

Fleeting Responsibility



Simple Solutions for Keeping Your Equipment Regiment Healthy and Productive

By Nick Zubko

They say knowledge is power. But it's also money when it comes to your equipment fleet. How well each machine performs day in and day out directly affects how well your business performs. But how much do you really know? Contractors are usually aware of the more pertinent statistics at the end of a workday — how much earth was moved, how much pipe was installed, how much cement was poured, etc. But there are a lot of factors in between. Where is precious time being lost? Extra fuel wasted? Or hours spent on unanticipated repairs, inefficient operating habits, or other more “recreational” reasons for downtime?

While the process of taking care of and monitoring the machines in your fleet seems simple enough, many contractors come to realize that it's just not the case. Today, the

practice of “fleet management” has become an all-encompassing term covering everything from maintenance and service and job costing to utilization and productivity tracking, efficiency assessment and machine health. In the past, if these tasks were done, they were done manually. But as technology has developed and computers have become a daily part of almost any business, a variety of products have been developed to incorporate tools like the Internet, cell phones, Blackberries and even GPS systems to bring fleet management into a new era.

“Fleet management has become a catch-all buzz word for increasing a firm's overall efficiency, decreasing service time and costs, optimizing the fleet size and makeup, increasing utilization and reducing downtime,” explains Tony Nicoletti, national sales manager for DPL America, a

San Francisco-based developer and supplier of advanced wireless, GPS and telemetry solutions for the construction industry. “To boil it down, it ensures that you have the right machine in the right place at the right time generating the most possible revenue at the lowest possible cost.”

New Tools for an Old Trade

One of the biggest problems with the old way of monitoring equipment use was that the onus was on the contractor (more specifically, the operators) to perform a variety of tedious and often time-consuming tasks. Data was collected manually, kept in binders, spreadsheets or on whiteboards. On the list of priorities, these usually fell to the bottom. Not to mention, the fact that it resulted mostly in guesswork and relatively inaccurate data — essentially, a lot of work for something that didn't prove to be very useful in the long run.

Today, the Internet has been a key to this development, allowing contractors to access data from any Web-connected computer. In addition, advances in telemetry provide the ability to deliver real-time information through automated data collection devices. All of these factors have allowed contractors to access real-time information for making their business decisions.

These sorts of developments have allowed construction-applied GPS systems to grow by leaps and bounds in the last few years. Nicoletti compares it to computers through the 1980s, or cell phones in the '90s. In both instances, the technology went from “nice to have” to a business necessity in less than a decade. Just in the last few years, the perception has progressed from something “space-aged” to the operational foundation from which a multitude of contractors are able to make intelligent business decisions.

“Not only has the cost of hardware and service come down enough to increase the rate of the return on the investment faster for companies, but the technology is more reliable and offers more features,” explains Renaat Ver Eecke, general manager of Navman Wireless Business Solutions, a global leader in GPS, vehicle navigation and mobile positioning and communication systems. “This means longer lifecycles and greater return on investment for each system installed — plus, the company can trust the solution will work consistently for their fleet of vehicles. We really are moving from an early adopter stage into the mainstream.”

In addition to tracking vehicles and equipment in real-time, today's fleet management technologies allow companies to look at historical data and see where they can improve. However, that's not to say there isn't some resistance. There is a natural human reaction to any technology that monitors your activity. And while manufacturers admit certain Orwellian connections, they recommend that customers should simply be up front with their operators, tell them that the technology is being implemented and even offer an explanation as to why.

“There's no question that some people see it as ‘Big Brother’ watching them, but people are becoming more and more accustomed to it — five years ago it was probably

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more prevalent,” notes Steve McGough, chief operating officer for HCSS, a Houston-based company specializing in estimating, field management and dispatching software for the infrastructure construction industry. “But there certainly are situations where that data can be surprising — usually equipment idle time in the morning. Owners have reported over an hour's worth of idle time on numerous pieces of equipment. And as fuel prices keep going up, having access to that sort of information can be important.”

Nuts and Bolts

A fleet management system essentially consists of the hardware unit (a plastic or metal box), an antenna and a software package (either Web-based or Web-accessible) where the data can be managed and viewed. In addition to Internet capabilities, advances in telemetry have allowed units to deliver real-time information for real-time business decisions.

The systems are designed for easy capture of data and operational information via standardized plugs on their machines. The units themselves are installed differently depending on the type of vehicle.

“Basic fleet management is simply a tracking system that consists of a black box containing a GPS chip and a cellular chip,” explains Ver Eecke. “This allows the location, speed and time information to be transmitted to a central system where a company can view it. The cell chip allows for transmission of data, which works similar to a phone. The data then goes to a server that is hosted by the manufacturing company. The final piece is the software that customers use to interact with the server to see their vehicle/fleet information.”

Some machines come pre-wired with a plug, while others require a power connection, a switched power source for the ignition/usage tracking, inputs for different machine health sensors and/or connection for the starter disable if the telemetry system is capable of remote disabling. Data can

Tailor-Made

Fleet Management Options from Three Leading Equipment Manufacturers

John Deere's JDLink

Created through a joint effort of John Deere and Qualcomm, JDLink is an equipment and machine monitoring and information delivery system leveraged from Qualcomm's GlobalTRACS system and installed on select John Deere equipment. JDLink automatically collects, transmits and manages information about where and how equipment is being used, as well as critical machine health data for superior equipment utilization, improved productivity and increased revenue.



JDLink offers four levels of service. Standard service provides machine location status, service hours and location monitoring capabilities, while higher levels provide data relating to dash indicators, fuel and equipment utilization, monitoring of component pressures and temperatures, fuel consumption and transmission gear selection and full-featured diagnostic information retrieval. The highest level enables customers to download machine operating history and diagnostics directly to a laptop. All four levels will be available in 2007 on select models of John Deere construction and forestry equipment; the Standard level of service was available as of fall 2006.

Caterpillar's Product Link



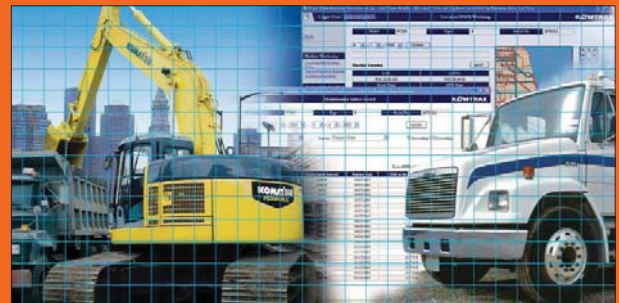
Caterpillar's Product Link provides two-way information flow between a machine's on-board systems and the customer's desktop computer through the Caterpillar's Dealer StoreFront and

EquipmentManager software. With the latest generation of hardware found in the new PL121SR and PL321SR units installed on a machine, customers can subscribe to EquipmentManager from their CAT Dealer.

Product Link is the on-board machine hardware consisting of an antenna, electronic radio and connecting wiring that gathers and wirelessly transmits important data such as machine location, hours and health information. Not only does the device provide information on machine location and health, it is also capable of monitoring fuel level and consumption, identifying unauthorized machine use and facilitating efficient maintenance scheduling.

Komatsu's KOMTRAX

The KOMTRAX system from Komatsu America Corp. is designed to be both a wireless equipment monitoring system, and a secure, Web-based, application used for reviewing the data it collects and sends. With KOMTRAX, owners, managers and operators can monitor machines on the Web — anywhere, anytime. The system not only gives equipment owners the power of knowledge, but also the convenience of manag-



ing your fleet on the Web, wherever they are. Data is packaged specifically for easy and intuitive analysis in maps, lists, graphs and charts that are ready for viewing at your convenience. Machine information is accessed by logging on to a Web-based application, where information can be easily downloaded.

KOMTRAX is already installed on most Tier-3 Komatsu construction equipment — and it's ready to run free for the first five years with no communication service fees. This technology can also be retrofitted on older machines using a 12V or 24V electrical system including service trucks, utility machines, gen sets and non-Komatsu equipment to provide you machine hours, operation maps, location and engine lock capability.

also be obtained in order to measure operator productivity, which often produces staggering data on how two operators on the same job can have drastically different productivity.

“Many fleet management systems can be configured to provide cycle time analysis,” McGough explains. “This is accomplished through certain triggering events, which are different depending on the type of machine. You can tie in to a PTO for a truck, or to the cylinder on a backhoe or wheel loader — each indicating that a specific event has taken place. For instance, you can record the number of passes the operator makes with a dozer or grader, or the number of dumps of dirt an operator made. Measuring cycle times for each task provides valuable information on operator efficiency which gives you the best chance to meet your budget by addressing potential problems immediately.”

Once the systems are installed and operational, customers are able to log into their account, view the data and compile a variety of information from each machine. Data can even be integrated with the customer’s legacy systems or imported via spreadsheet or a Microsoft Excel type of application. At that point, the user is able to manipulate the information at any time for a more comprehensive analysis.

“Customers have access to things like equipment usage, productivity, service tracking, health monitoring, location, current status ignition on/off, historical log of activity and notification for past-due service, inactivity or a bad battery,” explains Nicoletti. “Web software, maps and reports are used to manage it all. As a result, much more time-sensitive information — such as a missed service or critical machine health status — is sent in real-time to e-mails, cell phones, pagers or PDAs.”

Of course, there are different levels of the software capabilities that give more or less information depending on price. Simply the ability to easily access and analyze such vast amounts of data is probably the most important component of a fleet management system.

Doing the Homework

The technology involved in today’s fleet management systems is relatively easy to use, but the average buyer might not understand how it actually works — and they don’t need to. Actually, there are just a few factors contractors need to keep in mind to determine what type of fleet management system is best for them. This includes everything from researching a fleet management system to evaluating their own business, their fleets and their day-to-day operation.

For example, many of the units on the market today serve a dual function as a layer of theft prevention. But some don’t. Figure out which system best matches your desired level of security and control. Are you only interested in GPS tracking, or do you want features like curfews, cell phone notifications and disable capabilities? Along the same lines, some systems have backup batteries or disable the machine



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from running if the units are destroyed or removed. Others do nothing at all once they are compromised.

“The features customers should look for really depends on the contractor’s business segment and their unique challenges and issues,” offers Ver Eecke. “We work with each contractor individually to determine their specific needs. Then we develop the solution that improves their operations and get the most back from the investment. Most are surprised how much faster jobs get done, how much fuel can be saved and how much overtime can be reduced.”

First and foremost, manufacturers say the units must hold up in the construction environment — so a rugged design is a must. Units are available in both metal and plastic enclosures, but plastic units can wear down over time. According to manufacturers, a durable system should last no less than five years.

Price ranges differ drastically depending on the type of solution and installation a customer requires. Units can run anywhere from \$400 to \$1,000, while monitoring services charge between \$11 and \$35 per month, depending on the provider and plan. The plans themselves should be researched to determine whether you need unlimited usage, or only require a set number of communications (pings) per month. Factors like potential overage charges and updates are important parts of the pricing structure — and not knowing the details can turn \$7 per month into more than \$20 in no time.

“Customers just need to take a long-term look at their needs and see if their selected unit/vendor will grow with new features and your feedback,” says Nicoletti. “They should also inquire if those new features require upgrade fees or are part of your initial purchase. When you have found a vendor you like, put your toe in the water before you jump in the pool. Try out a small test of units to make sure it’s exactly what your business needs.”

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