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How to Unlock the Financial Potential of Batteries in Warehouse Operations

Battery asset management systems now allow detailed accounting of lift-truck battery usage to yield thousands of dollars of cost-savings.

Given today's fiscal uncertainty, most company comptrollers find themselves scrutinizing every aspect of operations for potential savings. Until now, though, only the most creative CFO would think to look for hundred-dollar bills inside a lift-truck battery. But then, as heavy as a bank vault and costing near as much, these batteries begin to make sense as an untapped store of hidden cash.

Extracting this previously unrecognized source of cost-savings involves nothing more complicated than careful management of an organization's battery assets, made possible by a new breed of battery management systems. With a minimum of hardware, yet very powerful software, these systems provide valuable information to management that allows them to improve the efficiency of their motive power assets. Considering the large number of battery-powered forklifts, pallet jacks, high-lifts, and other inventory handling equipment in any moderately-sized plant or warehouse, the potential savings can hoist up a P & L statement by six figures or more.

The added bonus that accurate management of battery usage and recharging can reduce battery room energy costs by up to 25% provides even more impetus for operations managers to investigate recent technological advances in the world of motive power management.

"The biggest savings we have found comes from the usage reports that allow us to purchase fewer batteries," says Mark Soetaert, Director of Distribution Center Maintenance Operations for Sears and Kmart Distribution Centers. "It has saved capital outlay."

More information = more money

Insufficient or inaccurate tracking of battery usage and charging has extracted a high toll from the income statement of many organizations.

For example, given that a forklift battery can cost up to five-figures, if that battery is unnecessarily replaced because of poor charging practices (such as placing a hand on the battery to see if it is hot or cold) or inaccurate lifespan calculations, it doesn't take long before such mismanagement can quickly leach tens of thousands of dollars or more from a large-scale operation.

Recognizing this potential for draining corporate coffers, chief operation officers are now demanding a greater accounting of battery usage. Meeting this demand are a new crop of battery asset management systems that gather and distill vast amounts of information into concise reports that can be routed through existing in-house networks onto the desktops of corporate level logistics staff.

"Through accurate management of battery inventory, these systems can reduce the standing inventory of batteries from an industry average of 2-3 batteries per lift-truck down to only 1.8 or 1.4, representing a sizeable savings for even a small warehousing site," says Jim Lane, vice president of sales for Temple, Texas-based MTC, which developed the EBatt suite of motive power management systems.

Soetaert, who uses the EBatt system agrees, "On the maintenance side, it allows us to look at underperforming batteries quickly and accurately, so we can repair or replace the bad ones."



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The primary advantage is it tells a maintenance person what batteries to use and when. The batteries are always fully charged and used equally. Since the system regulates the proper use of batteries, no one has to keep track.”

Accurate tracking of all aspects of battery usage provides the key to savings

The technological leap in today’s systems comes from the thoroughness in tracking several variables that account for motive power expenses.

Classified (appropriately enough in accounting terms) as FIFO systems, the best examples track six basic data points:

- 1) an asset ID for the lift vehicle;
- 2) an asset ID for each battery;
- 3) an asset ID for each individual operator;
- 4) a “start” timestamp for the moment the battery transaction begins;
- 5) the “stop” time for the moment the battery transaction ends; and
- 6) the duration (obtained from the hour meter) for how long each truck ran on each battery.

State-of-the-art systems can work with a surprisingly wide variety of vehicles and battery types, the latter of which includes: lead acid, gel, absorbed glass mat, and NiCad among others. This flexibility also extends to a wide range of battery chargers. Such a degree of leeway, combined with broad scalability, allows one battery management system to work with the entire scope of assets and facilities that any organization may have.

Management of the thousands of data points for a large organization is facilitated by funneling them into a relational database and then compiling them for analysis. Report wizards allow immediate access to the information in executive-summary fashion. In complete systems, reports can be viewed on-screen, printed out, exported to Excel or stored in PDF format.

Examples of reports include: battery inventory, vehicle inventory, charger inventory, transactions by charged battery, trans-

actions by charger, transactions by date, transactions by operator, transactions by vehicle, individual run times by battery, and comparative monthly statistics. Advanced systems add in battery room reports that detail charger status, battery watering, battery washing, battery equalizing, a “ready” battery listing and even vehicle maintenance.

Ideally, this data should permanently reside on the organization’s computer, as opposed to only being available by subscription from the system vendor.

Data search, sorting, and filtering should be integral to any modern system, allowing management to enjoy an overview or to drill all the way down to specific transactions, covering any range of dates.

Crunching numbers to increase profits

These powerful new tools enable managers to exercise much greater control over motive-power operations. The optimization of battery asset investments helps lower operating costs and improves profitability by pinpointing inefficiencies and defining capital asset requirements.

For example, these systems are specifically designed to help cut back on the number of required batteries and chargers. Only the defective elements need be replaced. At the same time, they help extend the battery to its maximum designed service life. Without a battery management system, there are two major potential problems: Either batteries fail years ahead of their time or they may last, but under perform...or both. Battery management systems allow you to get every ounce of life and performance possible from your batteries.

The identification of operational shortcomings extends to tracking operator usage of motive power assets. By viewing reports of battery life for each forklift driver, management can identify employees that might require refresher training in order to reduce battery changes or improve lift truck utilization.

On a macro level, for companies running several warehouses, the performance of each individual facility can be evaluated and compared. This helps upper management at a centralized point ensure that “best practices” are adhered to throughout the entire organization.

Lastly, the savings possible from more efficient use of battery assets extends beyond the cost of capital assets. “We are getting all the life we can out of a battery and all possible quality of performance. And we know when we need to replace a battery. All of this reduces the number of battery changes which adds to our productivity,” adds Soetaert.

“If an organization is able to reduce their battery and charger count through the use of a battery management system, then as much as 25% of the energy costs in the battery room can be saved,” points out MTC’s Lane.

With an ROI typically under nine months, the appeal of motive-power battery management systems is changing the historic mindset of treating batteries as an expendable item that acts as a constant drain on operating funds. Instead, corporate-level management is now recognizing that using a battery management system can greatly reduce battery costs.

For more information about motive power management, contact EBatt Systems at P.O. Box 1358; Temple, Texas 76503; 1 (254) 298-2900; toll free at (866) 953-2288 or visit <http://www.ebattsystems.com>.

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