



Distribution Center MANAGEMENT

May 2013

Managing people, materials and costs in the warehouse and DC

From the Golden Zone

Hybrid light-voice picking picks up steam

By Chris DeMeo

Pick to light and pick to voice are not cutting-edge technologies in and of themselves. But put them together in a hybrid solution, and picking productivity in ecommerce fulfillment centers can increase by as much as 25 percent while reducing carton errors by more than 20 percent.

The key difference is the hybrid system's ability to allow pickers to pick multiple orders at the same time. Traditionally, light and voice systems have focused on a single order. The instructions come through the system, the picker travels the DC to fulfill the order, then starts on the next one. In the process, the picker may walk by the same bins dozens of times. Not very efficient, especially in ecommerce, where less-than-case quantities are being picked.

With the hybrid approach, pickers can pick the total number of items needed to fulfill several orders at the same time, and then place the correct quantities of each in the appropriate cartons. This process reduces the number of trips pickers make to a given bin or aisle by grouping tasks — which is the way most of us would naturally perform high-volume work if left to figure it out for ourselves.

What took so long to harness the power of light and voice together? The materials handling industry had to wait for advances in wireless

communications, voice synthesis, and voice recognition software. And then it had to wait for the cost of mobile electronics to decrease to make it a smart business decision for DC managers to recommend going with a hybrid approach.

Light solutions have been around for more than 30 years and are commonly used in fulfillment centers around the world. The strength of a light system is that it conveys the simplest of messages extremely well — location and quantity.

The problem is that the information stops there. Yes, some light systems may convey additional information, but those advanced systems also cost more due to the advanced displays that are needed to communicate that premium information.

But that's not the only problem. With the additional information, the people in the DC pay a premium in time as well. A user must read and process the message. And the final challenge is quality — the user who has read and processed the information then has to remember the information that was sent. If it isn't remembered correctly, quality suffers.

Pick to voice, on the other hand, conveys complicated messages in a very effective way, with virtually no limit to message size. For example, a picking message may say, "Aisle 1. Shelf 3. Bin 4.

Hybrid system "allows pickers to pick multiple orders at the same time."

This article was reprinted from the May 2013 issue of *Distribution Center Management*.

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Pick 7 each.” The user can then confirm each specific location command with an affirmative phrase such as “Ready” once the specific bin or SKU location has been reached. Then the user can confirm the pick by repeating the instruction — in this case, “Pick 7” — and scanning the location or product. The spoken command and scan basically serve as on-the-fly quality control measures.

Sure, the step-by-step method of communicating via voice enables the concise delivery of complicated, multi-step procedures to the user, and removes the memorization challenge from the equation. It can be stunningly accurate as well. But many organizations find that the time it takes to deliver such a message can be cost-prohibitive.

By combining light and voice in a hybrid picking system, however, DCs can get the best of both worlds. Hybrid systems let pickers fill multiple orders at the same time, rather than having to pick and put each order sequentially. Combining order fulfillment in this way helps organizations increase picking rates up to 25 percent — the equivalent of adding an extra person to every eight-hour shift.

These hybrid systems are designed to maximize the speed of information delivery. They can then provide the user with a visual representation of the work — complemented and enhanced by a structured voice environ-

ment that prompts the user to perform the necessary actions required to complete tasks. As a result, it ensures the quality not only of the work that was accomplished, but also of the picking data that is relayed back to the warehouse management system.

The most critical advantage of a hybrid picking system is that it will enable the light system to display aggregate pick quantities that span multiple cartons. This is only possible due to voice-directed put instructions delivered immediately to the person in the distribution center doing the picking.

Another benefit of a hybrid approach is the reduction of foot traffic, a constant challenge in picking operations. Once a user begins scanning cartons, the scanned cartons are assigned a position number by the voice system. When that is completed, the total aggregate pick quantities — across all the cartons for the current zone — are calculated and related to the light system. Since the commands are voice-directed, a pick for any quantity of a SKU can be accurately put into any number of commands, enabling a user to then proceed to another illuminated light, where the user can pick, extinguish the light, and begin the put process all over again.

By taking a hybrid approach, not only is foot traffic reduced through increases in pick density, but picking quality and inventory accuracy improve since errors are reduced due to scan confirmations for each carton put command.

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Distribution Center Management is published monthly by Alexander Communications Group, Inc., which provides news, data and information on key distribution and warehousing topics through its newsletters, books, and website.



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