

BASICS

Improving Hazardous Materials Compliance



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?



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 Hazardous Materials Compliance BASIC

How does a motor carrier improve its Hazardous Materials Compliance BASIC?

Some carriers consider hazardous materials compliance as simply placing the correct placard on the trailer and having the shipping papers handy for inspection. Both of those steps are required. But more fundamentally, maintaining compliance is all about communication.

DOT DEFINITION OF “HAZARDOUS MATERIALS”:

“THOSE MATERIALS DESIGNATED BY THE SECRETARY OF THE DEPARTMENT OF TRANSPORTATION AS POSING AN UNREASONABLE THREAT TO THE PUBLIC AND THE ENVIRONMENT.”

IN CANADA, HAZARDOUS MATERIALS ARE CALLED “DANGEROUS GOODS.”





HAZARDOUS MATERIALS INCLUDE EVERYDAY ITEMS LIKE MAGNETS, ALCOHOL, THERMOMETERS, DENTAL WHITENING STRIPS, ADHESIVES, AEROSOLS, AND BLEACH.

When handling, storing and transporting such an “unreasonable threat,” a motor carrier must be able to communicate:

1	to its employees on how to handle, store and load the materials;
2	to its drivers on what placards to display, papers to carry, and how to respond in an emergency;
3	to law enforcement on what hazardous cargo is inside the trailer;
4	to first responders on what measures they should take to contain any potentially released hazardous materials; and
5	to receivers on the nature of the freight being delivered.

The Hazardous Materials Compliance BASIC measures how well a motor carrier follows this chain of communication. Because of the nature of hazardous materials, each link in the communication chain requires exacting detail. To be sure, motor carriers transport hazardous materials (“hazmat”) safely every day. But exacting detail adds two components to hazardous materials compliance: knowledge before communication and documentation of the process. In the big picture, a motor carrier seeking to improve its Hazardous Materials Compliance BASIC must examine its performance at each link in the communication chain.

Who is responsible for this chain of communication? Ultimate responsibility resides with motor carrier management. Then, at each link in the chain, responsibility flows to the employees in identifying, handling, loading and transporting the hazardous materials or interacting with law enforcement, responders and receivers.

Management Responsibilities

Whether in Hazardous Materials Compliance 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 time and every time.

1

Provide Direction

For hazardous materials, the following directions, when carried out consistently, will assure that the commodities are safely handled and transported, and regulatory compliance is achieved:

- All hazardous materials are appropriately packaged, marked and labeled.
- All hazardous materials are blocked and braced within the trailer and properly segregated from non-compatible commodities.
- All trailers are placarded, when required, for the hazardous materials within and all unrelated placards are removed.
- All trucks used for hazardous materials transportation carry a copy of the motor carrier's USDOT hazardous materials registration number.
- All trucks used for hazardous materials transportation carry a readily available copy of the emergency response information relevant to commodities being transported.
- All hazardous materials loads are accompanied by the corresponding shipping papers.
- Only drivers with a hazardous materials endorsement to their CDL operate trucks carrying placarded amounts of hazardous materials.
- All employees are aware of the motor carrier's hazardous materials security plan, when required, and trained in how to report a hazardous materials incident.

TOP 10 HAZMAT VIOLATIONS

Package not secure in vehicle

No copy of USDOT Hazardous Materials Registration Number

Shipping paper accessibility

No or improper shipping papers

Vehicle not placarded as required

Placard damaged, deteriorated or obscured

No placards/markings when required

Prohibited placarding

Maintenance/ accessibility of Emergency Response Information

Offer or transport without Emergency Response Information



2

Give Authority

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

- To the motor carrier's sales team to accept only those shipper requests for hazardous materials transportation for which the motor carrier is properly equipped.
- To drivers to refuse hazardous materials shipments that are not properly labeled or accompanied by accurate shipping papers and emergency response information.
- To operations personnel to remove from a hazardous materials load any non-compatible freight, even when that delays delivery of the freight.
- To the loading dock supervisor to purchase necessary containment units for the temporary storage of certain hazardous materials.
- To drivers to actively assist law enforcement and first responders, if required, in the event of a hazardous materials incident on the road.
- To all employees to report a hazardous materials incident on the motor carrier's property.

3

Provide Tools

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

- The hazardous materials training required for each employee function and refresher training as needed.
- Signs and posters showing the types of hazardous materials handled by the motor carrier, with their hazard class or division and proper placard.
- Depending on the hazardous materials, proper protective gear and emergency containment and clean-up supplies.
- Secure, mobile communications allowing direct coordination between all team members.

4

Conduct Oversight

Management is responsible for oversight. To assure consistency of results in hazardous materials compliance, management must:

- Maintain a hazardous materials security plan for its place of business and train employees in how to report hazardous materials incidents.
- Regularly review a sampling of shipping papers to ensure that information provided by the shipper matches actions taken by the motor carrier.
- Contact the shipper on any missing or inadequate hazardous materials information.
- Review all hazardous materials violations and challenge discrepancies through the FMCSA DataQs process as needed.
- Ask whether hazardous materials violations are specific to a vehicle, a person or job function or potentially system-wide.
- Take action appropriate to findings, whether as reminders, enhanced training, improved equipment, or discipline.
- Document all employee training and all corrective actions taken, whether in regard to personnel, the shipper or in response to incidents and violations.

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

Documentation as a Management Responsibility

Coordination with hazardous materials shippers

A common motor carrier mistake is assuming that the shipper has all responsibility for hazardous materials identification, labeling, shipping papers and emergency response. Hazardous materials shippers are regulated by the USDOT, as are hazardous materials carriers. But the USDOT lists carrier responsibilities as overlapping with shippers in most significant respects. (A private carrier, who is an arm of the parent shipper company, performs both sets of responsibilities in their entirety.) A motor carrier must document its close coordination with the hazardous materials shipper, particularly on corrective actions taken, to avoid violations and achieve full hazardous materials compliance.



4 Documentation Responsibilities:

1. Shipper coordination of loads
2. USDOT hazmat registration
3. Hazmat CDL endorsements
4. Completion of employee training

Registration with USDOT

A motor carrier must be registered with the USDOT to transport hazardous materials. That registration process can be found at <https://www.phmsa.dot.gov/registration/registration-overview>. Management should document completion of this registration and place copy of the carrier's USDOT hazmat registration number in every truck used for hazardous materials transportation.

CDL hazmat endorsement

Only drivers with a hazardous materials endorsement should be allowed to operate trucks hauling hazardous materials. Information on obtaining a Hazmat Endorsement can be found at <https://www.fmcsa.dot.gov/registration/commercial-drivers-license/drivers>. Management should document adherence to this requirement by placing a copy of the CDL endorsement in each driver's qualification file.

Hazardous materials training

Hazardous materials training for each employee function is a federal requirement, as more fully discussed below. Management should document the completion of training in each employee's personnel file.

Five Communications Links

From management on down the line, information and instructions on handling, storing and transporting hazardous materials flow through these communication links:



All Employees



Company Drivers



Law Enforcement



First Responders



Receiver/Customer

Communication link #1: to all employees on how to handle, store and load hazardous materials.

Hazardous materials communication generally consists of shipping papers, marking and labeling of packages and placarding of transportation vehicles. These means of communication utilize symbols found in the "Table of Hazardous Materials and Special Provisions" (49 CFR 172.101) that determine applicability, proper shipping name and shipping description, hazard class or division, identification number, packing group, label(s) required, special provisions, packaging authorizations, as well as quantity limitations aboard aircraft, and vessel stowage requirements for those transportation modes. In other words, these symbols are shorthand for what the hazmat commodity is and how it should be handled.

According to FMCSA, many of the hazmat violations uncovered during inspections can be attributed to the motor carrier's failure to read, understand and follow the symbols found in the Table of Hazardous Materials and Special Provisions.

Reading, understanding and following the hazmat symbols necessitates knowledge on the part of the motor carrier and its employees. In fact, the USDOT requires formal training for all “hazmat employees,” defined as anyone – full-time, part-time, temporary or self-employed – who “directly affects hazardous materials transportation safety,” including loading, unloading, handling or transporting hazardous materials.

The required training for hazmat employees falls into these six categories:

- **general awareness/familiarization**
- **function-specific**
- **safety**
- **security awareness**
- **in-depth security training, when a security plan is required**
- **driver training**

New hazmat employees, or those who have changed their job function, must complete training within 90 days of employment or new function. Until training is complete, the hazmat employee can only work under the direct supervision of a properly trained and knowledgeable hazmat employee. If a security plan is changed, new training in that aspect must be completed within 90 days of the change.

READING, UNDERSTANDING AND FOLLOWING THE HAZMAT SYMBOLS NECESSITATES KNOWLEDGE ON THE PART OF THE MOTOR CARRIER AND ITS EMPLOYEES.

Every three years, all hazmat employees must have refresher (called “recurrent”) training in all applicable categories.

Management must document this new and recurrent training in the employee files. Specifically, federal regulations require the hazmat employee files to show:

1. The hazmat employee’s name;
2. The most recent training completion date of the hazmat employee’s training;
3. A description, copy, or the location of the training materials used to meet the requirements;
4. The name and address of the person providing the training; and
5. Certification that the hazmat employee has been trained and tested.

Federal and state investigators will examine hazmat employee files to see that the required training has been completed and documented. That is how officials check that hazardous materials knowledge is present at the motor carrier and has been communicated to all employees.



Communication link #2: to drivers on what placards to display, papers to carry, and how to respond in an emergency.

Driver training is one of the six required hazmat employee training categories and management should give directions that only drivers with a hazardous materials endorsement to their CDLs should operate a truck hauling hazardous materials.

Still, even with the required training and the hazardous materials endorsement, several of the [most frequent hazmat violations](#) either relate to the driver or are discoverable by the driver. Those frequent hazmat violations include:

- **Improper placards.** No matter who places the placards initially, the driver must cross-check the placards against the shipping papers for accuracy. Placards are the principle means of hazmat communication.
- **No USDOT hazmat carrier registration number in the truck.** Again, management should direct that a copy of its hazardous materials carrier registration is in every truck used to transport hazmat, but the driver should verify its presence.
- **Shipping papers and emergency response information not readily accessible.** Law enforcement conducting a hazmat inspection will ask to see both the shipping papers and the emergency response information for that load. If a driver has to dig through a duffel bag for them, a hazmat violation will be noted. After all, how can hazmat details be communicated, particularly in an emergency, if the paperwork cannot be readily located?
- **Hazmat freight not properly blocked and braced.** No matter the freight being transported, a driver should always check how it was loaded. That's simply good trucking. But, surprisingly, failure to properly secure hazmat freight is among the most frequent of hazmat violations.
- **Unnecessary placards displayed.** Talk about communication! Once the driver delivers any hazmat freight, the corresponding placards must be removed or covered. Otherwise, the truck is sending the wrong signal to law enforcement upon inspection and to first responders when a hazmat incident occurs.

Drivers and their trucks are the most visible elements of hazardous materials compliance. They are the ones inspected on the road. Regardless of who at the motor carrier made the initial mistake in placarding, loading or paperwork, all of these frequent hazmat violations are discoverable by the driver and all of them are part of the training a driver receives in obtaining a hazardous materials CDL endorsement. When these violations do occur, they are marked against the motor carrier's Hazardous Materials Compliance BASIC. As it's been said, hazmat violations represent a "failure to *communicate*."

Communications link #3: to law enforcement on what hazardous cargo is inside the trailer.

Whether at time of an inspection or when responding to a hazmat incident or accident, the motor carrier must communicate to law enforcement just what hazardous materials are inside the trailer. That will determine the actions taken by law enforcement and whether first responders are also needed at the scene.

Law enforcement may have the trailer opened for inspection. Discrepancies in these four items will trigger a look at the freight itself, as the whole point of hazardous materials compliance is communicating exactly what commodities of "unreasonable threat" are being transported.

Why does law enforcement want to see the USDOT hazmat carrier registration number? If there are errors in the placards, shipping papers or emergency response information, law enforcement investigators will potentially review the motor carrier's documentation and that of the hazardous materials shipper to see if the errors are systemic. That is particularly true when a look at the hazmat freight itself reveals problems in packaging or blocking and bracing – which can be shared responsibilities between the shipper and carrier.

LAW ENFORCEMENT WILL WANT TO SEE FOUR ITEMS:

**1**

PROPER PLACARDING

2

SHIPPING PAPERS

3

EMERGENCY RESPONSE INFO

4USDOT HAZMAT CARRIER
REGISTRATION NUMBER

Communications link #4: to first responders on what measures they should take to contain any potentially released hazardous materials.

First responders also want to see the same four items:

- Proper placarding
- Shipping papers
- Emergency response information
- USDOT hazmat carrier registration number

Their need for accurate communication is obvious. The proper method of containing, mitigating and cleaning up the release of a hazardous material varies with the exact commodity being transported. Mistakes can be catastrophic and fatal.

This is all the more reason why a driver must remove unneeded placards once hazmat freight has been delivered. An accident may make the paperwork inaccessible. The placards must *communicate* the right information for the correct first responder actions.

In their case, the first responders will want to see the USDOT hazmat carrier registration number so they can notify the motor carrier, if not already contacted by law enforcement or the driver. And in some instances first responders may need to know the experience of the motor carrier or shipper in handling this specific hazardous material.

Communications link #5: to receivers on the nature of the freight being delivered.

Finally, a safe journey completed! The hazardous materials freight is unloaded at the receiver's facility. But the motor carrier has one last step in communication: telling the receiver what exactly is being delivered. The driver must hand over:

- Shipping papers
- Emergency response information

In turn, the driver must receive a receipt for the transaction (which may be directly communicated electronically to the carrier). The motor carrier must document the completion of this freight delivery – every communications link should be followed and documented when commodities of "unreasonable threat" are involved. That is the essence of hazardous materials compliance.

(REMINDER: NOW IS THE TIME FOR THE DRIVER TO REMOVE UNNEEDED PLACARDS.)

Improving the Hazardous Materials BASIC requires consistency, with the documentation for each hazmat shipment, the training (knowledge) for each hazmat employee, and accurate, complete communication at each step in the process. It starts at the top with management but then flows throughout the whole motor carrier team. Safe and compliant hazardous materials transportation 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.



QUICK QUIZ

1. How soon and how often must a hazmat employee be trained?
2. What is the principle means of hazmat communication?
3. True or False: Hazmat shippers are responsible for all hazardous materials identification, labeling, shipping papers and emergency response.

Helpful Hints

- Some weigh stations are now equipped with hazmat placard readers, allowing inspectors to quickly cross-check the placard symbols against the shipping papers. Motor carriers can accomplish the same feat through posters on loading docks, allowing employees to place the proper placards before transportation begins.
- Which commodities are considered hazardous can be counter-intuitive... did you know that human hair wigs (in the right quantity) are considered a flammable? Guessing is not an option. Call the shipper if there are questions.
- Hasty loading practices can create problems. Consider what freight is already on a trailer before adding that "one last item." It could introduce freight that is not compatible with a hazmat load already on the trailer or it could trigger the need for a different placard.

(Quick Quiz answers: 1) Within 90 days of employment or new position and every three years thereafter; 2) placards; 3) False. These responsibilities are shared by the shipper and motor carrier.)



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