

The Port Waratah Coal Service Kooragang Expansion

The Project

Bechtel Australia was the construction managers responsible for the installation and alignment of more than 5 kilometres of coal conveyors at the PWCS Kooragang Expansion Stage 3 in Newcastle Australia.

Pre-fabricated conveyor sections were delivered to the site and erected onto concrete trestle supports. Individual conveyor idlers (rollers) are required to be surveyed into position both horizontally and vertically within a tolerance of plus or minus 2mm to provide very accurate tracking of a high speed conveyor belt carrying 10,500 tonnes of coal per hour to the ship loader.

A similar horizontal and vertical alignment tolerance is required for the module mounted ship loader tripper rails over the length of travel along three contiguous berths of 350 metres each.

The Challenge

Project Survey Team Manager, Andrew Baker, was responsible for providing safe access to enable this alignment survey and mechanical adjustment to proceed.

Our Solution

Andrew Baker used the three sided configuration of the conveyor assembly and its design function for providing longitudinal transport to provide a mobile work platform tagged the "boat".

The preliminary plan was the culmination of client liaison, measurements of typical sections and idler spacing. This plan was presented to the Bechtel Field Engineering Manager, Rob Payton and the Client Project Design Manager, Owen Scott. Our engineering professionals tested the theory behind this concept and Rob Payton did the engineering drawings.

Port Hunter Fire & Fabrication constructed the lightweight aluminium structure with central anchor point for harness connection, central pin locking to retain platform against central idlers and end point safety rails. Four point lifting lugs enabled easy attachment to mobile crane hooks for lifting onto position on the selected conveyor, and careful sizing of platform facilitated usage on the variety of PWCS conveyor profiles.

The Implementation

The platform was launched and field tested. The operations have exceeded engineering design standards and workforce expectations. All safety locking, movement and control systems have proved to be successful.

As well as an operations triumph, this project was also a financial success story. Within the first seven days of operations, the efficiency improvements covered the cost of fabrication and development.

The benefits of simultaneous access for both survey alignment and mechanical adjustment from a safe mobile platform was the culmination of a high benchmark in professional team achievement.



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