

## NEW EQUIPMENT & SYSTEM APPROVAL PROFORMA

Ref: 08-08-11-102

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	<b>Equipment or System to be approved *</b> <b>Lock-up Devices for Approach Spans of Bascule Bridge over the Port River</b>
2	<b>Originator *</b> Name: R. Wyatt Company: Janus Railway & Civil for Abigroup Contractors
3	<b>Introduction *</b> The Stage 3 railworks involve crossing the Port River by means of a bascule-type opening bridge with approach spans using three different types of construction. The track on the approach spans is directly fixed to the in situ reinforced concrete deck slabs. Longitudinal forces in the approach structures arise from slow-acting longer term thermal effects and from more intense but short duration loads from rail traffic braking and traction.  To deal with longitudinal forces and movements, the approach superstructure has movement joints and a mixture of pier and bearing types and the track fixing system contains a mixture of fastenings providing either full longitudinal restraint or zero longitudinal restraint (ZLR). The rationale is explained in Section 7.5 of the Maunsell Design Report.  The articulation system is designed so that long-term longitudinal forces and movements are resisted by a few "fixed" piers and the short-term peaks from braking and traction are shared over most of the remaining piers. At these piers, Lock-up Devices (LUDs), more appropriately described by their manufacturer as Shock Transmission Units (STUs), protect the pot bearings on them by providing a direct load path between span and pier.
4	<b>Determination of Need *</b> The lock-up devices are an integral part of the bridge structural design. The device is new to ARTC but is in widespread use in rail and road bridges in various parts of the world.
5	<b>Significant Change or Not (as determined by the Manager Standards) *</b> This change in equipment or system is assessed as MINOR
6	<b>Review Panel (as determined by the Manager Standards) *</b> <ul style="list-style-type: none"> <li>John Furness - Manager Standards</li> <li>Matt Hart – Delivery Manager SA / WA</li> <li>Peter Prasad – National Bridges and Structures Engineer</li> </ul>
7	<b>Safety</b> There are no known ARTC or Australian Standards relevant to safety issues with these devices.
8	<b>Performance and Suitability</b> Refer to attached performance and suitability summary.
(i)	<b>Use in other rail networks</b> Refer to attached performance and suitability summary. The supplier contact details are available on their website at <a href="http://www.jarretstructures.com">www.jarretstructures.com</a>
(ii)	<b>Use in the ARTC network</b> None known
(iii)	<b>Issues arising from usage of the equipment/system</b> Refer to attached maintenance plan. The device requires no maintenance other than routine inspection, occasional cleaning and attention to corrosion protection.
(iv)	<b>Changes required to infrastructure or systems for use of the equipment</b> No changes necessary
9	<b>Reliability</b> N/A
10	<b>Maintainability</b> Refer to attached maintenance plan. Inspection and maintenance activities can be incorporated into normal bridge inspection and maintenance activities.

11 <b>Approval *</b>						
The device, identified as Jarret Structures Shock Transmission Unit Type AB1500-440J, should be approved for use anywhere on the ARTC system.						
12 <b>Conditions of Approval *</b>						
The units should be installed in accordance with the manufacturer's installation recommendations. Any subsequent replacement should be undertaken under specialist engineering direction to ensure action consistent with the bridge designer's intentions.						
<<NOTE: Review Panel may add additional Conditions of Approval>>						
13	<b>Does the Originator accept the additional Conditions of Approval as set by the Review Panel:</b>	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	N/A <input type="checkbox"/>

  

14	<b>Sign off</b>	<b>ARTC office use only</b>				
	<b>Review Panel:</b>					
	John Furness	Date: 08/04/08				
	Matt Hart	Date: 09/04/08				
	Peter Prasad	Date: 08/04/08				

