

our expertise

The Motor Control Specialists



*simply
reliable*

Case Study: Container Crane Refurbishment

45 tonne Paceco Container Crane

Port of Hull

Features and Benefits

- **Improved production**
- **Smooth load control**
- **Improved safety**
- **Ease of fault finding and repair**
- **Improved customer satisfaction**
- **Increased reliability**

The Challenge

The Port were experiencing many problems with the ageing Ward Leonard based control system. This resulted in failures of both the Ward Leonard generator set and the motion drive motors. The cost of repair of these components was inhibitive and the situation was exacerbated by long periods of crane unavailability. Spare parts were becoming increasingly difficult to source.

The Solution

MHAI, together with our crane mechanical engineering partner, won the contract for the upgrade of two container cranes. A major component of the refurbishment involved the replacement of the electrical control systems. Siemens was selected as component supplier to match equipment installed on other cranes.

The design, manufacture, testing and commissioning of the electrical control system was undertaken by MHAI and delivery completed within 14 weeks. The control system was designed and manufactured to current standards and legislation within the companies ISO 9001-2008 quality approved environment.

Key Project Elements

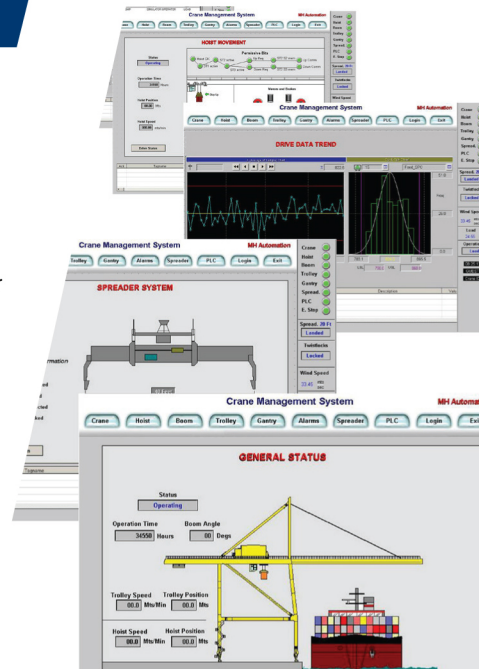
Motor and Drive Technology

- A1 - Remove Ward Leonard generator
- A2 - DC Shunt wound motors
- A3 - Install modern digital closed loop AC-DC converter
- A4 - Smooth control of load
- A5 - Automatic proportional overspeed for lighter loads
- A6 - Profibus link to PLC Control System to display performance data
- A7 - Crane Drive Software provides suitable host motions control



Benefits

- B1 - Integrated PLC control via profibus
- B2 - 12" Colour touch screen HMI display of data and access operational/fault information
- B3 - Positional control via motor encoders
- B4 - Automated sill beam protection
- B5 - Trolley gate safety and security control
- B6 - Service support via installed 3G-sim cards for remote access to PLC/HMI by MHA1 engineers
- B7 - Limits via positional encoders



ISO 9001:2008
Management
System



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