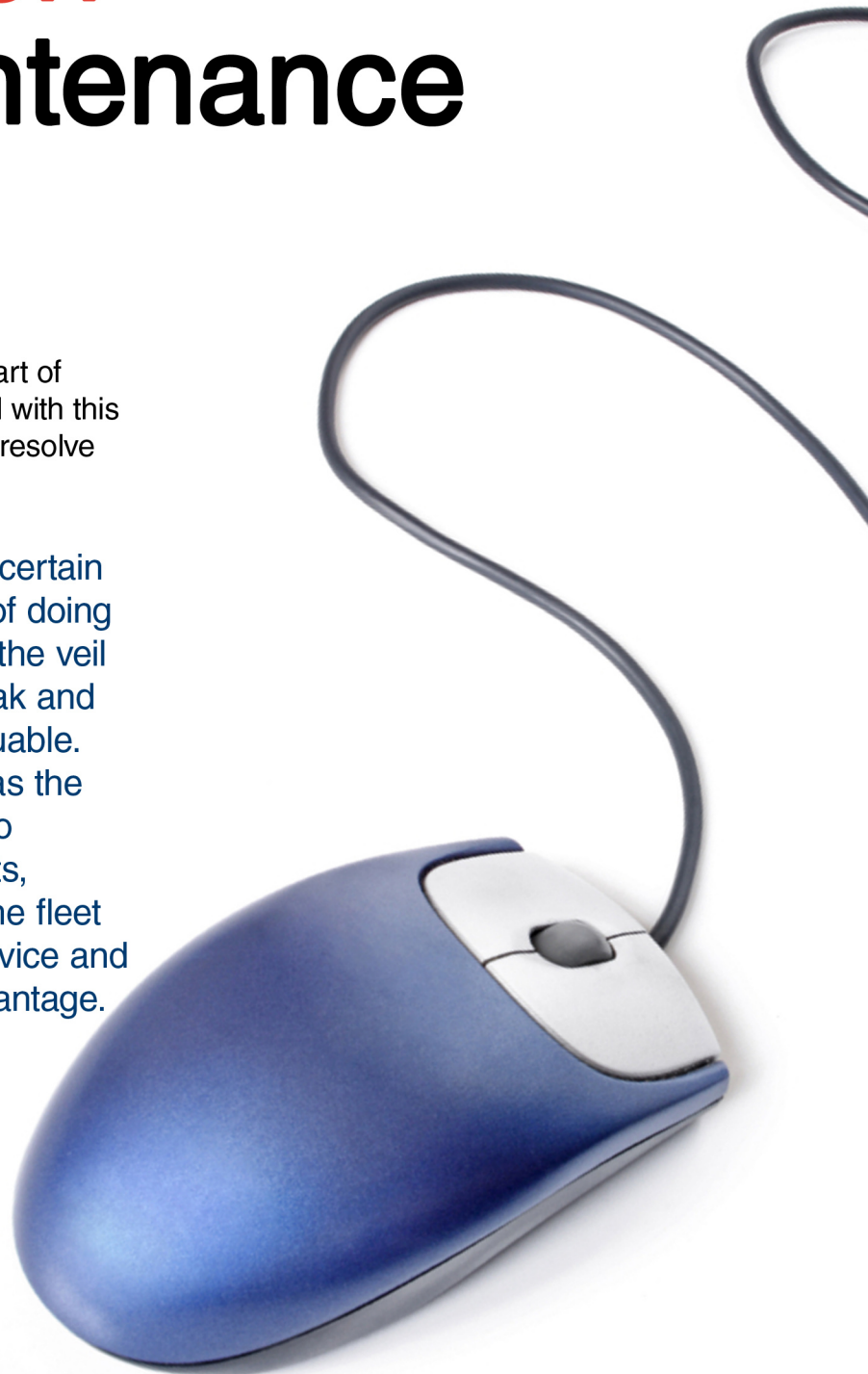


Data-Driven Fleet Maintenance Decisions

Roadside breakdowns are an inevitable part of managing a large commercial fleet. Faced with this reality managers have focused on how to resolve roadside events faster and cheaper.

But why does the industry accept a certain number of breakdowns as the cost of doing business? If there were a way to lift the veil of uncertainty about what might break and when, that information would be valuable. Such insights could be relied upon as the basis for an entirely new approach to maintenance that would reduce costs, improve delivery schedules, make the fleet more reliable, improve customer service and ultimately provide a competitive advantage.



Fleet managers who make decisions based on robust data unique to their fleet are able to reduce uncertainty and trial-and-error approaches to maintenance. They make holistic business decisions about fleet management that reduce maintenance calls and keep their trucks rolling.

Roadside Maintenance is More Costly

A roadside failure is four-times more expensive to fix than making the same repair inside the shop. Fixing a truck on the side of the road often requires outside labor and a premium to be paid for the on-demand service. Repairs that occur at night are even more expensive and often take longer because parts aren't always readily available. Those delays can result in additional customer service penalties for haulers that must meet strict delivery schedules. A bakery that receives a delivery late can't sell day-old bread at the same price as fresh bread. The hauler pays the price.

Breakdowns are rarely anticipated and their occurrence usually seems random. Fleet managers often feel they are playing a game of whack-a-mole, quickly assessing and fixing problems as they arise but rarely predicting problems and addressing them ahead of a maintenance event.

Most companies don't have a central repository for their information. Instead fleets are often made up of multiple makes and models, each with its own repair history that may or may not have been catalogued. For companies that have never maintained a database of repair data, their fleet can be a patchwork quilt of repaired and rebuilt parts. People are busy doing their level best to solve the problems of the day, but very few have the data to step back and solve the bigger problems.

Reducing Roadside Maintenance is Possible

It is possible to have a full history of each vehicle in the fleet and to use that data to make informed choices about which trucks, parts and maintenance partners are the most reliable.

The key to this insight is called the Vehicle Maintenance Repair Standard, or VMRS, that is a unique identifier of the engine part involved in a maintenance problem. The VMRS was created as a



standardized coding system for tracking equipment, assets and maintenance repairs. Since 1997 it's been overseen by the Technology and Maintenance Council of the American Trucking Association, and it's now the standard language of maintenance software. Through the use of a series of data sets, known as code keys – and there are 64 of them – maintenance and fleet managers can capture data related to maintenance events and keep that information for future reference.

For every maintenance event logged by FleetNet America, technicians use the VMRS to code maintenance events. Over time, the log of maintenance events creates a database of work that has been performed on each vehicle. Across a fleet of vehicles, that data can reveal patterns about what engine functions most often fail and provide benchmarking for fleet performance from year to year.

VMRS

ATA's TMC VEHICLE MAINTENANCE REPORTING STANDARDS™

VMRS coding is available to all fleet managers. Creating a robust database requires keeping records of each maintenance event, both scheduled and unscheduled repairs. VMRS data on scheduled, in-shop repairs can be recorded by the tech who performs the work. To capture unscheduled repairs resulting from roadside breakdowns takes a bit more planning. Fleets can hire administrative staff and train them to use VMRS.

To capture unscheduled repairs resulting from roadside breakdowns takes a bit more planning. Fleets can hire administrative staff and train them to use VMRS. The Technology & Maintenance Council of the American Trucking Association offers a VMRS certification program. The administrative staff would then collect and index vendor invoices to the repair and then apply the correct VMRS code into the system. Most fleets find coding to the VMRS “System” and “Assembly” levels provides enough information to make meaningful decisions. The effort to code to the VMRS “Component” level is considered by many fleets to be cost prohibitive.

A database using the VMRS code associated with the part that required maintenance provides a powerful tool to today's fleets. Over time, cumulative data on events and parts begins to show what trucks or parts are responsible for the most maintenance events. The data can be used to compare the performance of a fleet in order to identify areas the maintenance team can address to mitigate maintenance costs.



The Easy Button



VMRS coding makes building a maintenance database possible. But finding the time and manpower to build your fleet's database can be a challenge. For customers that use FleetNet America for 100% of their roadside maintenance events the database is already compiled. Better yet, it's free.

FleetNet customers who want to use their data to analyze trends and the source of problems will be assigned a FleetNet team that includes a fleet manager, analyst and sales person. Once a year that team produces a report identifying insights on where problems are occurring most often. That information is valuable in future purchase decisions or in devising maintenance plans.

For customers who run an in-house maintenance shop for local calls and use FleetNet America for longer distance maintenance events, the VMRS data cataloged by FleetNet can be combined with the company's own in-house records of repair orders or vendor invoices to build a robust database of maintenance events and the systems that caused them. By electronically combining in-house data with FleetNet data, the company can gain the complete picture of their maintenance events and the trends that could be driving up costs.

Data Drives \$1.3 Million Savings



FleetNet America discovered the value proposition of data-based decisions two years ago when a FleetNet client began using FleetNet's services less and less. Jim Buell, Executive Vice President of Sales and Marketing, visited the customer to find out why and to do what was necessary to ensure the customer was happy with their FleetNet service. "They said, 'we have no issues with FleetNet. In fact we love you guys,'" Buell says.

FleetNet had always provided the client with VMRS codes to show where maintenance failures had occurred. The client was using those codes to identify trends and determine the three or four VMRS systems that were causing the greatest numbers of roadside breakdowns within its fleet. With additional analysis the company was able to put together a plan to focus on a handful of systems that were breaking most often. The maintenance department attended to those issues before a breakdown occurred. After a year, the customer saved \$1.3 million by avoiding costly roadside repairs. And that savings doesn't even account for lost time or late delivery penalties.

Recognizing the power of the data, FleetNet America developed the Repair Summary Tool and began offering it to other clients, enabling them to view their maintenance problems in new ways.

Data Identifies Low-Performing Vendors

One customer took the data and examined all roadside failures that happened within 30 days of the truck receiving preventive maintenance. Those were the trucks that might seem least likely to have a problem because they'd recently been inspected in the shop. By seeing trends in what was causing breakdowns even shortly after preventative maintenance inspections, fleet managers were able to identify shops that weren't doing a thorough job of preventive maintenance. That company was able to achieve a 20% reduction in maintenance events after improving maintenance checks.

Data Validates Good Decisions

Another large customer used the data to determine which locations had the fewest maintenance issues. The analysis revealed that locations in Kansas City and Seattle had the fewest problems with exterior light failures. In fact, the hauler improved its lighting expenditures at those two sites by \$167,000 over two years. The Seattle and Kansas City locations had previously implemented a yard check system with an employee conducting a visual check of trucks before they left the yard. The conclusion was those visual checks were catching issues that were repaired before trucks left the yard, avoiding costly Compliance, Safety and Accountability violations that could have potentially grounded the fleet. Without data analysis, the savings offered by the yard check might never have been identified and replicated. Data helped that client make a better decision about whether it was worthwhile to implement yard checks in other locations.



Setting Industry Benchmarks

Making data-based decisions give fleet managers the tools to determine which engine parts and systems are the most reliable and provide the greatest miles between maintenance events. That advantage to individual companies is obvious. But as data permeates the industry the commercial fleet industry will move toward benchmarking that may help all carriers make better decisions.

"I hear carriers say they can't compare their fleet's performance to a competitor because they use different brake systems, for example," Buell says. "That's exactly the reason you should compare your performance."

With data comes the ability to create vertical benchmarking. With enough data from companies who pool what they've learned fleet managers will learn of other companies successes and failures.

"If the industry can determine the gold standard for braking systems, then the entire industry wins."

Using the Repair Summary Tool, FleetNet customers are able to measure and then work to improve how many miles are driven between breakdowns. Clients compare month to month performance and seasons against seasons. Large customers, especially, can compare the performance of trucks at various locations, even establishing which locations are best in class and setting benchmarks for other locations to make improvements.

Conclusion

Most companies are spending more money on maintenance than they should, and they don't even know it. For too long, the trucking industry has viewed roadside breakdowns as a normal part of doing business. While engine part failures will never go away entirely, progressive fleet managers are using data to better understand why breakdowns are happening and taking steps to avoid maintenance issues once trucks are out on the road. Data provides new tools to identify risks and quantify problems and potential solutions in ways that impact the bottom line. Using FleetNet America data, managers have the tools to elevate the maintenance department from being viewed as a corporate cost center to a sophisticated department reliant on data analysis that can provide a potential competitive edge for the company.

Moneyball

Did you ever see the movie Moneyball? Actor Brad Pitt plays Oakland A's General Manager Billy Beane, who is constrained by a payroll just one-third the size of rich teams. Looking for a competitive advantage, Beane hires a recent Yale graduate who uses statistical data to analyze and place value on players. He assembles an inexpensive team of no super stars and within two years takes the team to the World Series.

FleetNet America's Repair Summary Tool uses the same innovative approach to using data to find a competitive advantage by anticipating repairs and reducing costly maintenance events.

"Using data elevates the job of people who take the Moneyball approach versus those who keep doing things the way they've always been done. You can keep fighting fires, but using data allows you to be a business person who identifies problems that make your company less competitive than it should be."

~ Jim Buell

