# Five Reasons You Need a
# Vehicle Management System
## for Your Forklifts and Other Industrial Equipment

# t-matics
# COMMAND

Uncover new ways to improve productivity, safety and cost controls in
your material handling operations

# Introduction to Vehicle Management Systems

Powered industrial trucks are the workhorses of material handling operations and managing them effectively has its challenges. Forklift accidents are the second leading cause of fatalities in the private sector (highway vehicles being the first), according to OSHA.† Also, operator labor represents the largest single cost component of material handling operations and a fleet of industrial vehicles is very expensive to acquire and maintain. Vehicle management can help control these and other safety, productivity and damage issues that are so common in fleets.

The fundamental starting place is vehicle access control, or restricting who can operate your trucks. Since it's impossible for your industrial vehicle operators to keep dozens of keys in their pockets, inevitably keys are always left in trucks' ignitions. That means anyone can operate the trucks at any time with little, if any, accountability.

Lack of accountability translates to:

- Anonymous damage to vehicles, products and your facility
- Lack of compliance or increasingly cumbersome processes to meet OSHA safety standards to ensure only trained operators use vehicles in safe operating condition
- A large disparity in the amount operators are paid compared to the time they actually spend operating a vehicle. Operators are paid for an 8 hour shift, but actual drive times are often less than 50% of time on the clock.

† Source: "Andel on Lift Trucks: The Price of Ignorance is Death", Material Handling Management, July 2006

Because of these significant issues, many of the most successful companies in the world have adopted a Vehicle Management System (VMS) enterprise wide. Vehicle management systems are enabling businesses to better use labor resources and provide a safer work environment, which directly leads to maximizing profits and material velocity. However, there are still many companies today that have:

- No true visibility of the material handling movements made by industrial truck operators
- Limited tools and data to measure the complete productivity of their operators
- No efficient way to ensure vehicles are safe to operate
- Limited or manual systems, if any, to determine where vehicle operators are assigned and to temporarily reassign them based on peak needs

# What are Vehicle Management Systems?

A vehicle management system (VMS) begins with access control to your vehicles. In order to start any vehicle in your facility, the operator needs to present their badge ID to a card reader installed on the truck. The system is linked to the vehicle's ignition and the vehicle will only start if the operator is authorized. Once started, the system monitors and tracks exactly how that vehicle is used (or not). Data is collected automatically and in real time to provide the visibility you need to manage your business efficiently.

**VMS helps you answer questions, such as:**

1. Are my operators driving safely?

2. Why does it take some employees much longer than others to do specific tasks?

3. How long should it take to do a specific task? How can I measure what the true engineering standard should be?

4. Do I have the right amount of vehicles in my fleet?

5. Why are some operators paid overtime while others are not working their full shifts?

6. Where do we need to focus our labor resources today?

7. How do we forecast vehicles and operators needed for future workflow?

8. Am I maintaining my vehicles efficiently? Can I increase vehicle "uptime"?

**This report provides unique insight into how these questions are answered by VMS.**
You will learn the most important reasons why you need to consider installing a vehicle management system now and factors to evaluate when considering VMS vendors.

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### Example

- You are assembling 200 automobiles per shift in your facility
- You need to move 200 front right doors from the storage area to the assembly line.
- Your engineering standard says each round trip should take 3 minutes and 30 seconds, translating to 11.7 man hours of labor "allocated" for that task.
- The actual time recorded by your VMS is 3 minutes and 5 seconds (over the course of several months of real collected data), indicating the standard can be modified.

**RESULTS:** A 12% reduction of the time standard and paid resource level. This process, applied to all of your labor planning translates to a significant cost savings based on reallocation in your workforce or reduction in future hiring plan with no impact on your operation.

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# The FIVE Key Reasons to Immediately Consider Vehicle Management

**1.** **Operators are paid for three to four TIMES more hours than actual material movement time**
Across multiple industries, initial VMS data reveals a very similar and startling pattern of vehicle operation.

Typical Shift Pay = **8 hours** | Operator Logged in to Truck = **4 hours** | Truck In Motion = **2 hours**

Truck Moving with a Load = **1 hour**

*One hour* of product moved *for every 8 hours paid!*

This data has been collected from over 20,000 VMS vehicle installations. Of course, some operators are higher while some are lower, but VMS provides operational visibility and productivity metrics that are not achievable in any other way.

| Tools | Potential for Improvement |
|---|---|
| Warehouse Management Systems (WMS) | A WMS or voice system tells people where and when to complete tasks. You can see when a task was received and scanners tell you when they are completed. What happens in between? Why do certain jobs take longer for one operator vs. another? By tracking and measuring precise vehicle use and importing VMS data into your WMS, you now have the complete picture of material movement. As a result, your operations can be significantly improved – up to 30–40% from more productivity and decreased task times. In addition, VMS is a measurement tool for jobs that WMS does not monitor or initiate. |
| Incentive Pay | Many managers pay incentives to maximize operators' productivity. Pick more, get paid more. Without tracking and measurement, that can translate into paying bonus cash for work that can really be accomplished in the allotted time. VMS allows you to modify your standards and score your operators' performance based upon motion hours, lifts made, and login time. Lower performers are logged in/ moving less and can be readily identified and retrained, and of course true star performers are still rewarded. |
| Overtime | VMS allows you to monitor and control overtime pay. Why pay 10% of your operators overtime when the bottom 30% are logged into their lifts for less than 4 hours a shift? |
| Engineering Standards | Many facilities plan and staff their operations based upon industrial engineering standards. VMS lets you refine the standards for each task based upon actual data from multiple drivers collected over months, rather than a onetime "time and motion" study which are costly and time consuming to implement for every workflow change. |

**Many companies implement various methods to improve productivity.**
If you can use VMS to achieve 2 hours of "motion with load" time per shift, that represents a 100% increase in your productivity!

**2.** **Your Supervisors and Managers are doing the best they can with what they have**

When you walk around your facility, do you see empty trucks not being used? Yet, at the same time, are there also requests to acquire more trucks? This often results from unauthorized drivers, like outside contractors, borrowing trucks without returning them, authorized operators borrowing trucks from their assigned area and failing to return them, or without realtime visibility of vehicle location anywhere in the facility, a supervisor often needs to keep a truck available and in their line of sight for any unplanned tasks.

**Control**

Without access control, anyone can use any truck at any time, so there is nothing enforcing a vehicle's return to its designated area. You may have invested in WMS, barcoding, RFID or voice, but none of these technologies can be optimized if the trucks are not in service or in their assigned location. When trucks are not where they are supposed to be, what is the cost of operators or supervisors walking the floor looking for an available truck?

**If you can't measure it, you can't manage it**

Each day or week, supervisors assign drivers to various areas of the building or to perform certain tasks based upon their best projection of demand. By using VMS each day, supervisors have a tool to identify work performed by each driver and match it against the peak work flows. By re-viewing this data, daily assignments can be fine tuned to match actual needs vs. perceived needs.

**3.** **Every day you are asked to do more with less**

Do you find that certain areas of your facility "need" more forklifts and more overtime? Do you rent or consider renting vehicles for peak periods? How many vehicles are out of service in main-tenance at any time? What if those vehicles had less down time?

Vehicle Management Systems provide unique insight into fleet operation by evaluating how your current vehicles are being used and if there any opportunities to better allocate them. One of the most important of which is a "maximum simultaneous usage report." This graph identifies the peak use of your fleet by each area of your facility. In addition, it shows utilization, including peaks and valleys so that your operations can be better balanced over time. Why buy or rent vehicles to meet perceived peak needs when data can provide real metrics to evaluate this decision? Several VMS customers have not needed to buy new trucks in years because they were able to reallocate their vehicles!

| Vehicle Group | Month | AVG Used At Any One Time | MAX Used At Any One Time | Vehicles in Group | Reduction Potential |
|---|---|---|---|---|---|
| Maint-Stores | June | 1 | 2 | 3 | 1 |
| PKG-Floor | June | 2 | 4 | 5 | 1 |
| PKG-Supply | June | 1 | 2 | 2 | 1 |
| PKG-Unitizers | June | 1 | 2 | 2 | 0 |
| WHSE-Loaders | June | 6 | 12 | 15 | 3 |
| | | 11 | 22 | 27 | 6 |

**The hidden costs of Maintenance**

The more vehicles in Maintenance, the more vehicles you need in your fleet. By using VMS to schedule Preventative Maintenance (PM) on actual motion hours (vs. hour meter or calendar time), you can typically reduce PM costs by nearly 50%. Hour meters generally run when the key is turned, not necessarily when the vehicle is moving. How many hours of motion time are assumed when the 300 hour PM is scheduled? – Traditionally, all 300 hours. However, VMS will show that motion time is typically 50% of logged hour meter time. Reducing PM counts means lower costs as well as more vehicles in operation since they are only being serviced when it's necessary.

Additionally, by implementing wireless vehicle inspections via electronic checklists, small problems can be identified by drivers in real time, before they become more costly maintenance repair items that keep vehicles out of service for extended periods.

Without the ability to measure or collect data, your supervisors and managers run their operation based on what they know and can see. However, we find that there is a wealth of possibilities of using an existing fleet differently, even just slightly different, not only increases effectiveness, but creates significant cost savings.

## 4. You want to keep your employees as SAFE as possible

Making the workplace safe for its employees is important to all businesses. Many safety systems reduce productivity and are seen as overly burdensome. However, no one wants injuries or fatalities (and no one wants to be the supervisor on duty if an accident happens).                                                                                                         †

† *"Each year in the United States, nearly 100 workers are killed and another 20,000 are seriously injured in forklift related incidents."*

There are numerous OSHA safety regulations in place to help ensure a safe work environment. The most prominent are summarized below:

- **Before use, drivers are required to inspect vehicles for unsafe conditions** OSHA requires that industrial trucks be examined before being placed in service. They shall not be placed in service if the examination shows any condition adversely affecting the safety of the vehicle. Such examination shall be made at least daily. When industrial trucks are used around the clock, they shall be examined after each shift. When defects are found, they shall be immediately reported and corrected [29 CFR 1910.178(q)(7)]. Source: CDC/NIOSH

- **Employers need to ensure that only TRAINED operators can use forklifts and like equipment**

  OSHA has promulgated the Final Rule for Powered Industrial Truck Operator Training [29 CFR 1910.178(l)], which became effective March 1, 1999. The standard requires operator training and licensing as well as periodic evaluations of operator performance. Source: CDC/NIOSH

Ultimately, everyone needs to comply with these regulations. VMS can help you do so by enforcing daily vehicle safety checklists as well as tracking and authorizing drivers' access to vehicles. How many times do you see anonymous damage in your facility – to the racks, inventory, and the vehicles themselves? How can you enforce a sense of accountability for your drivers? Once you have trained them, how can you cost effectively ensure that only those drivers are operating vehicles?

VMS systems should also identify unsafe driving including speeding and impacts. VMS makes the workplace safer not just for the drivers, but for the hundreds of other employees/ pedestrians that work so closely around them.

*The cost of one incident, whether it's from an untrained driver, or major damage to a rack from careless driving can often more than justify an investment in VMS technology that can help manage these conditions.*

**5.** **VMS is becoming the workplace standard**

Keeping manufacturing and production in the non-third world countries is increasingly seen as too costly. Productivity tools are essential to maintain a competitive edge. As a result, the most successful companies in the world have adopted VMS enterprise wide. VMS gives you the tools you need to optimize your material flow as safely and effectively as possible. Typically, each dollar saved in distribution/manufacturing translates to nearly 5–10 times that in increased sales (based upon a company's margin profile). The return on investment and established results of a VMS has been proven for you and now it's time to move ahead.

After deploying a VMS:

A leading retailer moves 25% more pallets through their DC's

A leading auto manufacturer has reduced maintenance expense by over 60%

A government agency was able to put a complete moratorium on forklift purchases and operator overtime

A distribution center won the Great Lakes safety award

# Evaluating the Right Vehicle Management System Vendor

When considering a VMS vendor, it is essential to evaluate the following criteria:

**Will the system void your truck manufacturers' warranty?** You should require that the proper concurrences are in place from the original equipment manufacturers and dealers to ensure that the VMS will not interfere with UL approvals and other key safety endorsements. Does the vendor have concurrences in place or will that potentially slow down your deployment?

**The system should work on ANY type of truck, now and in the future.** To provide the most value, a VMS needs to be installed on all trucks in the workplace. You may not want to be "locked into" a particular truck manufacturer for your next year's truck purchases and this can happen if you buy a VMS system that only works on one truck type. The data capture also needs to be consistent regardless of model/type/age. One motion hour on one truck type should be identical to one motion hour on a different type.

**Select a vendor with years of experience, that can offer best practices learned from thousands of installed vehicles.** On the surface, VMS systems can appear the same; however, very few vendors' systems have been in place for years and can therefore address the myriad day-to-day issues that will inevitably arise. If an operator forgets his badge one day, is that day's data lost? If an operatore is deleted from the system, how do historical reports address this? Ensure that the VMS system you select is less work and more efficiency than before you had the system.

**The VMS should easily integrate with other systems.** If you already have a maintenance, WMS, timecard, or safety database, ensure that the selected VMS system can easily exchange data with those software programs. Also, be sure that the VMS system will not be a burden on your IT department.

**The VMS vendor should team with you to achieve the Return on Investment you signed up to when the project was approved.** Whether its 6 months or 12 months, the time horizon you need to show a return on investment is going to be quick. Identify a company that will work with you to meet your goals as well as find ways to exceed them, instead of launching the system and the deployment becomes a full time job beyond your existing responsibilities.

## In Summary

As companies attempt to optimize their supply chain, they need to stay on top of emerging best practices. Vehicle Management Systems have demonstrated a proven payback to the businesses that adopt them. Typically, they can provide less than a 12 month return on investment (ROI). In addition, with numerous OSHA regulations in place, it's important to do everything you can to support a safer working environment. Every day is a challenge in business and new measurement and optimization tools are paramount to success.

*For more information on T-Matics COMMAND, visit **www.ToyotaForklift.com.***

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