Making data more manageable

From asset tracking to inspections to car repair billing, wireless technology is helping railroads get a better handle on information, suppliers say

BY ANGELA CLAYPOOL, ASSISTANT EDITOR

For railroads, car owners and repair shops, maintaining accurate, up-to-date information on track, equipment and Federal Railroad Administration-mandated inspections has been a time-consuming — and generally unproductive — process.

Historically, reports, bills and inspection forms have been — and, for some roads, still are — transferred between workers, supervisors and department managers. The information has been filed away in disparate locations, making it difficult, even impossible, to review asset data.

"Twenty years ago, the challenge was getting accurate data, so railroads placed an emphasis on getting more reliable track geometry inspection equipment, and looked at rail-profile measurement systems and rail-flaw measurement systems," says Kevin Kesler, manager of rail programs for ENSCO Inc. "Today, most railroads believe they have reliable data. We've gotten to a point where there's a lot of data coming in from the field and railroads are getting inundated with it."

So, railroads are beginning to purchase equipment designed to simplify the data management process by electronically storing information in a central location and making it easier to retrieve data.

"The idea is to have data available instantly and in the hands of people that can deal with it right away," says Kesler. "The need was always there, and now with wireless data communication, GPS and Internet applications, things that were impossible five years ago are readily available."

ON THE RIGHT TRACK

Count ENSCO's TrackIT™ among the available data management systems. The Web-based data integration tool is designed to collect data from track inspection vehicles, handheld computers and remote field computing devices, and transfer the information into one database. Railroad maintenance-of-way managers can archive track inspection data, view and analyze current information, and plan and assess maintenance.

The FRA began using the system four years ago to organize track inspection data. And since May, Canadian National Railway Co. has been using a second-generation TrackIT to manage track asset data.

"It takes data from all sources — rail flaw inspections, track geometry cars, rail profile inspections — and aligns them so you can see how they relate," says Kesler. "It enables the person responsible for a particular track section to see all things associated with that section to make maintenance decisions.

ENSCO also offers the DigitalTrack Notebook™, a handheld computer featuring information management software that's designed to increase track-inspection accuracy. The notebook features a global positioning satellite (GPS) receiver, so inspectors can locate track defects within 10 feet, says Kesler.

MOW workers can use the handheld computer to record track inspections and field measurements, and take notes. Collected data then can be loaded into the TrackIT system.

MOBILE MONITORING

10East Corp. offers handheld computing devices, too. The equipment features the company's Railway Daily Operations Control Systems (RailDOCS) software, which 10East has offered to railroads and suppliers since the mid-1990s.

Introduced in 2002, 10East's mobile

business platform provides RailDOCS access to field workers, who primarily use the system for federally mandated signal inspections. FRA inspection requirements are pre-loaded into a personal digital assistant (PDA), so signal inspectors obtain immediate feedback on information entered into the system, says 10East Chief Technology Officer Lester Hightower.

The system also helps workers schedule inspections. Since the mobile platform keeps track of each territory's mandated inspections, the device can show workers the order in which to most efficiently complete inspections.

Of the 1,300 handheld computers 10East has sold during the past two years, CSX Transportation is using 1,000 to monitor FRA compliance. Some small roads might begin using the mobile business platform within the next year or two, says Hightower.

Meanwhile, GE Transportation has developed its own asset-management tool for PDAs. The company is testing its GPS-based Mapper Tracker — designed to automate the FRA reporting process for track or signal inspectors — with a Class I. The system will enable workers to gather, transmit and manage data using a Microsoft-based pocket PC. Workers' reporting forms and territories would be coded into their own secure digital card, which is inserted into the PC. When a worker logs on to the computer, it would show their reporting locations.

Inspection points can be entered into the system using GPS coordinates to prevent workers from opening reports until they reach a specified location. Once an inspection is complete, workers would sign their name on the pocket PC, which includes a GPS time and date stamp, so there's no question about whether the inspection was done on location, says Bob Wetzel, GE's product manager for Mapper Tracker.

Supervisors would use the system to view a Web-based inventory and maintenance schedule for specific territories, and a map that shows where inspections still need to be completed.

"You can manage your railroad from a Web site," says Wetzel.

AN INDUSTRY-WIDE TREND

Devices and software that retrieve, verify and manage data more quickly and easily is becoming more popular in the rail industry, suppliers say. Car owners and repair shops are using their own versions of wireless technology.

"With wireless communications, things that were impossible five years ago are now readily available."

— Kevin Kesler, ENSCO

To that end, SSG Innovations L.L.C. offers the Express Yard wireless car repair billing system, which is designed to help repair shops manage maintenance facility operations. Workers can collect data in the field on a handheld computer, which transmits information over cellular phone or local wireless networks, says SSG partner Mark Knapp.

"The process used today is so redundant — a person scratches notes in the field and transcribes it to somebody or puts it into a computer, then prints or faxes or emails the information to a customer," he says.

Information entered into Express Yard can be immediately accessed online. The Association of American Railroads' car-repair rules are saved on the system so Express Yard can validate the information input by workers.

Express Yard can be equipped with digital imagers to enable workers to take pictures of cars in need of repairs and transmit them along with the bills.

Or, shop managers can create work orders on the handheld device, so workers can view assigned jobs and lists of parts they need to pull. Workers also can use Express Yard to manage car movements and view where cars are located in the maintenance facility.

Keeping tabs on cars and accurately billing repairs is becoming increasingly important for car shops because car owners want to better manage their assets, says Mike Edwards, president and chief executive officer of iIRX L.P.

"Data has become important to spot trends and make management decisions," he says.

ERROR-FREE BILLING

To help railroads, car owners and repair shops more easily obtain that data, iIRX has developed the Internet Railcar Information System (IRIS) — software that features car repair billing and fleet management applications designed for railroads, car repair shops and private car owners.

The software is designed to help shops perform work quickly and prevent errors — the AAR continues to expand its repair billing rules, and shop workers sometimes make billing errors. IRIS validates estimates and bills before they're sent to customers.

"[IRIS] gives car owners the ability to run repair analyses, spot trends, analyze their fleet and make business decisions," says iIRX Vice President and Chief Operating Officer John Robertson. "They have a complete maintenance picture."

Chicago Freight Car Leasing Co. (CFCL) has been using IRIS for about 18 months to obtain more accurate repair estimates. The software also helps the leasing company hasten the repair process. Instead of faxing estimates and other information between CFCL and shops, the repair shop sends data electronically. As a result, lessors can obtain estimates quickly and send approval back to shops in real time.

IRIS saves all information exchanged between car owners and shops to help leasing companies better manage their fleet.

Sister regionals Dakota, Minnesota & Eastern Railroad Corp. and Iowa, Chicago & Eastern Railroad Corp. use the system to keep track of completed repairs to bill car owners. In addition, the railroads use IRIS to monitor equipment health in real time and determine when cars were last repaired — information that enables roads to spot short- and long-term trends, says Edwards.

"Railroads have been collecting this data for years, but until recently, they haven't been able to look at it easily," he says. "The use of computer programs now makes a daunting job fairly straight forward and available in real-time ... and it creates reliable information you can base business decisions on." PR

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