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IT for Fleet Managers: Part 5 Gathering Reliable Data

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“Garbage in, garbage out” describes the danger in not paying due attention to the reliability of data gathering and screening procedures. Technology provides many solutions but some aspects of the problem require good, old-fashioned leadership to overcome.

In this final installment of the IT for Fleet Managers series, we'll examine technologies and techniques for gathering fleet data and screening it for accuracy. There is little point in operating an excellent fleet information management system (FIMS) atop finely tuned computer and network hardware if the information it generates and the decisions based on that information are flawed.

Bad data can also harm customer relationships, says Paul Lauria, president of Mercury Associates. “Customer charges that are based on inaccurate data can give a fleet management organization a public relations black eye. They can send the message to customers that the fleet organization is not concerned about the accuracy of its bills, which may raise questions in customers’ minds as to why a charge-back system is used in the first place.” He adds, “They may suggest that the fleet organization’s systems and procedures for capturing and ensuring the quality of data are lax, implying that the organization’s work is slipshod in general. Customer billing is a key point of contact between service provider and customer; if these contacts are tainted by bad information, customer relations are not going to be good.”

Quality Control

Unfortunately, no matter how well thought out your FIMS structure, there is no getting around the element of human error. That’s not to say that some aspects of the data input system can’t be manually engineered to minimize errors.

First, if your software has built-in features to help prevent input errors, make them active even if it slows down the data input process. There will be a temptation to turn off features requiring double matching input (e.g., VIN) when possible, but it must be resisted. These features virtually eliminate the introduction of “typo” errors.

Only give security rights to software features for which a person needs access and has been thoroughly trained to use correctly. Don’t allow employees to share logins - make sure they know that every entry they make to the FIMS is coded with their user ID, so someone else’s errors will be attributed to them if they allow their access to be shared. Ensuring that everyone knows those employees introducing errors into the FIMS will be known and that there will be consequences goes a long way to reducing careless mistakes.

Implement policies and procedures requiring data entry personnel and their supervisors to double check particularly important items to ensure accuracy. It helps if they understand the ramifications to the organization if they make careless errors.

Finally, managers should routinely review data input to the FIMS to catch those errors that still slip through. A review of customer bills for obvious errors before they are sent out is good insurance against that “public relations black eye.” Employees typically do those things well that are important enough for the boss to check. Whatever system weaknesses can’t be “dummy proofed” must be checked thoroughly for errors.

Exception Reporting

Exception reporting is a means to leverage computing power to help with the task of monitoring data accuracy as well as operational performance. Here are some key steps to establishing effective exception reporting and then dealing with problems once they are noted.

First, you need to decide what is important enough to track. You and your staff have a limited amount of time to generate and review reports so you need to prioritize what to check, how often to check it, and who should do the checking. Establishing the importance of something to be monitored should involve assessing its relevance to obtaining organizational goals and objectives. Does it impact how your customers or executives perceive the fleet organization’s performance? Does it affect recommendations or decisions you must make? Bottom line, what is the risk of something going wrong and the impact if you don’t catch it early?

Once you decide what to measure and report on then you need to establish exception-reporting thresholds. The primary difference between an “exception report” and standard informational reports is that only data outside the norm is shown or at least clearly highlighted for easy identification. For example, you don’t want to spend hours looking at a listing of thousands of valid fuel transactions, you want to see the few with substantially lower than average MPG values that indicate there is a mechanical problem with the vehicle or that there is potential theft occurring. In order for the computer to make this selection for you, you must first tell it what criterion makes the data “exceptional.”

Finally, what are you going to do about exceptional data once you know about it? You need to identify the sources of the errors so corrective action can be taken. It could be a data setup or collection problem. If you find that items on the report are routinely acceptable, it could be that your exception criterion needs to be adjusted.

FIMS built-in features, or add-on products such as Carolina Software’s Value Indicators, allow fleet managers to customize what components are monitored. Every fleet leader or customer can have their own version tracking what they find significant. This product displays in your Web browser every morning or on demand. Products that provide easily identifiable graphical indicators take very little time to review. The thresholds for each indicator are typically customizable so you decide what is “green,” “yellow,” or “red.” When a problem is indicated, the details causing it are only a click away to aid in quickly investigating and resolving it.

Fuel Transaction Collection

Fuel transaction data whether gathered from internal or commercial operations provide critical operating cost and vehicle usage information. Electronic collection and importing of this data should be a high priority for all fleets. Dispensers record quantities of fuel pumped and the cost (at least at commercial stations) for cost-tracking purposes. Fuel dispensers or payment interfaces should collect odometer/hour meter readings as well. Unfortunately, collecting these readings is potentially a major source of error introduction into your database if drivers are involved in the process - especially if they don’t understand or care about the havoc their errors cause.

Meter-reading errors take many forms. Most FIMS expect only whole miles to be entered so drivers who enter tenths of miles turn 60,000 miles into 600,000. Likewise, a simple transposition of numbers, such as values miscalculated from the pump to the cashier, or a blatant disregard for accuracy, all lead to meter readings that are unusable. Or worse, make their way into the database and skew all cost and performance indicators that use them.

The best solution to this frustrating problem for internal fuel systems is to use automated data connections between vehicles and fuel dispenser controllers to transmit meter readings without driver input. Reliable systems are available to communicate via vehicle-mounted transmitters to ground loop or dispenser nozzle antennae. These systems have the added benefit of guaranteeing that only authorized vehicles can be refueled. Also, pumps shut off automatically when a vehicle pulls away so succeeding vehicles can't piggyback on the transaction even if the previous driver forgets to turn off the pump.

Similar technology solutions are seldom available at commercial refueling sites. A software approach serves to improve data accuracy in this case as fuel transactions are processed for importing into the FIMS. Error checking routines only accept meter readings that are within a specified range from the last accepted reading. Those transaction rows not meeting the criterion are sent into a holding table instead of updating the live database. A log of these exceptions is generally reported to inform fleet personnel of the reason for rejection (e.g., meter out of range, invalid unit number, invalid fuel type). This log can be helpful in identifying problems needing follow-up action.

Parts Operation Data Collection

Probably the second biggest data inaccuracy problem in fleets operating garages is keeping parts inventory records matching what's actually on the shelves. Setting aside sloppy adherence to receiving and issuing procedures and theft, human error is still a major issue.

Using barcode readers to receive and issue everything eliminates the keying errors of complex part numbers. Most parts come already barcoded by the manufacturer. Different part numbers from multiple manufacturers for the same part can be added to the FIMS in the crossover dictionary. For those parts lacking barcodes, labels can be easily added to tags, shelves, tray holders, or the parts themselves.

These barcodes also make inventory checks quicker and more accurate. A handheld scanner with keypad for entering quantities and memory to store data can be used to record what is actually present on the parts room shelves. The data is uploaded to the FIMS in batch process. FIMS software then compares stock levels calculated from receipts and issues against that from the actual count to produce a variance report for reconciliation.

Electronic tags have become affordable enough for some fleets to implement using them to track and manage expensive truck and equipment tires. Solutions available from multiple vendors read each tire tag as they come home. The chip also stores information about when and where it was made for recall handling and the tire's maximum pressure. Marrying that information with meter readings improves preventive maintenance programs for tires. The latest generation tags include tire pressure and temperature sensors that communicate directly with the truck moving them from the realm of inventory use into telematic devices.

Shop Labor Allocation Collection

The accuracy of tracking labor allocation in a shop is greatly improved using real-time electronic means. Devices ranging from traditional PCs or terminals to tablets, PDAs, or simple barcode stations distributed throughout a shop function equally well for this purpose. They do, of course, differ widely in

what information they can provide to the technicians but they also vary in expense and durability. Cheap and simple has a decided advantage in a harsh shop environment where they will be used by employees lacking computer skills.

Well-disciplined use of this technology results in job times being recorded more accurately to a work order. For example, a 23-minute job time would be charged exactly to a work order rather than rounded up to 30 minutes in a batch input situation. Non-productive time including shop cleanup, waiting at the parts window, or waiting on a supervisor that might otherwise be rolled into a job can be accurately tracked and accrued for later process improvement.

The real-time nature of the system makes it possible for supervisors to monitor the status of each vehicle from a computer terminal without constant, time-consuming trips to the work bay or paging technicians to the office for an update. This can amount to real savings in a large shop - especially when coupled with electronic surveillance cameras of the work and parking spaces.

Telematics Data Collection

Electronic add-on systems for vehicles provide a variety of monitoring capabilities. Some simple systems record data from sensors about a vehicle's operation for batch downloading at the garage. Many add global positioning system (GPS) receivers now that the cost has dropped and accuracy improved. Others add transmitters for real-time monitoring and permit active dispatching.

These telematic systems have progressed to the point that they can alert managers when vehicles leave a specified zone (break GPS-defined fences), deviate from a route, exceed the speed limit, idle excessively, operate components, develop engine problems, or even have low air pressure in a particular tire. Many of these features are primarily for the benefit of operational managers in fine-tuning routing and modifying employee behavior. Still, some definitely assist fleet managers to identify vehicle problems early and supplement driver reports to reduce downtime.

Making Wise Technology Choices

The refinement of data-collection processes and means and routinely screening for errors must be a high priority task if you are going to realize the full potential of your data, FIMS, and the network it lives on. You certainly don't have to become an information technology expert to be an effective fleet manager. However, familiarity with the subjects in this article series should help you make wise technology choices and take your performance to the next level by leveraging the power of the information management tools in which you have invested. Greatly expanded discussions of series topics and much more will soon be published in NAFA's Fleet Information Management Guide

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