



ZEBRA CASE STUDY

Major Food Manufacturer Implements Bar Coding to Reduce Errors of Manual Production Tracking System

Challenge

Tracking production of product in real-time to better organize and optimize shipments, providing the freshest product to the customer's store and minimizing costs in the event of a product recall.

Solution

Bar coding pallets of product as they are produced at each of six locations and updating the Company's Warehouse Management System (WMS) in real-time.

Product

Zebra's industrial, high-performance PAX™ OEM print engines and Industrial/Commercial bar code printers

Through key acquisitions and increased productivity at its six regional bakeries, the second largest producer of cookies and crackers in America needed a better means of keeping track of the thousands of pallets of products being produced each day. The production tracking systems being used at each facility were manual and prone to error. Since each facility had their own "home grown" method for tracking, consolidating data at Corporate was very time consuming. These antiquated systems identified what had been produced but not where product had been stored within the bakeries' internal warehouses, resulting in inefficient staging of shipments and less than full truck load shipments. In the unfortunate event of a product recall, the manual tracking system was of little assistance since it did not accurately track lot numbers or time/date of production. This resulted in the recall of all product produced during one or multiple shifts, which could equate to hundreds—potentially thousands of pallets. Retrieving each of these pallets from the field was extremely costly.

A Zebra Value Added Reseller (VAR) with years of experience in bar coding developed a customized production and inventory tracking system for each of the company's six bakeries/distribution centers. This system would track the location of each pallet of finished goods from the time of production (palletizing), through inventory, retrieval, and loading onto a truck (shipment).

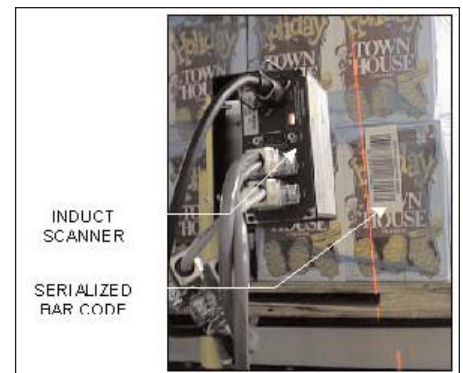
Individual packages of cookies or crackers are created, individually wrapped or inserted into a carton, and then loaded into cases. The cases are conveyed to a palletizer, where they are organized and stacked until a full pallet of product is produced. Each palletizer is dedicated to a particular product for a given shift. At the beginning of each shift, line supervisors enter into the tracking system's PC the product identification number, order number and lot number of each product that is scheduled to be palletized for that shift. Preprinted serialized bar code labels (also provided by the Zebra VAR) are automatically applied to each pallet as it exits the palletizer. These bar codes are immediately scanned by fixed position scanners, which forward the pallet's newly assigned serial number and time/date of production back to the system PC. As the pallet enters the stretch wrapper, the serialized bar code is scanned again.



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The induct scan data is sent to the system PC, which pulls all the pertinent information related to that product including: product ID number, lot number, order number, pallet serial number, time/date of production and bakery ID number. That information is sent to a Zebra 170PAX3™ OEM print engine, where the data is incorporated into a bar code label format, printed and automatically applied to two adjacent sides of the pallet. A swing tamp style printer/applier applies the first label to the side panel of the pallet. An identical label is then printed and applied to the rear panel of the pallet. A duplicate print/apply system located on the other side of the conveyor prints and applies the labels with the same content to the front and adjacent side panel of the same pallet. Identifying all four sides of the pallet ensures that it can quickly and easily be scanned in the warehouse or within distribution.



Immediately after labeling, all four sides of the pallet are scanned by fixed position scanners to ensure that the labels applied match the label scanned at induct and that all four labels match. A forklift operator then transports pallets to a put-away location. The operator uses a wireless data collection terminal to scan the unique pallet identification bar code label as well as the put-away location label to identify where the



pallet is being temporarily stored within the warehouse. All data is immediately transmitted to the Company's WMS, providing real-time information on production, inventory status and stock location. When the pallet is scheduled for shipment staging, the forklift operator retrieves the pallet from the location noted on his wireless terminal. The pallet identification label and dock door identification labels are scanned prior to the pallet being loaded on a truck. Again, this information is transmitted to the WMS to note the new pallet location and status change. The put-away location and dock door identification labels include a unique bar code. These labels are printed on Zebra's 8000T Retroskan material with 5095 ribbon. This label material features a retro-reflective surface, making it ideal for long-range scanning by the forklift operators.

Cost Avoidance

Since this customer can now track the production, inventory location and shipment status of each pallet of product produced at each of six locations, management has significantly more information available to them on a real-time basis than could have ever been possible with the antiquated manual systems. Soon after this system was installed at one location, the customer learned that they had received a batch of ingredients used in one of their products that was being recalled by their vendor. Prior to this system being installed, management would not have any visibility as to the number of pallets or lot numbers of pallets of product included the ingredient in question. This would result in a significant product recall, requiring hundreds, if not thousands, of pallets of product to be returned at the Company's expense. Once they knew the batch number of the recalled ingredient, the new bar code production and inventory control system allowed the customer to pinpoint which specific pallets of product included that ingredient and recall only the effected pallets. This meant significantly fewer pallets needed to be returned, resulting in a huge cost saving. Additionally, the Company was able to quickly communicate the issue to their customers and advise them of their action plan to remove the effected product from the distribution chain.

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Improved Operations and Cost Savings

Additionally, since the Company had better information of what they produced and where it is located in inventory, they were better equipped to organize shipments. This resulted in an increase in the number of pallets per truckload from 47 (two years ago) to 61 with the new bar coding system—a 30% increase! This is a key metrics for the Company since less-than-full-truckload shipments cost them more than full-truckload-shipments. The bar code production and inventory control system has allowed the Company to reduce inventory and distribution costs by more than \$3 million in the first year of implementation.

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