

Port Of Tyne - Port Logistics & Warehousing

A port has existed on Tyneside for over two thousand years. In modern times the Port has provided export and import solutions for a range of industries, including coal, wool and iron-ore. In recent years, the decline of the coal industry & other macro-economic forces has seen the Port transform itself from an export-import facility to a multi-modal complex offering a one-stop-shop service for all types of cargo. Approximately £50 million has been spent on the port in the past seven years in order to create a value added service to an ever-increasing customer base.

In order to realize the full potential of the Port's service, two key objectives were set, namely the integration and expansion of the supply chain function of the Port, and enhancement of IT systems to deliver up to the minute information to management and customers. Thus the introduction of a sophisticated warehouse management system has enabled the Port's palletized storage facilities to expand rapidly and with the same degree of value added service as other facets of the business.

The Port's Warehouse Division offers storage for a range of products from electrical goods to refreshment snacks, and serves a large area encompassing the North East of England and Scotland.

The fruits of the expansion objective are clearly visible. A new 5600m/sq warehouse, accommodating a VNA (Very Narrow Aisle) racking system, opened recently and, in total, the Port now accommodates five separate warehouses offering 220,000 sq/ft storage space and 23,200 pallet locations. With 4,500 to 7,000 transactions per week, the Warehouse Division operates six Narrow Aisle trucks, eight counter-balance trucks, three reach lift trucks and five power pallets trucks. 140,000 pallets have moved through the Port's storage areas in the past year alone. In comparison, the previous warehouse system provided just 3,500 pallet locations. This system was paper-based and worked in conjunction with standard spreadsheet software. This was a time-consuming process, and potential for error was high due to the reliance upon hard-copy instructions.

Recent expansion has been made possible by the installation of a new state-of-the-art warehouse IT system. The new computer-controlled dispatch and handling system enables full tracking and traceability of palletized stock, and controls the replenishment of picking faces, packing onto pallets and full control of dispatches. The IT system combines ATMS StockTrack PLUS warehouse management software with radio data infrastructure and terminals from UK-based Belgravium. The real-time functionality of the system ensures that increased volumes of cargo handled by the Port are managed effectively and accurately, and the rugged nature of the hardware was essential due to the harsh port environment.

The first phase of implementation involved Belgravium's Radio Frequency system being introduced at three of the Port's warehouses. The driving force behind implementation of the system was the requirement to increase picking accuracy. Implementation was smooth and seamless, and the benefits of the system were recognized soon after implementation; not only was accuracy greatly increased, a more efficient real-time environment was created. Warehouse Manager, Rob Hindes, recognizes the benefits of elimination of paperwork, "RF signals eliminate the problems created by misinterpreted or misplaced paperwork." Thus the same radio system was the natural choice for the second phase of expansion, the opening of the new warehouse.

Containers are discharged at the Port's deepwater terminal and transported to the secure container terminal where toplifters and a reachstacker are used to maneuver each container into its storage position. An advanced booking system then allows customers to schedule the movement of specified containers to the warehouse.

The RF system allows containers arriving at the "goods-in area" of the warehouse to be put away in a timely and organized manner. Each container of stock is broken down into individual pallets which are labeled with a unique barcode. A label printer linked to warehouse management software, the combined ATMS and Progress system, creates the barcode. The barcode label provides a date and time stamp for that pallet and includes information on which area of the warehouse that pallet should be taken to for put-away. Operatives use Belgravium's Geneva hand held RDT (Radio Data Terminal) to scan the pallet to acknowledge receipt.

The pallet can then be moved to the put-away position by use of appropriate warehouse machinery. The warehouse operative receives instructions on each pallet's storage location via either a Belgravium Monaco truck mounted terminal or Geneva hand held terminal. Once the pallet has been moved the operative confirms this on his terminal, and the pallet sits in location. Relocation of pallets, where required, is also governed by the radio data system.

Scanning barcodes eliminates the problems created by the poor spelling or keying errors associated with manual data entry. The real-time nature of the radio system allows all staff to determine exactly where a particular pallet

is at any time as each transaction reported on the terminals is also received at the administrative offices within a sub-second response time. More recently, customers have also been able to take advantage of the stock visibility created by the radio system. 'Webspeed' software integrates the Internet with the radio data system and allows customers to view their stock using a standard browser, a further increase in time efficiency.

The warehouse division receives customer orders via fax and email. Upon receipt the customer order is manually keyed into the system, along with information such as the date the order must leave the warehouse. Orders entered on to the system are allocated against the known available stock levels, and the StockTrack PLUS software is alerted to the existence of an order requirement.

When the order is due for picking, the warehouse management system issues a set of pick instructions for that order. The location of trucks and stock within the warehouse is cross-matched against the scheduled pick and any accompanying priorities. High priority can be added to an order pick via manual entry onto the software system by warehouse supervisors. The truck driver will receive these picking instructions via his Belgravium truck mount terminal. Each pallet is scanned by hand-held scanner before removal from its rack and the driver confirms that this pallet is ready for moving. The driver then informs the terminal when the action has been completed and the pallet is waiting in the outbound dispatch aisle. The pallet is then scanned again as it is moved on to the back of the outgoing HGV, to confirm that the order pick has been completed. This final scan acts as a prompt for the system to automatically issue a Delivery Note and Invoice.

Rob Hindes, the Port's Warehouse Manager comments: "The RF system has transformed the way our warehouse operates and stock throughput is at an all-time high."

Location, capacity, and state-of-the-art technology make the Port a reference site for many companies within the distribution sector. David Clifford, Managing Director of the Port comments: "This drive towards optimal supply chain management has been a major factor in attracting new customers, resulting in increased traffic moving through the Port.

"We chose Belgravium hardware because the company was able to demonstrate a long and credible track record in the manufacture and integration of Radio Frequency systems and the benefits of the system have been clear from the outset. Real-time operation is invaluable, providing complete transparency of our entire operation and ensuring maximum flexibility for both the Port and our customers. We are already contemplating the roll-out of wireless technology to other facets of the business."