

Transport SA

Rapid Bay Jetty

Structural Assessment Report

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5. CONCLUSIONS

The structural capacity of the jetty is limited by the capacity of the existing elements; deck, bearers, steel stringers, steel crossheads and timber piles. The maximum wheel loads available are as summarised in Table 5.1.

Table 5.1 Allowable Wheel Loads

Element	Wheel Load Tonne	Comment
Single deck plank 225 x 75 tallow wood	2.7	Load per plank. Dual wheels would increase this to 5.4 tonne
Cross beam 225 x 150 ironbark	3.0	
Stringer, 4.47 m span, 330 x 125 TFB	4.5	Corroded, drilled hole, two spans
Stringer, 9.35 m span, 330 x 125 TFB	1.0	3.5 m wheelspan, front wheel load 0.6 t
Crosshead, 2 x 300 x 88 channels	7.0	Corroded, one span
Piles 450 diameter timber	140	Based on full diameter, full length (ie new pile)
Piles 200 diameter timber	2.2	Conservatively based on 200 diameter for full length
Piles 250 diameter	6.5	Based on 250 diameter for full length

In summary, for **Bents 1 to 26**, assuming a dual wheeled vehicle, the cross beam would govern, resulting in a maximum 3 tonne wheel load or **6 tonne axle load**.

At two specific locations (Bents 27 and 32) where pile bents are ineffective, the stringer governs, resulting in a maximum 1 tonne wheel load or 2 tonne axle load. This limitation could be removed by repair of the piles.

For **Bents 28 - 80**, the piles govern generally (except for the steel piles at every fifth bent which are not limiting), resulting in a maximum wheel load of 2.2 tonne or axle load of **4.4 tonne**. This could be increased by repair of the piles.

In the machinery bays, the deck and cross beams govern as for the approach jetty. This limitation could be increased or removed by the use of outrigger spreader plates or beams between crossheads.