



BellHawk® Case Study Jewelry Manufacturer

Company

Manufactures earrings for a nationwide discount department store. Also manufactures earrings for several major nationwide specialty jewelers and earring discounters as well as for hundreds of smaller customers. Annual sales volume is approximately \$18 Million. The company starts with 24 cwt gold, alloys it, then converts this into rod, wire, or tube stock. This is then converted into components such as hoops and clasps, which are then assembled into earrings. These are then carded, packaged into boxes, and shipped to its customers' distribution centers.



Problems

Inventory management

Orders arrive daily by EDI from the company's customers based on consolidated daily cash-register sales. Typically, the company has five days or less to ship out the orders. This is not enough time to make the earrings from raw gold so the company has to maintain a significant inventory on hand.

The earrings typically have a 5 level deep BOM with many common components between different finished goods items. The demand for specific finished goods SKUs varies substantially. As such, the company tries to keep most of its inventory at the WIP level; assembling and packaging the earrings on demand.

The problem that the company was facing was a combination of poor average inventory turns, excess inventory, and frequent stock outs. As is typical in the jewelry business, the gold, silver, and diamond inventory is leased from the bank and not owned by the company. As these are precious materials, the finance charges for carrying excess inventory is very high.

“The company was suffering from both stock-outs and excess inventory at the same time.”

What was happening was typified by a specific incident. A supervisor got in trouble for running out of a specific WIP item, made of gold, needed for a critical job. His reaction was to make about a one and a half years supply of these components so he would not get in trouble again. As a result of incidents such as these, the company was suffering from both stock-outs and excess inventory at the same time. What was needed was a way of controlling WIP inventory so that there was enough on-hand to meet demand at all 5 levels of the BOM and yet there was not excess inventory.

Tracking Materials

Because of the high value of the gold, silver, and diamonds it handles, it is important for the company to accurately track the flow of materials at all times. This includes tracking scrap and gold recovered from operations such as polishing and cyanide etching. Much of this tracking involved recording weights using pencil and paper with subsequent data entry into the computer. This was a slow and error prone process.

There was also a problem in that people would set-aside materials for specific customer shipments. Then other people would borrow from these stocks for other orders. As a result, there would be unexpected shortages in WIP inventory for critical orders.

Tracking Picking, Packing and Shipping

There are often dozens of customer orders being carded, boxed, and packed ready for shipment at the same time. Each order may contain hundreds of different finished goods items. Because of short delivery times, some order line items are being picked and packed while others are still being manufactured. The company was trying to keep track of this using a pencil and paper tracking system. As a result, incomplete orders were often not discovered until it came time to ship them. This resulted in much anguish, expediting, overtime, and short shipments.

Solution

The Company implemented a BellHawk Production and Inventory Tracking System. This included a pull-based inventory management system.

Now, when orders arrive, BellHawk examines finished goods inventory to see what quantities are available. If there is not enough available then BellHawk creates a job to make an economical quantity of the finished goods. This job allocates inventory for its components parts, based on its BOM. If there are not enough parts available, then the system creates further jobs to make economical quantities of the components. These in turn allocate inventory and create jobs until the BOM tree arrives at purchased raw material, when BellHawk issues purchase requisitions to buy more raw materials.

For each inventory item, BellHawk maintains debits for jobs that will use the inventory and

credits for jobs or purchase requisitions that will create inventory. Jobs are created whenever the

“We received two very large orders one week after the other and the factory turned them around effortlessly. We are now shipping product well before the cancel date.”

allocated inventory (physical plus credits minus debits) falls below an established threshold. Components are manufactured in economical amounts that reflect a pre-established trade-off between minimizing inventory levels and producing (or ordering) items in a cost-effective way. Shop floor supervisors no longer have to guess what amounts of which components to make. The system does the calculation for them.

“After only about 2 1/2 months, we’ve already seen a big improvement in our on-hand inventory levels and our ability to prioritize work in process. I’m surprised at how quickly BellHawk has helped straighten out our operations.”

The result of this has been to virtually eliminate stock-outs as well as to more than

double the rate of inventory turns.

The BellHawk system automatically collects the weight of each batch of materials as they transition from step to step in their manufacturing operation. This includes collecting the weight of scrap. These weights are compared with expected weights and used to warn management if there are discrepancies.

At any time, the BellHawk system is tracking the status of

“BellHawk has made our lives much, much easier. This year we should be able to go through our busy season without all the overtime we ran last year.”

many thousands of inventory containers and hundreds of inventory replenishment jobs. Management now has an accurate view of where every inventory item is and how much of what is available is already allocated to

other jobs. This has eliminated the need for special "set-aside" stocks and its attendant problems. BellHawk also gives management warnings when inventory is running low or jobs are running late.

The Company's BellHawk system is tied into the EDI system over which the company receives its orders. As soon as the finished goods are available, these orders are used to generate barcoded pick and pack sheets. These sheets are used to control and monitor the flow of materials from finished goods inventory. As a result, managers and supervisors have real-time visibility of the status of the dozens of orders being assembled at any one time. Problems with incomplete orders can now be spotted well ahead of shipment time and corrected by shifting priorities.

The company uses BellHawk to maintain its perpetual inventory and to compute its value monthly. Accuracy is verified by cycle counting, which has been made much easier by the use of barcodes and automated weighing scales attached to the PCs in the various areas.

After its production and inventory control system was fully operational and shaken down, the company added a BellHawk Time and Attendance module to replace its time clocks, track the labor of its several hundred employees, and to feed its ADP payroll system. The company hires many temporary, part-time, and seasonal workers. BellHawk proved easy to customize to handle the company's special overtime, holiday, vacation, and 401k tracking and compensation rules.

System Configuration

The company has a number of buildings networked together. All the operations work off a single BellHawk database, which uses SQL Server running on an NT Server computer with external SCSI drives in a RAID 5 configuration for reliability. All the tracking is done using PCs equipped with CCD coded scanners, except the PC in the picking room, which uses a cordless scanner communicating to a PC.

