AUTOMATIC
I.D.NEWS
FOR AUTOMATED DATA CAPTURE SYSTEMS USERS

CASE-STUDY OF THE MONTH

Bar codes sew up textile application

Yarn-piece tracking gives textile converter valuable data about product status and location while speeding inventory counts

By John Jesitus, Contributing Editor

In commission textile finishing, the more you know about where customers' orders are in your processing, storage and shipping cycles, the better your ability to track them for both internal and external purposes. It is for this reason that Orion Finishing, a nine-year-old company that turns raw textiles into institutional linens and materials used to make a variety of pants pockets, chose to implement an Auto. ID system three years ago.

"We had at that time in excess of 4,000 to 5,000 pieces of customers' inventory here," explains Mary Almond, the Taylors, SC-based company's vice president. Before implementing bar codes, she says, "The only way we could find an item was to go up and down aisles and look for it."

While inventory was numbered with magic markers and workers generally knew where items were *supposed* to be stored, if anybody moved anything, there was no way to find it short of traipsing through the warehouse with your eyes peeled, Almond says. "And when you start trying to ship under those circumstances," she says, "it becomes a real chore to make sure that you have all the pieces."

Therefore, in the summer of 1991, Orion began looking for a better way. What made Orion finally decide to use bar codes? "It was not only our customers' success; it was watching the industry as a whole be successful in implementing bar coding" as well as the apparent ease with which this method could be applied to Orion's specific needs that influenced the company's choice, Almond says.

Plan developed

After consulting with several customers and Auto. ID experts, a plan was developed for Orion by Montine Blank, the company's administrative developer, to implement an integrated program in phases that would start small and continue to grow with the company. At first, Orion selected an off-the-shelf label-printing solution that it used with Hewlett-Packard laser printers. Despite what Almond calls the "enormous" task of entering all the company's inventory at the time into the system, it worked well for about a year and a half. But, as the company grew busier and its demand for bar codes increased, Orion felt the need to implement the second phase of Blank's forward-thinking concept, and the integration began with the company's Reigel inventory management system program, written by local integrator Datascan. This step required

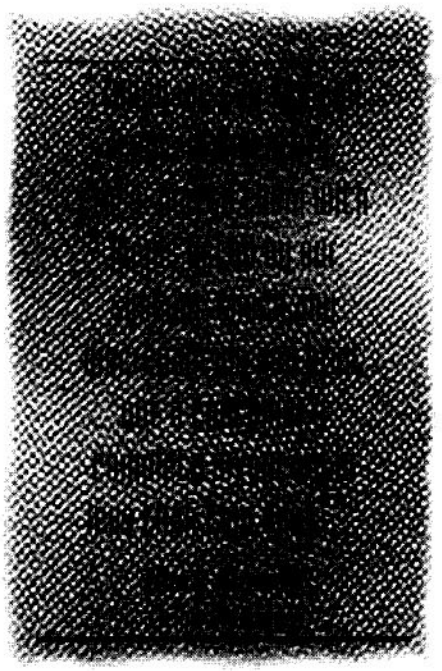
a few changes in the software, but since the Reigel system was designed from its outset to be an integrated system, they proved to be quite simple, says Almond.

Involved with Orion's implementation from the beginning, Datascan played a pivotal role in all stages of the company's upgrade as well, providing first a basic inventory system and eventually adding modules including production and warehouse tracking. "This has allowed us to control our cash flow for equipment and expenditures," Almond notes, while letting the company grow at its own pace and understand exactly what its system needed before moving ahead. As she says, "We just didn't go buying pigs in pokes." The resulting system allows Orion to maintain customer inventories of approximately 8,500 pieces, which represents about five million yards of cloth, while supporting a weekly production capacity of more than 1 million yards.

Comprehensive solution

The new system works like this: For each order, the company receives a lot or shipment from a customer, along with instructions to transform it from the unfinished or "greige" state in which it leaves a mill into the finished state by adding a white pocketing finish, for example. An accompanying lot sheet tells the plant which greige goods to use and what processes, like coloring and finishing, the cloth must go through. At this point, lots are assigned an eight-character Code 39 bar code, the first five digits denoting the lot number, followed by a hyphen and three more digits to distinguish between the various cartons in each lot.

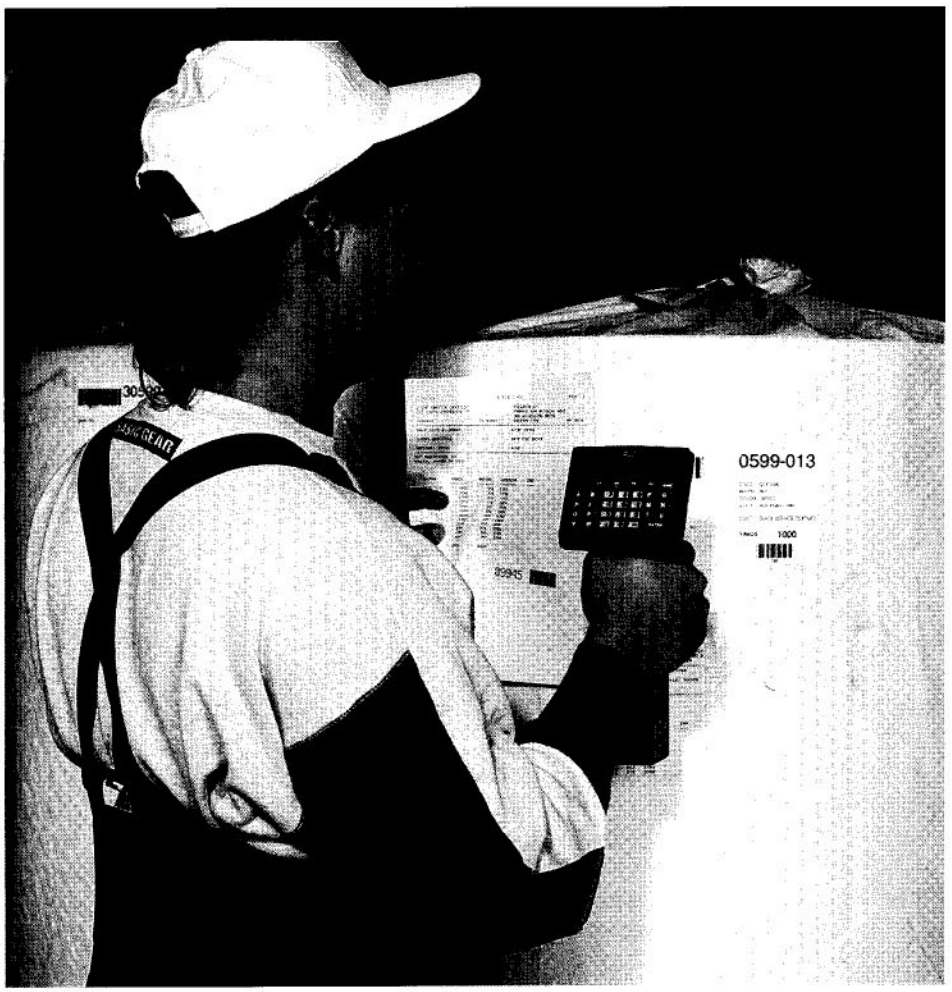
It is in Orion's put-up area, which is where finished goods are put on



rolls and in cartons in accordance with customer specifications, that these codes first come into play. Here, labels printed on a Fargo Prodigy Plus printer located in Orion's office are affixed to each roll or carton, along with a Code 39 weight label, which is printed in the put-up department using a Toledo Scale Model 2191 integrated with a Mettler Toledo model 8865 printer using thermal-transfer labels. These items were supplied by Edgar B. Heape & Son, which also modified the scale by replacing its mechanically operated column with a load cell. This cell registers physical weights in the form of electronic signals that can be converted into digital readings for use by the printers.

Next, the bar codes are scanned by a PSC model 5310 scanner as they move down a manual conveyor belt. The scanner is attached to a Linx data terminal, which downloads label information into the system. And, as packaged goods are taken from Orion's put-up department into its warehouse, they are scanned again with one of three Hand Held Products Laser-Wands, along with bar codes corresponding to the specific warehouse locations in which they're being placed.

Locations, addresses and other information thereby gathered are downloaded into the user's tracking system, which resides on a network of five IBM 386 PCs (one of them functioning as a server)



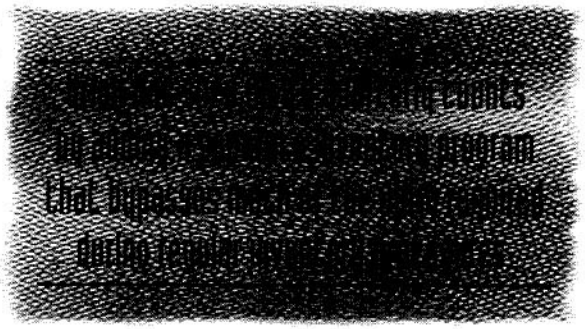
A work-in-process bar code tracking system at Orion Finishing is saving $11,500 in quarterly inventory counts while simultaneously providing more accurate and timely information for customers, shipping department and plant decision makers.

backed up by a Deltec PowerRite uninterruptible power supply. The system then is able to generate information needed to complete lots, as well as invoicing for work done and code numbers of goods placed in warehouse storage, from this data.

When filling orders, for instance, the system allows Orion to generate packing lists on two Hewlett-Packard laser printers. The company's shipping personnel retrieve goods required for each customer's order by scanning item numbers and warehouse locations with the Hand Held laser units. Similar scans also allow Orion to remove any items being released for shipment from its customer-inventory files, although the system maintains separate files so Orion can look up as needed where, when and by whom goods were shipped.

Bar coding also eases the company's quarterly physical inventory counts. Doing this manually used to take a crew of 25 to 30 people about 18 hours, often at overtime rates, says Almond. And punching the information they gathered into a computer so it could be sorted and checked against records of what inventory was supposed to be in each customer's account required another 40 hours' labor, not to mention the 30 or so hours spent correcting any discrepancies. All told, the procedure cost in excess of $15,000 each time.

"Today," Almond says, "we can scan all items in inventory, cross-match them with items listed by our system, check any discrepancies and print out a customer's complete inventory in less than two days using approximately 10 people at a cost probably no greater than $3,500." In fact, she says that the Auto. ID system (which to date has cost the company around $75,000 total) has so streamlined Orion Finishing's operations that the company could not process all the paperwork that it must and keep track of customer goods in the manner in which it does without it.



Ongoing enhancements

The only real problem Orion has encountered to date has been the need for greater stability and easier modifications of its ever-expanding database. Last year, the company converted its Paradox database program, originally written for the Pascal computer language, into a DOS-based Paradox package (made by Borland). The latter, explains Chris Elrod, systems engineer with Brillig Systems who has been involved with the development of Orion's software from the installation's start, is a fourth-generation language that uses built-in coding to modify such elements as how data is presented on user screens.

At the same time, moving Orion's data into an Artisoft LANtastic networking program gave multiple users simultaneous access to it, something the original configuration did not. Brillig also helped the company install a Colorado Memory Systems 250 megabyte tape backup system at this time.

Due to the sheer vastness of Orion's application, Almond explains, "We were losing information" until the integrator transferred the company's records into hardware and software better suited to handle it. Now, she says, "We have unlimited capacity for expansion."

Minor modifications also have been made along the way. For example, instead of using the same software for daily and quarterly inventory, Orion sped up its quarterly counts by adding a separate inventory program that bypasses much of the work required during regular inventory procedures.

More recently, Brillig Systems helped Orion add the capability to automatically produce bills of lading, which contain shipping-related information including lists of finished cartons being released to an end customer. To do this, the user purchased a Datasouth heavy-duty impact printer and an additional Linx data collection unit, and Brillig wrote the necessary software. With the new module, workers can scan goods as they're being released for shipments and generate bills of lading without having to type these documents separately and attach packing lists to shipments. At press time, Orion also had just added Brillig-written software to its bill-of-lading setup to similarly automate invoicing procedures.

And by September, Orion was to begin incorporating EDI 870 order-status reporting capabilities. Beginning with one-way messaging to a single customer in New York, Orion wants to eventually allow all clients access to up-to-the-minute reports on the status of their inventories. With finishing touches like this, Orion's system should really be on a roll. ■

ORION Finishing

FACTS AT A SCAN

User:
Orion Finishing, Taylors, SC.

Application:
Work-in-process tracking.

Technology:
Bar code scanning

Benefits:

- Ability to maintain customer inventories of 8,500 pieces (5 million yards of cloth) while supporting weekly production of more than 1 milion yards of cloth.
- Computer-generated information about completing lots, invoicing for completed work and code numbers of warehoused goods.
- Computer-generated packing lists.
- Items released for shipment are automatically released from customer inventory files.
- Easily find out where, when and by whom goods are shipped.
- Quarterly inventory count done in under 16 hours, with 10 people, at $3,500 cost, vs. 18 hours with 25 to 30 people (at overtime rates), plus 70 hours for verifying and correcting, at total previous cost of $15,000 plus.