Selecting the Right Mobile Pick Cart to Support Batch Picking

THREE CRITICAL FEATURES FOR ORDER FULFILLMENT OPERATIONS

LIGHTNING PICK
Matthews Automation Solutions

Introduction: What is Batch Picking?

By definition, batch picking is an order fulfillment process characterized by "groups of orders…picked at the same time to minimize repeat visits to the same product bin location [pick face]."[1] A single order picker travels through the warehouse, selecting items to fill multiple orders during a single trip during batch picking.

Successful batch picking often requires a warehouse management system (WMS) or order management system (OMS) to pre-arrange a group of orders based on shared commonality. For example, all orders that require one or more of the same stock keeping units (SKUs), or all the orders whose required SKU pick faces are located in close proximity to each other. After grouping them together, the system then releases the batch of orders to the picker.

What are the benefits of batch picking?

Filling orders is widely recognized as a facility's "most labor-intensive and costly activity…where the cost of order picking is estimated to be as much as 55% of the total warehouse operating expense."[2]

For most operations, the reason is two-fold. First, many facilities employ single-order picking, where one picker fills one order at a time. Second is travel time, meaning the time it takes a picker to walk from the location where they receive a discrete picking order to the stored SKU's pick face, select the required items, and transport them to the point of shipping. Travel can account for as much as 60-65%[3] of a facility's direct labor activities.

Therefore, batch picking offers a number of benefits, including:

- More orders filled, faster. Because an operator can pick to fill more than one order simultaneously, time is saved over processes that require one operator to fill one discrete order at a time before moving on to the next. Quantitatively, that means "batch picking can boost…pick rates from 60-70 lines an hour for single-order picking to 200 lines an hour or more, depending upon the order profile and the average cubic size of…orders."[4]

- Reduced travel time. Limiting the number of times the worker goes through the warehouse to pick orders automatically translates into an increase in efficiency. "The combined picking of several orders… leads to a total reduction of about 60% in walking time."[5]

- Fewer pickers. Since one picker can fill more orders at one time, labor requirements are reduced. With batch picking, the decrease in total order picking time translates into a reduction in the number of pickers by approximately 19%."[6]

[1]Mark Del Franco, "Batch vs. Wave Picking," Multichannel Merchant, June 1, 2006, http://multichannelmerchant.com/opsandfulfillment/batch-vs-wave-picking-01062006/, accessed May 5, 2014.
[2]Martin Murray, "Order Picking in the Warehouse," About.com Logistics and Supply Chain Guide, accessed October 28, 2012, http://logistics.about.com/od/operationalsupplychain/a/order_pick.htm.
[3]Lee Rector, "Warehouse Slotting," Toolbox.com SCM Blogs, accessed October 28, 2012, http://it.toolbox.com/blogs/warehouse-planning/warehouse-slotting-6655.

How do mobile pick carts support batch picking?

To fill multiple orders at the same time, an operator must be able to handle several picked item receptacles - either reusable plastic totes or cardboard shipping cartons - at the same time. The easiest way to do this is via a cart, outfitted with multi-tiered shelving, which rolls across a warehouse floor on wheels or casters. The shelving carries totes or shipping containers organized in pre-defined positions, one for each unique order in the batch.

Easy to learn and use, the multi-shelf carts combine a variety of technologies that ensure fast, accurate order selection and sortation during the picks. These systems automate batch picking for fulfillment of multiple, one- to two-line orders at the same time. They verify that the correct item and quantity is placed in the correct bin location on the cart. And, because they support batch picks of multiple orders simultaneously, mobile picking carts can dramatically increase picking speed by up to 200%.
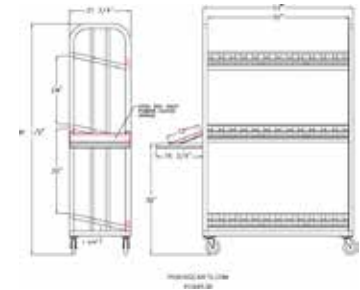
Batch picking with carts also improves worker ergonomics by reducing the number of trips through the warehouse, minimizing fatigue. Further, because they are independent, autonomous equipment, mobile pick carts can automate paper-based batch picking processes without requiring an investment in expensive automated material handling equipment, such as conveyors.

Is batch picking with mobile pick carts right for your operation?

Batch picking, supported by mobile pick carts, can be an effective solution for a variety of operations. These include:

- E-commerce and direct-to-consumer fulfillment.
- Third-party logistics (3PL) fulfillment providers.
- Operations where orders are typically not more than two lines, product sizes are small and 12 to 30 orders can be grouped together.
- Fulfillment operations with a variety of SKU throughput rates that don't fall clearly into high-, medium- and low-velocity profiles.
- Operations that cannot cost justify automated picking technology installation for medium- and low-velocity SKUs.
- Facilities that cannot cost justify automated picking technology installation at every pick face location
- Warehouses without conveyor or sorters.

This white paper is intended to help order fulfillment operations identify and understand the key features to consider when evaluating mobile pick carts.

[4]Del Franco, "Batch vs. Wave Picking."

[5]René de Koster et al., "Reduction of Walking Time in the Distribution Center of De Bijenkorf," New Trends in Distribution Logistics, Lecture Notes in Economics and Mathematical Systems Volume 480, 1999, pp 215-234, http://link.springer.com/chapter/10.1007/978-3-642-58568-5_11, accessed May 5, 2014.

[6]Ibid.

## THREE KEY PICK CART FEATURES FOR OPTIMAL BATCH PICKING

The ideal mobile pick cart solution for batch picking in order fulfillment operations can be customized to virtually any size or shape, and with a variety of options, including powered versions for handling heavy loads.
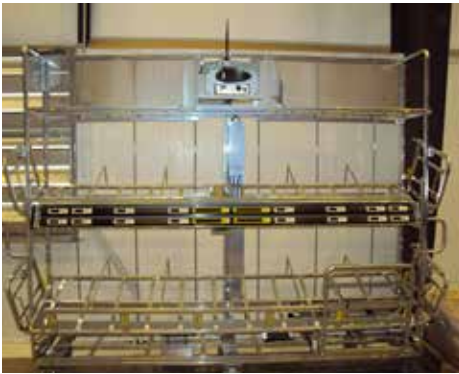
Cart systems should also be flexible and scalable, enabling future modifications to support a facility's growth and changing order fulfillment needs. Look for a supplier who can engineer a new—or retrofit an existing—cart system to include the following key features.

Pick-to-Light/Put-to-Light Hardware

The best mobile pick cart solution incorporates light-directed picking technology. A pick-to-light module is located at every discrete order location on each shelf of the cart. When the picker arrives at an assigned storage area, the cart's light-directed picking modules illuminate to indicate which picked items should be distributed to each bin riding on the cart. (For this reason, pick-to-light on mobile pick carts can also be called put-to-light because the picked items are sorted, or put, into the indicated destination.) The modules also display the required quantity per order.
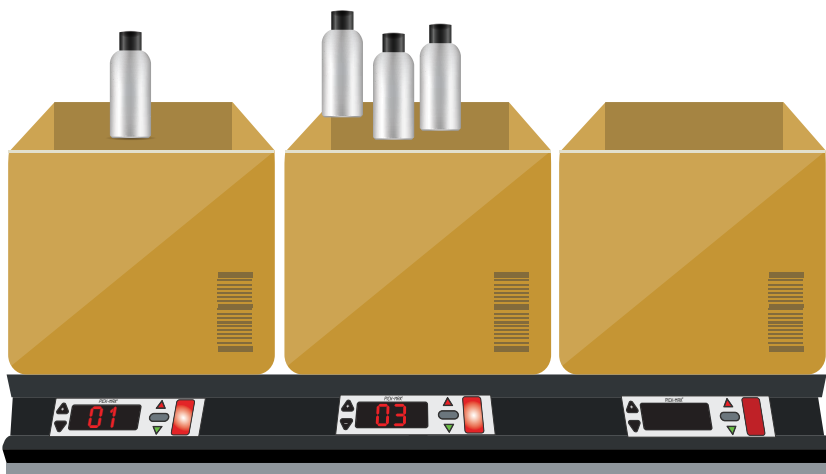
Simply by using pick-to-light hardware, operations can achieve up to a 40% increase in picking productivity and nearly 100% accuracy compared to paper-based picking practices.

Additionally, using cart-based pick-to-light systems instead of installing modules at every pick face supports an unlimited number of SKUs at a dramatically lower installation cost.

Pick-to-Light/Put-to-Light Hardware

The ideal pick-to-light technology includes the following features:

■ **Low power draw**. Mobile pick carts are equipped with rechargeable batteries to provide power to the pick-to-light modules. To minimize downtime and maximize run time between charges, the most effective pick carts are outfitted with light device hardware specifically engineered to use less power—as low as 0.2 watts apiece. The most environmentally friendly devices run for 12 hours or more between charges.

■ **Extended function modes**. Multi-function pick-to-light modules can be installed to provide additional information to the mobile pick cart operator. This includes directions that the box can be sealed when the order is complete, alerts for special packing instructions, lot tracking and data capture requirements, and device status.

■ **Plug-and-play dynamic addressing**. For fast installation and easy replacement should a module become damaged during use, the ideal pick-to-light system's modules snap in and out of a flat track and are immediately recognized by the control system—no factory serial numbers or special programming devices required.

■ **Compact construction**. To maximize the number of order locations on a pick cart's shelves, the ideal provider offers a variety of light module sizes, options and features to accommodate space constraints and unique applications. The most commonly used modules measure 4.5 inches wide and display up to four digits. Particularly useful for operations picking small items, the modules may also combine the "task complete" button with the indicator light for space savings, as well as improved efficiency.

LIGHTNING PICK
Matthews Automation Solutions
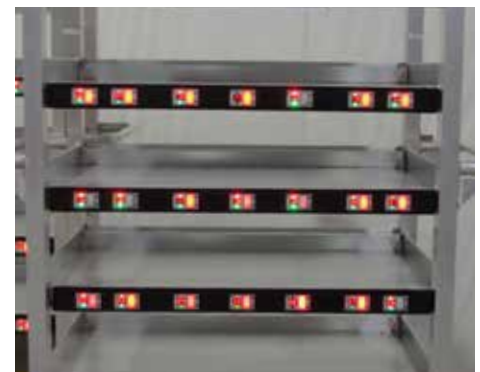
Software

As mentioned in the introduction, a WMS, ERP or other host software typically manages the complexities associated with order batch creation. Once a batch is released to the floor, the ideal mobile pick cart will include the following features to maximize productivity:

- **On-board batch optimization software.** The best mobile pick cart solution utilizes an efficient algorithm, embedded in the carts' batch optimization software, to independently group orders according to pick location proximity. Alternatively, the carts' control software can interface with supporting warehouse systems (if possible) to easily automate batch picking.

- **Wireless, real-time communications.** For the easiest automation of batch picking, the ideal cart control software is powered by a simple, file-based interface that communicates wirelessly in real-time with the facility's host computer system. This continuous communication facilitates even faster picking.

- **Dashboard access to key performance indicators (KPIs).** To help facilities measure and analyze a variety of productivity data, the best mobile pick cart software delivers management-level insights into daily KPIs in real time across the entire facility, or at individual picker levels.

- **Touchscreen tablet interface.** To guide a picker to the correct SKU locations, the most productive mobile pick carts integrate an on-board tablet interface with color LCD touchscreen display and Android operating system. Additionally, this display can provide a visual, graphical indication of the location of a pick face or of a destination location on the cart. For highly sophisticated operations with WMS support, the tablet can also display a photo of the required product to further boost pick accuracy.

- **Real-time cart monitoring for additional productivity.** The ideal software monitors the cart's real-time location in the warehouse (as opposed to assuming the cart is navigating along a pre-determined route). This enables the software to direct the picker to collect additional, single-line pick orders along the travel path—even though individual order containers from the original batch are being filled. Because the software is perpetually adding picks to moving carts, the productivity of every walk through the facility is further maximized. This enhanced functionality is particularly beneficial for e-commerce fulfillment operations, as it supports highly compressed order-to-delivery time.

Automatic Identification and Data Capture (AIDC) Accessory Support

Although the cart's light-directed picking modules provide a highly effective means to match picked items to the orders that require them, the best mobile pick carts support a variety of AIDC accessories to further ensure accuracy. Among these technologies are:

- **Radio frequency (RF) barcode scanners.** Mobile pick carts that support hand-held or fixed-mount RF barcode scanners allow picked items to be scanned. Scanning the product barcode label confirms the right pick has been made, which in turn illuminates the cart's put-to-light module for correct bin placement. The ideal automated cart system can also support optional scanning of location labels, check digits, lot numbers or other bar coded information at the pick face for additional quality control.

- **Voice-directed picking.** The most flexible mobile pick cart systems can be equipped with a speaker to give audible, vocal commands to the cart operator. Information might include special handling instructions, or pick face and aisle location guidance.

- **On-board printer.** Incorporating support for a printer on a mobile pick cart enables an operator to print order and manifesting documents, as well as shipping labels, further boosting order fulfillment productivity.

Conclusion

Now available from Lightning Pick, a line of high-quality mobile pick carts to support batch picking that includes all these key features critical to order fulfillment operations seeking high-quality mobile pick carts to support batch picking. Visit **www.pickcarts.com** to learn more about this unique system and to schedule your in-facility demonstration today.

About Lightning Pick

Lightning Pick (www.lightningpick.com) is a provider of light-directed and advanced order picking technologies. Our best-in-class solutions for picking, kitting, sorting and assembly processes drive increased productivity, accuracy and cost efficiency from production through order fulfillment. Lightning Pick delivers projects on time, on budget, every time so our customers can deliver the perfect order, time after time. Today as part of Matthews Automation Solutions, Lightning Pick customers are part of the largest live pick-to-light user group in the North America. Along with our sister Matthews fulfillment systems brand Pyramid Controls (www.pyramidcontrols.com) we provide:

- Pick-to-Light for Order Fulfillment
- Pick-to-Light for Manufacturing
- Put-to-Light
- Mobile Picking Carts
- A-Frames
- Order Fulfillment Execution Software
- Warehouse Control System
- Conveyor, Sorter and other Material Handling Automation System Control and Re-Control
- Print and Apply Labeling
- Auotmatic Bagging, Document Insertion and other Order Finishing Systems

Lightning Pick | A Matthews Automation Solutions Brand
Distributed by Cisco-Eagle:
www.cisco-eagle.com | 888-877-3861

Matthews™
AUTOMATION SOLUTIONS