

# PROJECT SHEET

## RUSSELL RIVER AND JOSEPHINE CREEK BRIDGE BEARING REHABILITATION

### PROJECT SUMMARY

**Client:** Queensland Rail

**Location:** Innisfail

**Duration:** 8 Months

#### Major Challenges Overcome:

- Lead Paint
- Heavy Rainfall
- 1,500 Kg Bearings
- Access
- Limited Work Time

### *The Project*

Queensland Rail (QR) engaged Dynaciv to carry out the abrasive blasting and epoxy coating of 16 steel bearings. Eight of the bearings were fixed and the other eight were expansion. The bearings were coated in a lead paint which was deemed hazardous.

The bridges are in Innisfail, one of the wettest areas in Australia! We mobilised in April, while it was raining, and unsealed farms tracks made access very difficult.

After removing the lead paint on most of the bearings, we learnt that the expansion bearings had suffered from too much corrosion and needed to be replaced.

All eight of the expansion bearings were then replaced.

### Access Road



The revised project scope comprised of the following work:

- Blast and epoxy coat eight fixed bearings
- Design and install eight expansion bearings

The photo below shows the state of a typical existing bearing. Note the snapped keeper plate.

### Existing expansion bearing



## Completed Works

The following works were successfully carried out:

1. Blast and pain of existing fixed bearings
2. Design of new expansion bearings
3. Jacking and replacement of the bearings (done in between trains)

## Abrasive blasting and Coating

The existing coating was found to be a lead-based coating and thus the product was considered a hazardous paint project. A Lead Management Plan was prepared, and this required the dust to be collected and correctly disposed of. Below is a photo of the duct collector used.

### Dust collector



### Walkway to Pier 2 showing scaffolding, ducting and encapsulation.



## Bearing replacement

After the blasting was done, we noticed the poor condition of the current expansion bearings. See photo below

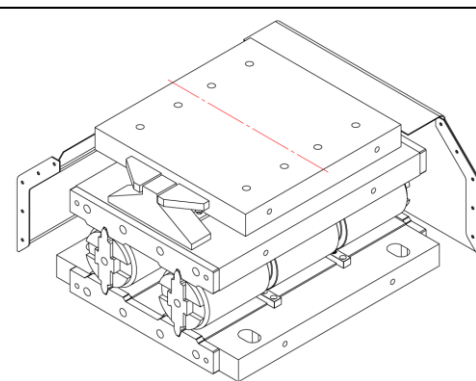
### Expansion bearing after blasting.



## Design

The bearings were made from a high-grade stainless steel with a high hardness requirement. They were equipped with covers to help keep them clean.

A sketch and photo of the new bearing is shown below

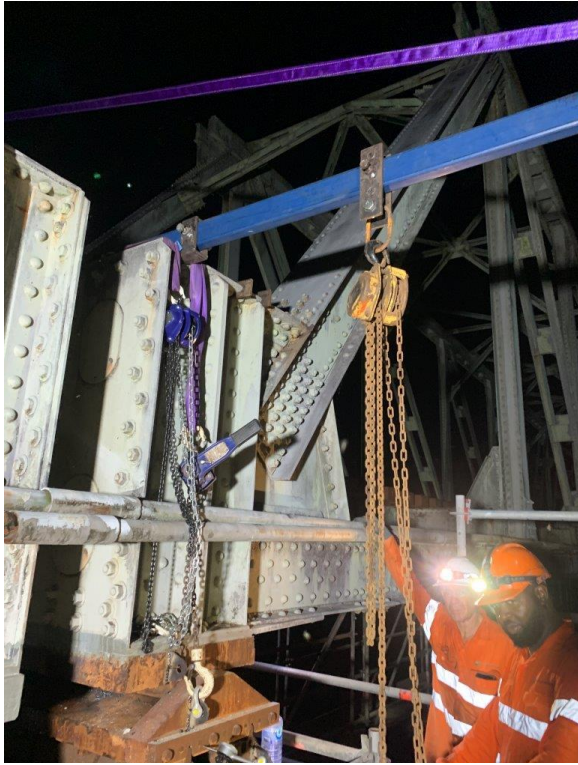




Removing the existing bears was tedious as there was no opportunity to use a crane at the Piers. We therefore had to construct a “Jim pole” to create a cantilever to allow us to lift the bearings and move them to the scaffolding.

The project was difficult and had many restrictions. It was risky to move the 1.5 t bearings back and forth on the scaffolding and install them in the limited closure periods. However, Dynaciv successfully installed all 8 bearings without any significant delays.

**Photo showing Jim Pole**



The bridge ends were lifted using four 55 t jacks (two at either side)

**Photo showing two 55 t jacks setup below the cross girder.**

