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[eResponse](#)

[Home](#)

[Progressive Distributor](#)

### **Inventory system allows lean tool cribs at Boeing's helicopter plant in Mesa, Ariz.**

Boeing's manufacturing plant in Mesa, Ariz., has established control and accountability in its tool cribs, drastically cut issue and return time for tools, and created an extensive database of crib transactions that is used in the cribs, as well as in purchasing, receiving, accounting and other departments on the campus where Apache helicopters are assembled.

Boeing accomplished this with CribMaster, an inventory management system created for managing tools and inventory in the manufacturing environment. At Boeing, the all-inclusive, Windows-based CribMaster system uses bar coding and a collection of manned tool cribs and point-of-use dispensers to monitor tool inventory and usage, track consumption, issue purchase orders and provide numerous reports at the touch of a button.

"(It's imperative to) electronically track and have instant response, keep track of who's got what tool, where it is. You've got access to all that information in a matter of seconds," says Bruce Briggs, who oversees Boeing-Mesa's six staffed tool cribs and its automated tool dispensers.

Boeing, which purchased CribMaster in December 1997, uses the system to tie together its tool cribs and dispensers, as well as the campus' electrical tool recertification group, the tooling receiving group and the buying group. The result is a faster, more accurate system of keeping track of tools and inventory.

"It is a system that maintains traceability and accountability for required (portable perishable) tooling in the plant," says plant tooling coordinator Clay Lonie.

The system changed the way Boeing's tool cribs operate, making them faster and more dependable than the manual system that had been in place. Machinists in the past signed tools in and out, or attendants entered each tool's number by hand into a computer. Now with bar coding, tools are checked out in seconds using a wireless handheld scanner, and there's less room for

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error.

The process saves time on the nearly 1,000 issues, returns and counts Boeing averages every day.

"It's probably saving at least 20 to 30 seconds per transaction, and that's if somebody was good on the computer," Briggs says.

Additional time is saved tracking down tools that are checked out but are needed by someone else at another machine. Briggs used to spend as much as a half-day calling people and hoping that information about a tool's location was entered into the computer or scribbled on a piece of paper somewhere. Now he checks all six tool cribs in about 30 seconds. Once he locates the tool, he uses the bar code scanner go to where the tool is and check it in, then go to the new machinist and check it out. "It saves hours of time," Briggs says.

The ability to locate tools quickly is the most remarkable change Briggs has seen. Information, tied to the bar codes on Boeing-Mesa's 25,000 different types of tools housed in 26,000 bin locations, supplies the plant's buyers with everything they need to know to keep track of what's in the crib and, using order point data, order and receive supplies.

"The buyer receives this information directly from CribMaster and places the order in almost a paperless system," Lonie says.

CribMaster creates the purchase order using data about suppliers, order numbers, prices, addresses and other necessary information. Not only is the ordering process simpler, but the bin quantities are more accurate because the system's real-time transactions constantly keep track of what's getting used and what needs to be ordered.

When a major part of the Apache assembly process had to be moved from one building to another, Boeing administrators didn't know if the crib in the new building would support the new tasks. In the past, no one knew whether what was in the new building's crib would suffice or how it needed to be stocked. This time, however, Lonie had a report in less than half an hour that showed what had been used in the original crib in the last year, what was available in the new building, and where on the Boeing campus any of the other necessary items could be found.

The cribs weren't keeping any of that information in the past because there was no accountability; attendants knew how much sandpaper was leaving the tool crib, but they didn't track who was

picking it up or how it was used. Accountability saved Boeing money.

"We noticed a decrease in usage," Lonie says, explaining that machinists who used to pick up a few extra inserts or a couple more batteries than needed now have cut out that practice.

Boeing can track such changes using some of the more than 150 standard CribMaster reports or by creating their own documents using Crystal Reports, a report program that integrates into CribMaster.

Lonie asks CribMaster for reports on weekly and monthly spending; about individual jobs, machines or employees; or anything else he needs to know. The reports can be special requests like the changed building, or to ask specific questions like who's using the most safety glasses, where a certain tool get used, what has a certain employee been working on, or where batteries go in early December.

"Through use of Crystal Reports and the database, we can just about answer anybody's question," Lonie says. "You ask a question, the system will answer it."

He also relies on CribMaster's scheduled reports, ones the company chooses to run on certain schedules. For instance, each Monday morning, Lonie receives a report showing which crimpers and strippers need to be certified that week. The report tells who has the individual tool, where it is being used and when it was issued. The information, which is passed to shop floor managers, is useful not only in making sure tools are recertified on schedule, but for meeting the needs of internal and external audits.

It's all about information – and it's all tied to the bar codes on employees' name badges. The codes get scanned when employees pick up tools and when they return them. They're used at manned cribs, as well as at each of the automated cribs stationed strategically around the Boeing shops.

Through a partnership with Remstar International Inc., CribMaster integrates with Remstar automated tool dispensers to provide secure point-of-use distribution points for tools. Boeing has two shuttles, six sentinels, five vending machines and two vending lockers, all of which are close to certain work areas so machinists don't have to walk to a central crib. Some of the dispensers allow items to be returned, and some are for consumables. Machinists check out tools from the dispensing machines using their bar-coded name badges in much the same way as they do at a

staffed tool crib.

The system is updated automatically, as if the transaction had occurred in an attended tool crib. The difference, Lonie says, is that "you're walking maybe 10 feet instead of maybe 300 feet."

As with the attended crib, if a tool can't be found in one of the automated dispensers, CribMaster can locate one.

The ability to use automated dispensers as well as attended tool cribs drew Boeing to CribMaster.

"The reason we went to CribMaster was because it provided a software platform that would operate dispensing and a manual tool crib," Lonie says.

Boeing also knew changes were ahead and that the new system would have to accommodate those changes.

"We didn't want to get into a box with anybody who wouldn't let us grow. With CribMaster, people are constantly finding different ways to use it," Lonie says.

*This article provided by WinWare, makers of CribMaster inventory management products. For more information, visit [www.cribmaster.com](http://www.cribmaster.com).*

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