increase monitoring. Prioritise repair
			1430 mm to < 1445 mm	A7	Routine scheduled inspection
			1427 mm to < 1430 mm	A4	60/65 km/h TSR until repaired
			1425 mm to < 1427 mm	A2	20 km/h TSR until repaired
			< 1425 mm	A1	10 km/h TSR until repaired
Back of switch blade to opposite switch gauge face at tip	LEFT		1360 mm to < 1365 mm	A6	Increase monitoring. Prioritise repair
			1365 mm to < 1370 mm	A2	20 km/h TSR until repaired
	RIGHT		≥ 1370 mm	A1	10 km/h TSR until repaired
Back of switch blade to opposite switch blade at supplementary drive or stretcher, measurement	LEFT		1370 mm to < 1380 mm	A6	Increase monitoring. Prioritise repair
			1380 mm to < 1390 mm	A3	40 km/h TSR until repaired
	RIGHT		1390 mm to < 1400 mm	A2	20 km/h TSR until repaired
			> 1400 mm	A1	10 km/h TSR until repaired
Throat Opening (Back of switch blade to stock rail at the junction of heads)	LEFT		≥ 40 mm	A7	Routine scheduled inspection
			35 mm to < 40 mm	A3	40 km/h TSR until repaired
	RIGHT		< 35 mm	A1	10 km/h TSR until repaired
Switch blade and stock rail condition, metal flow	LEFT		1 mm or more flow	A6	Increase monitoring. Prioritise repair
	RIGHT				

POINTS INSPECTION					
ELEMENT	**MEASURE**	**COMMENT**	**CONDITION**		**RESPONSE ACTION**
Switch blade and stock rail condition, surface condition	LEFT		Visible damage, breakout of cracks, moderate to severe RCF and head checking	A6	Increase monitoring. Prioritise repair
	RIGHT				
Switch Alignment	LEFT		Bends evident, possible previous repair. Gap to switch stops and/or gap switch blade to stock rail through (excepting toe) 5 -10 mm.	A3	40 km/h TSR until repaired
	RIGHT		Bent, gaps greater 10 mm	A1	10 km/h TSR until repaired
Switch blade closed gap	LEFT		1 mm to 3 mm	A6	Increase monitoring. Prioritise repair
	RIGHT		>3 mm	A1	10 km/h TSR until repaired
Switch width at the tip, conventional only	LEFT		3 mm to < 4 mm	A6	Increase monitoring. Prioritise repair
			> 4 mm to < 5 mm	A3	40 km/h TSR until repaired
	RIGHT		5 mm or more	A1	10 km/h TSR until repaired
Switch height at the tip, measured using ARTC switch tip gauge, conventional only	LEFT		> 10 mm to < 12 mm	A6	Increase monitoring. Prioritise repair
			> 8 mm to < 10 mm	A3	40 km/h TSR until repaired
	RIGHT		8 mm or less	A1	10 km/h TSR until repaired
Switch height at the tip, measured with ruler, conventional only	LEFT		> 12 mm to < 13 mm	A6	Increase monitoring. Prioritise repair
	RIGHT		12 mm or less	A1	10 km/h TSR until repaired
Switch Tip Wheel Clearance, undercut only	LEFT		2 mm to > 1 mm	A6	Increase monitoring. Prioritise repair
			1 mm to > 0 mm	A3	40 km/h TSR until repaired
	RIGHT		0 mm or less	A1	10 km/h TSR until repaired

POINTS INSPECTION					
ELEMENT	**MEASURE**	**COMMENT**	**CONDITION**		**RESPONSE ACTION**
Switch blade damage	LEFT		100 mm to < 200 mm	A6	Increase monitoring. Prioritise repair
	RIGHT		> 200 mm	A1	10 km/h TSR until repaired
Stock rail or switch blade gauge wear face angle	LEFT		≤ 22	A7	Routine scheduled inspection
			>22 to < 26	A6	Increase monitoring. Prioritise repair
	RIGHT		26 or greater	A1	10 km/h TSR until repaired
Fixed and pivot heel blocks	LEFT		Cracked	A4/A3	80/90 km/h TSR until repaired Heavy Haul 40 km/h TSR until repaired
	RIGHT		Broken but still effective	A3	40 km/h TSR until repaired
			Missing/Broken and ineffective	A1	10 km/h TSR until repaired
Fixed and pivot heel blocks, bolts	LEFT		Missing/ineffective ≤ 2	A4/A3	60/65 km/h TSR until repaired Heavy Haul 40 km/h TSR until repaired
			Missing/ineffective 3	A3	40 km/h TSR until repaired
	RIGHT		Missing/ineffective >3	A1	10 km/h TSR until repaired
Anti creep device including bolts	LEFT		Loose cracked but effective.	A6	Increase monitoring. Prioritise repair
	RIGHT		Missing/Broken and ineffective	A6	Increase monitoring. Prioritise repair
Rail brace/chair, slide plates and rollers.	LEFT		1 only - Cracked/loose	A6	Increase monitoring. Prioritise repair
			1 only - Broken/Ineffective	A4/A3	60/65 km/h TSR until repaired Heavy Haul 40 km/h TSR until repaired
	RIGHT		2 consecutive - cracked / loose / broken / ineffective	A3	40 km/h TSR until repaired
			> 2 consecutive - cracked / loose / broken / ineffective	A1	10 km/h TSR until repaired

POINTS INSPECTION					
ELEMENT	**MEASURE**	**COMMENT**	**CONDITION**		**RESPONSE ACTION**
Switch Stops	LEFT		1 only - Cracked/loose	A6	Increase monitoring. Prioritise repair 60/65 km/h TSR until repaired
			1 only - Broken/Ineffective	A4/A3	Heavy Haul 40 km/h TSR until repaired
	RIGHT		2 consecutive - cracked / loose / broken / ineffective	A3	40 km/h TSR until repaired
			> 2 consecutive - cracked / loose / broken / ineffective	A1	10 km/h TSR until repaired
Spreader bar			Loose fastenings or worn insulators	A6	Increase monitoring. Prioritise repair
			Missing/broken	A1	10 km/h TSR until repaired
Switch Blade Support	LEFT		Gaps up to >2mm through blade or >1mm at drive points	A6	Increase monitoring. Prioritise repair
	RIGHT				

SWINGNOSE CROSSING (SNX) INPSECTION (ONLY WHERE APPLICABLE)					
ELEMENT	**MEASURE**	**COMMENT**	**CONDITION**		**RESPONSE ACTION**
Crossing nose closed gap	LEFT		1 mm to 3 mm	A6	Increase monitoring. Prioritise repair
	RIGHT		> 3 mm	A1	10 km/h TSR until repaired
Wing rail flare	LEFT		1360 mm to < 1365 mm	A6	Increase monitoring. Prioritise repair
			1365 mm to < 1370 mm	A3	40 km/h TSR until repaired
	RIGHT		≥ 1370mm	A1	10 km/h TSR until repaired
Track gauge (at the crossing nose)	LEFT		≥ 1456 mm	-	Assess as per ETS-05-00 Table 5-15
			1445 mm to < 1456 mm	A6	Increase monitoring. Prioritise repair
			1430 mm to < 1445 mm	A7	Routine scheduled inspection
	RIGHT		1427 mm to < 1430 mm	A4	60/65 km/h TSR until repaired
			1425 mm to < 1427 mm	A2	20 km/h TSR until repaired
			< 1425 mm	A1	10 km/h TSR until repaired
Crossing nose and wing condition, metal flow			1 mm or more flow	A6	Increase monitoring. Prioritise repair
Crossing nose and wing condition, surface condition			Pieces 3 mm or more across have fallen from surface	A6	Increase monitoring. Prioritise repair
Nose Alignment			Bends evident, possible previous repair. Gap to switch stops and/or gap switch blade to stock rail through (excepting toe) 5 -10 mm.	A3	40 km/h TSR until repaired
			Bent, gaps greater 10 mm	A1	10 km/h TSR until repaired
Swing nose protrusion	LEFT		Nose projects beyond running surface less than 1mm, no evidence of flange contact.	A6	Increase monitoring. Prioritise repair
			Nose projects beyond running surface less than 1mm with evidence of flange contact.	A3	40 km/h TSR until repaired
	RIGHT		Nose projects beyond running surface by more than 1mm.	A1	10 km/h TSR until repaired
Swing nose point rail damage			100 mm to < 200 mm	A6	Increase monitoring. Prioritise repair
			> 200 mm	A1	10 km/h TSR until repaired

SWINGNOSE CROSSING (SNX) INPSECTION (ONLY WHERE APPLICABLE)					
ELEMENT	**MEASURE**	**COMMENT**	**CONDITION**		**RESPONSE ACTION**
Swing nose point rail or wing rail gauge wear face angle			22 to < 26	A6	Increase monitoring. Prioritise repair
			26 or greater	A1	10 km/h TSR until repaired
Heel blocks			Cracked	A5/A3	80/90 km/h TSR until repaired Heavy Haul 40 km/h TSR until repaired
			Broken but still effective	A3	40 km/h TSR until repaired
			Missing/Broken and ineffective	A1	10 km/h TSR until repaired
Heel blocks, bolts			Missing/ineffective ≤ 2	A4/A3	60/65 km/h TSR until repaired Heavy Haul 40 km/h TSR until repaired
			Missing/ineffective 3	A3	40 km/h TSR until repaired
			Missing/ineffective > 3	A1	10 km/h TSR until repaired
Anti creep device including bolts			Loose cracked but effective.	A6	Increase monitoring. Prioritise repair
			Missing/Broken and ineffective	A6	Increase monitoring. Prioritise repair
Crossing spacer blocks			Cracked	A4A3	60/65 km/h TSR until repaired Heavy Haul 40 km/h TSR until repaired
			Broken but still effective	A3	40 km/h TSR until repaired
			Missing/Broken and ineffective	A1	10 km/h TSR until repaired
Crossing spacer blocks, bolts			Single or multiple bolts loose yet effective	A6	Increase monitoring. Prioritise repair 60/65 km/h TSR until repaired
			Missing/ineffective ≤2	A4A3	Heavy Haul 40 km/h TSR until repaired
			Missing/ineffective 3	A3	40 km/h TSR until repaired
			Missing/ineffective >3	A1	10 km/h TSR until repaired

SWINGNOSE CROSSING (SNX) INPSECTION (ONLY WHERE APPLICABLE)					
ELEMENT	**MEASURE**	**COMMENT**	**CONDITION**		**RESPONSE ACTION**
Splice joint, protrusion of point of splice			Point of splice rail projects beyond running surface less than 1mm, no evidence of flange contact.	A6	Increase monitoring. Prioritise repair
			Point of splice rail projects beyond running surface less than 1mm with evidence of flange contact.	A3	40 km/h TSR until repaired
			Point of splice projects beyond running surface by more than 1mm.	A1	10 km/h TSR until repaired
Splice joint, surface condition			Pieces 3 mm or more across have fallen from surface	A6	Increase monitoring. Prioritise repair
Rail brace/chair, slide plates and rollers.			1 only - Cracked/loose	A6	Increase monitoring. Prioritise repair 60/65 km/h TSR until repaired
			1 only - Broken/Ineffective	A4/A3	Heavy Haul 40 km/h TSR until repaired
			2 consecutive - cracked / loose / broken / ineffective	A3	40 km/h TSR until repaired
			> 2 consecutive - cracked / loose / broken / ineffective	A1	10 km/h TSR until repaired
Swing nose stops	LEFT		1 only - Cracked/loose	A6	Increase monitoring. Prioritise repair 60/65 km/h TSR until repaired
			1 only - Broken/Ineffective	A4/A3	Heavy Haul 40 km/h TSR until repaired
	RIGHT		2 consecutive - cracked / loose / broken / ineffective	A3	40 km/h TSR until repaired
			> 2 consecutive - cracked / loose / broken / ineffective	A1	10 km/h TSR until repaired
Point Rail Support			No gap or gaps less than 1mm	A7	Routine scheduled inspection.
			Gaps up to 2mm through blade but less than 1mm at drive points	A6	Increase monitoring. Prioritise repair
			Gap of up 4mm or 2mm at drive points	A6	Increase monitoring. Prioritise repair
			Gaps greater than 4mm or greater than 2mm at point	A6	Increase monitoring. Prioritise repair

SWINGNOSE CROSSING (SNX) INPSECTION (ONLY WHERE APPLICABLE)					
ELEMENT	**MEASURE**	**COMMENT**	**CONDITION**		**RESPONSE ACTION**
Point Rail Slide Plate Wear			New no wear up to 2mm	A7	Routine scheduled inspection.
			Wear more than 2mm deep	A6	Increase monitoring. Prioritise repair