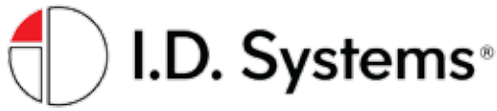


The 5 Reasons You Need A Vehicle Management System for Your Ground Service Equipment

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

WHITEPAPER

Reading Time 20 Minutes

Introduction to Vehicle Management Systems (VMS)

Managing aircraft Ground Service Equipment (GSE) effectively poses significant challenges. Tens of thousands of GSE vehicles operate at airports around the world. The vast majority are not keyed, because it is impossible for drivers to keep dozens of keys in their pockets. But that means anyone can take and use any piece of equipment without accountability for its use (or abuse), and without any visibility to the vehicle's owner.

Equally challenging to managing GSE fleets is controlling the significant costs of vehicle acquisition, vehicle maintenance, and operator labor the single largest cost component of ground handling operations.

A Vehicle Management System (VMS) can help control these and other safety, productivity and damage issues common in GSE fleets. The fundamental starting place for vehicle management is vehicle access control, to restrict who can operate your vehicles and establish accountability for all vehicle use.

Lack of accountability translates to:

- Anonymous damage to vehicles, baggage, aircraft, and facilities
- Poor compliance with government safety standards (or cumbersome processes to attempt to meet them)
- Increased risk of accidents due to untrained operators using vehicles or vehicles being operated in unsafe operating condition
- A large disparity in the amount operators are paid compared to the time they actually spend operating vehicles (actual time spent utilizing vehicles productively is typically less than 50% of time on the clock)

Because of these significant issues, some of the largest, most successful airlines in the world have adopted vehicle management technology in their operations. Vehicle management systems enable airlines to better use labor resources and provide a safer work environment, which directly leads to fewer missed baggage connections and maximized profits. However, there are still many airlines today that have:

- No true visibility of the GSE movements made by GSE 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. Inorder to start any vehicle in your facility, the operator needs to present his/her ID badge to an electronic reader installed on the vehicle, similar to gaining entry to a secure area of the airport. The system is linked to the vehicle's ignition and the vehicle will only start if the operator is authorized and properly trained. 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 necessary to manage GSE operations most 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 standards should be?
4. Do I have the right amount of vehicles in my fleet and can I still meet peak demands?
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. How do we prevent baggage from missing key connections?
9. Am I maintaining my vehicles efficiently? Can I increase vehicle "uptime"?

This report provides unique insight into how these questions are answered by VMS.
In this report you will learn the most important reasons why you need to consider installing a vehicle management system now. You'll also gain insight into what factors to evaluate for VMS vendors.

EXAMPLE

- You are delivering outbound bags to scheduled flights
- You need to move three fully loaded baggage carts to Gate 7
- Your standards say a trip should take 7 minutes and 30 seconds per round-trip of labor "allocated" for the delivery
- The actual time recorded by your VMS is 5 minutes and 45 seconds (average over the course of several months), indicating the standard can be modified

RESULTS: A 23% 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.

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 GSE	4 hours
GSE In Motion	2 hours

Two hours of motion for every 8 hours paid!

This data has been collected from over 50,000 VMS vehicle installations. Of course, some operatorsare higher while some are lower, and some airline work is driven by schedule, but VMS provides operational visibility and productivitymetrics that are not achievable in any other way.

Many companies implement various methods to improve productivity

TOOLS	POTENTIAL FOR IMPROVEMENT
Workflow Planning Systems	A workflow planning 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 forone operator vs. another? By tracking and measuring precise vehicle use and importing VMS data into your workflow planning system, you now have the complete picture of GSE movement. As a result your operations can be significantly improved – up to 30-40%! In addition, VMS is a measurement tool for jobs that workflow planning systems do not monitor or initiate.
Overtime	VMS allows you to monitor and control overtime pay. Why should overtime be 10% or more of your total operator labor costs, if the lowest performing 30% of your operators are logged into their GSE for less than 4 hours per shift?
Engineering Standards	Many facilities plan and staff their operations based upon labor standards. VMS lets you refine the standards for each task based upon actual data from multiple drivers collected over months, rather than a single “time and motion” study which is costly and time consuming to implement for every workflow change.

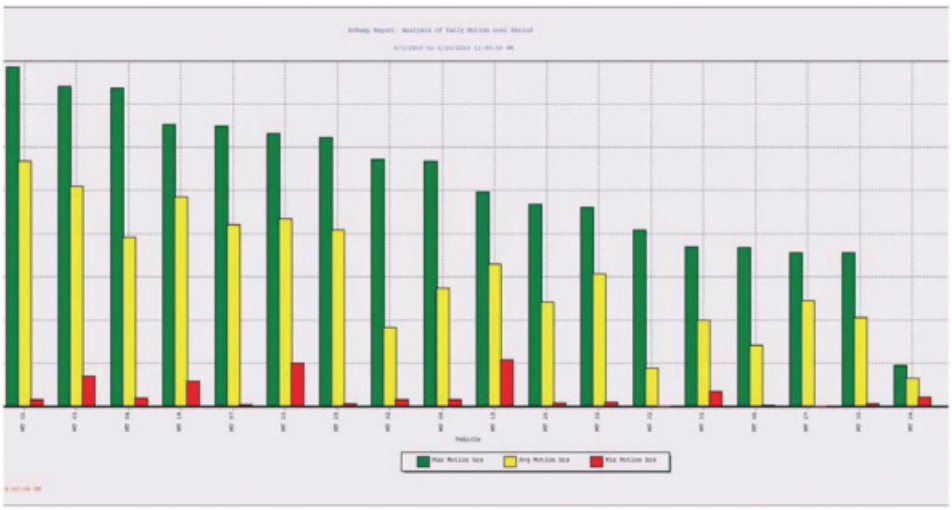
If you can use VMS to achieve 4 hours of “motion” time per shift, that represents a 100% increase in your productivity! You can move more bags through your airport and/or reduce your operator headcount or overtime. Either way, you come out significantly ahead.

2 YOUR SUPERVISORS AND RAMP MANAGERS ARE DOING THE BEST THEY CAN WITH WHAT THEY HAVE

When you walk around your ramp area, do you see idle tractors not being used? Yet, at the same time, are there also requests to purchase more trucks? This often results from unauthorized drivers, like outside contractors or other airline personnel, borrowing tractors without returning them, or authorized operators borrowing trucks from their assigned/gate area and failing to return them. Without real time visibility of vehicle location anywhere in the facility, a supervisor often needs to keep a vehicle available and in their line of sight for any unplanned movements.

Control

Without access control, anyone can use any GSE at any time, so there is nothing enforcing a vehicle’s return to its designated zone or gate. You may have invested in labor planning, bar coding, RFID or ground to ground radios, but none of these technologies will be effective if the GSE are not in service or in their assigned location. When GSE are not where they are supposed to be, what is the cost of operators or supervisors walking the ramp area looking for an available vehicle?



If You Can't Measure It, You Can't Manage It

Each day or week, ramp managers assign drivers to various areas or gates to perform certain tasks based upon their best projection of demands required. By using VMS, each day, supervisors have a tool to identify work performed by each driver and match it against the peak needs. By reviewing 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

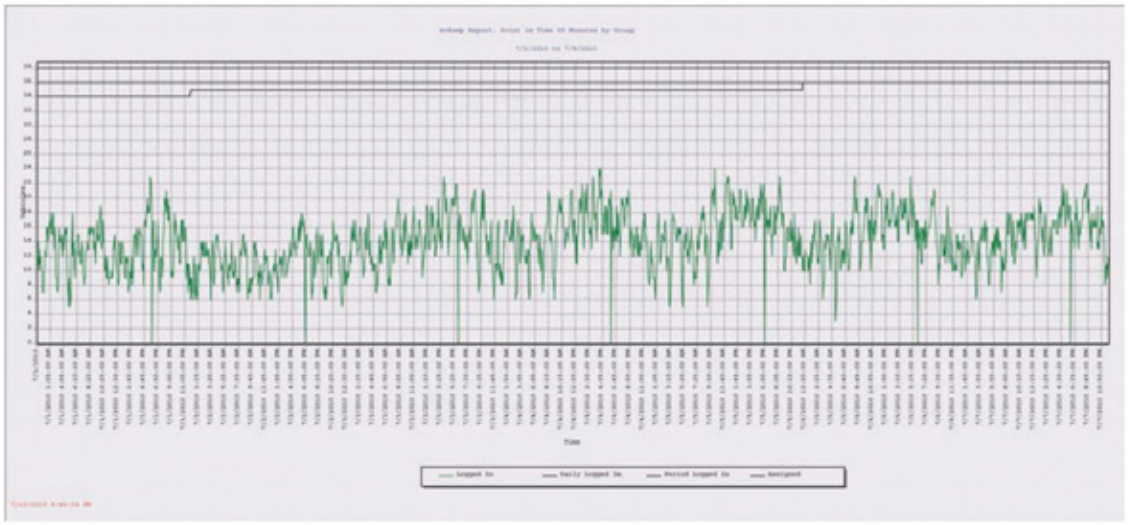
Do you find that certain areas of your airport "need" more GSE and more overtime? Do you rent or consider renting vehicles for peak periods? How many vehicles are out of service in maintenance at any time? What if those vehicles had less down time?

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 VMS tools is a "maximum simultaneous usage report." This graph identifies the peak use of your fleet by each area of the airport. 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? VMS users have avoided buying new vehicles by using VMS data to reallocate equipment to different facilities!

VEHICLE GROUP	MONTH	AVG USED AT ANY ONE TIME	MAX USED AT ANY ONE TIME	VEHICLES IN GROUP	REDUCTION POTENTIAL
Maintenance		4	7	15	8
Terminal A	Dec	7	12	25	13
Terminal B	Dec	8	22	37	15
Terminal C	Dec	10	30	45	15
Terminal D	Dec	5	7	10	3
		34	78	132	54

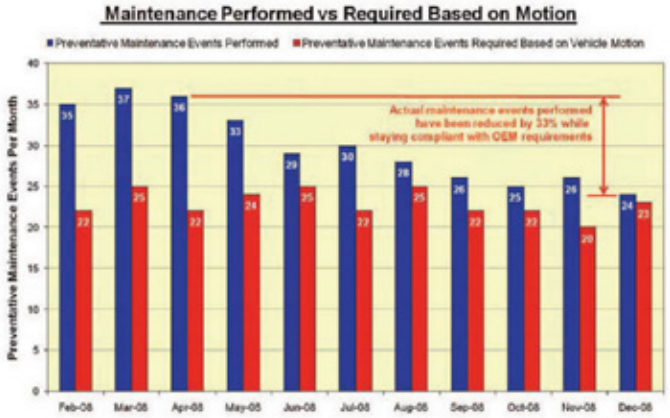
The Hidden Costs of Maintenance

The more vehicles you have out of service for maintenance, the more vehicles you need in your fleet. By using VMS to schedule Preventive Maintenance (PM) on actual motion hours (vs. hour meter or calendar time), you can typically reduce PM costs by nearly 50%. Hour meters, even if they are installed and working on every vehicle, generally run when the key is turned, not necessarily when the vehicle is moving. Ask your dealer/manufacturer's rep, how many hours of motion time are assumed when the 300 hour PM is scheduled. They will typically say "all 300 hours." With the unique insights provided by VMS, 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 oation 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 ramp managers run their operation based on what they know and can see. With the unique insights provided by VMS, we find that there is a wealth of possibilities to use your existing fleet differently, to significantly increase productivity and reduce costs.



4 YOU WANT TO KEEP YOUR EMPLOYEES AS SAFE AS POSSIBLE

Making the workplace safe for employees is important to all businesses. Unfortunately, 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).

It may come as some surprise that, “The Flight Safety Foundation estimates that 27,000 ramp accidents and incidents – one per every 1,000 departures – occur worldwide every year.”

“About 243,000 people are injured each year in these accidents and incidents.”
“Ramp accidents are costing major airlines worldwide at least US $4 billion a year.”

There are numerous government 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
- Employers need to ensure that only TRAINED operators can use GSE and like equipment

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 airport – to the baggage handling systems, bags, 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 GSE?

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

The cost of one aircraft damage incident, whether due to an untrained driver or careless driving, can more than justify your investment in a VMS technology that effectivelymanages this problem.

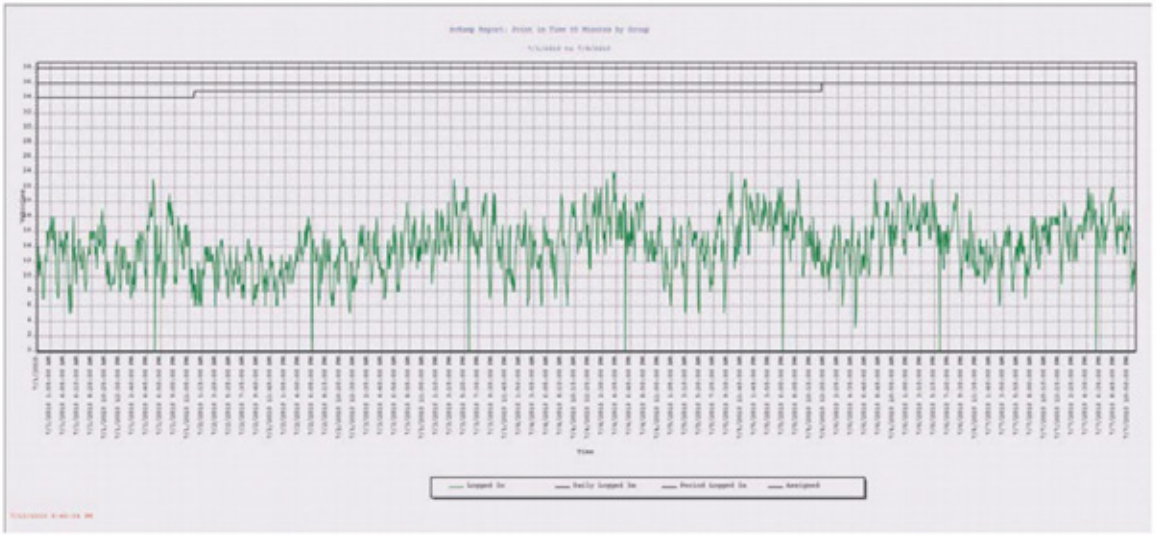
5 VMS IS BECOMING THE WORK PLACE STANDARD

Airlines are having a challenging time managing costs in a very difficult operating environment. Productivity tools are essential to maintain a competitive edge. As a result, the most successful airlines in the world have adopted VMS in their key hub operations. VMS gives you the tools you need to optimize your GSE fleet as safely and effectively as possible. Typically, each dollar saved in ground handling operations translates to many times that amount in increased passenger revenue (based upon an airline's margin profile). The effectiveness of VMS and the rapid return on investment it generates have been proven in the airport environment. Now you, too, can capitalize on these proven VMS results for your GSE fleet.

Case Study

After deploying a VMS:

- An airline uncovered that out of 100 pieces of GSE (baggage tractors) monitored in their hub, less than 35 were ever used simultaneously at any given time over a four-month period. As a result, the airline canceled the purchase of new equipment and transferred the underutilized equipment to a new hub.
- Ramp accidents were reduced by nearly 75%
- GSE operator overtime was significantly reduced



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 GSE 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 GSE at the airport. You may not want to be "locked into" a particular GSE manufacturer for your next year's GSE 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 operator 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, labor, 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 airlines attempt to optimize their ramp operations, 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 safety and FAA regulations in place, it's important to do everything you can to support a safer working environment. Every day is a challenge in the airline industry and new measurement and optimization tools are paramount to success.

For more information on I.D. Systems' Vehicle Management System, please go to **www.id-systems.com** or contact us at **info@id-systems.com** or **+1201.678.5565.**

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I.D. Systems is listed on the NASDAQ stock exchange under the symbol IDSY.

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