

Manage Inventory Better

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MANAGEMENT

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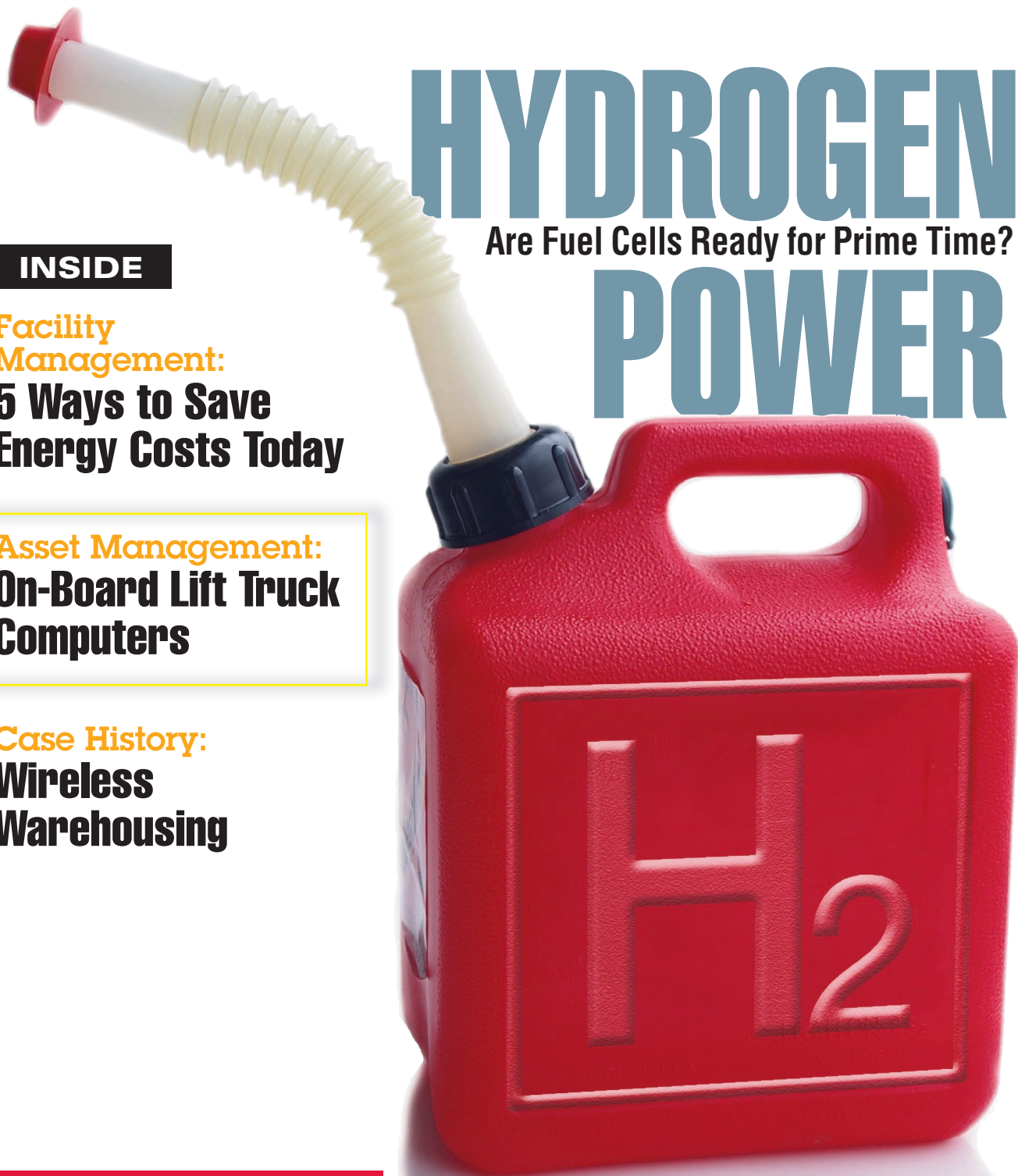
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You can't manage what you don't measure. Managing information is what computers do best.

On-Board Computers Lift Data Management Burdens



Developments mounted to lift trucks to help manage inventory have been around 20-plus years and have only improved with age. Computers on-board lift trucks to measure the activity of the vehicle, however, are a relatively new phenomena that offer great potential.

The ability for a computer to relieve managers of paperwork, particularly in regard to government regulations, is one of the principal aspects of the Crown Equipment Corporation (New Bremen, Ohio, www.crown.com) wireless fleet management system known as InfoLink.

"To comply with OSHA," explains Matt Ranly, senior products manager, "regulations state that every time a truck is turned on, the operator must fill out a pre-use inspection sheet.

By Clyde E. Witt

There's no way to confirm if they actually do the inspection, or simply complete the paperwork."

And when that paperwork is completed it must be collected, stored and data entered into a computer. This new wireless fleet management system can relieve operators and managers of the paperwork burden. When an operator turns the key, the InfoLink terminal cycles through all the inspection requirements and the data is automatically stored.

"Another benefit," says Ranly, "is that the system tracks the certification of every driver and every truck he is certified to operate." It also notes the date of the operator's certification and the truck will not operate (when the operator puts in his identification code) if the certification has expired.

Logging the bumps

Impact sensors now tell managers much more than before. Trucks have previously had sensors to measure impacts. Typically, the sensors would shut the truck down on impact. A supervisor was then required to restart the vehicle and the operator was reprimanded. Improvements in electronics have changed that.

Now, with InfoLink, the force of an impact that is important to managers will be logged, yet the truck does not necessarily shut down. Whereas a consistent small impact might be common to a specific operation, a larger impact can tell the manager a lot about the operator as well as the truck. Time and place stamping in the data tell the manager exactly what happened, when and where.

"Culling through the data," says Ranly, "you begin to see behavioral driving habits of operators. When confronted with facts, drivers often admit to having an accident. Now, with InfoLink, operators have been known to go directly to their supervisor right after the incident occurred."

Financial repercussions are many from collecting this type of information. Damage to trucks as well as racks and products can be reduced, even eliminated.

Another benefit of recording lift truck information real time is that managers have an accurate report on usage. Often maintenance is scheduled by looking at a calendar instead of actual running time of the vehicle. Without accurate usage data, trucks can be over serviced or under serviced. "Also, by looking at travel time of the vehicle and comparing lift/lower time," says Ranly, "the manager can see if the operator is being productive."

Optimizing a lift-truck fleet is also easier with on-board computer monitoring because real-time data is used to determine how many trucks are actually needed in a particular time frame. Reports accurately describe running time and lift/drop activity, telling the managers exactly how each truck is being used. By shifting resources, even eliminating some vehicles, costs can be reduced.

Working by remote control

Another on-board product offered by a lift truck manufacturer, Hoist Liftruck Manufacturing (Bedford Park, Ill, www.hoistlift.com) is RemoteTech, a vehicle management system the company is incorporating into its new trucks. This system allows managers, or the truck manufacturer, to do diagnostics on the vehicle, real-time, remotely if necessary.

Design engineer Jeff Svec says, currently they are monitoring various aspects such as engine speed, transmission shift points and the functions of the hydraulics on vehicles. The system also employs impact sensors to monitor potential damage to the vehicle. "We've also installed a cell modem on board so that we can do diagnostics sitting here [in Cleveland or Chicago] while the truck is anyplace

in the world."

An example of that was a recent reprogramming effort he did via the telephone and an Internet hook up. Tom Murray of HiLo Yale Industrial Trucks (Hauppauge, N.Y., www.hilousa.com), took delivery of a truck for a customer. Between the time when the truck was shipped from the factory and when it was delivered, the customer changed his mind about the controls on the pendant that would be used. While sitting on the truck with his cell phone, and a laptop computer plugged into the vehicle, Murray and Svec reprogrammed the pendant operating device on the vehicle within 90 minutes. "It was all done over the Internet to change the function buttons on the pendant as if it had been done at the factory," says Murray.

He says he had another customer that changed its mind on the function, or control of the fork tines. "They wanted the controls to move the tines to tilt instead of swing. So, using the Internet, we were able to take one function out of the truck and put another in."

An important part of the RemoteTech system is its ability to notify managers, or others, when preset faults have been activated. "The truck's system is tied in to our [Hoist Liftruck] computers," explains Svec. "If something goes wrong, or faults exceed a pre-set limit, an e-mail is sent to the manager or any assigned party."

Because all of the data on every vehicle is gathered into the Hoistlift computers, Svec can review faults reported via the sensors to determine if a single truck has a problem or if there is something bigger happening with all the trucks.

"For example," he says, "if we see an abnormal volume of hydraulic filters being changed at intervals we had not predicted, we can talk to the filter vendor, or review the specifications for the filter we have on that line of trucks."

From the manufacturer's point of view, the impetus behind this type of

data gathering is to be able to insure continuous improvement of the product. It also lets the manufacturer determine if the customer has the right vehicle for the assigned application. "If we're seeing a lot of overload faults," says Svec, "we can ask if a larger truck is needed, or if we need to make some adaptation to the vehicle."

Having the ability to monitor and program the vehicle remotely also adds flexibility to the truck, he says. "If the customer's requirements or needs change, within limits we can adapt to that change at a greatly reduced cost to the customer."

Svec says future enhancements to the system will be a larger, more interactive display for the operator. Currently the system uses warning lights similar to those on an automobile. Also, the new display will allow technicians to make adjustments via the display terminal rather than plugging into a laptop.

Controlling inventory

Inventory control in a \$1.4 billion company is critical. You can do it with index cards or the most sophisticated electronics and warehouse management systems available. Mike Figiel, systems engineer, Berry Plastics (Chicago, www.berryplastics.com) says it saw the benefits of automatic data collection and opted to install RF terminals on its lift trucks 10 years ago. How you select the right equipment is as critical now as it was then.

"Even when you move into the electronic realm of inventory control," says Figiel, "you still need to allow the operators the ability of interacting with the inventory system."

Warehouse operators, whether using a manual system or automatic data collection, are a source of information he says. "Early on, we began writing controls for a previous system that was rules based," he explains. "It was A+B=C. However, on the floor of the

real world, A+B didn't always equal C." There were errors in the real-world environment and then operators were stalled, or locked out of jobs because they had no way of putting information into the system.

"We made the error of designing the application so that it would exclusively drive the functionality at the floor level," he says.

The intimate knowledge and intelligence of the operator is still needed on the floor, even with sophisticated warehouse management systems. "We changed our thinking process to say we are going to enhance the ability of the operator and give him the right tools to work with the product," says Figiel.

That was the guiding principle for the company's recent upgrade to new VX6 model terminals from LXE (Atlanta, www.lxe.com). "We've seen evolution over the years to include more ruggedized equipment," he says, "however, we've also seen some challenges in the size of the terminals that mount in the truck cab as people wanted more information at the operator level."

Operators objected to larger terminal screens that blocked their visibility, for one thing. Finding terminals that fit the cab and are large enough to deliver all the nec-

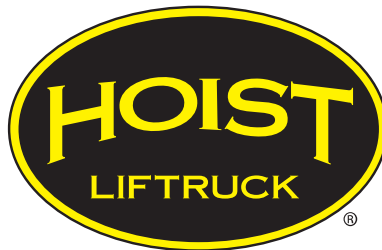
essary information for order picking and putaway became the challenge for Figiel. He says the burden for him in choosing equipment is nothing when compared to the burden of the operator who will be using the equipment. After the IT department had made its choices, terminals were tested and rated by the operators to find the best fit.

The choice came down to half-height screens with back-lit keys on the keyboard. "The half-height is large enough for the information we want to deliver," he says. "It provides good communication between the operator and the host system."

Figiel says the guiding influence in selecting terminals was, and should be: How does it enhance the operator's ability to do the job? "The scanning function of the device is most critical," he says, "then finding a data terminal that interfaces with that scanner."

Another piece of advice Figiel gives is that the terminal should be flexible in its mounting on the truck, particularly if the company has a mixed fleet of vehicles. "It used to be," he says, "the terminal came with the mount from the manufacturer and that was that. Now flexible ram mounts are available to fit the terminal to the truck and operator." **MHM**

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