

Toolroom with a view

By Charles Bates, senior editor

Boeing's Tool Services groups control the aerospace company's portable and perishable tooling and supplies. Each day, these groups receive, issue, coordinate, track, and monitor the use and replacement of various tools needed on factory-floor production lines. At the company's Everett, Wash., facility alone, this responsibility involves up to 12,000 transactions on any given day.

To keep Everett and its other manufacturing facilities on the same materials-management page, Boeing uses CribMaster software from WinWare of Marietta, Ga., to improve kitting capabilities and reduce inventory through better control, visibility, and sharing of existing inventory. The Windows-based manufacturing software does these through barcoding, wireless data-terminal devices, and automated tool-retrieval (ATR) units.

Currently, CribMaster is in seven Boeing facilities across the U.S. -- Everett and Renton in Washington state, the two largest sites using it; Mesa, Ariz.; Oak Ridge, Tenn.; Cecil Field, Fla.; Tulsa, Okla.; and San Antonio. Many other sites are scheduled for implementation by year end.

CribMaster consolidates what was once handled by 11 different systems into one. "Boeing's different plant locations are now connected," says Jennifer Halford, project coordinator at WinWare. "Through common item numbering, the company tracks what each site/toolcrib has, and, if needed, transfers items from one toolcrib to another or from one facility to another."

CribMaster's Data Warehouse links every Boeing CribMaster site. The aerospace manufacturer replicates its local inventories and stores the data in the Warehouse. Records now travel with transferred materials, so Boeing can track history, usage, and other pertinent information. Prior to the system, if Boeing sent tools from Everett to Chicago, for instance, Everett had to remove them from its inventory, crate, and ship them. Chicago would then add them to inventory. "With the new system," comments Jim Edwards, business systems manager on the CribMaster project for Boeing Tool Services, "it's like one big factory with a lot of toolcribs."

Along with the Data Warehouse function, Boeing standardizes its supplier contracts by evaluating what each plant is using and how much it's paying. "Everything was done separately," says Edwards. "What one facility did wasn't exactly what another was doing. Each plant negotiated with suppliers on its own, so a Boeing plant on the West Coast, for example, might have paid \$3.00 for an item for which an East Coast plant was charged \$10.00." With the material-usage information supplied by the CribMaster system, Boeing negotiates single contracts so each facility pays the same amount. The system also connects Boeing to its suppliers through a purchasing interface, called SSPM, and allows for multilevel approval and visibility. To generate data, CribMaster incorporates barcoding, wireless handheld devices, and ATRs. Boeing marks its tools with



Boeing improves its kitting capabilities and reduces inventory through better control, visibility, and sharing of existing inventory using the CribMaster software system -- which incorporates barcoding, wireless data-terminal devices, and automated tool-retrieval units.



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either an item or serialized-type barcode -- serialized barcodes let a shop track a tool's calibration dates and other such information.

"Boeing has a lot of regulations concerning the tools it works with," points out Halford. "CribMaster informs the company when its measurement and gaging tools were last calibrated and when they will need recalibrated/recertified."

Boeing toolcrib attendants read barcodes using wireless, handheld devices. They collect, in real time, tool information such as when an item is issued, returned, ordered, or sent to calibration. "Attendants are no longer running back and forth to a computer screen to enter data," says Edwards.

Boeing's Everett facility has some point-of-use, vending-machine-style ATRs for its more critical and difficult-to-track items. Mesa uses the same style ATRs as team toolboxes, and Oak Ridge, along with Tulsa, are also vending-machine oriented.

CribMaster software works with many different types of ATR units. Most have touchscreens for selecting tools, while others require that users scan their employee badge or barcode to check out an item. PC versions of ATRs have a wedge, or tethered, reader that lets users scan badges or barcodes instead of typing the information into the PC.

Boeing's vending units are like small toolcribs containing only certain items. For instance, units in Everett's clean, seal, and paint area control the dispensing of respirators. Mesa, on the other hand, has banks of the machines so machine operators can get the tools they need.

"Before CribMaster," says Cindy Wall of Boeing Commercial Airplanes' public relations and communications department, "workers needing a tool might take as long as 45 min to hunt one down." And with Boeing's recently incorporated moving-line manufacturing-and-assembly system, work stopped until employees returned.

"This doesn't happen anymore," she says, "because everything is pre-kitted ahead of time, so line workers have all the necessary items/tools at their fingertips. If they do need something, it now takes only 5 min because the CribMaster system tells them exactly where it is." According to Edwards, arranging inventory for such point-of-use involves a lot of kitting, and the CribMaster system also features a robust kitting process.

A system just for toolcribs

Jim Edwards is leading the effort to get all Boeing's Tool Services groups on CribMaster inventory-management software. He's part of the company's Commodities Standardization Initiative team consisting of tooling-services managers working to standardize processes used to acquire supplies and materials.

As part of that initiative, managers from 30 toolcrib sites across Boeing met and brainstormed about what they wanted out of an inventory-management system. "We wanted a system that dealt with toolcribs," says Edwards. "We didn't want an MRP, personnel, or accounting system," he adds. "We chose WinWare because its only product was a toolcrib system, and it understood our manufacturing processes."

Boeing's Mesa and Oak Ridge facilities were the first to use CribMaster software. Both incorporated it on their own about four years prior to the Standardization Initiative, and the program gained the attention of team members. At that time, the Everett facility managed its inventory using four different systems and was looking to simplify and standardize to save costs. The other four facilities that now have CribMaster were in similar situations.

"Going from 11 systems to 1 has been a cultural change," comments Edwards, "and we are continually evaluating ways to use the CribMaster system. As far as capabilities, the system provides a lot more than we expected, and we're adjusting to that."

Edwards foresees Boeing's use of CribMaster software growing into other areas. He also predicts an increase in point-of-use vending machines and more interaction with suppliers through the system.