

Forklift Fleet and Operator Management:
Optimizing Return through Phased Implementation

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Introduction

Warehouse and material handling managers continue to face pressure to reduce costs and improve productivity. As with any continuous improvement process, information is the key to identifying and eliminating waste and inefficiency.

Forklift fleet management consists of the collection, analysis and use of relevant fleet information to reduce costs and improve operator and truck productivity. Convenient access to meaningful information provides new visibility into operations that can help answer critical questions, such as:

- How much is being spent on the fleet each year?
- Are costs distributed evenly or are some trucks accounting for an unreasonably high percentage of costs?
- Is the fleet sized properly to ensure adequate capacity without having too many trucks sitting idle?
- Are all trucks and operators achieving similar levels of productivity?
- Are certain operators or locations accounting for a higher-than-average number of impacts?

In addition, fleet and operator management can consolidate fragmented operations in the area of service management and can automate processes, such as collecting

compliance information, to improve operational efficiency and consistency.

Despite these benefits, concerns about the cost and complexity of implementing a comprehensive forklift fleet and operator management program have kept some organizations from moving forward with deployment. Fortunately, fleet management is not an all-or-nothing proposition. A minimal investment in a forklift fleet and operator management program can provide a system to collect meaningful fleet information. Further, a company can use savings achieved from initial efforts to fund future investments that expand the scope and value of the program.

This information also provides a valuable window into operator performance. Through operator log-ins, important productivity metrics — including average travel time, average lift time, actual travel times, actual lift times, time stopped and time stopped with no operator — can measure and benchmark individuals and groups.

This paper outlines multiple paths to forklift fleet and operator management based on organizational objectives. A phased implementation based on high-priority objectives minimizes the challenges of fleet and operator management while still realizing the full benefits of the system.

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Defining Objectives

Fleet and operator management has the potential to positively impact three of the major challenges faced by lift truck operations managers. These challenges include:

- Reducing fleet costs
- Optimizing operator and truck productivity
- Improving compliance with workplace regulations

While it is difficult to prioritize these objectives as all are critical to organizational success, it can be beneficial when planning for fleet and operator management to evaluate these objectives in light of both the potential gains that can be realized and the investment required to achieve those gains.

A comprehensive service program can give significant insight into costs and control over those costs. For organizations with a primary interest in controlling cost, service management represents an ideal opportunity to take the first steps toward fleet management.

Truck-mounted wireless management systems (Figure 1) can provide the benefit of optimized truck and operator productivity by collecting information from trucks in your fleet and transmitting the collected information in real time to management software that can analyze the collected information. Wireless management systems can also play a role in compliance management through impact monitoring and access control. Organizations that need to quickly optimize operator and truck productivity or streamline compliance management should evaluate adding wireless management systems to the fleet as the most direct path toward achieving objectives.

Whether you choose to begin with real-time information collection or service management, you can expand into a comprehensive fleet and operator management program as organizational resources allow.

Figure 1. Vehicle-mounted systems benefit both operators and managers.



Reducing Fleet Costs

Forklift maintenance creates the opportunity to collect information on the truck's operation and represents a major component of total costs. Unfortunately, many organizations are not positioned to take advantage of this opportunity because service is fragmented across multiple providers. This is because trucks are distributed across multiple locations and many providers only serve a limited area.

When different providers service a fleet, the consolidation of service information is more difficult and time consuming in order to obtain a comprehensive view of costs and quality. In addition, the use of different providers can introduce inconsistencies in service and parts quality. One provider may use only OEM parts while another uses third-party parts. Plus, there can be wide discrepancies in costs for the same procedures across different vendors.

Centralizing service management using a single network of providers with known pricing and consolidated reporting creates the foundation for a comprehensive fleet management program with minimal capital investment. This provides the ability to compare and benchmark service costs by vehicle in a meaningful way.

When this information is made available to management through an online reporting console, the information provides up-to-date, objective support for management decisions and provides visibility into fleet costs. Vehicle replacement decisions can be made using actual service costs with the confidence that service is being performed to the same standards and at the same cost for all trucks in the fleet. Operating hours for individual trucks and the total fleet can be analyzed to help guide decisions on fleet size and resource allocation.

Not every service provider is equipped to support fleet management, so the choice of provider is critical to the success of the program. The right partner is one that can provide the information collection capabilities required and deliver consistent, OEM-quality service across multiple locations.

With the right capabilities, the service management program can play a significant role in reducing costs. Consolidating service with a single provider often results in better pricing because the service provider has a more predictable revenue stream and can more effectively manage resources. In addition, service efficiency is improved. Labor times can be reviewed and managed

against historical information to ensure service times are consistent and appropriate, eliminating unexpected charges. With all trucks under management, warranty repairs can be more effectively tracked to ensure warranties are fully leveraged. Finally, the focus of the program can shift from a reactive, break-fix mode to proactive service that increases uptime by ensuring planned maintenance is executed in a disciplined and consistent manner across the fleet.

A centralized approach to service management can also deliver cost-saving operational efficiencies, through electronic invoicing and work order management, that feature integrated quality control processes to reduce processing times and minimize questions and disputed charges.

With the many benefits available through service management, it should be considered a key component in any comprehensive fleet management program and often represents the easiest point of entry into fleet management.

Optimizing Productivity and Improving Safety Compliance with Workplace Standards

Service and operating information obtained at the time of forklift maintenance yields a number of meaningful benefits; however, truly optimizing fleet and operator performance involves the ability to collect and analyze data from the forklift in real time. This is accomplished through the use of vehicle-mounted management systems capable of collecting information from the truck, controlling access to the truck and transmitting data to a central management system.

Wireless communication technology can be used to monitor operations, including truck and operator status, to ensure forklifts and operators are performing within established productivity standards. Wireless communication technology can also serve as the basis for a continuous improvement program focused on performance and operational efficiencies.

Specifically, a wireless communications system should control access to the truck through the use of an authorized PIN code or other operator identifier, capture critical operating information and transmit that information to a central management system.

Essential data provided by the system should include:

- Equipment status (e.g., logged on, logged off or in service)
- Hours by operator based on status (e.g., idle, hydraulic and travel)
- Battery or fuel status
- Fuel consumption
- Impact events

When consolidated and analyzed in the management system, this information helps to gain a fleet-level view of operations that can be used to reduce damage and truck wear.

Once impact monitoring is in place, the system can analyze impact events. Operators understand that impacts can be easily audited to determine responsibility. As a result, truck damage from impacts generally decreases. In addition, ongoing monitoring makes it easier to identify operators that require additional training or locations that are accounting for a high percentage of impacts. In fact, when food distributor MBM implemented wireless truck-mounted systems, a decrease in damage from impacts was one of the first benefits they realized. "We learned a lot about our fleet usage in those first few months," Sean Bennett, director of

"It wasn't long before I realized that I needed to take steps to ensure I maintained a clear understanding of the number of trucks in my fleet, the conditions of those trucks, and most importantly, their utilization rates."

*- Dennis Carlson
Logistics Manager, Steelcase*

financial operations at MBM said shortly after the implementation went live.

"There were a lot of impacts that, if left unaddressed, would lead to damaged lift trucks, racks and other warehouse equipment. We were able to evaluate and isolate each impact by operator and address operator behavior."

Increase productivity

Operators perform more consistently and at higher levels when they know performance is being monitored and recorded daily.

Increase utilization

Without the visibility provided by the information transmitted from truck-mounted systems, material handling managers may not even know how many forklifts are in operation or sitting idle, let alone utilization and productivity levels. That was the case with Steelcase, a global office furniture manufacturer, following a series of acquisitions.

"I had new forklifts added to my fleet, while other trucks were moving from one facility to another," said Dennis Carlson, a logistics manager at Steelcase responsible for the forklift fleet following the acquisitions. "It wasn't long before I realized that I needed to take steps to ensure I maintained a clear understanding of the number of trucks in my fleet, the conditions of those trucks, and most importantly, their utilization rates."

Carlson suspected he had more trucks than he needed but didn't have data to confirm his suspicions until he added real-time data collection capabilities. Using information from the system, Carlson identified process improvements that yielded higher utilization rates and was able to confidently reduce the size of the fleet by 30 percent.

Speed problem resolution

With real-time monitoring, events such as impacts can trigger alarms and automated notifications allow fast response to actual and potential problems. Trend reports can show when key variables are outside the target range so that issues can be addressed before they have a significant impact on operations. Operator problems also can be identified more quickly so that corrective action can be taken.

Streamline compliance management

The management console controls access to the vehicle and can thus support compliance with OSHA inspection and training requirements. The management console can limit access to the vehicle to operators with the required certification, and can integrate an inspection checklist to guide operators through the inspection process. The system captures the time spent on inspections and compares it to standard times to ensure the operator performs the inspection with proper

attention to detail but without wasted time. Further, the system saves checklists for easy access to support compliance management.

Enhance training and service management

As the management system collects data on truck operation, it can track operator training requirements and planned maintenance activity based on actual operating hours. It also sends notifications of upcoming training requirements and maintenance requirements.

The benefits of fleet management are optimized when all trucks are equipped with management systems, but meaningful benefits can be realized through a phased approach to implementation that focuses on a specific facility, location or truck type. For example, Steelcase implemented wireless management systems in a single facility as part of a pilot program before rolling out the technology across the fleet. This allowed potential issues to be identified and addressed on a small scale in advance of the full implementation.

Utilizing Data Effectively

Collecting data is only part of the challenge of fleet management. Equally important is the ability to consolidate that data and deliver it to the people who need it in a way that is useful and supports decision making. Too much data can be as much of an impediment to optimization as not having enough. As a result, the design of the management system supporting the truck-mounted console can have a major impact on the success of a fleet management initiative.

The following factors should be considered when evaluating centralized management system requirements:

Does it deliver the information required to optimize operations?

For most organizations, information on operator and truck productivity, compliance, impacts, service and energy use will all be useful in optimizing operations and should be available through the fleet management system.

Is the information organized in a way that makes it easy to access?

Having to search through detailed reports to find data is frustrating and inefficient. The design of the management system should be intuitive to a user and categorize data to enable fast access.

Is information presented in a way that enables convenient monitoring of the operation?

Some of the information delivered by the system is useful for reporting and analysis and some requires immediate action. The management system should feature a layered approach that ensures busy managers are aware of situations that require their attention. This can be accomplished by defining target ranges for key variables being monitored. Once the targets are established, the system can monitor performance against the targets and send alerts and notifications to management when actual performance is outside the target range. For example, targets for truck utilization, operator productivity and number of impacts per shift can be entered into the system so that performance can be tracked against defined benchmarks.

Is the system deep enough to support detailed analysis and reporting?

High-level overviews must be supported by more detailed reporting that supports problem analysis and troubleshooting. Again, the layered approach should be employed to enable ongoing monitoring while providing fast access to information on a facility, truck or operator basis as required.

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This sounds like a major task, but a well-designed management system should be able to meet these requirements. The Crown InfoLink® system, for example, organizes data into six categories with an overview page that features a color-coded status indicator for each category to illustrate whether performance is as expected, is approaching target thresholds or requires immediate attention (Figure 2). From the main screen, graphical dashboards can be accessed for each of the six categories: Compliance, Impacts, Productivity, Utilization, Energy and Service. Drill-down reports, accessible through each of the six dashboards, provide more detail that can be used to identify the specific causes of a problem.

For example, if a manager notices that the Productivity bar on his overview page is coded red, a single click takes him to the Productivity dashboard where fleet metrics, such as average lift/travel time per log-in hour, average travel distances and operator log-in status, can all be analyzed. If too few operators are logged in, the manager can then access drill-down reports to view productivity by operator.

With a properly designed management console, forklift information becomes a tool that managers can use to stay ahead of problems rather than one more set of reports that managers do not have time to review.

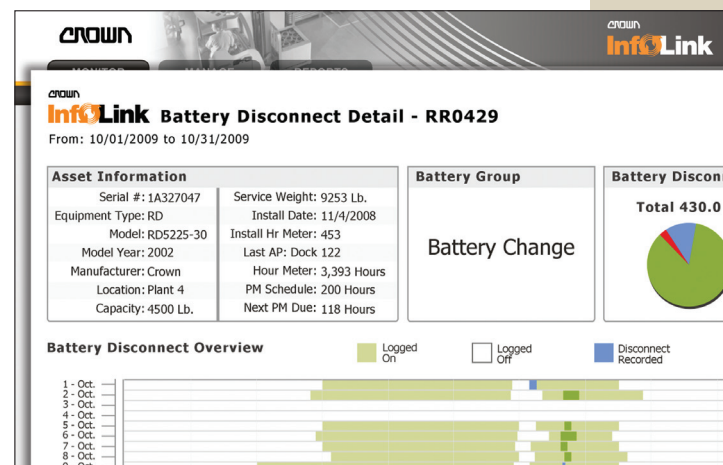
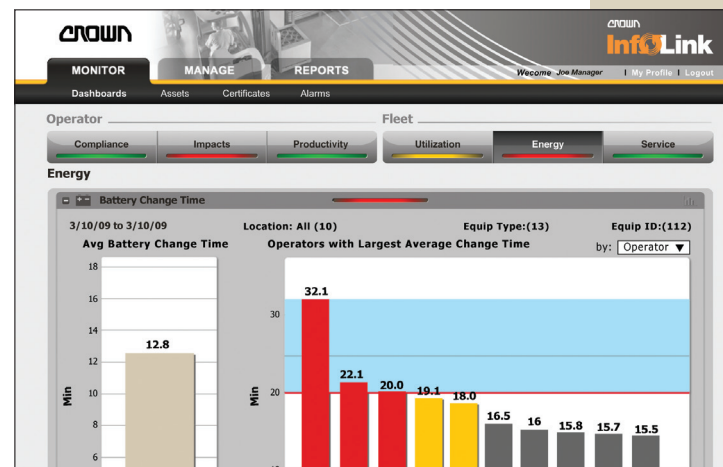
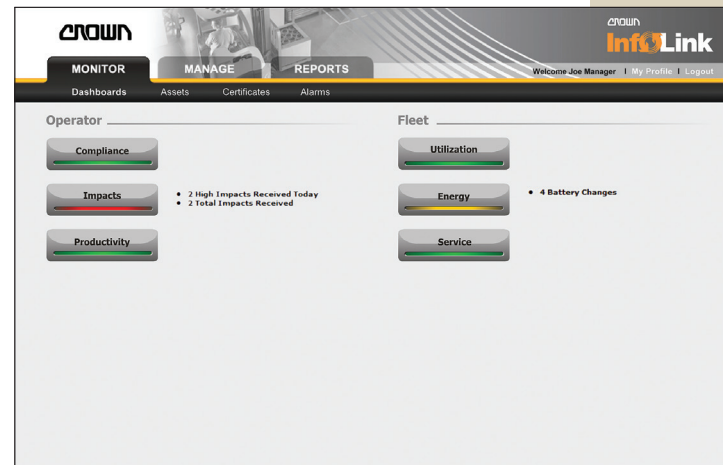


Figure 2. The design of the management system should support convenient monitoring and detailed analysis. The images on the left show a high-level monitoring screen that allows problem areas to be quickly identified. If a problem is identified, drill-down reports can be accessed.

Insights for Managers

The coherent organization of forklift data is key to optimizing material handling operations and essential to addressing productivity, efficiency and compliance issues in virtually every type of application. There are two major opportunities to collect information from forklifts: During service events and real time during operation. This data, when made relevant, can then provide the visibility and control that management needs to improve overall efficiency and productivity.

Specifically, the combination of service management and real-time monitoring increases organizational efficiency by automating manual tasks such as maintenance scheduling, training management and compliance reporting; reducing the cost associated with forklift service; helping ensure the fleet is properly sized; and identifying trucks and operators that are not performing as expected so that appropriate corrective action can be taken.

The systems can have an equally powerful impact on productivity. For example, the systems make forklift downtime more predictable and minimize the downtime as a result of consistent planned maintenance and impact monitoring and management. Resources can be more effectively managed to increase utilization rates, and operator performance can be monitored to ensure

target productivity levels are being met on a daily or hourly basis. The ability to monitor productivity gradually increases productivity levels based on actual performance to support continuous improvement initiatives.

These benefits can be realized through a phased implementation that first addresses either forklift service or real-time operations, depending upon organizational priorities. Real-time monitoring represents a larger investment; however, implementation can be phased in across the fleet based on physical location, truck type, age or other factors to reduce initial costs.

The technology is available today to provide insights into issues managers face when optimizing fleet and operator performance. While there are some challenges that must be faced in putting the systems and processes in place to collect and use this data consistently, those challenges can be easily addressed by working with the right partner and developing a phased approach to implementation. With the programs and technology available today, there has never been a better time to get on the path to forklift fleet and operator management.

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