

Case Study

Honeywell goes Wireless

At a Glance

Industry:

Industrial

Market:

Aerospace

Application:

Labor tracking, Work-in-process

Products:

6642, 1800 VISTA, 5020,
MobileLAN, 2100



HONEYWELL

Production process managers at Honeywell's largest aerospace repair and overhaul facility calculate that their initial investment in wireless technology from Intermec paid for itself in less than 90 days and they estimate that the additional cost savings from their new wireless network will be in the millions of dollars.

"By using the wireless network in combination with handheld scanners and Web-based data collection screens, we reduced labor collection issues by 99.6% the very first week we put it in," says Ward Lape, Manager of Supply Chain Systems and Processes for the Honeywell facility.

"Labor is a major cost driver in our shop," Lape explains. "If we collect labor transactions inappropriately, we can't assign them to specific work orders. Instead, the labor costs flow to overhead and become part of the overall burden. It limits our ability to manage cost effectively on a per-product basis. That was the key project that drove the wireless technology. And that has since provided the infrastructure for many other 'digitization' efforts, each with a further return on the initial investment"

Wireless Vision

"Our whole vision and strategy for moving ahead into what Honeywell Chairman and

CEO, Larry Bossidy, calls 'digitization' is based on this wireless infrastructure," says Scott Duncan, Production Process Leader at the Honeywell facility in Phoenix, Arizona. Honeywell is currently engaged in aggressive digitization, productivity, and cost-reduction initiatives to better serve the aerospace industry.

Commonly known within Honeywell as Phoenix Repair & Overhaul (Phoenix RO), the 300,000 square-foot Honeywell facility near Sky Harbor International Airport repairs engine components for commercial, military, and executive aircraft. Phoenix RO employs more than 800 highly skilled associates to manage the timely repair and overhaul of these engines for Honeywell's Aerospace business.

Honeywell associates at Phoenix RO receive propulsion engines and Auxiliary Power Units (APUs) and break them down into component parts that are repaired and overhauled at different cells on the shop floor. Parts flow to numerous work centers on the shop floor and are eventually reassembled as an overhauled engine. They use a variety of wireless bar code scanners and portable computing devices from Intermec to track the parts and labor associated with each work order.

Keeping Up With Data

Phoenix RO had previously used light pens on a hardwired network to gather shop floor data on labor and work in process (WIP), but the hardwired system was unable to keep up with the business demand for real-time information flow. And because there was limited feedback from the light pens for the shop floor workers, data verification was a serious problem. Workers on the shop floor could never be sure they were entering data correctly.

"We generate around 250,000 data transactions a day, and each of these transactions is important in our decision making and process flows," says Duncan. "Our legacy data collection system was 10 years old, and couldn't do the job. The transactions were flying so fast around here that we were having trouble keeping up with the data. We needed real-time information because the batch process wasn't fast enough. Parts could physically move five or six times before the associates on the floor downloaded the data from their batch scanners. As a result, we never knew where those parts really were. We were spending countless hours looking for parts in all the wrong places."

Increasing Velocity

Ward Lape describes the difference with the new system. "With wireless, we're able to provide real-time data collection tools at the point of work. Using a scanner and a web-based data collection screen, we're able to let the user see what he's scanning, see how the data populates each field, and give him written feedback for any invalid data or inappropriate transaction. We can prompt the associate to check with someone and/or redo a transaction correctly."

"The key benefits are two-way data movement, and continuous information," says Lape. "I expect we will save 15% of our associates time in production control and other manufacturing coordination

operations. And continuous information increases the velocity of part movement throughout the shop."

"It also provides a platform for improving processes," says Lape, "because now we can enforce rules with the two-way information flow. When we establish a process using Six Sigma tools, we can then lock it down. For example if a part is to go from point A to point B and it somehow gets erroneously assigned to point C, we can interrupt and disallow that move before it causes a problem."

Duncan agrees, "Every decision we make daily, in our facility is based on data. So data verification at the point of data entry is the key. Now that we can accurately watch parts flow through the shop, it's easier to isolate the bad processes. We can then use the data to reduce the variation that exists within those processes, to a more productive and acceptable level."

New Tools For A Wireless Infrastructure

The workers at Phoenix RO selected a variety of Intermec data collection tools and wireless computing devices. "Intermec has been great about allowing us the flexibility to try a variety of products, prior to procurement," says Duncan. "We tried both laser scanners and CCD scanners and most of our users were more comfortable with the CCDs. They are much more reliable than the old light pens. For the light pens to work properly, you actually had to make contact with the barcode label. Consequently the bar codes wore out and the heads on the pens wore out. The result was bad transactions, and excessive maintenance costs."

"Intermec's Vista CCD scanner allows the user to scan from about ten to twelve inches away, whereas most CCD scanners have to be right on top of the bar code," explains Chris Sarotte, Intermec Systems Consultant on the Honeywell account. "The Vista CCD engine is unique to Intermec. It combines the distance capabilities of a laser scanner with the rugged, solid state technology of CCD."

To provide workers with greater mobility and allow real-time online transactions without wires, Honeywell also equipped Phoenix RO with a number of wireless Intermec 5020 handheld computers. "Honeywell IT staff liked the idea of being able to run a standard Web browser on the 5020 handheld so they could design their own Web-based applications to prompt the users through specific transactions," says Intermec's Sarotte.

"We use the 5020 handheld computers to move parts from location to location throughout the shop," says Duncan. "Initially we were concerned about battery performance, but Intermec brought us a great solution – a flash memory card that maintains all of our settings and configurations on the portable device even when a battery runs out."

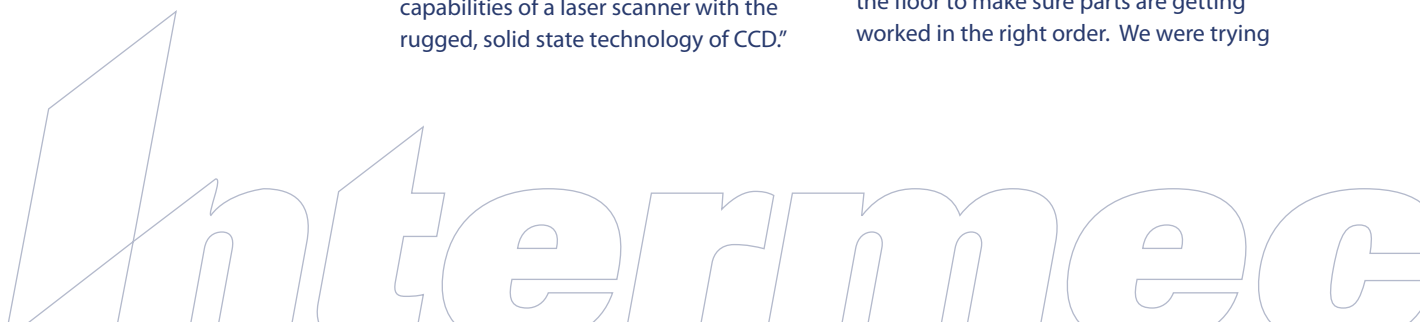
Web Pads

The device that everyone at Phoenix RO seems to like best is the Intermec 6642 Pen Tablet computer. They call it a "Web Pad."

"Because the Intermec 6642 is a standard (Microsoft) Windows-based product with a touch screen interface, it was very easy for them to implement and easy for their end users to adopt and understand," says Intermec's Sarotti. "Honeywell is able to run full-screen browser applications, as well as terminal emulation applications to their legacy mainframe system."

End users appreciate the portability and ease of use. "The thing I like best is that it's online wherever I go," says Lois Peters, a Manufacturing Production Control Coordinator at Phoenix RO who carries a 6642 with her throughout her busy day. "I can tell what's going on at all times."

Honeywell's Scott Duncan explains, "Our production control people are on the shop floor most of their day, and that's where they need to be. They are the most effective when they are moving around the floor to make sure parts are getting worked in the right order. We were trying



to figure out the best way to keep them on the floor, but still allow them to answer e-mails, and provide their feedback to customers. Intermec showed us three or four wireless computing options. Now our production control group uses Intermec's wireless 6642."

The Honeywell staff at Phoenix RO recently used their 6642s to conduct a shop wide physical inventory. "We used to have to write everything down on paper and have it keyed into the computer. Then we moved to scanners and we had to wait while they downloaded," says Peters. "Now the 6642s take the data in immediately and all we have to do is run the report. It really cuts our time. With the old scanners it took us at least two days. With these 6642s, we finished our part in four hours. That was good for all of us."

"Now when production coordinators are out on the shop floor, they can actually do a mini inventory in a specific area to make sure all the parts are clocked to the right place," says Duncan. "If they're not, then they can fix the problem right there. They don't have to walk back to their desk with a hand scribbled note to key the change into the database."

Peters reports that the 6642s are great for getting answers and making decision on the spot throughout the day. "These new 6642s help tremendously in meetings. We can call specific jobs up right then and there. We get the information we need to make decisions right in the meeting, instead of writing down the request and going back to our desks to do the research."

Saving Steps

The flexibility of wireless computing has enhanced productivity in other job functions as well. "In our Hold For Rework area, we store parts that we don't need to rework right way," Duncan explains. "We have about 28,000 rework orders there."

Previously, to retrieve one of those components, they would print out the work order and try to find the corresponding part in a particular bin. Then they would bring the part back to the computer to enter a transaction that released it from their inventory. The wireless network makes that process much quicker. "We created a screen for them to use with their 6642s. Now, they can carry the computer with them to find what they're looking for, then release the part automatically by entering the correct data. It saves 65 to 70% in turnaround time."

Duncan says Honeywell employees have found countless other ways to save time and money with the wireless 6642s. "Now we're rolling out a new Engineering Findings application," he says. "It is a Web-based application. Our shop workers use the 6642s to key in their observations about what's causing problems with an engine. We then use that data to report to the customer regarding the services performed while the engine was in our shop. This data is critical to our customers, and was previously all collected by hand. By using the 6642s, we can bring the data collection capability right to the user, and standardize their inputs."

Extending the Wireless Network

At Phoenix RO, the wireless network is already growing. The nearby Honeywell rework facility for military aircraft engines has extended the wireless network to its own shop floor. It installed Intermec 2100 Access Points and uses both the Intermec 5020 handheld computers and the Intermec 6640 Pen Tablet computers. And now that the Phoenix RO has clearly demonstrated the rapid return on investment, several other Honeywell facilities have expressed an interest in building their own wireless network infrastructure.

Next up in Phoenix, Honeywell is planning to install Intermec access points in nearby corporate offices as well. "As we travel back and forth between buildings we can all get to our data seamlessly from any meeting room," says Duncan.

Of course Duncan carries a 6642 himself. "We can take it to any available room in the facility, hook it up to a projector, and teach anywhere we want. Before we had very few training rooms that were hardwired and I would have to schedule those to get the time I needed. Now, I can train throughout the facility. Everybody loves wireless."

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