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- [Archive 2003](#)
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- [Archive 2001](#)

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Vending machines equip mechanics on the shop floor

Crystal Toenjes - Staff Writer

Using vending machines as a way to get leaner might not work in the realm of physical fitness, but when it comes to product support in Bldg. 3001, the approach is improving accountability and saving a lot of money.



Kent Knouse, -135 sheet metal mechanic, takes a pair of gloves from a SmartSource machine in Bldg. 3001. The medium security machines give mechanics access to personal protective equipment and other items used on a regular basis. (Photo by Margo Wright)

“Our goal is to get to the point where everything the mechanic needs is here, and everything that’s consumed on the aircraft and the money that was spent is accounted for,” said Steve Dilbeck, 76th Maintenance Wing Tanker Branch Production Support Unit chief. “The automated vending machine is part of what we call a Lean Support Cell.”

Ten medium and high security vending machines and an unmanned, automated tool crib are already up and running in the maintenance docks of the Oklahoma City Air Logistics Center.

“One important thing we could do is reduce the number of steps they have to take to get the equipment they need out here,” he said.

Mr. Dilbeck said the medium security SmartSource machines contain personal protective equipment such as gloves, safety glasses, coveralls, dust masks, batteries and other items, which they know mechanics will be using on a daily basis.

“We’ve positioned this machine as close as we could to the center spot of two aircraft,” he explained.

To access the items, an employee scans his access card, enters his PIN and makes his selection, explained Doug Williams, Production Support Unit tooling planner.

“You scroll through the menu, select what you need, it unlocks the door and it flashes a light telling them where that item is,” he said. “When you take the item out, you push the button and that’s how our inventory is tracked.”

Users can also get a list of items without having to log in for each separate item. If an item isn’t used, they can bring it back to the machine and restock it. If an inventory check doesn’t match the number of items in the machines, supervisors can go back to the log and see who accessed that area.

Mr. Dilbeck said eventually they hope to stock the machines with preassembled kits or equip it with the software to allow mechanics to scan a work control

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document. The machine would then indicate exactly what items or which kit they needed for that specific operation.

"That way they don't have to second guess; it will just tell them what they need," he said.

Software is also being developed to help track the items as a way to pinpoint the exact cost of returning each aircraft to its owner, Mr. Williams said.

"We've had no real way to show that battery or that tool was used on that airplane," he explained. "If we used a million dollars worth of consumables and expendables and we worked on 50 jets, we would spread it out over those jets. With this system, there is the potential they could scan their work control document and account for every dollar applied to that tail number."

In the sheet metal area a more secure machine, the SmartCrib 2000, is used to dispense items such as drill bits, reamers, rotary files and rotary brushes. The login and selection is similar to the other machines, except only the selected item will be accessible through a small door. About 2,200 of the 2,700 trays in the SmartCrib 2000 are currently in use, according to Mr. Williams.

"The machines won't all be the same because the areas they service don't all need the same thing," he said. "There's a lot of flexibility with these, we can add more of certain items and take others away, all depending on what they need."

Mr. Williams said this machine is physically checked everyday to make sure the items removed have been returned. He said the higher accountability for returning items have significantly tightened the foreign object damage control.

"We still check it, we still inspect it, but it's one more step in safety knowing that it's a clean jet when it leaves here," he said.

The new technology also cuts down on the man hours used for taking inventory because the machines generate restock reports, which can be automatically e-mailed to the vendor.

"A restock report can be sent out daily or hourly," Mr. Dilbeck said. "Or by consumption if we have one day that's busier than another, a restock report will automatically generate when it reaches a minimum level which we set. There's also an emergency level we can set, then it goes straight to the vendor."

Another important piece of this lean cell operation is the VirtualCrib, an unmanned tool cage which also requires mechanics to swipe their card to gain access. Once inside, the employee logs into a hand held scanner with his card and password. They scan the barcode of the item they need and when they are finished with the tool, they return it by using the same process to log it back in.

"At the end of the day if someone didn't turn something in 10 minutes before the end of their shift, an e-mail is sent to a supervisor telling them the item hasn't been returned," Mr. Dilbeck said.

The final piece to this Lean Cell project is a manned chemical issue point near the mechanics work areas.

"We used to have one chemical cage and now we have four, so the mechanic only has to go 20 feet from the aircraft to get what he needs," Mr. Dilbeck said.

Mr. Dilbeck said the overall goal of anything they do is simply to give the mechanics what they need, where they need it and when they need it.

"If you give working people working tools they'll work, if you don't impede them they'll do what they need to get done," Mr. Williams said.