

Integrating asset management systems enhances shop productivity

Zonar and AssetWorks integration automates remote diagnostics.

When a refuse truck develops a mechanical problem while out on its route, I know with near certainty that my mechanics know about it even if the driver doesn't. Even if the driver ignores the issue or forgets to tell us about it, we often have a work order before he returns to the shop. It's one reason we're caring for vehicles much more proactively.

In 2009, the Sacramento, Calif., City Council approved a five-year contract to install and integrate Zonar's telematics platform and electronic vehicle inspection report (EVIR) system with AssetWorks' FleetFocus M5 on 100 refuse trucks and about 500 high-fuel consuming, field-dispatched vehicles like those operated by parking enforcement and animal control officers.

Since 2009, our \$750,000 investment in new technology, which has bought us fleet telematics equipment and nearly four years of related services for 600 vehicles, has more than paid off. Smoother workflows and streamlined diagnostics dramatically reduced downtime during the day. This is important because we prefer to maintain refuse trucks at night

and work on other assets during the day. Similarly, we're managing the equipment of other internal customers more efficiently, helping those departments avoid unnecessary downtime.

Fuel consumption fell 25% because drivers spent less time idling and drove more slowly over more efficiently designed routes that eliminated unnecessary or unauthorized miles traveled. In addition to offsetting Zonar's monthly service fees, the reduction is helping us meet stricter state emission requirements while fulfilling the city's Climate Action Plan and Fleet Sustainability Policy.

Finally, we became so efficient, we're one of the few government fleets in the state that hasn't had to lay off employees.

As a result, all replacement equipment is now budgeted to include the hardware. Eventually, almost all heavy-duty vehicles will have the equipment.

Automation improves compliance

All this is a far cry from the days when we relied solely on drivers' verbal or written reports to identify mechanical issues that needed repair. Our department of 40 mechanics and 20 equipment service

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PROJECT SPECIFICS:

Who: City of Sacramento, Calif., Fleet Management

Assets: 2,300 vehicles; five maintenance shops

What: Automating work orders by integrating existing vehicle maintenance software with electronic inspection reporting and real-time diagnostics

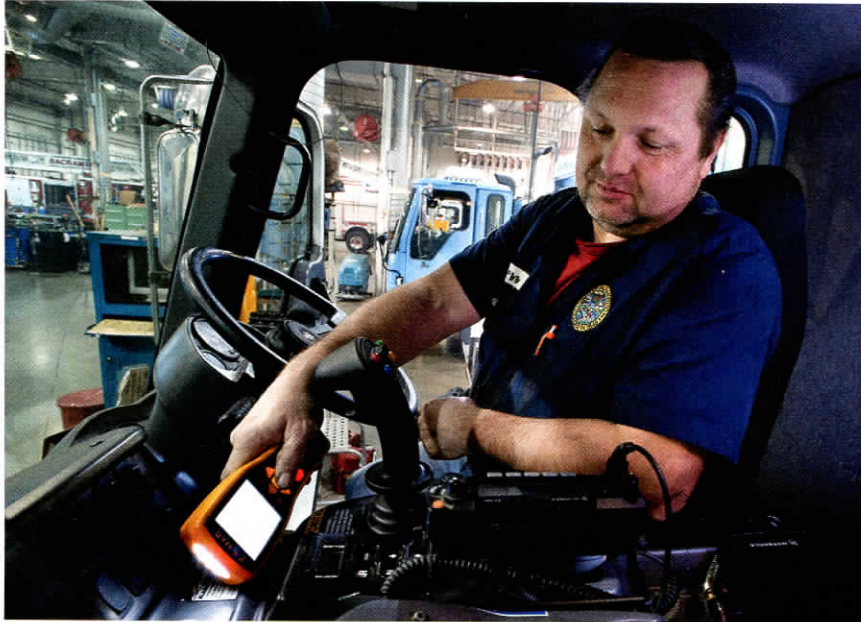
Maintenance software: AssetWorks' FleetFocus M5

Telematics platform and inspection system: Zonar

Cost: \$750,000 for about 600 vehicles

WEB EXTRA

Visit www.pwmag.com for a sidebar on how the Sacramento Fire Department tracks its fuel usage.



Zonar

workers maintains 2,300 vehicles at five maintenance shops, including equipment in the city's fire, solid waste and recycling, transportation, and parks and recreation departments. Two of our shops also service the police department's 264 vehicles.

The Federal Motor Carrier and Safety Administration requires refuse drivers to conduct pre- and post-trip inspections at the start and end of their shifts, a task that generally takes five to 10 minutes.

Before, drivers handed in manual logs before starting or ending their shifts. The reports were often vague and got buried in a shuffle of papers at our three maintenance shops for heavy-duty vehicles. Sometimes drivers forgot, misplaced, or left reports incomplete. Or they reported problems verbally instead of writing them down.

After looking at several potential solutions, we decided to test how Zonar's EV-IR, which includes a telematics platform that captures data directly from the engine in addition to real-time GPS information, would work with AssetWorks' FleetFocus. We monitored driver performance and idle time from 184 vehicles in 14 classes for two months.

Our pre-test report to the city council conservatively projected 10% less fuel use. But an independent third-party analysis by Avion Solutions Inc. found that savings actually averaged almost 25%. This convinced the council to approve a five-

year contract by a two-thirds majority.

For the next 18 months, Zonar and AssetWorks technical staff worked with the city's IT department to develop an integration that shares Zonar-captured vehicle fault code data and driver inspection defects with FleetFocus M5.

How it works

Each truck that's equipped with the EV-IR system has a hand-held scanner that the driver holds over RFID tags placed at up to 12 critical inspection zones. Zonar's telematics device, typically installed under the dashboard near the driver's pedals, automatically transmits the inspection results when the driver returns the scanner to a charging cradle mounted on the dashboard or floorboard.

When the driver finds a defect that requires maintenance, and inputs that information into the scanner, a prioritized work order automatically opens in FleetFocus. Once the job is completed, FleetFocus automatically updates Zonar's web-based Ground Traffic Control software, which clears the defect and indicates the vehicle is in full compliance for operation. The same process occurs for routine maintenance and unscheduled repairs.

The 22 dispatchers who handle non-emergency city services have access to Ground Traffic Control, so they know which vehicles are ready to return to service. Meanwhile, FleetFocus tracks all

RFID tags at critical inspection zones have encoded information that's read by a hand-held scanner and tells the driver which nearby components (up to 11) to inspect. The driver indicates the status of each item by following a series of prompts that offer various options; i.e., Is the problem critical or non-critical? Drivable or non-drivable? A telematics device installed in the vehicle automatically transmits the results when the driver returns the scanner to its charging cradle on the dashboard or floorboard. In addition to inspection data, the telematics device also delivers to the shop's maintenance software real-time GPS information, operating metrics, and fault codes provided through the engine control unit (ECU).

functions related to the vehicles' maintenance, processing repair and preventive maintenance work orders, capturing operating expenses, and tracking usage.

The telematics device also transmits real-time GPS information, operating metrics, and fault codes provided through the engine control unit (ECU) to FleetFocus while the truck's on the road.

Drivers were worried that a monitoring system would be used punitively. True, until now we had no way to hold them accountable for inspections or how and where they went. But instead of drilling down into what everybody's doing, we use the technology to operate very expensive equipment as efficiently and safely as possible. Telematics shows drivers specific impacts of various behaviors.

It's also defends them. If we get a complaint, we can show exactly where and when trucks are and how fast they're going. Dispatchers can see exactly where trucks are at any given time and reroute a truck when a pickup is missed.

My mechanics find out where street sweepers have been before responding to residents who claim their street was overlooked. Dispatchers locate and redirect parking enforcement officers more easily. In some cases, telematics can give an added degree of safety when dealing with potentially hostile citizens. **PW**

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