



BASICS

Improving Vehicle Maintenance



You want to continue bypassing weigh stations, saving time and money. But you have Alerts in some BASICS and your ISS (Inspection Selection System) score is too high. It's time to take action.

WHERE DO YOU START?



What are BASICS and ISS?

As you've seen, the FMCSA has a language of its own, mostly expressed in acronyms. To understand how your company is evaluated by FMCSA, you must first understand its language.

BASICS (Behavior Analysis and Safety Improvement Categories) are areas of a company's safety and regulatory compliance. FMCSA compiles data in seven BASICS and compares the results of similar motor carriers. The result provides an individual motor carrier's overall CSA (Compliance, Safety and Accountability) safety percentile ranking. The seven BASICS are:

- Vehicle Maintenance
- Unsafe Driving
- Hours of Service Compliance
- Driver Fitness
- Controlled Substances & Alcohol
- Hazardous Materials Compliance
- Crash Indicator

Overwhelmingly, the BASICs data results from commercial vehicle enforcement inspections. Data comes from the number of truck inspections and the violations uncovered during those inspections. It also results from citations issued on the road, post-crash analysis and from FMCSA or state investigations of motor carriers. Therefore, good truck inspections are fundamental to good BASICs scores.

Truck inspections commonly occur at weigh stations and roadside inspection sites. But not every truck gets inspected. Why? Two factors: first impressions and ISS.

State enforcement agencies have broad discretion over which trucks to inspect. Often, the officer will make a decision based on their first impression of the truck and the driver.

- Visible mechanical problems will almost always get a truck pulled in for a thorough inspection. A torn mudflap or missing clearance light may not represent an immediate safety issue, but it can cause an inspector to wonder what else may be wrong with the truck.
- Reckless driver behavior is another trigger for immediate enforcement action. But even short of unsafe driving, law enforcement will notice the driver who, when approaching a weigh station or roadside site, appears to be scrambling to get his paperwork in order. You can be sure that truck will be pulled in and the driver's credentials, permits and bills of lading will receive a thorough review.



WHILE NOT A MANDATE, THE ISS SCORE IS THE SINGLE BEST INDICATOR OF THE LIKELIHOOD THAT A CARRIER MAY RECEIVE AN INSPECTION.

ISS is the Inspection Selection System, the numerical score FMCSA provides to agencies responsible for commercial motor vehicle compliance. Those agencies use ISS scores to determine which motor carriers they should prioritize for weigh station pull-in or roadside inspection. ISS scores range from 0 to 100. The lower the score, the better.

While not a mandate, the ISS score is the single best indicator of the likelihood of receiving an inspection. Not surprisingly, carriers must maintain a good ISS score to qualify for or to continue participating in a weigh station bypass program like PrePass. The good news is that a motor carrier's ISS score is within the carrier's control. It starts with doing well on the seven BASICs.

QUICK QUIZ

1. What does the "B" in BASICs stand for?
2. Where does FMCSA get most of its safety data?
3. True or False: FMCSA tells states which trucks must be inspected.

Reduce Inspections

- Clean trucks give a good first impression. Dirty trucks can raise a red flag for inspectors.
- In addition to safety and compliance repairs, pay attention to visible items like peeling decals, which may cause an inspector to conduct further inspection.
- Organize your paperwork and have it easily accessible. If you are disorganized, law enforcement may assume your maintenance is as well.

(Quick Quiz answers: 1) Behavior; 2) truck inspections; 3) False. FMCSA provides the ISS score, but states have broad discretion.)

How does FMCSA calculate the ISS score? What are Alerts?

The BASICS, CSA and ISS scores are all data-driven. The calculations FMCSA goes through can be complex – but there are four aspects of this process you should understand.

1

When determining a carrier's BASIC percentile, FMCSA applies a mathematical formula to a carrier's violations in the last 24 months. Violations that are more recent have greater impact in the equation, as do violations that are more severe. This is commonly referred to as Time and Severity weighting.

Having recent "clean" inspections will tip the scales in your favor as older inspections, those with violations, age out. Similarly, even minor violations can be an improvement over past problems, particularly those that placed a truck or driver out of service (OOS). Improvement in your scores may require close attention over several months, but you are not stuck in the past.

2

You do need enforcement inspections. Because inspections produce the data FMCSA uses to calculate ISS scores, FMCSA will prioritize for inspection those motor carriers who simply do not yet have enough inspections to generate a safety profile.

This is another opportunity to improve your scores. Reach out to your local state commercial vehicle enforcement agency and see whether they will conduct voluntary truck inspections. If not – they may be short on manpower – perhaps they do give demonstrations to motor carrier groups. You can learn directly from the inspectors themselves.

3

FMCSA applies an Alert symbol to a carrier's BASIC when the carrier's percentile is at or above the "Intervention Threshold" established for that category. It can also apply when the carrier has Acute and/or Critical Violations. These are one-time occurrences discovered during an investigation of noncompliance so severe that immediate corrective action is required. The Alert triggers direct contact by federal or state officials with the motor carrier.

The FMCSA "intervention" contact may simply be a warning letter that the carrier needs to pay closer attention to one area of safety compliance or it may entail a targeted or full compliance review. Interventions can result in fines, penalties and, in severe cases, disqualification as a motor carrier. Alerts are not just an opportunity to improve your scores, they are an alarm bell that improvement must occur. Heed that alarm by looking closely at the sections below for any BASIC where you have an Alert.

4

Finally, in the calculation of ISS scores, FMCSA gives greater mathematical weight to three of the BASICS: “Unsafe Driving,” “Hours of Service Compliance,” and “Crash Indicator.” “Unsafe Driving” covers speeding, reckless driving, improper lane change, inattention and not wearing seat belts. “Hours of Service Compliance” means noncompliance with hours-of-service regulations and improper time and duty records. The “Crash Indicator” considers a carrier’s history of crash involvement.

To improve your ISS score, look first to any BASIC where you may be in Alert status. Then see where you stand in these three priority BASICS: “Unsafe Driving,” “Hours of Service Compliance,” and “Crash Indicator,” paying particular attention to “Hours of Service Compliance.” Review the sections for each BASIC, below.

In the end, once FMCSA applies its mathematical formula, the result for that carrier is compared to similar carriers and a percentile ranking is set for that carrier. The percentile ranking says that the carrier’s safety compliance in that BASIC is worse than that percent of similar carriers. So, a high percentile ranking in any BASIC, in the carrier’s CSA score or its ISS ranking is not desirable. And again, a percentile ranking at or above the Intervention Threshold for that BASIC prioritizes that carrier for federal and state interventions.

QUICK QUIZ

1. How long do past inspections affect your ISS score?
2. What is an “Intervention Threshold”?
3. True or False: All BASICS are created equal.

Improving BASICS

- Stay on top of your BASICS scores. If you see an Alert, immediately focus your attention on improvement in that BASIC.
- Use the 24-month data cycle as the basis for your BASICS improvement plan, charting steps you will take each month to improve your scores.
- Review every violation, citation and audit/investigation finding. Challenge mistakes or inaccuracies through the FMCSA DataQs process.
- Use the FMCSA Crash Preventability Determination Program to remove non-preventable crashes from consideration in the “Crash Indicator” BASIC.

(Quick Quiz answers: 1) 24 months; 2) the percentile for any BASIC that will trigger direct FMCSA or state contact with a carrier; 3) False. FMCSA gives greater priority to three of the seven BASICS, with “Hours of Service Compliance” being #1.)

The Vehicle Maintenance BASIC

How does a motor carrier improve its Vehicle Maintenance BASIC?

The most common BASICs shortcoming occurs in “Vehicle Maintenance.” Vehicle maintenance is often considered the work of mechanics and equipment technicians. You may have also heard the phrase “BLT,” to indicate the most common mechanical issues - Brakes, Lights and Tires. Both statements are true. But vehicle maintenance is first a management issue and then the responsibility of the entire motor carrier team, including mechanics and technicians, and also drivers and dispatchers.



Management Responsibility

Whether in Vehicle Maintenance or any other BASIC, only management can give the direction, authority, tools and oversight to improve a motor carrier's safety performance. Consistency of results is the goal, and consistency is achieved when employees carry out their directions each and every time.

1

Provide Direction

For vehicle maintenance, the following directions, when carried out consistently, will assure that motor carrier equipment is properly maintained, compliant with regulations, and safe to operate:

- All equipment is subject to periodic maintenance, inspection and recordkeeping.
- All vehicle defects which impact safety or regulatory compliance are immediately reported, fixed and recorded before the vehicle is again operated.
- All visible defects, such as peeling decals, are immediately reported and fixed so that the vehicle is not pulled in for unnecessary inspections.
- All drivers complete Driver Vehicle Inspection Reports (DVIRs) and pre-trip inspections for each trip and communicate the results to management, including inspection results showing no defects.
- All incoming drivers review any DVIR from the prior trip, check for the mechanic's signature that repairs were made, and confirm the vehicle condition.
- All roadside inspection reports, including those with no violations, are submitted as soon as the workday is completed.
- Any vehicle out-of-service (OOS) orders are brought to management attention ASAP.

2

Give Authority

To support employees in carrying out these directions, management must give authority:

- To the head of vehicle maintenance for the purchase of parts as needed.
- To maintenance staff in holding vehicles out of service when necessary.
- To dispatchers to make scheduling adjustments as necessary to ensure that only safe, repaired vehicles are sent out.
- To drivers to return vehicles for service before operation when safety- and compliance-related defects are discovered or when reported defects have not been repaired.



3

Provide Tools

To complete their tasks successfully and efficiently, management must provide employees with the proper tools, both physical and financial. For vehicle maintenance, those tools include:

- Vehicle maintenance software, with links to websites for truck, trailer, brake and lighting manufacturers used by the motor carrier and the ability to receive equipment updates, recalls and alerts.
- Diagnostic equipment specifically geared to the electronic circuitry and computers used in the fleet's vehicles.
- Secure, mobile communications allowing direct coordination between all team members.

4

Conduct Oversight

Management has its task, too. It's called oversight:

- Regularly review all inspection reports for accuracy.
- Challenge inaccuracies through the FMCSA DataQs process as needed.
- Regularly review DVIRs and corresponding maintenance records to assess driver and maintenance performance.
- Ask whether maintenance violations are specific to a vehicle or potentially system-wide.
- Take action appropriate to findings, whether as reminders, enhanced training, improved equipment, or discipline.

Be assured, FMCSA or state investigators will look for policies and procedures supporting these same management steps – directions, authority, tools and oversight – when investigating maintenance issues at a motor carrier.

Team Approach

The single most important management step related to vehicle maintenance is communicating the team approach.

Management must establish a team-based safety approach across all employees and drivers. A motor carrier is paid to deliver safely and on time. A vehicle problem that delays or strands a driver at roadside, or worse, contributes to an accident, eventually affects everyone involved. Maintenance processes are therefore a shared responsibility with the goal of finding and fixing those vehicle problems. Likewise, all share credit for a job well done.

TO ENSURE THE TEAM FUNCTIONS AS A UNIT, MANAGEMENT MUST REINFORCE THE ROLE EVERY TEAM MEMBER PLAYS IN DOCUMENTING, COMMUNICATING, REPAIRING AND RECORDING ALL VEHICLE MAINTENANCE ISSUES.

Tips for Drivers

Drivers have a key role in finding and communicating vehicle maintenance issues. After all, drivers spend the most time with equipment and receive the most direct indication that a truck is not operating properly, much less unsafely.

Conducting inspections

Federal regulations require that a driver conduct both a pre-trip and a post-trip inspection. The post-trip inspection must be recorded in a DVIR – Driver Vehicle Inspection Report. The DVIR must cover at least the following parts and accessories –

- Service brakes, including trailer brake connections
- Parking (hand) brake
- Steering mechanism
- Lighting devices and reflectors
- Tires
- Horn
- Windshield wipers
- Rear-vision mirrors
- Coupling devices
- Wheels and rims
- Emergency equipment

Any defects or deficiencies found during the inspection or reported to the driver which would affect the safe operation of the vehicle or result in a mechanical breakdown must be documented in the DVIR. As the industry saying goes, drivers should especially check the “BLT,” brakes, lights and tires. The driver must sign the DVIR and submit it to the motor carrier at the end of the workday.

Drivers must conduct a pre-trip inspection each time they begin operating the equipment. If there was a DVIR submitted on that truck that noted any deficiencies, the incoming driver must **1)** review the form, **2)** check for the mechanic’s signature attesting that the repairs were made, and **3)** certify that the required repairs were indeed made.

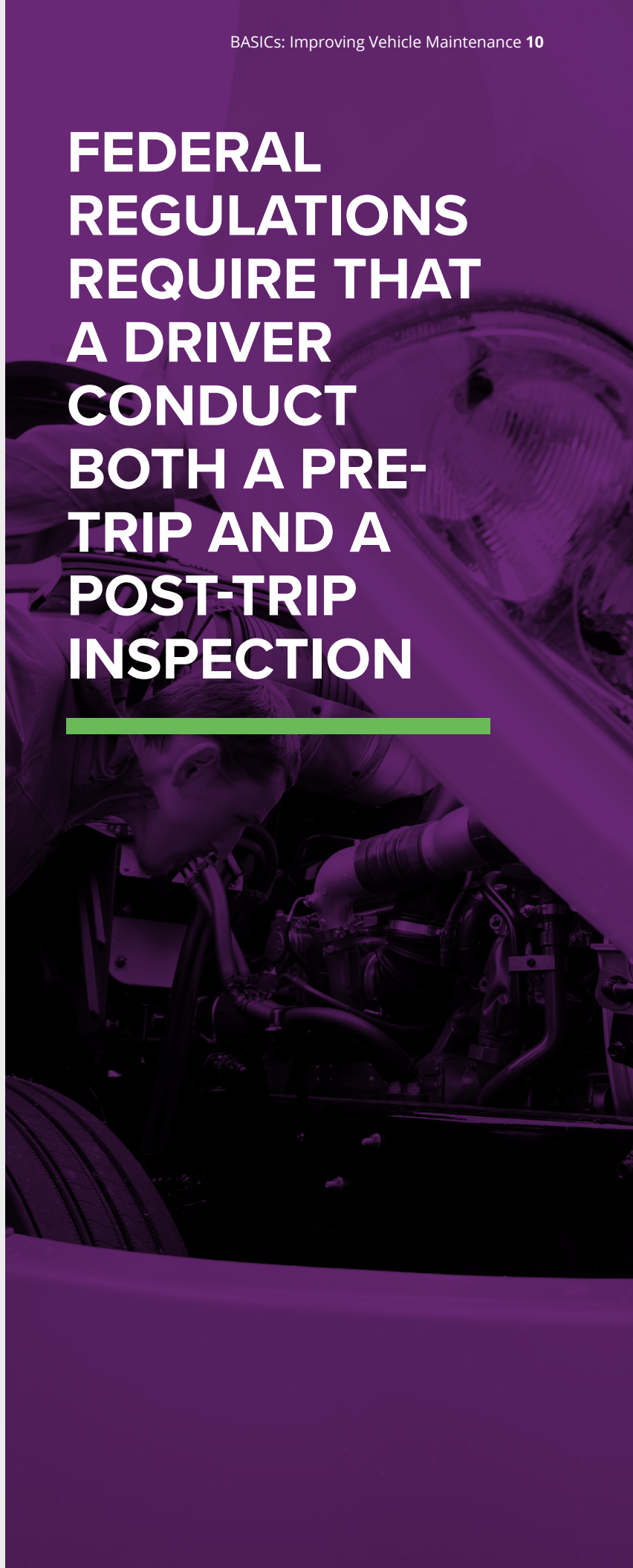
During an audit, FMCSA will compare previous roadside inspection reports with the DVIRs submitted. If defects found at roadside are not reported on a DVIR or not confirmed as being repaired by an incoming driver, FMCSA will assess an acute violation against the motor carrier’s Vehicle Maintenance BASIC.

Reporting Inspection Results

FMCSA no longer requires that a driver submit a DVIR to the motor carrier if no vehicle defects were found during the post-trip inspection. While less paperwork is welcome, for some drivers the FMCSA action created the temptation to forego any post-trip inspection. But federal law still requires both pre-and post-trip inspections on every trip.

Regardless of whether required by federal regulations, drivers should still report all inspection results, pre- and post-trip to their management. They can submit inspection reports by phone, email or text if the DVIR is not required. Management needs full information to assess and improve the carrier’s vehicle maintenance practices. Plus, if FMCSA or state investigators call on the carrier, management can protect the carrier’s Vehicle Maintenance BASIC score by showing the complete record of inspections performed, including those clear of defects.

FEDERAL REGULATIONS REQUIRE THAT A DRIVER CONDUCT BOTH A PRE-TRIP AND A POST-TRIP INSPECTION



Drivers have a responsibility to team members, including other drivers, to communicate vehicle conditions. If FMCSA discovers that the inspections were not, in fact, conducted or that vehicle defects were not reported, the carrier's Vehicle Maintenance BASIC will be negatively impacted.

Here are other reasons for drivers to conduct and report all vehicle inspections:

- The fleet may run a slip-seat or relay operation. In what condition did the last driver leave the equipment?
- Quite often drivers pull shipper's trailers – a rolling billboard advertising the shipper's product – but are the trailer tires, brakes and hoses in as good a shape as that colorful ad on the side?
- Yesterday the driver may have pulled pups and today it's a 53-footer. That pre-trip inspection reminds the driver that different combinations handle differently, which can prevent Unsafe Driving errors.

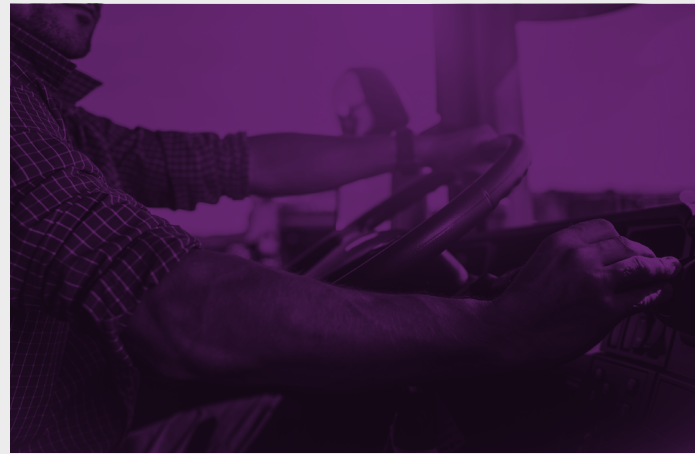
In the end, no driver wants to operate an unsafe truck. That alone calls for a thorough pre-trip inspection. It also calls for the post-trip inspection to pass information to the next driver or to maintenance, if necessary. Both steps will help improve the carrier's Vehicle Maintenance BASIC.

Tips for Dispatchers

Dispatchers are traffic control operators for motor carriers. Just as an airport traffic control officer will delay or halt airplane movements on the ground until the runway is clear and conditions safe, the motor carrier dispatcher has a responsibility to be sure the truck is in condition for take-off.

First, management must give the dispatcher the direction and authority to adjust schedules to accommodate vehicle maintenance. Second, the entire team must communicate when maintenance will occur and how long it may take so that the dispatcher can make the adjustments. Safe, on-time performance requires safe, well-maintained equipment.






Adjusting Schedules to Assure Safe Equipment

Dispatchers, technicians and drivers must be in open, transparent communication about equipment maintenance needs and availability:

- Under management direction, maintenance should prioritize safety- and compliance-related vehicle defects for attention. Visible problems, even if not safety-related, should be fixed to avoid unnecessary roadside inspections.
- Dispatchers must withhold that equipment from operation until the maintenance is complete.
- Dispatchers should be aware of any available substitute equipment, bearing in mind that using a substitute may require unloading and reloading of some or all the freight.
- Drivers, of course, will log off from their ELDs when turning the truck in for maintenance and then log back on when the truck or a substitute is ready for operation. They should take care to not let improvement of the Vehicle Maintenance BASIC turn into an Hours of Service Compliance BASIC violation!
- Clear communication of the time required for the maintenance will allow dispatchers to adjust schedules and drivers to take rest breaks.
- Drivers can help technicians and dispatchers by reporting needed repairs as soon as discovered, even from the road.



Tips for Equipment Technicians

Mechanics and equipment technicians perform the actual vehicle maintenance work. Their workload is divided between scheduled periodic maintenance and defect repairs. Both are important, but prioritization must be given to fixing safety- and compliance-related defects because equipment cannot be operated safely or within regulation until they complete those repairs.

Mechanics and technicians have additional responsibilities:

- Monitor manufacturer recalls through www.nhtsa.dot.gov and keep current on service bulletins.
- Maintain training and needed licensing.
- Update the carrier maintenance software as needed.
- Support management with maintenance records, analysis of equipment breakdowns and parts inventory.
- Accept reported defects as an opportunity to improve vehicle maintenance.

Improving the Vehicle Maintenance BASIC requires consistency, with each inspection, each periodic maintenance, and each required repair. It starts at the top with management but then flows throughout the whole motor carrier team. Safe, well-maintained equipment contributes to a good ISS score. That leads to qualifying for and continuing in a weigh station bypass program like PrePass. Most important, it means improved safety and efficiency for all team members and for everyone sharing the road.

**IMPROVING
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WITH EACH
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QUICK QUIZ

1. What does "BLT" refer to?
2. Who is most responsible for proper vehicle maintenance: drivers, management, or maintenance staff?
3. True or False: Inspectors only look for safety and compliance violations.

Helpful Hints

- Decals have a history of peeling and falling off. A missing IFTA (International Fuel Tax Agreement) decal is a motor carrier compliance issue – but IFTA now allows an electronic image on a smartphone or tablet as proof of compliance. Some weigh stations are equipped with CVSA inspection decal readers, so make sure those decals are clean and intact. Speaking of clean, clean trucks give a good first impression to inspectors.
- Weigh stations may also have tire anomaly readers, showing mismatched, missing or underinflated tires. Thorough pre- and post-trip inspections by drivers will catch these frequent "BLT" concerns before they are detected by the tire anomaly readers and become a violation.
- Many independent drivers appreciate the look of additional clearance lights along the roofline of their cabs. Inspectors will notice missing/burned out lights, even when they are not the lights required by regulation. Make sure all lights are working.

(Quick Quiz answers: 1) "Brakes, Lights, Tires," the most frequent areas of vehicle maintenance violations; 2) all of the team, adding in dispatchers, are responsible for proper vehicle maintenance; 3) False. Inspectors look for any sign that a vehicle is not properly cared for as an indication that a safety or compliance violation may exist.)



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