

NEW EQUIPMENT & SYSTEM APPROVAL PROFORMA

Ref: 14/13535

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 * Martinus Rail Swing Nose Crossing Assemblies for the Hexham Relief Roads and Aurizon LTTSF only
2	Originator * Name: Mark Fulford (mark@martinusrail.com.au) Company: Martinus Rail
3	Introduction * Martinus Rail Swing Nose Crossing Assembly is suitable for all current axle loads and speeds including the Hunter Valley region and is compatible with current turnout assemblies and crossings. This type approval however is for its use for the Hexham Relief Roads and Aurizon LTTSF only. Martinus Rail tangential turnout assemblies with monoblock crossings are type approved ARTC network wide and are suitable for all current axle loads and speeds including the Hunter Valley region (HAL). Ref 12/25688
4	Determination of Need * Martinus Rail will be supplying tangential turnout assemblies using swing nose crossings in the upcoming Hexham and LTTSF projects. ARTC's current policy for renewing turnouts in the Hunter Valley Coal Network is to utilise Swing Nose Crossing Technology.
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) * <ul style="list-style-type: none">• John Furness - Manager Standards• Will Headon - Project Engineer Major Works Hunter Valley• Gunaratnam Jayakumar - Development Manager (Heavy Haul)• Denis Snowden - Work Health and Safety Advisor• Jess Tai - Track Engineer
7	Safety The design of the turnout assemblies complies with the following ARTC specifications <ul style="list-style-type: none">• ETA-03-03 Technical Specification for Manufacture of Components for Points and Crossing Structures• Section 3 – Points and Crossings – CoP Section
8	Performance and Suitability The swing nose crossings are similar to that of other manufacturers and are in accordance with ARTC specifications as listed above. The turnouts are approved for the following standard configurations: <ul style="list-style-type: none">• 60kg – 1 in 15 Crossing Rate - 500m Turnout Radius• 60kg – 1 in 12 Crossing Rate – 300m Turnout Radius• 60kg – 1 in 12 Crossing Rate – 500m Turnout Radius The turnouts will be produced from UIC60 head hardened rail and suitable for the following axle loads and speeds in the Mainline direction: <ul style="list-style-type: none">• 20 TAL @ 160 km/hr• 25 TAL @ 115 km/hr• 30 TAL @ 80 km/hr• 32.5 TAL @ 80 km/hr Maximum speeds on the Diverge for all axle loads are: <ul style="list-style-type: none">• 45km/hr for the 1:12-300 turnout• 60km/hr for the 1:12-500 turnout• 60km/hr for the 1:15-500 turnout Contact band does conform to the standards laid out in ETM-01-01.

<p>The crossing is suitable for both WPR2000 and ANZR1 wheel profiles in both new and worn condition.</p> <p>Turnout assemblies and crossings are interchangeable with current assemblies from other suppliers.</p>						
<p>(i) Use in other rail networks</p> <p>Martinus Rail have provided 60kg rail Swing Nose Crossing turnout assemblies in Perth and Europe.</p> <p>Martinus Rail have provided an email excerpt referring to independent inspection of Martinus Rail 1:12 tangential turnout assemblies with SNC assembly on the PTA Network in Perth.</p>						
<p>(ii) Use in the ARTC network</p> <p>Swing nose crossing assemblies are currently in use in the ARTC network from other SNC manufacturers</p>						
<p>(iii) Issues arising from usage of the equipment/system</p> <p>Martinus Rail is currently investigating maintenance issues with vees caused by wheel load transfer on existing Monoblock crossings. One advantage of the SNC is better wheel load transfer which should avoid these issues.</p> <p>Martinus Rail has also taken on the improvement suggested after PTA inspections and have changed the SNC operating plate design to incorporate a cutout for easier installation and setting.</p>						
<p>(iv) Changes required to infrastructure or systems for use of the equipment</p> <p>Bearers & Rodding to be suitable for SNC.</p>						
<p>9 Reliability</p> <p>Martinus Rail is a proven supplier of high quality turnouts, S&C components and interlocking. Martinus Rail turnouts are designed to give improved wheel rail interactions thus reducing impact and wear on the turnout.</p> <p>Martinus Rail carries consignment stock for some of their components.</p> <p>Martinus Rail shall inspect SNC on site prior to pre-assembly.</p>						
<p>10 Maintainability</p> <p>Martinus Rail's standard supply package includes maintenance manual and a specific training program for the use and maintenance of the SNC. SNCs are compatible with current maintenance regime. Maintenance manual will be provided for ARTC intranet.</p>						
<p>11 Approval *</p> <p>Martinus Rail swing nose crossing assemblies for 1:12-300, 1:12-500 and 1:15-500 standard turnouts are approved for use on the ARTC Network for the Hexham Relief Roads and Aurizon LTTSF only.</p>						
<p>12 Is the supplier accredited to ISO 9001 specifically for this product? *</p> <p>ISO 9001:2008 Certificate No. QEC29920</p>				Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<p>13 Conditions of Approval *</p> <ol style="list-style-type: none"> 1. Items to be installed and maintained as per manufacturer's instructions. 2. Martinus Rail to provide instruction to maintenance personnel on the inspection and maintenance of the SNC, including provision of documentation and a site demonstration, prior to commissioning of the turnouts. 3. The appropriate Construction Method Statement (CMS) or Work Method Statement (WMS) will be prepared by the turnout installer detailing how the turnout will be installed, including lift plan where necessary. The CMS or WMS will be available on site during the construction period and included in handover documentation at the completion of work on site. 4. Martinus Rail to provide ongoing technical support and provision of maintenance manuals for the lifetime of the turnouts. 5. Ellipse shall be updated with the required inspection requirements per EGP-03-02. 6. Prior to its use with a specific manufacturer's turnout and with a specific point motor, a design drawing showing all the components of the turnout, point motor, spherolock and all rodding including all required detailed parts drawings shall be produced and approved as per the engineering design approval process. A copy of the drawings shall be provided to the standards section. 7. Rail and switch & crossing components to be ground for the WPR2000 in areas where this wheel profile is in operation. For areas on the ARTC network where the WPR2000 wheel profile does not operate, the rail and switch & crossing components are to be ground for the ANZR1 wheel profile. In all areas, all components are to be suitable for the relevant wheel profile in both new and used condition. 8. A report is to be submitted by Martinus Rail to the standards section detailing the performance of the turnouts which are to be installed as part of the Hexham Relief Roads and NSW Long Term Train Support Facility (LTTSF) projects. Performance reports are to be submitted at 3 months and 12 months after commissioning of the turnouts. 						
<p>14 Does the Originator accept the additional Conditions of Approval as set by the Review Panel:</p>				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

15	Sign off	<i>ARTC office use only</i>	
Review Panel:			
John Furness	<u>On file</u>	Date:	<u>19/05/2014</u>
Will Headon	<u>On file</u>	Date:	<u>19/05/2014</u>
Gunaratnam Jayakumar	<u>On file</u>	Date:	<u>19/05/2014</u>
Denis Snowden	<u>On file</u>	Date:	<u>19/05/2014</u>
Jess Tai	<u>On file</u>	Date:	<u>19/05/2014</u>

16	Sign off	<i>ARTC office use only</i>	
Review Panel for additional standard configuration:			
John Furness	<u>On file</u>	Date:	<u>20/10/2014</u>
Will Headon	<u>On file</u>	Date:	<u>21/10/2014</u>
Gunaratnam Jayakumar	<u>On file</u>	Date:	<u>29/10/2014</u>
Denis Snowden	<u>On file</u>	Date:	<u>21/10/2014</u>
Jess Tai	<u>On file</u>	Date:	<u>29/10/2014</u>

17	Sign off	<i>ARTC office use only</i>	
Review Panel for update to limit type approval to Hexham Relief Roads and Aurizon LTTSF only:			
John Furness	<u>On file</u>	Date:	<u>15/02/2015</u>
Will Headon	<u>On file</u>	Date:	<u>9/02/2015</u>
Gunaratnam Jayakumar	<u>On file</u>	Date:	<u>10/02/2015</u>
Denis Snowden	<u>On file</u>	Date:	<u>11/02/2015</u>
Jess Tai	<u>On file</u>	Date:	<u>10/02/2015</u>