

BRG Sports: Synchronizing omni-channel fulfillment with WCS

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BRG Sports' new facility relies on a warehouse control system and voice-directed picking to synchronize parallel pick and pack activities across pick modules.

By Bob Trebilcock, Executive Editor

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BRG Sports; Rantoul, Ill.

Size: 813,000 square feet

Products: Sports helmets, bike helmets, collectible football helmets and accessories

Throughput: Approximately 10,000 pallets per month

SKUs: 23,000

Employees: 360

Shifts per day/days per week: 2 shifts per day; 5 to 6 days per week

BRG Sports' new 813,000-square-foot facility in Rantoul, Ill., uses voice-directed picking and warehouse control software (WCS) to tie together full case, split case and piece picking under one roof. The facility also has the capacity to manufacture and assemble four million bicycle helmets a year.

Receiving: The receiving area (1) receives domestic truckload deliveries and import containers on two shifts. Additional product is received from manufacturing and assembly operations (2) co-located in the same building. All deliveries are received against open purchase orders in the warehouse management system (WMS). Once the receipt has been verified and checked for quality, the WMS chooses a put-away location in the very narrow aisle (VNA) reserve storage (3) or conventional aisle reserve storage (4). Palletized product is delivered to a staging area with room for four pallets located at the end of each aisle. Containerized product is verified, palletized and delivered to staging (3, 4). Product received from manufacturing and assembly (2) is stretch-wrapped, tagged and entered into the WMS and then delivered to the staging area (3, 4).

Storage: Most pallets are stored in the reserve storage areas (3, 4). Turret truck operators pick up pallets from the staging area at the end of the aisle. After scanning a license plate bar code label, the operator is directed by the system to a put-away location. The operator scans the storage location to confirm the putaway. The product is now available in the WMS. In addition, some very fast moving product is stored in an area designated for those SKUs (5).

Picking: With a mix of big box retailers, specialty retail and direct-to-customer orders, BRG fills orders for full and mixed pallets, full and mixed cartons, and parcel shipments. Those orders are filled from a full case pick module (6); split case pick modules (7); and reserve storage and fast-moving SKU area (3, 4, 5). To initiate picking, the WCS first analyzes a batch of orders to determine which orders to start first. The WCS also

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segregates trailer load, LTL and parcel shipments. Picking is directed by voice, while SKU and storage locations are confirmed by a ring scanner and picks are confirmed by voice or a hands-free scan.

- **Full case picking:** When an associate logs onto the voice system in the full case pick area (6), the WCS sends picking instructions to a mobile computer and the associate is directed to the first pick. After the location and SKU are confirmed by scans, cases are picked to a conveyor. The picks are confirmed by voice. Cases are then conveyed to the third floor of a split case module (7) where they are automatically scanned and weighed, and shipping labels are automatically applied.

- **Split case picking:** In the split case area (7), a license plate bar code label is applied to a shipping carton that is then inducted onto the conveyor. The WCS routes the case through the split case module, stopping only in areas where a pick is required. When a case arrives in a pick zone, an associate scans the label on the carton and receives picking instructions by voice. The associate scans the location and SKU labels to confirm the picking location and then picks the right number of items to the container. When the picks are complete, the container is placed back on the conveyor and delivered to the next pick location. Once all of the items for that container have been picked, it is conveyed to the third floor of the module where the print-and-apply system is located.

- **Reserve picking:** Some slower moving SKUs are picked to specially built carts in the reserve storage areas (3, 4). The carts, which hold 12 cartons, are built on a pallet that can be moved by a lift truck. The operator is directed by the voice system to a pick location. Once all of the items for the cartons have been picked, the operator inducts them onto the conveyor system (8) for the split case module. If all of the items for a carton have been picked, the carton will be conveyed to the third floor for labeling. If more items need to be added, the carton will be conveyed to the right pick zone or zones for the additional items and then conveyed to the third floor for packing (7). Fast-moving SKUs (5) are handled in a similar way.

Packing: When a carton arrives at one of the packing stations (7), the packer adds any void fill, packing slips and carton content slips required for the order. If an order has more than one carton, a content list is added to each carton. In addition to a visual inspection by the packer, the process is videotaped for security and quality assurance. Once the order is closed out, the carton is automatically taped and weighed. If the weight of the order matches the estimated weight in the system, the carton is conveyed to the automatic print-and-apply station. After the shipping labels have been applied, the carton is conveyed to a scan tunnel and then sorted (9) to the right shipping lane for that order. In the shipping area, cartons may be fluid loaded into a trailer (10), palletized for full trailer load shipments (11), staged for LTL shipments or readied for parcel shipping (12).

System suppliers

System design/integration, WCS, voice picking, & print-and-apply software & motion scales: Numina Group, numinagroup.com

Network modeling & site selection: Competitive Insights, ci-advantage.com; Avison Young, avisonyoung.com

Voice engine: Topvox, top-vox.com

Voice hardware, ring scanner & mobile computing: Honeywell, honeywell.com

Conveyor, narrow belt & shipping sorters: TGW, tgw-group.com/us-en

Print-and-apply hardware: Panther Industries, print-n-apply.com

ERP & WMS: SAP, sap.com

Fixed bar code scanning: Sick, sick.com

Pick Module & racking: Unarco, unarcorack.com

Narrow aisle lift trucks: Raymond, raymondcorp.com

their pallet needs are changing. Then, we'll dive into the trends that are influencing how logistics professionals expect to use pallets in the future.

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About the Author



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Bob Trebilcock, executive editor, has covered materials handling, technology and supply chain topics for Modern Materials Handling since 1984. More recently, Trebilcock became editorial director of Supply Chain Management Review. A graduate of Bowling Green State University, Trebilcock lives in Keene, NH. He can be reached at 603-357-0484.

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