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Brenda Beyer, director of logistics for beauty supply distributor Aerial Co.

A photograph of a warehouse interior, likely a consolidation carousel, featuring rows of blue plastic bins on metal shelving units. The bins are mostly empty, suggesting efficient picking operations. Two women are standing in the foreground, smiling at the camera. The woman on the left is wearing a red top, and the woman on the right is wearing a pink top. The background shows the complex structure of the carousel with various levels and tracks.

Aerial gets a makeover

Automation cleans up this beauty supply distributor's picking operations, eliminating congestion and boosting productivity.

By Corinne Kator, Associate Editor

Brenda Beyer (left), director of logistics, and Heather Nelson, production manager, have fine tuned Aerial's picking operations. The DC's consolidation carousels are nearly empty—a sign that workflows are properly balanced.

BEAUTY SUPPLY DISTRIBUTOR AERIAL CO. had a messy problem. As the company's business grew, its Marinette, Wisc., DC was becoming increasingly crowded—too many people, too many carts, too much congestion.

The company was filling as many as 1,200 daily orders for shampoo, nail polish and other professional beauty supply products through a largely manual process. Employees carried paper lists as they pushed carts, filling orders one at a time.

"We decided it was time to look at a new technology to gain efficiency and to utilize our space better," says production manager Heather Nelson. "You can only add so many bodies."

So, the company dramatically upgraded its DC, introducing several new technologies and practices. Radio frequency and light-directed picking replaced paper lists. Meanwhile, a powered conveyor system and horizontal carousels (Remstar International, 800-639-5805, www.remstar.com) reduced travel time and congestion for pickers. Zone and batch picking have also contributed to higher efficiencies.

As a result, the operation is now running beautifully. Aerial is filling more orders with less labor and has plenty of flexibility to accommodate future growth.

Real-time tracking and automated picking

Aerial is a \$100 million family-owned business, shipping beauty products—from brands such as Matrix and Paul Mitchell—to nearly 10,000 salons and 49 professional beauty supply stores in the Midwest. The company's Marinette DC manages between 6,500 and 7,000 stock keeping units (SKUs), depending on the season. Order volumes are highly variable, spiking as much as 50% in a given week to accommodate special sales and promotions.

Initially, Aerial installed a warehouse management system (WMS) with real-time inventory tracking capabilities to better manage fluctuating volumes. The WMS also allows the company to support multiple shifts of employees working flexible hours.

But the WMS was just the beginning. Aerial later automated the DC's picking procedures, significantly increasing productivity.

Before, each employee picked complete orders from shelving and flow rack to carts, walking nearly 10 miles a day.

To cut down travel distance and time, the company added eight horizontal carousels—four on the ground level and four on a new mezzanine. A pick-to-light system on each carousel guides operators, who can pick up to eight orders simultaneously with minimal travel. In all, the carousels hold approximately 5,000 SKUs of slow- to medium-moving products, with capacity for 1,000 more.

"Having the product brought to the operators increased our productivity significantly," says Brenda Beyer, director of logistics for Aerial. "The products picked in the carousels are picked three times as fast as they used to be."

Aerial added a second pick module, this one radio frequency directed, for medium- to fast-moving products. About 1,100 SKUs of medium movers are in carton flow rack, while fast movers are in pallet flow rack. The two-level pick module is divided into several zones. Employees pick only in their zones, reducing walking time and increasing productivity.

The company also added two consolidation zones for picked orders, one for store orders and one for salon orders. The salon consolidation zone uses put-to-light racking for sorting and consolidating orders.

To connect all these areas to each other, Aerial added 360 feet of static and powered roller conveyor. Employees pick products into plastic totes, and the conveyor carries the totes from the pick modules to the consolidation zones.

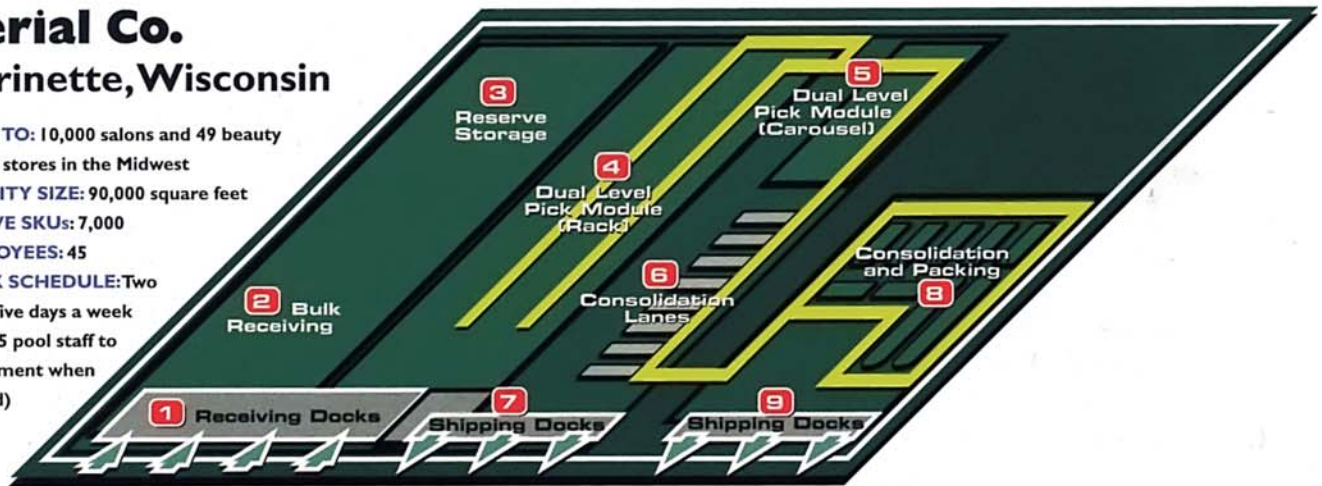
"The system has really helped increase our productivity," says Beyer. "We used to have 28 people picking orders. That number is down to 12."

Expansion and enhancement

Most recently, Aerial added 23,000 square feet to its DC (making a total of 90,000 square feet) and still

Aerial Co. Marinette, Wisconsin

SHIPS TO: 10,000 salons and 49 beauty supply stores in the Midwest
FACILITY SIZE: 90,000 square feet
ACTIVE SKUs: 7,000
EMPLOYEES: 45
WORK SCHEDULE: Two shifts, five days a week (plus 15 pool staff to supplement when needed)



Pallets of beauty supply products arrive at Aerial's receiving docks **1**. Employees in the DC's bulk receiving area **2** scan the bar code license plates on incoming cartons, receiving the products into the warehouse management system (WMS). The WMS then directs putaway. Products go to reserve storage **3** or to picking locations in one of two dual-level pick modules. Fast to medium movers are stored in pallet and carton flow rack in the larger pick module **4**. Medium to slow movers are stored in horizontal carousels in the smaller pick module **5**.

When pick quantities reach a minimum level, the WMS creates an electronic order, directing a stocker to replenish that pick location. Order picking begins in the morning with large store orders. Employees pick products into plastic totes on static conveyors. Once filled, the totes are placed on powered takeaway conveyors. The totes are diverted to one of eight consolidation lanes **6**, where employees place them on pallets. Pallets leave the shipping docks **7** as less than truck load shipments.

After store picking is completed, employees repeat the picking process for smaller salon orders. The takeaway conveyors carry totes of products to a second consolidation area **8**, where orders are consolidated in flow rack and horizontal carousels. Operators are alerted by lights when an order is complete and can be pulled for packing. Completed orders are packed into corrugated boxes, labeled and placed on a shipping line. Salon orders leave in dedicated UPS trucks from a second shipping dock **9**.

more automation. The additional space accommodates more bulk storage and a larger receiving department. The auto-

Aerial stores slow- to medium-moving products in horizontal carousels.



mation adds efficiencies in consolidation operations and is ready for growth.

Aerial's expanded salon consolidation zone has two new carousels alongside existing racking. The carousels, which are fed by two lanes of accumulation

conveyor, are the primary consolidation zone for salon orders.

"The reason we put in the carousels," says Beyer, "was to gain efficiencies by eliminating walk time. Previously, our handlers had to walk as far as 35 feet in order to place a tote in the consolidation area."

Aerial also expanded its packing area, adding four stations to the five it already had. The company ships store orders in its plastic totes, and the stores later return the empty totes for reuse. Salon orders, however, must be packed into corrugated boxes. The company plans to add more salon customers, which will require the extra packing stations.

Employees at the packing stations are also responsible for conducting quality inspections. Before, Aerial checked every order for accuracy before shipping it to a customer.

"Now we just do random inspections," says Nelson. "The technology got better, so we were able to increase

our accuracy in picking.”

Aerial's accuracy rate, she says, is 99.2%. This is particularly impressive considering the short turnaround time on orders. “We have an obligation to our customers,” says Nelson. “If you place an order by 2 p.m., the order will ship that same day.”

Great results

Transitioning to an automated DC was not without challenges, says Beyer. “Every day we would tweak the system in order to improve the flow, and every day we would be encouraged by the results of the adjustments.”

The biggest lesson Beyer and her staff had to learn, she says, was how to manage the flow

Aerial's fast- to medium-moving products are picked from carton flow rack into plastic totes.



Transitioning to an automated DC was not without challenges.

of the orders in the system. “Unlike our manual world, we had to limit the number of orders that were introduced into the system for picking,” she says. They also had to adjust staffing in pick zones so orders from all the zones would be completed within a certain timeframe, preventing backups in the consolidation area.

“We also learned to increase our zone sizes,” says Nelson. When Aerial switched to a zone picking methodology, she says, the DC was divided into many small zones. After a few weeks, it became clear that picking could be accomplished with fewer employees in larger zones without jeopardizing productivity. Increasing the zone sizes also helped reduce the num-



When all of the order's components arrive, the operator moves the totes to skate conveyor (right) to stage for packaging.

ber of totes in the system.

These adjustments were made quickly, says Beyer, and the system is running smoothly. The equipment

easily adjusts from low volume to top speed, so Aerial can accommodate fluctuations in orders and is ready for future growth.

System Suppliers

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