

NEW EQUIPMENT & SYSTEM APPROVAL PROFORMA

Ref: 08-08-11-095

Note: the prompts given below are only a guide to the information required for approval. Dependent on the type of equipment or system that requires approval delete any section that is not applicable or include additional information if necessary. **Mandatory** fields are marked with an asterisk (*).

1 Equipment or System to be approved *

DUAL GAUGE CATCHPOINT FOR USE IN 1600 mm / 1435 mm DUAL GAUGE TRACK.

2 Originator *

Name: Frank Lander

Company: ARTC

3 Introduction *

A dual gauge catchpoint is required for the Western Leg of the Port Flat Triangle. The track functions both as an entry/exit for Port Flat Yard for trains travelling to/from Outer Harbour and also as a head shunt for Port Flat Yard. As such this track section would require a catchpoint or derail to protect the ARTC main line.

4 Determination of Need *

The track is on an embankment with acid tanks nearby on the eastern side. The Risk Assessment determined that this was a critical area and therefore a basic derailer should not be used. It was recommended that:

- a dual gauge catchpoint be used to provide positive derailment to the west away from the acid tanks
- there be guard rails through the device to ensure that a locomotive, if derailed, would not fall (approx) 2 m to ground level.

The adopted configuration uses the RH switch assembly of the Type 30 dual gauge turnout with purpose designed checkrail and a fixed point on the LH side to achieve positive derailment with some minimisation of potential for damage of the assemblies in the event of a derailment.

5 Significant Change or Not (as determined by the Manager Standards) *

This change in equipment or system is assessed as **MINOR**

6 Review Panel (as determined by the Manager Standards) *

- John Furness - Manager Standards
- Tim Calver – Standards & Technical Services Engineer
- Ian Domleo – Senior Track & Civil Consultant

7 Safety

The design was carried out by Janus Railway and Civil (Roger Wyatt). The design configuration is based on the existing type 30 dual gauge turnout with a purpose designed checkrail and a fixed point on the LH side to achieve positive derailment.

The RHS of the catchpoint uses existing designs with the geometry as per AN-W51013 and a K-crossing assembly as per AN-W55012. The design has been modified slightly to ensure that a derailed wheelset is dropped before it contacts the continuous guardrail on the common rail side. The LHS also has a checkrail to protect the point of the opposite K-crossing with an extension to carry diverted wheelsets beyond to point of the K-crossing before permitting them to derail. This will prevent excessive damage in the event that the device is used to derail a wheelset.

This means that in normal (non-derailment) operation:

- On the dual rail side the device will function like a standard type 30 dual gauge turnout set for the straight leg
- On the common rail side the device is effectively a straight rail.

A risk assessment in accordance with AS4360 was carried out which resulted in several items being incorporated into the Inspection & Test plan and the Maintenance Plan (both attached).

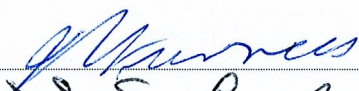

A third party independent design review was carried out by SKM.

8 Performance and Suitability

The Dual Gauge Catchpoint design conforms to the following standards:

ARTC Code of Practice	Section 1 – Rail
	Section 2 – Sleepers & fastenings
	Section 3 – Points & crossings
	Section 5 – Track geometry
	Section 6 – Track lateral stability
ARTC Standards	TCS-06 – Specification for turnouts & diamonds

<p>Australian Standards</p>	<p>TCS-07 – Specification for manufacture of 47 & 53 kg points and crossing components TCS-09 – Mixed gauge track AS1085 Part 1 – Railway track materials – Steel rails AS1085 Part 14 – Railway track materials – Concrete sleepers</p> <p>Design documentation attached.</p>						
(i) Use in other rail networks	N/A						
(ii) Use in the ARTC network	N/A						
(iii) Issues arising from usage of the equipment/system	No impact on train operations or signalling. A detailed inspection and maintenance plan is attached.						
(iv) Changes required to infrastructure or systems for use of the equipment	N/A						
9 Reliability	N/A						
10 Maintainability	<p>Spare parts may be readily fabricated by Transfield points & crossings shop.</p> <p>A maintenance plan has been prepared covering routine inspections, repair of worn component and shop and field assembly.</p>						
11 Approval *	DUAL GAUGE CATCHPOINT FOR USE IN 1600 mm / 1435 mm DUAL GAUGE TRACK.						
12 Conditions of Approval *	<p><<NOTE: Review Panel may add additional Conditions of Approval>></p>						
13 Does the Originator accept the additional Conditions of Approval as set by the Review Panel:	<table border="1"> <tr> <td>Yes</td> <td><input type="checkbox"/></td> <td>No</td> <td><input type="checkbox"/></td> <td>N/A</td> <td><input type="checkbox"/></td> </tr> </table>	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>		

<p>14 Sign off</p> <p>Review Panel:</p>	<p style="text-align: right;">ARTC office use only</p> <div style="display: flex; justify-content: space-between;"> <div>   </div> <div> <p>Date: 2/1/08</p> <p>Date: 19/12/07</p> <p>Date: 18/12/07</p> </div> </div>
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