

Beyond

Asset Management

Telematics now does so much more than simply keep track of your most valuable assets

by Barbara Cox, Contributing Editor

In times like these, it's good to get back to the basics of fleet maintenance and look at ways to improve daily operations without investing too much of your time and money. The latest advancements in asset management will help maintain the fleet you already have until you can update it and won't cost nearly as much as a new fleet either.



For instance, what if you could pinpoint when it's time for maintenance? And how much more productivity could you gain from your roadbuilding fleet if you knew where your machines were and what they were doing 24/7? Or, what if you could do all this and be notified as soon as a thief tried to steal a piece of your equipment?

Telematics – or the integrated use of telecommunication devices and information technology, including computers and GPS – aim to answer these questions and more by culling machine metrics, such as engine run time and mileage, and then supplying critical data regularly through parameters that you set.

Telematics differs from the traditional asset management method of using a dry erase board to detail projects and operator whereabouts in that automates time-consuming functions, says (or explains) Andy Rogers, vice president of business development for Fremont, Calif.-based Ayantra.

Although telematics debuted in the over-the-road trucking industry, now technology companies and OEMs offer products with on-, off-road or combined fleets in mind.

Idle no longer

You don't have to be a techie to understand that telematics provide a way to put costs in perspective. For roadbuilding fleets, telematics deliver solutions by directly impacting cycle time management and maintenance schedules. Telematics can manage the combined operability of all of these.

"Roadbuilding fleets need one solution for the entire paving dynamic," says Mark Bittner, senior vice president and general manager for Topcon Positioning System's telematics division.

With Topcon's Tierra telematics system, you can detect how fast a paver needs to lay down the mix, how much material a batch plant must produce per hour, decipher when trucks should deliver more asphalt and learn what rollers are needed and when to reduce

bumps and get the smoothest surface possible.

Managing fuel use is another key benefit, which impacts your bottom line. "Idle time reporting makes it easy to see exactly which vehicles are idling when, and cutting down on idle times cuts down on fuel costs," says Rob Painter, general manager, Trimble Construction Services. In turn, fleet owners who learn to more effectively manage their fleets can often reduce the amount of rental equipment required for a job.

"We began looking at new technology not only to have a way to compete with other companies in our area, but also as a way to deal with high costs," says Ted Bryant, vice president from Summers-Taylor, Elizabethton, Tennessee. Summers-Taylor adopted Trimble's Construction Manager software and CrossCheck Global Locator to first monitor its truck fleet, including concrete mixers, asphalt and dump trucks.

Trimble's software/GPS combination connects via hard wiring to the ignition switch and sensors that can be hard wired to the engine. The software tracks hours of use and mileage to identify and alert users when the machine reaches a service interval, based on manually entered maintenance thresholds.

Through Trimble's Construction Manager, Summers-Taylor's equipment managers and superintendent kept track of use and idle times, and compiled reports to show operators how often they idled and how much fuel was being wasted. "We definitely saw our operators adjust to improve their idle times and driver performance," Bryant says.

This prompted the company (or this served as the impetus for the company) to invest in additional telematics for its heavy-highway fleet, and it estimates it will save nearly 20 percent in fuel costs within a year.

How can telematics help you?

Telematics providers typically offer packages with either a software or Web-based program to catalog information, and a hardware device for out-of-sight



◀ *Trimble's telematics solution has an available in-cab monitor to provide truck and equipment operators with detailed information, including whether more materials must be picked up.*



Beyond basics

Telematics enables you to view a map of equipment locations and graphical use charts, so you never have to question the location of your fleet. Geo-fencing, or the set up of virtual boundaries, acts as another key feature to safeguard fleets from thieves and notify owners when equipment enters or exits an area.

"Geo-fencing allows users to minimize risk of loss due to unauthorized use and enforce restricted areas," says Robert DeAngelis, senior director, LoJack, commercial division. For even more protection against theft, LoJack's LoCate combines telematics with the company's stolen vehicle recovery system, which notifies the user and law enforcement to track down stolen equipment.

Telematics can also go a step further by tying into a machine's CANBUS (or controller-area network) for reporting and critical alerts, or through adding sensors to monitor specific machine components.

CANBUS – an internal communications network that connects a machine's electronic and/or engine control units – should be thought of as "the brain stem of a machine," according to Bittner. Topcon's Tierra taps directly into a machine's CANBUS network, as does John Deere's JDLink product.

While some telematics pull trouble codes and diagnostic information from on-board computers, Jeff Warner,

A universal approach

Companies with mixed fleets may subscribe to several telematics systems, which proves costly and doesn't make machine comparisons exactly easy. In an effort to change this, the Association of Equipment Management Professionals asked heavy equipment manufacturers to pursue a universal telematics data format, so users could pull machine data directly from a third-party server for integration into the company's own database. All major OEMs who produce telematics agreed to work with AEMP on its proposal, but it's unclear when the new standardized format will go into effect.

"We're going forward in support of this, but OEMs still want to compete aggressively on how we capture data and turn it around for customers," says Clint Allaman, product marketing manager, machine information and machine control, John Deere Construction and Forestry. John Deere intends to do this through its own Web site by helping customers set up things such as preventive maintenance schedules.

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vice president, mobile resource management, Preco Electronics, says the depth and accessibility of the information varies based on the age, manufacturer and type of equipment. Products such as Preco's PreCise offer a simplified approach by connecting directly to sensors enabling a more universal solution. If you're considering telematics, talk with a provider about critical alerts capabilities before you buy.

Having access to CANBUS and diagnostic information aids tremendously in diagnosing catastrophic equipment failures, but monitoring engine hours through general telematics determines when regular maintenance should

occur. "You don't want to delay preventive maintenance, but you also don't want to perform it too early, because that could increase costs," McGough notes.

Telematics takes the guesswork out of service intervals, so you know when it's time for an oil change, but are also aware of current problems, such as an engine overheating. "Reports may be accessed whenever a fleet owner needs them, whether the mechanic needs an upcoming maintenance schedule, the safety manager needs to know the number of speeding incidents or the trucking coordinator wants to identify backed up trucks so they can be moved to a different delivery," McGough says. ❖



RFID technology

Another asset management option available for road building fleets is RFID technology, or radio frequency identification. This approach requires small, low cost RFID tags affixed to the fleet for tracking jobsite activity. RFID-tagged fleet vehicles report to "read points," and thus the tags capture the activity of plants and pavers or other road machinery. One such example: the eRoutes PaveTag from Minds, Inc., which uses Intellex tags.

"We take telematics to a new level by integrating advanced RFID technology," explains Pierre Vidailac, president, Minds, Inc. "The customer's main concern today is the ability to reduce transportation costs. eRoutes attacks this problem directly by combining load out ticketing information to truck location and paver activity in an easily deployable solution for owned and hired fleets." The RFID element combined with eRoutes opens a new era of visibility with regards to coordination, logistics and communications efficiency, explains Rich Bravman, CEO of Santa Clara, Calif.-based Intellex.

