Ainscough Crane Hire

Tagging Heavy Lift Capability

Ainscough Crane Hire is the largest lifting services company in the UK, running a fleet of over 500 cranes with lifting capacities ranging from 10 tonnes to 1,250 tonnes. While it's not easy to lose track of something the size of Ainscough's giant cranes, the company needed a system to control the use of the jib extension sections (or "luffers") that are used to alter the configuration of cranes. With each job needing a different set of luffer sections, Ainscough were seeking an automated solution to track them.

CoreRFID proposed a solution using electronic radio frequency tags to identify each luffer section. This allows the process of capturing records of which section left the depot/was returned to the depot automatically.

The solution was developed and provided by CoreRFID who also sourced robust tags to be used on the heavy luffer sections.

Essential Applications

Leyland is the national centre for Ainscough Crane Hire's Heavy Cranes Division. From here mobile and crawler cranes able to lift up to 1250 tonnes are sent around the country for use on construction, engineering, rail and petrochemical sites. When a crane is despatched on hire it leaves Ainscough's Leyland Depot with a range of items needed to allow it to carry out its lifting task. Typically a crane will have a range of lifting slings and tackle, ballast blocks to counterbalance the jib and large, tubular steel jib sections that allow the reach of the crane to be adjusted. A luffer jib may extend to over 90 metres in length, using 7 metre segments of welded steel tubing. With luffer sections costing thousands of pounds each control of their whereabouts and checking for damage and repair is an important task that can affect Ainscough's profitability and the high level of customer service that they provide.

To provide themselves with a way to check that the luffer sections booked out on a job agree with the list of items required, Ainscough have invested in CoreRFID's CheckedOK application. Using the system, Ainscough fit each of the luffer sections with a compact, robust, electronic tag. The data on this tag can be read using a handheld computer programmed to collect data from tags and through the handheld's touch screen.

Tag in situ on a luffer section

As part of the check out and check in process staff are encouraged to check for any requirements for maintenance and repair and the final configuration for the job is signed off so that the system is able maintain accountability for the correct equipment being delivered to site.

Data from the handheld computer is transmitted to a database server on the customer's own servers (as in this case) or managed by CoreRFID on the customer's behalf. This data can then be accessed directly using a web browser or other software can access it for other applications.

"The solution has completely met our expectations. RFID tagging helps us to ensure we are sending out the exact sections that are required for each job – and enables us to check everything back in to our depots at the end of a job."

Jim Fleming, Depot Manager, Ainscough Crane Hire, Heavy Cranes Division.

Practical Experiences

Ainscough have found that the system provides a practical, low cost solution to their business problem. The installation was carried out in a matter of a few weeks and user training required only half a day before Ainscough were able to start tagging equipment and getting the benefits from the system. So far Ainscough have tagged over 100 crane configuration components, covering luffer extension sections, bottom and top ends and equipment containers. As a result of the success with tagging luffer sections, Ainscough intends to extend the use of the system to tagging counterweight ballasts,hoists and vital components. For these items, bar coding may prove the more practical way to identify items but since the CheckedOK system can support both barcode and RFID tags, Ainscough will be able to use whichever is appropriate.

The CheckedOK System

The Ainscough CheckedOK system uses the M3 portable handheld computer with integral RFID reader. This runs the Windows Mobile operating system and the CheckedOK application. The application displays details of the luffer sections needed for the crane configuration required by a particular contract. As each item is scanned the tag details confirm that it is required and then books it out to the contract.

Data about which sections have been signed out on which contracts are transmitted from the handheld computer using a GPRS link to the CheckedOK database. The same system is used to sign luffer sections back into the depot and details of any damage can be captured straight away so that the repairs can be arranged immediately.

Ainscough handheld software is customised for their needs.

The Benefits

The Ainscough Crane Hire solution provides:

- Automatic identification of jib luffer sections and reconcilation with required configurations.

- Electronic signatures for issued and returned equipment.

- Additional accountability, especially for items requiring maintenance or repair

- Improved accuracy and efficiency over previous manual system.

Over time the system is building up a history for each luffer section, allowing Ainscough depot staff to instantly identify which sections are out on hire and an accurate and up to date picture of which sections are available in the depot.

The system is paying for itself by reduced administration effort, less time lost through incorrect despatch of sections and better availability through improved damage reporting and repairs. Data collected by the CheckedOK system is integrated with the Ainscough hire systems with a single enquiry and reporting system for the depot staff. The overall system combines data from both areas in the way that the depot staff needed to do their jobs. The combined solution take full advantage of the M3's mobile capability, the identification element provided by the RFID tags and the integration possible with today's web based systems.