



PULLING PRODU

A FAST-GROWING NUMBER OF FLEETS ARE CUTTING COSTS BY MANAGING TRAILERS MORE INTELLIGENTLY.

Asset utilization is a critical measure in any industry. For example, a manufacturing firm closely measures the utilization of each workstation — the percentage of time it stays busy — to determine where and when to add capacity along a production line.

In trucking measuring utilization is much more complicated — especially when applied to trailers. In a just-in-time environment — where trailers are customers' rolling warehouses of raw materials and finished goods — uncertainty is the cardinal

sin. Yet at any moment, numerous exceptions can occur, including delays, equipment breakdowns, detention, and lost or missing trailers.

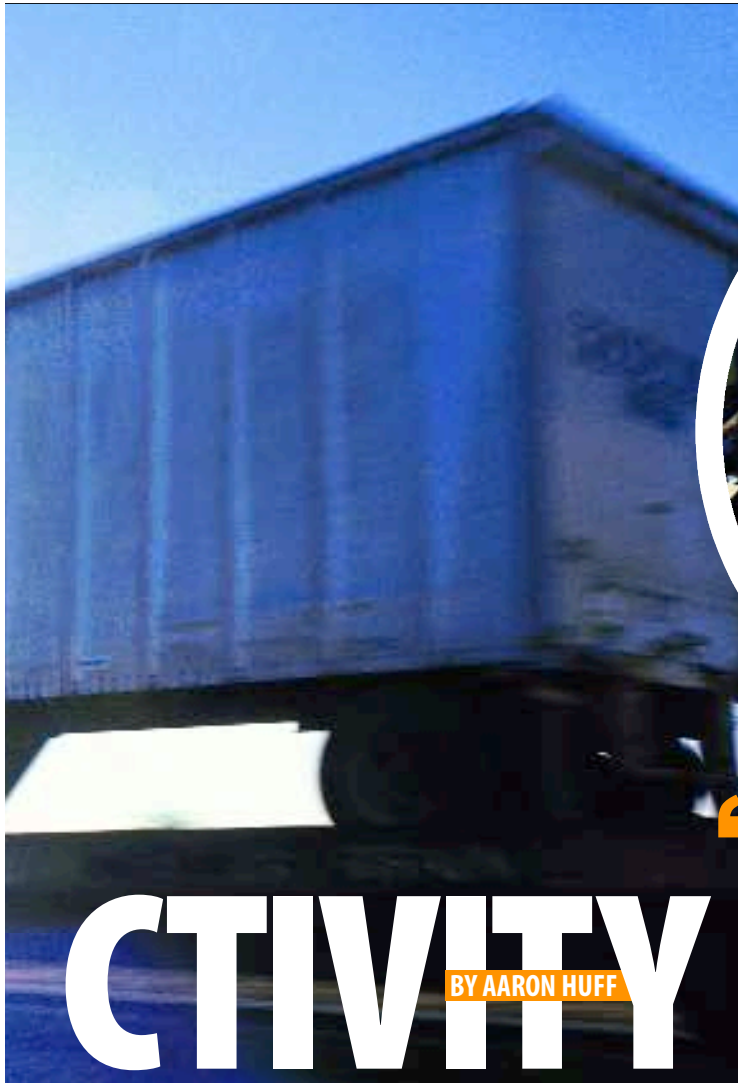
To buffer against that uncertainty, fleets and shippers typically use trailerpools at pickup and delivery locations. Shippers use trailerpools for temporary storage, while carriers use them to maximize driving time with drop-and-hook operations. But like an overstuffed retailer, fleets often have too much trailer inventory due to mismanaged trailer pools.

Today, a fast-growing number of carriers are using trailer-tracking

systems to change this trend by managing all events tied to trailer utilization, including loading and unloading, detention, and tractor-trailer combinations. By improving trailer utilization, these fleets are buying fewer trailers and boosting productivity.

Fast ROI

Fleet installations of trailer tracking have doubled in the past two years, according to a recent study by ABI Research, a technology research firm based in New York. Currently, about 8 percent of fleets in North America



ACTIVITY

BY AARON HUFF

“Our system will cross-reference where the trailer really is versus where we told the driver to go get the trailer. If there is a difference, we get an alert.”

Dave Summitt, president, Summitt Trucking

use the technology, for a total of 400,000 units now deployed, ABI says. This quick adoption rate will continue, reaching 40 percent by 2012, predicts Frank Viquez, ABI's director of transportation.

The main factor for this explosive growth is the arrival of a variety of low-cost solutions, Viquez says. Some vendors have developed solutions in the \$300 to \$400 price range, per unit, with minimal wireless costs and battery power that lasts, uncharged, for four years and up. (For more on battery power, see “Energy Savings,” page 116.) At this price and product life-

span, fleets now are able to prove a return on investment, he says.

The technology has brought a fast payback for Milk Transport Services. The Cabool, Mo.-based fleet, which operates 1,250 tank trailers, found that automating its trailer inventory counts was enough to justify the cost of trailer tracking.

“We get really equipment-heavy at drop yards,” says Dave Shelton, MTS general manager. MTS uses hub-and-spoke operations to move milk in bulk tankers from drop yards — farms and dairies — to processing plants. Until August 2005, the com-

pany tracked its trailer inventory manually — a process that took yard workers about one hour each day to count trailers, plus another hour to input yard counts into a database. Having a manual count sometimes meant yard checks weren't done at all.

“It was really easy to say ‘drop a piece of technology in there,’” Shelton says. In August 2005, management implemented the Skybitz InSight satellite-based tracking and trailer management system. Besides automating its daily inventory count, fleet managers now track utilization

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ENERGY SAVINGS

Trailer-tracking systems invent new ways to extend battery life

No matter how efficient a fleet is, chances are it has dozens of trailers that sit idle for days on end. In addition, some fleets allow third parties, such as owner-operators and rail companies, to pull their trailers. With such an unpredictable source of power supply, fleets often judge trailer-tracking systems by their ability to conserve energy.

Power management was among the main criterion for Summitt Trucking, which led Dave Summitt to choose TransCore's GlobalWave tracking system for his 455-truck fleet based in Clarksville, Ind. The GlobalWave system he chose one year ago uses a lithium battery and is designed to operate more than three years without recharging.

"We've still got full battery life after a year," Summitt says.

Last October, TransCore announced the availability of a new satellite-based GlobalWave product with

an uninterrupted power supply that lasts up to seven years. The system quickly mounts on the roof of trailers and meets the majority of fleets' information needs — including a daily status report on their trailers, says Dave Roscoe, TransCore's vice president of hardware engineering and research and development.

Summitt says he plans to use this new hardware — which he calls "lick and stick" because of its ease of installation — for applications where he doesn't need trailers with extra amenities such as cargo and door sensors.

SkyBitz, since its debut into trailer tracking several years ago, has used a power-saving technology called GLS in its Insight tracking system. With the technology, two inexpensive AA lithium batteries in a mobile unit can last for several years. SkyBitz says GLS saves power by calculating the position of a trailer asset centrally at an operations center, rather

than using a global positioning system (GPS) chipset in its mobile unit.

However, fleets should not dwell on a vendor's claim for battery cycles, says Anne Taylor, vice president of marketing for AirIQ. The need to have battery cycles that last for years, untethered, is more myth than reality, she says.

"The whole idea of an untethered trailer-tracking system is to know a trailer is not sitting untethered for a great amount of time," Taylor says. "You have a bigger problem if a trailer is sitting somewhere for five years."

AirIQ uses a rechargeable battery pack in its satellite-based trailer-tracking system that reports trailer status information, untethered, for 60 days. The battery pack will last from three to five years without replacement, she says. This battery cycle also is typical for cellular-based systems.

But even the best-run company has trailers that sit for 60 days, says Todd

Felker, Terion's vice president of marketing. Terion's FleetView3 system uses CDMA and analog cellular networks. If a trailer remains untethered for 60 days and the battery depletes, FleetView3 uses an algorithm to send a low battery signal in advance before going into a "deep sleep" mode. The device will "wake up" when triggered by a motion sensor in the mobile unit, Felker says.

Solar power offers another power management option. The world's largest retailer is perhaps the largest user of solar-powered trailer tracking. In March, Wal-Mart announced it would use GE's VeriWise trailer-tracking solution, making it GE's largest trailer telematics customer. The solar-charging capability in VeriWise supports Wal-Mart's 10-year trailer maintenance requirement as well as its sustainability efforts, says Tim Yatsko, Wal-Mart's senior vice president for transportation.

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and detention, and efficiently dispatch drivers to a loaded or unloaded trailer.

On a day-to-day basis, MTS can determine the loaded or unloaded status of trailers by their locations at drop yards. The movement of empty tankers on a 4-acre lot, for example, can be tracked from one side of the lot to the other, where they are loaded and waiting for pickup. Fleet managers also can determine what tankers need to be washed based on elapsed time between movements, Shelton says.

On a periodic basis, management compares trailer utilization with the expected seasonal demand at each location.

“We measure and monitor how much we are doing with equipment,” Shelton says. Having precise data on utilization helps management plan trailer purchases and size trailer pools to meet demand at each location more accurately.

Integration benefits

Trailer-tracking systems provide a variety of reporting tools that fleets use to monitor and improve utilization. Data such as positions, dates, times, sensor readings, and trailer and tractor identities are captured and presented through a Web-based application.

With Teri on's FleetView 3 system, fleets can use a secure website to set up trailer pools by landmarks. Users can pull up a landmark and see what trailers are loaded or unloaded, and how many are at the location versus how many are supposed to be there, says Todd Felker, Teri on's vice president of marketing.

When used as a standalone Web application, trailer tracking gives fleets visibility and control of location. But to truly manage trailers,

fleets need to integrate trailer tracking and dispatch software systems, says Kent Hildreth, co-founder of software developer Add-On Systems.

Oklahoma City-based Add-On Systems recently developed an application for AS400-based dispatch systems — specifically, the Innovative Enterprise Software system and TMW Systems' TL2000 — called Trailer Monitoring and Management (TMMi).

TMMi integrates trailer tracking and fleet dispatch systems with business rules and logic. For example, by using an optional tractor ID module, the system attaches the correct order to the trailer only if the connecting tractor has the correct identification; dispatchers get an alert if the connection is incorrect, Hildreth says.

Alerts also can be sent if trailers stop outside predefined boundaries

Fleets using trailer-tracking systems can capture positions, dates, times and sensor readings, and assign trailer and tractor identities.

during normal operations. Stop points such as customer sites, fuel stops, drop yards and relay points for trailers can be “geo-coded” into the system. As another management layer, the system can automate contractual arrangements with customers for trailer pools.

“Just because a trailer is empty doesn't mean a dispatcher can assign a driver to pick it up for use somewhere else,” Hildreth says. The TMMi program also can automate customer notification and billing processes for detention and unauthorized trailer usage, per a contract or agreement.

“The complexity is bringing data

together in usable, understandable and meaningful terms that truly represent what is happening in the real world,” Hildreth says.

Cargo Transporters is completing installation of Qualcomm's T2 trailer-tracking system on all its trailers, and also recently purchased the TMMi application from Add-On Systems.

“What drove us was to get better visibility as to what was happening to our equipment with regards to when it was outside of our control,” says John Pope, president of the Claremont, S.C.-based trucking company. “Because of drivers' hours of service, we wanted to do more drop-and-hook to not have driver waiting time. In doing that, we felt like we needed a tool to give us better visibility when trailers are not connected.”

When a trailer is left at a customer location and is used in some other capacity than how it was intended, the company now has the information it needs to track and bill customers.

“We also felt that, internally, our tractor-trailer ratio was too high and that we could reduce it by knowing better what was going on with our equipment,” Pope says. Cargo Transporters is using cargo sensors to track detention times closely and to schedule pickups.

“Using the cargo sensor functionality, we know the instant when [a trailer] was emptied,” Pope says. “We are just starting to take data to build

an alert scenario using Add-On Systems. We also intend to make use of their detention module that goes with that product.”

Besides Add-On systems, each major provider of dispatch and fleet management systems has developed unique integration features for trailer tracking. Dispatchers at Summit Trucking use dispatch software from TMW Systems and TransCore's GlobalWave trailer-tracking system to prevent drivers from being sent to the wrong location to pick up a trailer.

“If we dispatch trailer 123 on a load and hit ‘go,’ our system will cross-reference where the trailer really is versus where we told the driver to go get the trailer,” says Dave Summitt, president of the 455-truck fleet located in Clarksville, Ind. “If there is a difference, we get an alert.”

Advanced features

As trailer-tracking technology matures, vendors and fleets continue to tap new technologies to increase the value of the data that these systems provide.

One of the largest truckload carriers, Knight Transportation, has used Teri on's FleetView system since 2001. In June 2005, Knight began upgrading its entire trailer fleet to Teri on's next-generation FleetView 3 product. A recent application used by Knight overlays trailer status information on satellite photos of customer locations using Google Maps.

“We can pretty well see what row trailers are in,” says Steve Grover, Knight's director of communications. “It has allowed us to see where a customer is using equipment unauthorized. We'll see a trailer loading at one location and unloading at

another location.”

Knight also has developed a proprietary application to automate drivers' searches for trailers. When arriving at a lot, a driver hits a key in his in-cab mobile communications device to request a trailer. The application in the office selects a trailer using a range of operational criteria. In a couple of minutes, the driver receives a trailer number. Using a Google satellite map display, a dispatcher at the office can provide drivers with the specific location of the trailer in a lot if needed, Grover says.

Radio frequency identification (RFID) also has untapped potential for trailer-tracking applications, experts say. Many less-than-truckload carriers, such as FedEx Freight, use RFID tags on trailers and gate readers to register arrivals and departures of equipment entering or leaving termi-

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More fleets are taking notice of the fast growth of trailer tracking, but uncertainty remains over the technology's stability and cost.

nals. But RFID also can be used in wide-area tracking applications.

CarrierWeb, a provider of mobile communications and onboard computing systems, offers a wide-area RFID trailer-tracking solution. An inexpensive RFID transmitter attached to a trailer communicates with an RFID reader on CarrierWeb's onboard computer.

The system can detect the right truck-trailer combination, track door openings and closings, and temperature from reefer units. Fleets can use the RFID tracking mode to get status updates as often as once a minute, and manage both tractors and trailers from a central Web-based system.

"On one panel, you see all data you need to see," says Norman Thomas, CarrierWeb's director of marketing.

Managing uncertainty

Fleets are taking notice of the fast growth of trailer tracking, but uncertainty remains. For example, management of Liberty, Mo.-based American Central Transport remains cautious about the benefits of trailer-tracking technology.

"Our view is that with newer technology, we want to see things become proven, accepted, and learn who becomes the leading standard before we jump in," says Tom Kretsinger, president of the 385-truck dry van carrier. "When mobile communications first came out, we got into a product too quickly which didn't work. We are looking at trailer tracking the same way."

Besides stability, the cost of the

technology is also an issue, Kretsinger says. ACT has more than three trailers for every tractor. "On that basis, it would be pretty expensive," he says. "That's a lot to cost-justify. We usually know where our trailers are. It is hard for us to see where we would save that much money."

However, for a fast-growing number of fleets, uncertainty about trailer location and who is using them is driving the technology's rapid growth.

"We feel like we will make significant gains on utilization, and reduction in our tractor-trailer ratio," says Cargo Transporters' Pope. "It just takes some time to go back and retrofit so many trailers. Once we're done, we will be able to see some results." ■