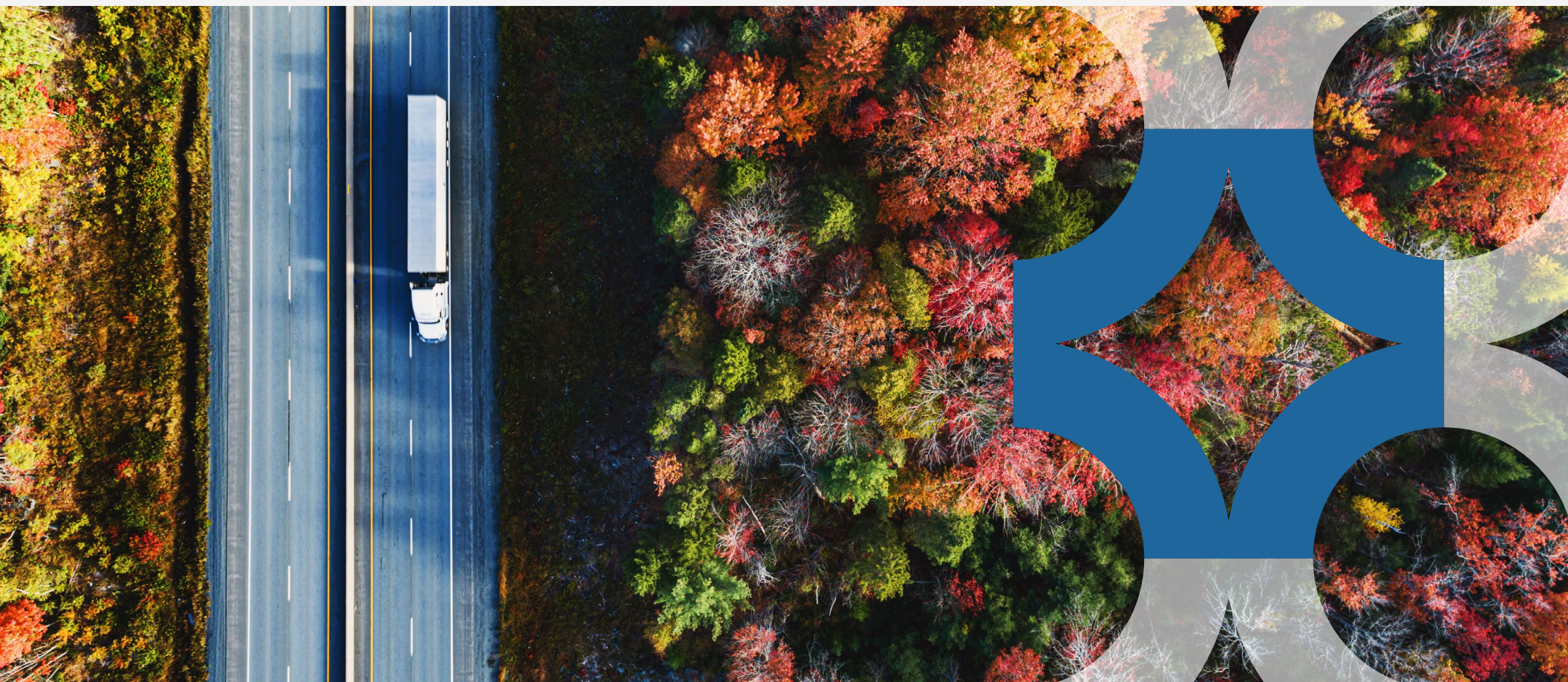


journey to fleet safety: the hidden costs of ignoring maintenance



the unseen engine of fleet success

The Drive Toward Fleet Safety

As a fleet manager or owner, your primary goal is maintaining safety, efficiency, and reliability within your fleet. However, beneath the surface of effective operations lies one critical component: maintenance. Ignoring maintenance is not just a petty oversight; it's a significant threat to fleet safety and business success. In this guide, we will unravel the importance of maintaining your fleet, the hidden costs of neglecting it, and strategies to foster a culture of safety through proactive maintenance practices. Get ready to embark on a journey toward fleet success that prioritizes safety and sustainability.

In this guide, we'll take you through everything you need to know about preventive fleet maintenance. Whether you're a seasoned professional or new to fleet management, this guide has got you covered. We'll unpack the key elements of preventive maintenance, highlight its benefits, and delve into the importance of record-keeping and data-driven strategies for your fleet's safety.

We'll also explore the role of technology in modern fleet maintenance. How leveraging the right fleet maintenance solution can transform your maintenance practices, saving you time and money.

This guide doesn't shy away from the challenges either. We'll tackle common industry challenges and provide practical tips to overcome them.

We'll share industry best practices and real-world success stories to inspire you and demonstrate the positive impact of a well-executed preventive maintenance program.

Whether you're managing a small fleet of delivery vans or overseeing a large-scale operation with diverse vehicle types, our goal is to equip you with the knowledge and tools needed to enhance the reliability, safety, and efficiency of your fleet.

Get ready to take the wheel and steer your fleet towards a smoother, more cost effective journey.



understanding fleet safety and maintenance

The power of preventive maintenance

Fleet safety is intrinsically linked to maintenance. Preventive maintenance serves as your frontline defense against potential breakdowns and accidents. Just as regular health check-ups can prevent serious illnesses, maintaining your fleet can prevent significant operational disruptions and ensure the safety of drivers, vehicles, and other road users.

However, misunderstandings often cloud the true value of preventive maintenance, particularly its perceived high costs. This myth suggests that ongoing maintenance, and the downtime it brings, is more expensive than pushing your fleet until repairs become unavoidable. Picture this: Your vehicle unexpectedly breaks down. Suddenly, you're faced with a cascade of complications — from scrambling to find available technicians to dealing with parts that aren't immediately at hand. The unexpected cost of retrieving the

vehicle from the breakdown spot add to the strain. On top of it all, you need to conduct a thorough inspection to root out any hidden issues, throwing off your schedules and disrupting normal operations. Compare that to a well-organized, planned maintenance where everything, from manpower to materials, is arranged in advance, ensuring a smooth and efficient process. This is why unscheduled vehicle maintenance can take 2 to 5 times longer than its planned counterpart. It's all about preparation, efficiency, and preventing nasty surprises — the essence of preventive maintenance.



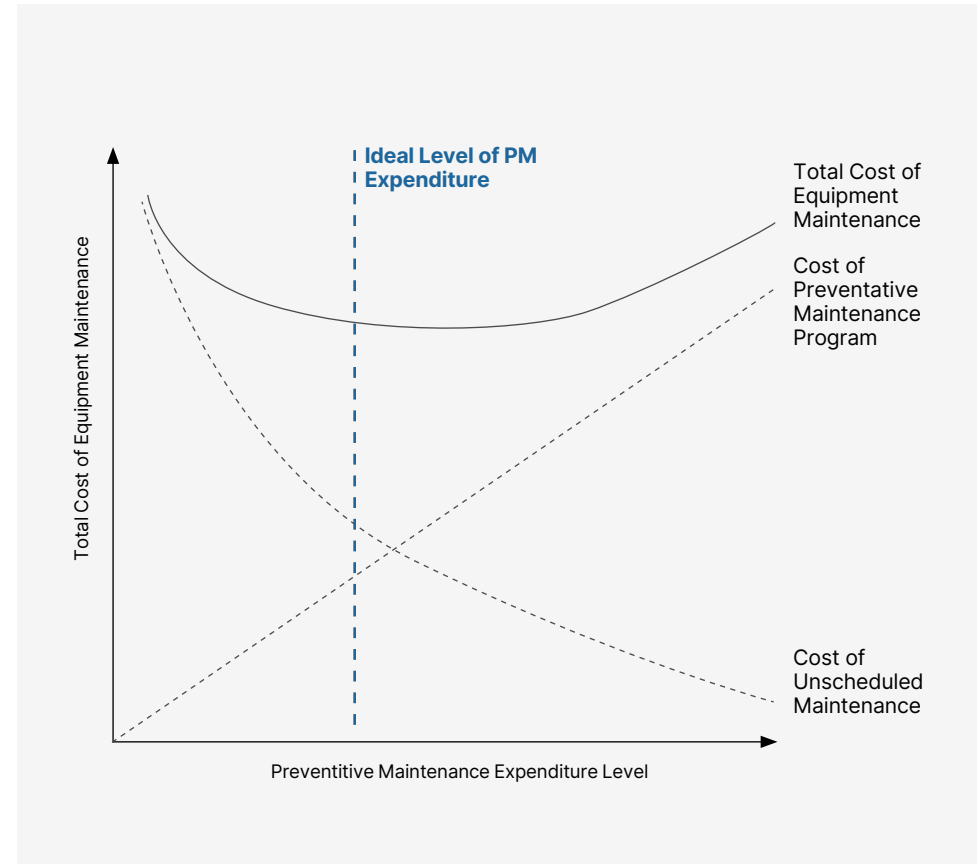
understanding preventive maintenance

The fleet manager's job is to find the sweet spot between Preventive Maintenance and breakdown repair. You're looking for the optimum level where additional preventive maintenance doesn't significantly dent breakdown costs. It's not about eliminating breakdowns, but achieving cost-effectiveness. This comprehensive approach emphasizes regular inspections and timely services—catching small issues before they escalate into significant safety hazards.

This graph illustrates the cost relationships and the ideal preventive maintenance investment point, where total costs are lowest. Experience is vital though. Review equipment maintenance histories for data on repairs and cost, and do not be afraid to make appropriate adjustments to the program as required.

Striking the Right Balance

The key is to properly time your maintenance activities. Too late, and it escalates the risk of unexpected vehicle failures, downtime, and expensive repairs. Too early, and unnecessary intervention can disrupt operations, lead to resource wastage, and increase costs.



the value of preventative maintenance

Maximizing fleet performance

Preventive maintenance¹ has been backed by research as a proven cost-saving measure, reducing maintenance costs by 30%² compared to a reactive model. It minimizes downtime, increases productivity, and boosts your bottom line³. It's a win-win for everyone, from machine operators, technicians and drivers, and up to top management. The choice is simple: higher costs and unpredictable downtime, or smoother, more predictable operations.

Here are some key benefits of preventative maintenance:

1. Enhanced Vehicle Reliability

Just as a healthy lifestyle keeps us strong, preventive maintenance keeps your fleet dependable. It routinely checks and corrects minor faults, ensuring your vehicles are always ready to roll, reducing the risk of unexpected breakdowns, and guaranteeing the reliability your customers expect.

2. Reduced Replacement Costs

Who wouldn't prefer fixing a small leak over replacing an entire engine? With preventive maintenance, minor issues are spotted and fixed early, drastically reducing the need for costly replacements. This results in long-term savings that improve your bottom line.

3. Minimized Vehicle Downtime

Time is money and unexpected downtime is not only inconvenient, but it can also harm your reputation and income. Preventive maintenance drastically reduces these disruptions, ensuring your fleet spends more time on the road than in the repair shop.

4. Efficient Inventory Management

Imagine always knowing what parts you have, what you need, and when you need them. Fleet Maintenance software can help you with inventory management to avoid shortages or overbuying⁴. With visibility into your inventory levels, you'll be able to make informed decisions on how much to

stock. It allows for smart inventory planning, reducing waste, freeing up cash flow, and ensuring parts are available when needed.

5. Streamlined Operations and Productivity

Preventive maintenance isn't just about cost savings—it's a productivity booster. By streamlining scheduling, optimizing vendor management, and refining workflow and financial reporting, all without the clutter of paper, it fosters a more efficient, well organized workforce that drives your bottom line.

30%

Reduction in maintenance costs with preventative maintenance

challenges for modern fleet managers and operators

Managing a Fleet

Managing a fleet is no longer just about mechanics—it involves strategic decisions, complex logistics, tough negotiations, financial acrobatics, and compliance with evolving regulations. It's about making the hard calls—buying vs. leasing? Repairing vs. replacing? Centralizing vs. delegating?

In this context, fleet managers rely on data analytics to make informed decisions and gauge efficiency. This drives companies toward more sustainable, tech-driven operations as they prepare for the electric vehicle transition and enhance safety in an interconnected world.

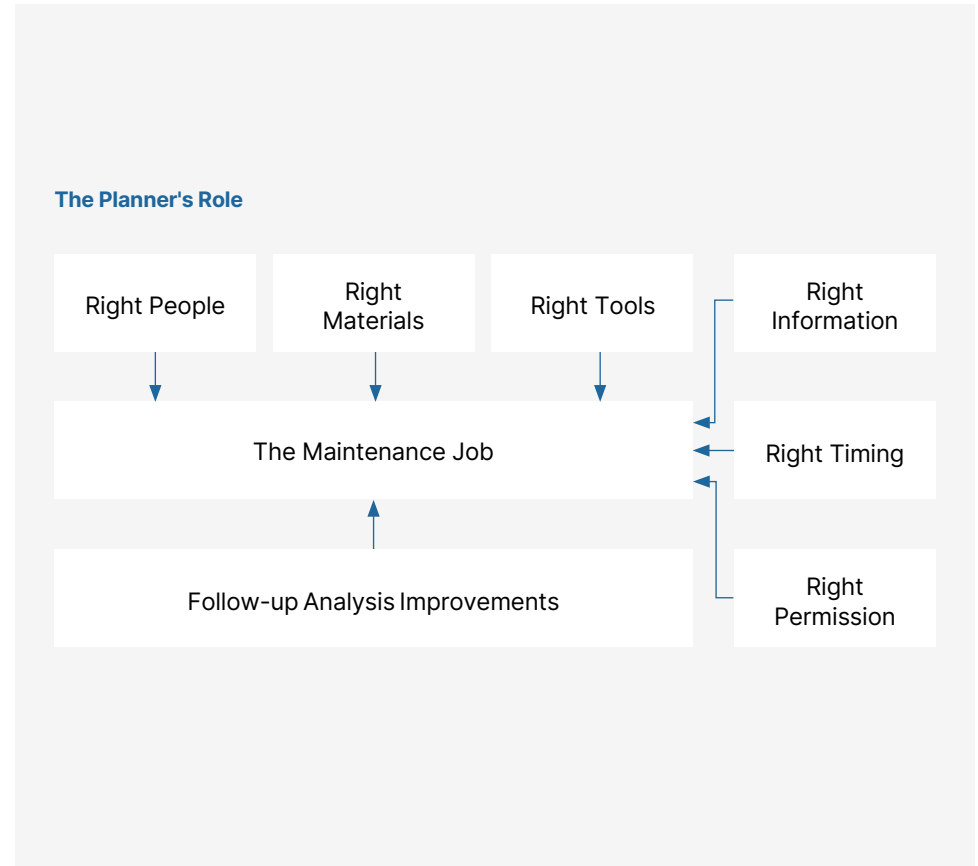
Maintenance Planning

Preventive maintenance is all about planning—it's as much an art as a science. Businesses can establish maintenance schedules based on mileage, regulations, or equipment usage.

Operations often suffer from ineffective job planning, where technicians face unclear tasks, unavailable resources, and frequent modifications. Mismatched skills, poor job breakdowns, and reactive workflows drive up costs and frustration.

The planner's role is crucial in overcoming these hurdles. They ensure efficient execution by sequencing tasks, analyzing work, and coordinating people, materials, tools, and safety measures within budget.

Fleet maintenance software offers solutions through automated notifications, preventive scheduling, workflow streamlining, and robust reporting. Visual tools like work order views, Kanban boards, and interactive checklists provide a clear snapshot of ongoing work, ensuring efficiency.



challenges for modern fleet managers and operators

Continued

“The only thing worse than training your employees and having them leave is not training them and having them stay.”

Henry Ford

Fuel costs

Maintenance isn't just about keeping vehicles running; it's about making them run efficiently. Key components like lubricants, air systems, and tires, when well-maintained, substantially enhance fuel efficiency. For instance, maintaining the right oil viscosity minimizes friction and enhances fuel economy. Moreover, regular maintenance of intake and exhaust systems ensures optimal air supply for combustion, preventing excessive fuel consumption.

Don't underestimate tire pressure checks: they can reveal surprising facts and save your fleet from unexpected costs due to excess tire wear. Studies show that for every 1 psi drop in tire pressure, gas mileage can decrease by 0.2%, while proper inflation can boost it up to 3%⁵. This might seem insignificant on its own, but applied across your entire fleet, these percentages can quickly drain your fleet's efficiency.

Leveraging fleet maintenance software is key for monitoring fuel efficiency via telematics devices or fuel cards, comparing miles per fuel unit. Modern systems also record fuel usage and refueling details, reducing errors and highlighting performance anomalies. This not only enhances fuel efficiency but also promotes vehicle reliability and resale value.

Driver & Technician Shortages and Retention

Both fleet and independent shops grapple with shortages² of drivers and skilled technicians. Technician turnover is not only costly, but can also lead to extended repair times, increased vehicle downtime, and compromised maintenance quality. As vehicles grow in complexity, the challenge of recruiting and training skilled personnel intensifies, escalating both repair timelines and expenses. To address these challenges, fleet operators can turn to fleet maintenance solutions. By automating

tasks and providing remote diagnostic capabilities, fleet maintenance solutions can improve efficiency and reduce technician workload.

The solution can safeguard valuable knowledge from retiring technicians by digitizing it into standard repairs and checklists. This ensures the continuity of high-quality service by providing new employees with access to accumulated expertise, thereby mitigating the effects of technician shortages.

<3%

Increase gas mileage up to 3% simply by ensuring the correct tire pressure

challenges for modern fleet managers and operators

Continued

Regulatory Compliance

In fleet management, compliance is more than aligning with guidelines and regulations. It's about risk mitigation, achieving strategic objectives, and meeting financial targets. Yes, it's another item on the to-do list, but it can also prevent expensive pitfalls.

The first step? Identify the source and nature of compliance demands. These could range from federal and state regulations to maintenance records and vehicle permits. An efficient tracking system becomes your ally here, helping keep track of all these variables indefinitely.

By establishing a compliance-focused system and training your staff to track necessary data, you ensure adherence to your compliance program and refine your policies and procedures. Using a Fleet Maintenance[®] system will help you find the documentation you need easily without shuffling through papers.

Time Constraints and Downtime Management

Fleet operators strive to minimize vehicle downtime to maintain operational efficiency. It's important to note that different fleets measure downtime differently, so it's crucial to establish a proper measurement method. Coordinating maintenance schedules, managing repairs, and ensuring the availability of replacement vehicles or alternative transportation options are ongoing challenges for fleet maintenance teams.

Watch our Webinar on Demand:

[Improve Fleet Productivity with AMCS Fleet Maintenance](#)



the hidden costs of ignoring maintenance

The True Financial Impact of Preventive Maintenance

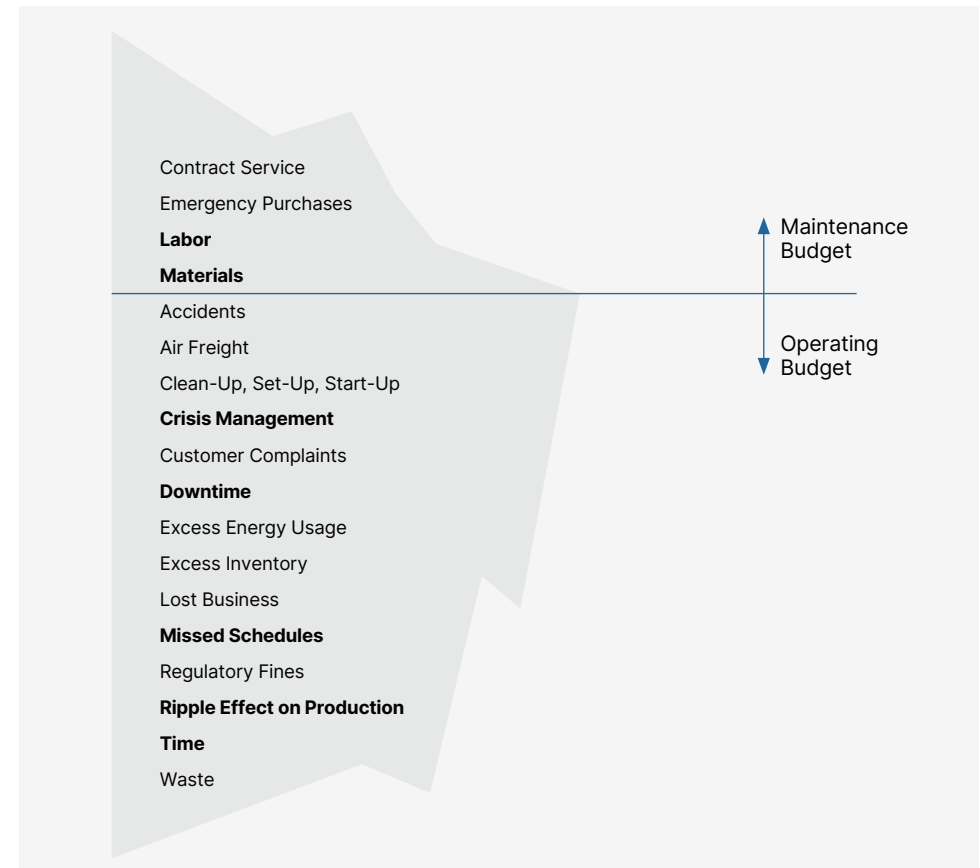
Businesses often sail full speed ahead, seeing only the tip of the maintenance iceberg—direct costs like labor, parts, and overhead in the maintenance manager's budget. These are easy to spot, measure, and manage. But beneath the surface lies a vast body of hidden costs—like the 90% of an iceberg underwater—including breakdowns, unscheduled shutdowns, lost production, and equipment failure.

Skipping preventive maintenance may yield small short-term savings, but the long-term costs are often far greater, sometimes catastrophic. By proactively investing in inspections and repairs, you can prevent up to 70% of potential breakdowns, minimizing costly downtime undermining both safety and budget stability. It's simple: preventive maintenance costs far less than the price of breakdowns.

Manage Your Costs Effectively

Operating expenses like fuel, oil, tires, and maintenance are directly tied to vehicle usage. Expressing these costs in cents-per-mile or cents-per-hour helps correlate driving distance with financial impact. Tracking costs per vehicle provides insights into life cycles, optimal buying times, and the true costs of scheduled versus unscheduled maintenance.

Fixed expenses—investment costs, depreciation, and insurance—may not vary with mileage but still impact your budget. Incidental costs like licenses, taxes, accident repairs, parking, and tolls also add up. Factoring in these expenses gives a comprehensive view of your fleet's financial health. Leveraging fleet maintenance software enables better expense tracking, highlights areas for improvement, and supports data-driven decisions.



optimized fleet inventory

For peak technician productivity, ensure appropriate parts and supplies are available and storage rooms are well organized for easy access. Remember, time saved is money earned.

Balancing stock, costs, and efficiency

Inventory management is a critical aspect of ensuring minimal downtime and efficient operations. It is a delicate balance between having too many, too few, or just enough parts. Key considerations include cost implications, uptime requirements, and parts accessibility, all of which should be factored into an effective strategy.

At its core, the inventory management process involves having spare parts on hand for quick equipment repairs, replenishing stock as parts get used, and continuously reviewing which parts to stock based on usage and need.

While inventory management might seem simple, it demands careful planning and regular monitoring. It's not just about stocking parts, but also consistently checking usage, tracking inventory, and ensuring process discipline. Idle parts collecting dust? Consider returning them to suppliers

or selling to other fleets to avoid future writeoffs down the road.

A structured, stepwise approach to fleet inventory management⁷ can optimize the process:

1. Sort and organize existing parts, removing any damaged or outdated ones.
2. Identify additional inventory needs. This step may require a deep analysis of downtime instances, frequent emergency purchases, and input from purchasing staff and vendors.
3. Develop a cost-effective purchasing plan considering purchase timeframes and quantities.
4. Establish a reorder plan based on parts consumption, ensuring parts are always available.
5. Consider leveraging [Fleet Maintenance](#) solutions to streamline the process of tracking, reordering, and managing inventory, as well as generating reports to guide decision-making.

70%

prevention of breakdowns by proactively investing in inspections and repairs

leveraging fleet data

Vehicle Maintenance Reporting Standards (VMRS)

Data is coming at us from all directions—vehicle repair, part replacement, labor hours, maintenance costs, the list goes on. It's easy to drown in this sea of information, especially when it's all in different languages, recorded on scattered slips of paper, and locked away in separate systems. The key to success lies in your ability to collect and process data effectively.

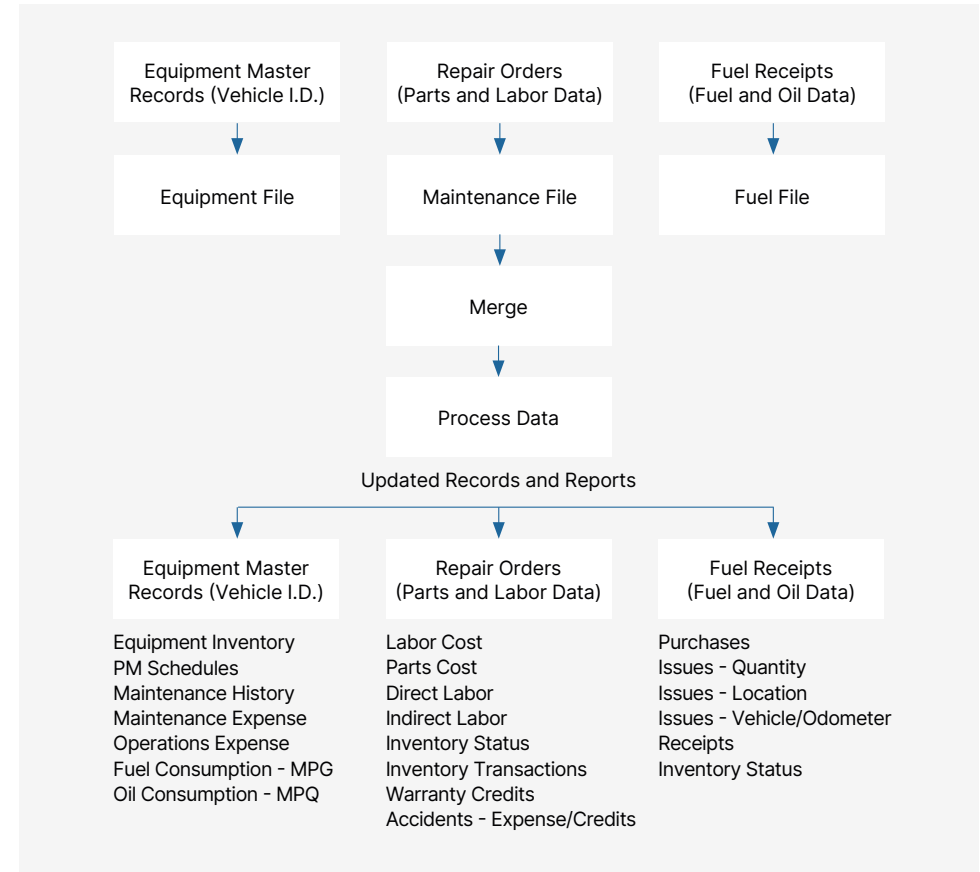
That's where the Vehicle Maintenance Reporting Standards (VMRS) come into play. Managed by the Technology and Maintenance Committee (TMC) of the American Trucking Association (ATA), VMRS provides a standardized system for capturing essential vehicle information and related costs.

From describing the vehicle's condition and what actions have been taken, to recording who performed the work, when, and at what cost. This isn't

simply a tool for bookkeeping. It's a comprehensive solution that informs crucial business decisions. It uses standardized data codes, or Code Keys, to simplify data retrieval and processing. VMRS also standardizes procedures for recording, classifying, and analyzing maintenance data, ensuring consistency and ease of data conversion.

Some of the Code Keys Include:

- System, Assembly, Component (CK31, CK32, CK33)
- Failure Codes (CK18)
- Work Accomplished (CK15)
- Work Request Reason (CK82)
- Position Codes (CK79)
- Work Reason (CK14)
- Warranty Claims
 - Types (CK81)
 - Response Reasons (CK83)
 - Status (CK84)
- Priorities (CK16)
- Indirect Labor (CK19)
- Manufacturer (CK34)



Data to output reports (Analytical Fleet Maintenance, p. 189)

a power tool for fleet managers

But enough with the technicalities - let's move on to the most crucial question: how will VMRS benefit you?

Pro tip

Make sure your fleet maintenance tool comes with VMRS code keys pre-loaded, it not only makes your data more consistent, but also offers significant time savings both during system implementation and regular use.

Imagine your technicians simply selecting repair reasons from a preset list rather than manually entering them—that's a huge time saver. For maximum value, consider partnering with a solution provider whose people are well versed in VMRS.

Maximizing fleet efficiency

1. Cost Control

VMRS allows detailed tracking and analysis of maintenance costs, enabling you to implement cost-saving measures. It also provides the ability to compare fleet performances, identify trends, and benchmark your operations against industry standards.

2. Optimal Resource Allocation

By providing comprehensive insights into your fleet's performance, VMRS helps you allocate resources effectively. From determining optimal maintenance intervals to identifying high-impact repairs, ensuring your fleet operates at peak efficiency.

3. Informed Decision-Making

Armed with accurate and timely maintenance data, VMRS equips you with the knowledge to make informed decisions. With a deeper understanding of your fleet's needs, you can implement strategies that enhance safety, minimize downtime, and maximize productivity.



repair, replace or retire - grab your calculator

“Embracing complexity in newer assets might require a shift in maintenance strategy for fleet managers aiming for longevity.”

Bob Hausler, VP Transport NA, AMCS

Making smart fleet maintenance decisions

When it comes to fleet maintenance and unscheduled repairs, three choices constantly surface: repair, replace, or retire. Each vehicle in the fleet brings with it a balance of depreciating worth and increasing repair expenses.

Every year, you'll need to crunch the numbers to find the sweet spot between the old vehicle's dropping principal and interest, rising maintenance and operating costs, and the new vehicle's price.

Example

A construction firm owns a mixer truck, initially worth \$100,000, now valued at \$50,000 and requiring \$30,000 in repairs. The repairs would extend the truck's lifespan by three years. However, clients increasingly require high-volume material handling, a task more suited to larger, more efficient dump trucks.

It's a financial and operational puzzle to solve: do we invest in its repair or cut our

losses in favor of a newer, larger truck?

The key lies in an early evaluation process. The guiding principle? Consider repair work that's one-third to one-half the residual value as the tipping point for evaluation.

In these evaluations, we have to ask ourselves:

- What will this repair really cost now, and what might come up later?
- Will the repair significantly extend the vehicle's life?
- Or is the vehicle simply too old to be fixed, and more of a hindrance
- than a help to the fleet's productivity?

The bottom line

When a vehicle is due for replacement or needs major repairs, you must arm yourself with the right data and make decisions that keep your fleet in prime condition.

where are you today?

Preventative maintenance checklist

Before we continue, let's take a short pit stop. Take a look around—where do you stand, and more importantly, how do you measure success? Reflect on each of the following points. This will help you identify your strengths, uncover gaps, and understand where improvements are necessary.

Tip

Make sure you're tracking the following KPIs to analyze your fleet's performance:

1. Total cost of operation
2. Average fuel consumption
3. Maintenance costs per vehicle
4. PM compliance (including metrics for early, on-time, late, and critical)
5. Number of PM or PdM tasks completed versus scheduled
6. Ratio of preventive vs reactive maintenance hours
7. Number of assets out-of-service
8. Downtime %

CHECKLIST

Maintenance Schedule and Detailed Checklists:

Are your maintenance activities planned based on vehicle needs?

Do you utilize comprehensive checklists for all tasks to ensure no aspect is overlooked?

☐

Regular Inspections and Trained Personnel:

Do you conduct inspections at frequent intervals?

Are your drivers and technicians well-trained to identify potential issues early on?

☐

On-Board Tools and Technological Leverage:

Have you adopted technological tools for real-time monitoring of vehicles?

Are you leveraging a fleet maintenance solution to automate and optimize your maintenance program?

☐

Record Keeping and Review:

Do you maintain detailed documentation of all maintenance activities?

How often do you review and update your preventive maintenance program?

☐

Parts Inventory Management and Safety Compliance:

Are you efficiently managing your parts inventory?

Do your maintenance activities comply with the necessary safety regulations?

☐

Compliance, Safety, and Accountability Record

Is your company actively working to improve your SMS rating? Do you know how much of your overall maintenance cost is related to accident repair?

☐

Sustainability Considerations:

In the context of growing environmental concerns, are you factoring in sustainability in your maintenance practices? Is your company looking at reducing your environmental impact, for example in areas like fuel, tires, emissions.

☐

navigating fleet maintenance software

Features, benefits, and key considerations

Ever felt lost in the maze of fleet maintenance software? In this chapter, we'll cut through the jargon and provide you with a simple guide to selecting fleet maintenance software that ticks all the right boxes.

An ideal solution should enable:

Management of all Preventive

Maintenance tasks (PMs): Able to schedule PMs based on distance run, hours operated, time (days), fuel consumed, business metrics, or any combination of these.

PM Compliance Tracking and Analytics:

Dashboards and KPIs showing PM and Asset Compliance and performance data, including statistics on PMs completed early, ontime, late, and not done.

Flexible and Easy to Use:

Highly configurable to support any type of asset and organizational structure. The ideal preventive maintenance software should be easy to set up and use, and provide real-time data validation to minimize errors.

An Intuitive Experience: Consistent and easy to understand user experience. Dashboards and cards visualize the status of assets, people, parts, work orders, procurement, and more. Provide unlimited user-definable display elements which can be memorized as instantly recallable Workspaces. Analytics deliver insightful history and trends, providing the key value of the solution: support to make better decisions.

Full-Featured Mobile App: Technicians and Drivers/Operators should be able to do all of their work within the solution via a mobile app. The mobile app should not be a compromise and should provide a straightforward workflow for

data capture and also provide important information such as work order history at the Technician's fingertips.

Automatically capture time and parts

usage on Work Orders: The mobile app should provide task clock on/off as well as the ability to scan parts on to Work Orders using manufacturer's or UPC barcodes eliminating costly and error-prone double data entry. Standard Repair processes should interactively guide Technicians through work tasks and create benchmark reporting.

Cost Management and Analytics:

Provide complete capture and analysis of all internal and external maintenance and operations costs, plus allocated and overhead costs.

Rich Reporting and Analytics:

The solution should offer rich cost and performance reporting capabilities, providing valuable decision support to manage your fleet effectively. This can be

particularly useful for fuel consumption, cost analysis, and life cycle performance against various fleet metrics.

Data Import: This feature eliminates the need for manual data entry tasks, ensuring efficiency and boosting accuracy as data comes directly from the source, such as automated fuel pumps, onboard computers, and outside fueling services.

case study: worldwide flight services (WFS)

“We’re tracking everything, our PM schedules for each individual asset, who reported what problems and when, how much equipment we need for any given flight, and a lot more. It’s all helping us make huge improvements to our day-to-day operations.”

Kelly Terry, WFS Director of Ground Service Equipment Strategy and Sourcing

Keeping Planes, Cargo, and People Moving with AMCS Fleet Maintenance

WFS, a member for the SATS group, is the global air cargo continents logistics leader, and best-in-class ground handling partner. With regional headquarters in Paris, France; Dallas-Fort Worth Texas; and Hong Kong, WFS provides high quality cargo, passenger, ramp, baggage, and technical services.

When it comes to keeping a plane on schedule, what happens on the ground can be as important as what happens in flight. Something as simple as a flat tire on a baggage transport vehicle or a restricted fuel filter on a pushback tug can cause a delay. And even a brief setback can ruin a vacation, break a supply chain, even interrupt crucial medical treatment. These breakdown causes can easily be avoided by ensuring that Preventive Maintenance tasks (PMs) are completed on time.

[Learn how AMCS Fleet Maintenance helps WFS keep things moving.](#)



the road ahead: the journey to fleet safety

Adopting a preventive maintenance mindset

The journey toward fleet safety is ongoing and requires commitment. Implementing a proactive maintenance strategy keeps vehicles running efficiently, drastically reduces hidden costs, and, most importantly, ensures the safety of all road users. As you gear up for your upcoming challenges, embrace the mindset of preventive maintenance. By making safety your top priority, you can unlock the full potential of your fleet, driving both operational success and peace of mind for your team.

Explore these additional useful resources on our website.

Case study: Worldwide Flight AMCS Group

"We're tracking everything. Our PM schedules for each individual asset, who reported what problems and when, how much equipment we need for any given flight, and a lot more. It's all helping us make huge improvements to our day-to-day operations."

[Read story.](#)

Case study: Feld Entertainment AMCS Group

"AMCS Fleet Maintenance really delivers it all. It has the features we need; the customer service and support are truly second to none."

[Read story.](#)



about amcs

Don't let unexpected breakdowns and high repair costs derail your operations. Take control of your fleet's health today with our comprehensive [Fleet Maintenance Solution](#). Get in touch with us to learn more about how our software can help you optimize your fleet, enhance safety, boost customer satisfaction, and drive your savings.

Ready to take the next step in your Digital Transformation? We look forward to helping you get started on your journey. [Contact us](#) to schedule a call or book a meeting for more information.

AMCS: Sustainability that means business.

If you're ready to schedule a personal demo online, [contact us](#).

Find out more on our website, [amcsgroup.com](https://www.amcsgroup.com).

¹<https://www.amcsgroup.com/blogs/controlling-fleet-costs-with-preventive-maintenance/>

²<https://www.reliableplant.com/Read/12495/preventive-predictive-maintenance>

³<https://www.amcsgroup.com/brochures/boost-your-bottom-line-with-proactive-fleet-maintenance/>

⁴<https://www.amcsgroup.com/blogs/how-to-stock-the-fleet-parts-you-need-without-overbuying/>

⁵<https://www.fueleconomy.gov/feg/maintain.jsp>

⁶<https://www.amcsgroup.com/solutions/fleet-maintenance/>

⁷<https://www.amcsgroup.com/blogs/how-to-stock-the-fleet-parts-you-need-without-overbuying/>

