Case Study: BHS Assists Dealer to Dramatically Improve Fortune 500 Company's Motive Power Capacity

Battery Handling Systems, Inc. (BHS) manufactures high-performance battery room equipment, but they rely on a vast network of dealers to bring that equipment to customers. This partnership has been key to BHS' growth since the company was founded in 1979.

BHS Products Discussed in This Case Study:

Automatic Transfer Carriages
- Portable side extraction
- Completes battery changes in only 3-5 minutes
- Mounts to existing lift truck, limiting costs
- Provides immediate battery handling capabilities

Battery Roller Stands
- Heavy duty construction provides quick, reliable storage
- Spark-proof, poly-sleeved roller bed eases battery movement
- Standard charger shelf included

Drip Pan Kits
- Contain battery drips and spills, protecting stands and floors
- Side extraction for easy cleaning
- Corner-formed, stainless steel construction prevents leakage
- Can be equipped with AcidSorb pillows for instant absorption/neutralization of electrolyte

Triple Stack System Stands
- Stainless steel construction
- Acid and abrasion-resistant coating
- Spark-proof, poly-sleeved rollers resist corrosion and ease battery movement
- Greatly reduce battery room footprint
- Custom design fits any application

Triple Stack Battery Extractors
- Quick, safe battery changes
- Low-maintenance
- Dual floor drive for total reliability
- Acid- and scratch-resistant coating
- Heavy duty steel frame
- Wide range of optional features
- No exposed components
- Vacuum extraction reduces wear on battery cases

In fall of 2005, one of BHS' valued dealers reached out to the BHS Engineered Systems team for help. A Fortune 500 company was quickly expanding warehousing operations, and their fleet capacity couldn't match the new demand.

The dealer asked BHS for assistance designing and implementing a solution that would exceed the customer's motive power needs without replacing the entire fleet. BHS' commitment to exhaustive customer service applies to dealers and end-users alike; engineers, technicians, and designers at BHS were eager to look into the company's situation.

The Problem:

BHS' collaboration with their dealer began when the end-user made one of the most important decisions in the history of their business; rather than rely on a 3PL to distribute their new line of appliances, they would use their existing network of distribution centers (DC). To prepare their entire operation to handle this material handling challenge, they would need to significantly increase their motive power resources.

At first, company managers planned to keep their existing battery fleet and try to squeeze more productivity out of them by implementing fast charge technology. The BHS dealer worked with company management to complete a painstaking analysis of the costs and benefits of a fast charge system.

They considered five major factors in the decision:

1. The upfront costs of installing fast charge equipment.

2. Ongoing energy costs associated with fast charge technology.

3. The number of batteries required for fast charge systems versus optimized traditional battery chargers.

4. Expanded AC power distribution required by fast chargers.

5. The exact operational conditions, including forklift fleet demands, of each distribution center.

As trade journal *Material Handling & Management* reports, fast chargers consume the active materials in a forklift battery much more quickly than conventional chargers, so the company found that the expense of new batteries over time would steadily increase. Additionally, they would have to complete an expensive and time-consuming upgrade to their electrical system to install fast chargers.

When the team considered the purchase price of fast charge batteries — about 1.5 times the price of conventional batteries, with shorter lifespans, according to forklift consultants *Fleetman Consulting* — they realized that fast charge technology was not the solution. They would have to keep looking.

There were several distinct challenges in this case. All of the company's distribution centers needed more space for storing and handling bulky, heavy appliances. They would need more forklifts on the floor, and they had to be certain that their fleet would always have the power for a high-capacity application. Company management was committed to the environmental, technical, and financial benefits of electric forklifts. The problem lay, as it so often does, in the battery room.

Analysis:

Engineers from BHS joined their experienced dealer in deep study of the customer's projected motive power needs, as well as their current systems for changing batteries. They found several challenges unique to a project of this size.

- Each distribution center had a distinct floorplan. There was no "one-size-fits-all" design that could be replicated across the entire network. Each building would need its own unique design to reduce battery room footprint to the absolute minimum.
- The products that the company expected to begin handling appliances, placed great weight on forklift forks. The company's fleet was more than equipped to handle this machinery, but their batteries, tasked with such loads, tended to run out before the completion of a shift.
- The team faced a severe deadline. Appliances were scheduled to begin shipping well before they would be able to build brand-new, state-of-the-art battery rooms in every distribution center.
- The company wisely wanted to preserve as much of their existing motive power infrastructure as possible to reduce costs. BHS engineers would be working around existing systems, rather than designing a greenfield space from the ground up.

Solution:

BHS Project Managers determined that the first priority was to immediately expand battery resources for the DCs so they could begin handling the new products without delay. With temporary battery changing areas in place, the company could begin shipping appliances while BHS, in partnership with the dealer, designed custom battery rooms for each DC in the network.

BHS provided a fleet of Automatic Transfer Carriages (ATC), which mounted easily to the DC's existing lift trucks. Paired with a row of battery stands, complete with drip pans, these ATC units allowed the DCs to immediately expand their motive power to meet the new demand.

These temporary change-out systems kept the DCs in business while the dealer and BHS designed permanent Battery Handling Systems for each facility. Triple Stack System Stands dramatically reduced the battery room footprint, leaving more space for revenue-generating tasks in the DCs.

Triple Stack Battery Extractors reduced battery change-out times in the new systems to a maximum of 2-3 minutes. These DCs were now equipped to maximize efficiency for all their material handling tasks.

Implementation:

The phased installation of each DC's battery solution was key to this project's success. In order to make a smooth transition to higher-capacity, more-efficient battery handling capabilities — without causing downtime for the end-user — BHS project managers worked closely with engineers from the motive power specialists on the dealer's end.

Each step of the process had to be calibrated down to the minute and the millimeter to ensure success. To that end, BHS project managers stayed in constant communication with the dealer, local contractors, and the client. The successful implementation of this drastic change to the DC's battery handling systems had as much to do with detailed planning as it did with expert engineering and quality steel. Spreadsheets and schedules were as crucial as new equipment.

Because of the varied floorplans of the DCs involved, engineers had to come up with several designs before they could move forward with the project. When drawings were completed, experts at BHS collaborated with the dealer and client management to review them, suggesting changes where needed. Through this process, the team created a layout for each DC that would take advantage of the unique elements of each facility.

Meanwhile, DCs began to receive shipments of the bulky new products without a hitch, thanks to the temporary battery changing areas supplied by BHS. When every Triple Stack system was complete, the client's entire distribution network began operating with ideal motive power supplies, leading to the success of a highly lucrative new product line for the client.

Results:

The BHS dealer became an ongoing partner with this Fortune 500 company, committing to providing motive power services well into the future. More importantly, the end user was "extremely pleased," said those involved in the project.

The company was faced with an extreme challenge, but management was committed to adding this important new product line to their existing brands. Thanks to BHS and their dealer, this multinational corporation was able to handle the new demands with a safer, more efficient, and more reliable motive power supply than they started with.

BHS was involved in the process from the beginning, providing clear leadership in planning, designing, and implementing new battery room solutions. Their commitment did not end there. BHS specialists also thoroughly trained staff to use the new equipment to the considerable limits of its power, ensuring an optimal battery handling system that boosted DC productivity to unforeseen heights.

References:

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