

CSA

The 7 BASICS



CSA: The 7 BASICS Driver Handbook

Introduction

Comprehensive Safety Analysis (CSA) is the driver and carrier monitoring and evaluation system. It was designed by the Federal Motor Carrier Safety Administration (FMCSA) to identify and intervene with drivers and carriers who are not in compliance with safety regulations.

Simply put, CSA is a data gathering and analysis system that seeks to identify safety problems *early*, so that they can be addressed by the agency's compliance and enforcement programs.

What does CSA mean for you as a driver? Data about your compliance on the road will be gathered, tracked, compared with other drivers, and used to generate numerical scores in multiple areas critical to motor carrier safety.

It also means that if you get too many violations or are involved in too many crashes, you or your carrier can be on the receiving end of an enforcement intervention.

At the heart of the CSA safety measurement process are seven categories of 'safety related behaviors' called **BASICS**—which stands for **Behavior Analysis and Safety Improvement Categories**.

You should know that your violations and crashes in the seven BASICS will be compared to similar drivers' violations and crashes. Your carrier's scores, which are generated by tracking their drivers' violations and crashes in the seven BASICS will also be compared to other, similar carriers.

Carriers and drivers with high BASIC Scores in the CSA Safety Measurement System (SMS) are then subject to FMCSA enforcement action, which is referred to as an intervention.

In this handbook, we'll address each of the seven BASICS in detail. But before we do that, we'll review how the Safety Measurement System—the SMS—works.

Driver Handbook



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The Safety Measurement System (SMS)

Any time a driver has contact with a trained officer, data is gathered for the SMS. That contact can be the result of a roadside inspection, a crash investigation, or a carrier investigation.

For example: An officer at a weigh station determines that your truck has a light out and that your driver's log is not up to date, which he documents on a roadside inspection report. In turn, these two compliance violations become data points in the SMS. And they are reported for both you, as the driver, and your employer, as the carrier.

By the same token, if your inspection at the weigh station shows that you are in compliance with all regulations, the result of this inspection is also entered into the SMS—if, that is, a roadside inspection report is completed by the officer.

What happens when a violation is reported during a roadside inspection? First, when the data enters the SMS, the violation is given a numerical “value” based on the violation’s relationship to crash causation. This is called “severity weighting” the violation.

After severity weighting, the violation is also subject to “time weighting.” This is a way of putting more emphasis on recent violations than on past violations.

Time weighting offers a way for drivers and carriers who have violations within the SMS, to improve their scores by remaining violation-free for an extended period of time—12 months for drivers, 6 months for carriers. You’ll see how this works when we go through some examples in each BASIC.

The SMS automatically multiplies the ‘severity-weighted value’ by the ‘time-weighted value’ for each violation to determine the “full violation value.” The “measure” for each BASIC is then determined by totaling all the “full violation values” within the BASIC.

For some BASICs, the total of the “full violation values” is divided by the ‘total of time-weighted inspections’ to determine the measure. This is referred to as a “normalizing factor.”

It’s somewhat of a complicated process, so here’s an example of how a “BASIC Measure” is calculated in the SMS.

For example: A driver received a ‘reckless driving’ violation, which has a high correlation with crash causation. Under the SMS, reckless driving is assigned a “severity weight” of 10.

The “time weight” of any violation that occurred in the last 12 months is 3, so the “full value” of the violation during the first 12 months following the violation is: $10 \times 3 = 30$.

Now, let’s assume that during the same month, the same driver receives a violation for ‘having left a vehicle parked on the roadway.’ This violation has little correlation with crash causation, so it’s assigned a severity weight of 1.

Again, the ‘time weight value’ is 3, because the violation occurred within the last 12 months, so the “full value” is: $1 \times 3 = 3$.

Both of these violations are considered unsafe driving behaviors, so they’re placed into the *Unsafe Driving BASIC*. Adding their full values together yields this driver’s “BASIC Measure” for *Unsafe Driving*: $30 + 3 = 33$.

It is the “measure” for each BASIC that is used to compare drivers and carriers to their peers by calculating a “percentile ranking.” And it is the percentile ranking that is the “BASIC Score.”

For drivers, the calculation works like this: First, drivers with no violations are removed from the peer group and are not scored.

Next, all the remaining drivers, that is, those with violations, are ranked from the lowest BASIC Measure to the highest.

Then a percentile ranking is assigned, with zero given to the driver with the lowest BASIC Measure and 100 to the driver with the highest BASIC Measure. The remaining drivers are given percentile rankings between zero and 100, based on their relative BASIC Measures.

The violations that are reported while working for a carrier will be included in the carrier’s data and scores, so maintaining a low score in each of the seven BASICs is an important element of your employer’s success within CSA.

An important note: As a driver’s violations get older they automatically diminish in value due to the time-weighting process. Once a violation is over a year old, its time weighting drops from 3 to 2.

After 24 months, the time weighting drops to 1, and after 36 months these violations are dropped from the calculation completely.

So, even after receiving a violation, you can reduce your BASIC Measure—and your percentile ranking to zero—by remaining violation-free for 36 months. However, due to the time-weighting process, the important first step is to remain violation-free for 12 months.

Unsafe Driving BASIC

You should know that the **Unsafe Driving BASIC** is one of two “stand alone” BASICs that are part of CSA. The “stand alone” designation is given to BASICs that the FMCSA considers most important for crash reduction.

The **Unsafe Driving BASIC** includes things like moving violations, other driver violations, and some hazardous materials violations. The vast majority of violations placed in this BASIC are assigned to the driver.

If one of these violations is noted on a roadside inspection report by a trained officer, the violation will be entered into the carrier’s **Unsafe Driving BASIC** of the CSA Safety Measurement System (SMS).

If the FMCSA has determined that the driver could have avoided, prevented, or stopped the violation, then the driver is also considered a responsible party and the violation is entered into the driver’s data—as well as the carrier’s data—in the SMS.

An important note: If a driver receives a warning, citation, or ticket that’s issued by an officer who has not received FMCSA training, there is no entry into the SMS. Only data on roadside inspection reports submitted by trained officers become part of the CSA database.

To be sure you understand how the SMS works for this BASIC, let’s take a look at another violation that’s placed in the **Unsafe Driving BASIC**.

Speeding is obviously related to crash causation, and it’s the most common moving violation noted on roadside inspection reports. What’s more, a speeding violation is an event that triggers many roadside inspections. And, of course, it’s a violation that’s under the driver’s control—so when a speeding violation is noted on a roadside inspection report, it will become a data point for *both* the carrier and the driver.

‘Following too close,’ ‘failing to stop at a railroad crossing,’ ‘improper lane change’ and ‘failure to obey a traffic control device’ are

all examples of violations that are placed into the **Unsafe Driving BASIC**.

For example: Let’s review the SMS calculation to determine the “full value” of one of these violations—using a radar detector in a CMV:

The “severity weight” for this violation is 5. Multiply that by the “time weight”—which is 3 if the violation took place in the last 12 months—to arrive at the “full value” of 15 for this violation:

$$5 \times 3 = 15.$$

Once a month, all “full violation values” in the **Unsafe Driving BASIC** are totaled to reach a driver’s Unsafe Driving “BASIC Measure.” This BASIC Measure is then compared to all other drivers’ Unsafe Driving BASIC Measures.

The comparison for drivers and carriers is done on a percentile basis. Drivers and carriers with no violations are not included in the calculation. Drivers with the lowest BASIC Measure are given a percentile ranking of zero and drivers with the highest, are given a percentile ranking of 100. The remaining drivers are ranked between zero and 100.

For carriers: They have the additional step of having the total of their **Unsafe Driving BASIC** violations divided by a “normalizing factor” to create a fair number for comparison.

And, their scores are calculated in a slightly different way. They are categorized into peer groups made up of carriers with similar characteristics, and their “BASIC Measures” are compared to the “BASIC Measures” of other carriers in their “peer group.” Then they are percentile ranked within the peer group to arrive at the carrier’s “BASIC Score.”

What YOU can do to keep your Unsafe Driving BASIC Score low

The best approach to ensuring a low score in this BASIC is to avoid driving violations—especially high severity violations.

Practice defensive driving, keep yourself fresh and alert to prevent poor driving decisions, and take advantage of any training programs your carrier offers.

For carriers: Providing effective training programs, mentoring by experienced drivers, and doing meaningful road tests are all techniques that can help develop safe driving behaviors. And, if carriers identify a driver that is not operating safely and in compliance, they should have a system in place to correct that driver's behavior—even if no violations have been recorded in the SMS. Having such a system in place can be helpful if the carrier is subjected to an FMCSA intervention.

As a driver, if you do receive a violation that is placed in the **Unsafe Driving BASIC**, remember that its value will diminish over time, dropping after 12 months and after 24 months. And the violation will be eliminated from your data in the SMS after 36 months. So even if you make one mistake, you can improve your Unsafe Driving BASIC Score each year by avoiding subsequent violations.

Fatigued Driving BASIC

The other "stand alone" BASIC is **Fatigued Driving**. It is "stand alone" because the FMCSA has determined that **Fatigued Driving** is directly related to crash causation.

Some high-severity violations under the **Fatigued Driving BASIC**: 'operating when ill or fatigued' and 'operating in violation of an out-of-service order related to hours-of-service' all have a severity weight of 10.

'Operating over hours' or 'with a false log' each have a severity weight of 7. 'Log not current,' 'no log when required,' and 'failure to retain logs for 7 days' all have a severity weight of 5.

For example: To see how the SMS calculates the full value of a violation in the **Fatigued Driving BASIC**, let's consider this scenario: During a roadside inspection, a driver is cited for 'driver's record of duty status not current.'

The "severity weight" of this violation is 5. So 5 is multiplied by 3 (the "time weight" for a violation that occurred within the last 12 months) to determine the "full value" for the violation:
 $5 \times 3 = 15$.

Fourteen months ago, the same driver was also cited for a 'general form and manner' violation that was placed in the **Fatigued Driving BASIC**. This violation has a "severity weight" of 2, and

because it occurred between 12 and 24 months ago, a "time weight" of 2, so its "full value" is: $2 \times 2 = 4$.

Fatigued Driving is one of the BASICs that has an out-of-service penalty, or "kicker." Any time a driver is placed out-of-service for a violation in this BASIC, the violation severity is increased by 2. So if the violation originally had a severity weight of 7 and the driver was placed out-of-service, the severity weight for the violation is increased to 9.

And, once each month, the full values of all the violations in this BASIC are totaled (in the example above: $15 + 4 = 19$).

Fatigued Driving is also one of the four BASICs that use a "normalizing factor" to compare drivers. This normalizing factor is the "total of all time-weighted relevant inspections," (in this case: driver inspections) that the driver has undergone in the last three years. So, each inspection, good or bad, that the driver has undergone is counted in the SMS and is time weighted, using the same time weighting as violations. See the table below:

Driver time-weighting table:

If the event took place...	The time weighting is...
Within the last 12 months	3
12 to 24 months ago	2
24 to 36 months ago	1

Let's see how this would work in our example: The "severity weight" for the 'driver's record of duty status not current' violation is 5 and the "time weight" is 3, so the "full value" is:
 $5 \times 3 = 15$.

For the 'general form and manner' violation, the "severity weight" is 2 and the "time weight" is also 2—since this violation took place 14 months ago: $2 \times 2 = 4$.

Now, let's assume that the driver had an additional roadside inspection report filed in the current year that showed no violations in this BASIC—this has no severity weight, but does have a time weight of 3 because it happened within the last 12 months: $0 \times 3 = 0$.

All of the inspections are time weighted and counted, so the total of 'time-weighted relevant inspections' is: $3 + 2 + 3 = 8$, and that is the number divided into the 'total of full violation values,'

which is: $15 + 4 + 0 = 19$, to determine the BASIC Measure. Nineteen divided by 8 equals 2.375. That result is the measure for this driver for the **Fatigued Driving BASIC**.

For drivers, the **Fatigued Driving BASIC** Measure is assigned a percentile ranking by comparing it to a peer group of other drivers that have a similar number of relevant inspections.

For carriers: Calculating the BASIC Measure works in the same way. The violation's full values are totaled then divided by the total number of the carrier's time-weighted relevant inspections. This measure is compared to the carrier's peer group to determine the percentile ranking, which becomes the carrier's BASIC Score. (Just like for drivers, the carrier peer groups are based on the number of driver inspections the carrier has undergone.)

What YOU can do to keep your **Fatigued Driving BASIC** Score low

Hours-of-service is one of the key elements of the **Fatigued Driving BASIC**. You can avoid violations by thoroughly understanding the hours-of-service regulations and by keeping your log book with you, and keeping it accurate, truthful and up to date.

And, of course, don't drive if you're ill or fatigued, out of hours, or if you've received an out-of-service order. Also, remember that the number of 'time-weighted driver inspections' the carrier and driver have undergone is used in scoring the **Fatigued Driving BASIC**. For this reason, it's important to accumulate good driver inspections—that is inspections with no violations. These will help lower the driver's and the carrier's BASIC Measure faster than waiting for the time-weighting process to diminish the BASIC Score.

For carriers: Since the **Fatigued Driving BASIC** relates closely to hours-of-service violations, carriers should start by offering comprehensive initial training on the hours-of-service regulations and establishing a culture where violations are not tolerated. An effective tracking system to identify driver and supervisor compliance is key to maintaining a low **Fatigued Driving BASIC** Score. When problems are identified, carriers should offer immediate re-training to ensure that drivers and supervisors understand both the importance of compliance *and* application of the rules.

When logs are current and truthful and drivers work within the hours-of-service regulations, their roadside inspections will report no violations. And, because all inspections are factored into the scoring of this BASIC, these drivers and the carriers that employ them will have low "BASIC Measures" in the **Fatigued Driving BASIC**.

Driver Fitness BASIC

Contrary to what you might assume about the name of this BASIC, **Driver Fitness** does not refer to the physical fitness of drivers. It might be more appropriately called the "driver qualifications BASIC." The **Driver Fitness BASIC** uses violations noted in roadside inspections that are associated with driver training, driver qualifications, and driver licensing as related to the types of vehicles drivers operate and loads they transport.

And, like all BASICs, driver violations placed in this BASIC are uncovered in roadside inspection reports and can affect the scores of *both* drivers and carriers.

Some examples of violations of the **Driver Fitness BASIC** include: 'operating a commercial motor vehicle without proper training' or 'transporting hazardous materials without the appropriate training' to do so.

'Operating without the correct license or endorsements' or 'operating while holding multiple licenses' and 'operating with no medical card in possession' are also examples of violations that will be placed into the **Driver Fitness BASIC**. 'Driving with more than one CDL' has a severity weight of 8 and 'violating a driver qualifications related out-of-service order' has a severity weight of 10. High severity weights are assigned to these violations because they have been shown to be reliable predictors of future crash involvement. 'Not having the correct license or endorsement' and 'operating while disqualified' each have a severity weight of 8 as well.

Driver Fitness is another one of the BASICs with a 2-point out-of-service penalty. Any time a driver is placed out-of-service for a violation, the severity weight is *increased by 2*. So if the original violation has a severity weight of 6 and the driver is placed out-of-service, the severity weight is automatically increased to 8.

As with all violations, the “severity weight” is multiplied by the “time weight” to reach the “full value” of the violation. And, like three of the other BASICS, the total of the full values is divided by the ‘total of the time-weighted relevant inspections’ (in the case of this BASIC: driver inspections) to determine the “BASIC Measure.”

For example: During a roadside inspection, which took place 16 months ago, a driver was discovered to have two CDLs in his possession. This violation is assigned a “severity weight” of 8. Since the violation took place within the last 12 to 24 months, the “time weight” is 2. Therefore, the “full value” of this violation is: $8 \times 2 = 16$.

Six months ago, the same driver had a violation for ‘not having his medical certificate in possession while operating a CMV.’ This has a “severity weight” of 1 and, because it occurred in the last 12 months, it has a “time weight” of 3, making the full value of the violation: $1 \times 3 = 3$.

To determine the measure for this BASIC, for either a driver or a carrier, once a month the “full values” of all of the violations under the **Driver Fitness BASIC** are totaled in the SMS.

This total is then divided by a “normalizing factor,” which is the number of ‘time-weighted driver inspections’ the driver or carrier has undergone.

*For example: Let’s assume that the driver had an inspection 28 months ago that reported no violations, so no violations were placed in this BASIC. The time-weighted total of all inspections the driver has undergone equals 1 (for the oldest inspection) plus 3 (for the inspection 6 months ago) plus 2 (for the inspection 16 months ago) for a total of $6 (1 + 3 + 2 = 6)$. Six, then, is the number that is divided into the totaled “full violation values,” which is 16 plus 3, or 19, to determine the “measure” for the **Driver Fitness BASIC**: $19 \div 6 = 3.16$. That would be this driver’s “BASIC Measure.”*

And, like other BASICS, the measures for both drivers and carriers are compared to peer groups of drivers and carriers that have roughly the same number of driver inspections.

What YOU can do to keep your Driver Fitness BASIC Score low

Since driver qualifications and training are the key elements of this BASIC, you can ensure a low score by being properly licensed and trained and by keeping your training current.

If your job involves transporting hazardous materials, be sure you’ve received the training you need to be qualified to carry these loads. You should have a valid license of the correct class with the necessary endorsements for the type of truck and type of loads you are transporting.

*For carriers: Carriers also have a role in keeping scores for the **Driver Fitness BASIC** low. Remember all those annoying reminders and forms you get from your company? That’s an effort which will keep you and the company out of trouble in this BASIC. Verifying each driver’s training, offering refresher training, and verifying licenses and endorsements in a driver qualifications file will help to keep unqualified drivers off the road. A best practice in this area is not to dispatch any driver until all qualification requirements are met—even the ones that allow thirty days for completion.*

If drivers or carriers have violations placed in the **Driver Fitness BASIC**, remember that the time-weighting process will diminish the value of violations over time.

This BASIC also uses the ‘number of inspections’ as a “normalizing factor,” so achieving more good driver inspections—that is inspections with no violations—is the fastest way to reduce your “BASIC Measure.”

And, of course, every driver should be able to pass the physical exam and have a medical card in his or her possession at all times. After all, it is called the **Driver Fitness BASIC**.

Drugs and Alcohol BASIC

Understanding this BASIC is pretty easy. If you know the Controlled Substances and Alcohol regulations found in Parts 382 and 392 of the FMCSA regulations, you know what the violations are.

Like other BASICS, this has nothing to do with receiving a citation or ticket (for example, driving under the influence) while driving your personal car. Citations and tickets are a different matter and are, of course, serious, but they are not tracked in the BASICS because they are not written up as violations on roadside inspection reports. So they do not enter into the SMS.

For a controlled substance or alcohol violation to become part of the SMS—and this BASIC—it must be noted by a trained officer in a roadside inspection report, or during a carrier investigation.

Examples of violations placed in this BASIC include ‘operating under the influence,’ ‘possession of drugs or alcohol in a commercial motor vehicle’ and ‘consumption of alcohol within four hours of coming on duty.’

The highest severity weight is attached to the violations with the closest correlation to crash causation. Violating an ‘alcohol or drug-related out-of-service order’ or ‘using or possessing a drug while operating’ are assigned a severity weight of 10. ‘Use of alcohol within four hours of coming on duty’ is assigned a severity weight of 5.

To determine the “full value” of a violation, the “severity weight” is multiplied by the “time weight.”

For example: If a driver had a high severity drug-related violation, the severity weight would be 10.

If this event occurred more than 24 months ago but less than 36 months ago, the “severity weight” of 10 would be multiplied by a “time weight” of 1, because the violation occurred in the more distant past. In fact, after 36 months any violation will no longer be used in the SMS.

For drivers, the “measure” in this BASIC is determined each month by the SMS automatically—by totaling the “full values” of all violations.

Your score for this BASIC would be the result of comparing your BASIC Measure with the measures of other drivers.

After eliminating drivers with no violations, the driver with the lowest measure is assigned the percentile ranking of zero and the driver with the highest measure is assigned the percentile ranking of 100. Other drivers are assigned percentile rankings between 0 and 100 depending on their relative measure in this BASIC.

For carriers: The process is similar except that the calculation for carriers includes the additional step of dividing the total by a “normalizing factor” to create a fair number for comparison. Carriers are then compared in peer groups to arrive at their percentile ranking.

If the carrier’s percentile ranking, or BASIC Score, reaches the predetermined threshold for intervention or enforcement, the FMCSA will be in touch!

What YOU can do to keep your Drugs and Alcohol BASIC Score low

For drivers, staying on the good side of this BASIC is pretty simple: Don’t operate vehicles under the influence of alcohol or drugs—illegal and prescription.

For carriers: Achieving a low score in this BASIC requires several actions, all designed to create a culture where drinking alcohol or using drugs on the job is never tolerated. This means establishing effective policies and providing the training drivers need to understand the policies. And it means enforcing those policies rigorously.

Some carriers choose to establish and enforce policies that are stricter than the regulations mandate, for example, requiring a driver to be “alcohol free” for 12 of 24 hours before coming on duty rather than the regulation’s required 4 hours.

During an investigation, such a policy would be a clear signal to the FMCSA that the carrier is serious about the **Drugs and Alcohol BASIC**.

Vehicle Maintenance BASIC

Proper vehicle maintenance is paramount to safety, and some vehicle maintenance issues have a considerable bearing on crash causation. This means that severity weights can be high for certain vehicle maintenance violations.

Vehicle maintenance violations are also subject to an additional 2-point penalty for an out-of-service order. If an out-of-service order

is issued because of a vehicle violation, the severity weight of the violation is increased by 2.

Examples of violations that are placed into the **Vehicle Maintenance BASIC** include: 'defective brakes and lights,' 'failure to make required repairs,' 'failure to perform annual and periodic inspections' or 'failure to prepare inspection reports,' and 'operating an out-of-service vehicle.'

For example: During an inspection, an officer reports a violation for 'inoperative or defective hazard warning lamps' which has a "severity weight" of 6. As part of this violation, the officer also issues an out-of-service order that adds an additional 2, making the "severity weight" a total value of 8: $6 + 2 = 8$.

The inspector also notes a problem with the windshield and reports a violation for 'windshield condition' with a "severity weight" of 1.

*Since both of these violations occurred within the last twelve months they are multiplied by a "time weight" of 3. Assuming there are no other violations or inspections within the last three years under this BASIC for this driver, the "full value" for the violations placed in the **Vehicle Maintenance BASIC** is: $8 \times 3 = 24$, plus $1 \times 3 = 3$, for a total of 27.*

The **Vehicle Maintenance BASIC** is among the four BASICs that use the 'total of time-weighted inspections' (in this case: vehicle inspections) during the last three years as a "normalizing factor" in the calculation. Any vehicle inspection that took place in the last year has a time weight of 3. Vehicle inspections that took place one to two years ago have a time weight of two, and those that took place between two and three years ago have a time weight of 1. (NOTE: See driver time-weighting chart in the Unsafe Driving BASIC section.)

*For example: This driver had only one inspection with a "time weight" of 3. The "full value" of 27 is divided by 3, which determines the **Vehicle Maintenance "BASIC Measure"** of 9.*

*Nine is the number that will be compared with the **BASIC Measures** of other drivers in the driver's peer group. The peer groups are based on the number of vehicle inspections the driver has undergone in the last three years. The driver with the best **BASIC Measure** in the peer group is given a percentile ranking of zero, while the worst is given a percentile ranking of 100.*

Everyone else falls somewhere in between. This percentile ranking inside the peer group is the driver's score for this BASIC.

For carriers: Scores are determined by percentile ranking within peer groups, but the carrier peer groups are slightly different.

What YOU can do to keep your Vehicle Maintenance BASIC Score low

The obvious answer for drivers is to make sure you complete all required vehicle inspections and report problems to your carrier immediately so that they can be addressed.

Inspections should include a pre-trip inspection at the beginning of the day, a walk-around inspection anytime the vehicle is parked, and a post-trip inspection including completion of a Driver Vehicle Inspection Report (DVIR) at the end of the day.

Your carrier should also have plans in place to handle on-road repairs. You should know these procedures and know who to contact when on-road maintenance or repairs are required.

Inspections and repairs should be well documented. That way if your carrier is investigated, they have the documents to back up your inspection procedures.

Many of the violations placed in the **Vehicle Maintenance BASIC** are the shared responsibility of the carrier and the driver. However, some are considered solely the responsibility of the carrier.

For carriers: Whether maintenance is handled in-house or by a contractor, carriers should have a system of scheduling maintenance and using maintenance checklists that monitor and document all maintenance activities. Such a system is useful in resolving on-going problems with specific pieces of equipment and identifying drivers for whom maintenance issues appear to be a chronic problem.

*These documents can also be very useful if your carrier is investigated by the FMCSA for having a high "percentile ranking," or "BASIC Score," in the **Vehicle Maintenance BASIC**.*

Cargo Related BASIC

One of your key responsibilities as a driver is to properly load and secure your cargo and to make sure that hazardous materials have been properly packaged, labeled, and documented before they are loaded onto your vehicle.

You also need to make sure that hazardous materials are properly secured and that hazmat paperwork is where it should be—in the cab. The FMCSA acknowledges this by including cargo loading and securement as one of the seven BASICs. The **Cargo Related BASIC** encompasses both cargo securement and hazardous materials regulations.

Many of the technical violations placed in this BASIC relate to marking, certifying and documenting hazardous materials. These responsibilities tend to fall on the carrier or shipper. However, a significant number of cargo-related hazardous material violations are assigned to the driver and are, therefore, used to determine the driver's "measure" under this BASIC.

Examples of cargo-related violations for which the driver is responsible include: 'failure to comply with requirements for handling hazardous materials,' 'vehicle not placarded as required' and 'placards obscured.' These violations carry severity weights of 2 to 5, because they are safety violations, but not ones that are likely to cause a crash.

Examples of high-value violations include 'failure to secure cargo,' including hazardous materials' and a 'loose or unfastened tie-down.' Both of these violations carry a severity weight of 10. And, the out-of-service penalty applies in this BASIC, too. If the vehicle is placed out-of-service as the result of a violation of these or other cargo regulations, the severity weight is increased by 2.

The "full value" of the violations placed in the **Cargo Related BASIC** is calculated like it is for other BASICs: The "severity weight" of each violation is multiplied by the "time weight," then once a month all the "full values" are totaled in the SMS.

Let's look at a cargo-related violation example: having 'a loose or unfastened tie-down.' The "severity weight" for this violation is 10, because it has a high correlation to crash causation. If the violation is noted on a roadside inspection within the previous 12 months, the "time weight" is 3, so the "full value" is: $10 \times 3 = 30$.

To determine the BASIC measure, the full value of all violations is divided by the sum of the 'time-weighted relevant roadside inspections' (in this case: vehicle inspections).

Let's look at our example again: Assume that the driver has had four relevant inspections during the last three years and their time weights add up to 6. We'll also assume that this most recent violation is the only violation for this driver in the Cargo Related BASIC, so the total of the full violation values for this BASIC is 30. To determine the BASIC Measure: $30 \div 6 = 5$.

After drivers with no violations are eliminated, the "measures" of the remaining drivers are compared within peer groups of drivers that have had roughly the same number of vehicle inspections.

Among these drivers, the driver with the lowest measure in the peer group is assigned a percentile ranking of zero, and the driver with the highest measure is assigned a percentile ranking of 100. All other drivers are assigned a percentile ranking based on their BASIC Measure relative to the zero and 100 ranked drivers.

For carriers: The process is similar except the peer groups are slightly different.

What YOU can do to keep your Cargo Related BASIC Score low

The surest path to preventing violations placed in the **Cargo Related BASIC** is knowledge—knowledge gained by understanding the regulations related to cargo securement and knowledge gained by inspecting your load and taking action when you identify a problem.

The most obvious cargo issues relate to flatbeds, but van and refrigerated drivers must also be vigilant in following cargo loading and securement procedures in order to achieve a low **Cargo Related BASIC Score**.

Failure to use appropriate straps, dunnage, or load bars on loads that do not reach the back doors of the van can result in a 'failure to secure' violation.

Combine that with 'improper or obscured placards,' and 'load documentation problems' and you can easily find yourself with an elevated **Cargo Related BASIC Score**.

For carriers: Maintaining a low BASIC Score involves providing the training and equipment necessary for drivers to secure cargo effectively and to handle hazardous materials properly. Providing a cargo securement mentor to new drivers and a first-contact point-person to advise on hazardous materials issues are two useful techniques for giving drivers the knowledge to remain in compliance.

By creating a culture where asking questions is encouraged and where time spent securing and checking the load is considered time well spent, carriers can encourage the behaviors that keep **Cargo Related BASIC Scores** low.

Crash Indicator BASIC

At its core, CSA is designed to prevent crashes, so it's not surprising that monitoring crash events is a critical part of the Safety Measurement System (SMS).

Unlike the other six BASICs, which each relate to a specific category of behavior, the **Crash BASIC** collects data on one of the more extreme consequences of driving behaviors.

The **Crash BASIC** uses state-generated crash reports to add data points to both the carrier's and the driver's SMS record.

It's important to note that under the current system all crashes are recorded. It doesn't matter who was at fault—if you're involved in a crash while operating a CMV, even as a victim, that crash will become part of the SMS database.

However, crashes used for this measure include only "recordable" crashes—those that result in a fatality, an injury requiring treatment away from the scene, or that require vehicles to be towed from the scene due to disabling damage.

Similar to the other BASICs, the **Crash BASIC** uses severity weighting:

Type of Crash	Severity
A vehicle towed from the scene due to disabling damage	1
Fatality or injury	2
Hazardous material released due to a crash listed above (other than motor fuel)	Add 1 to above

Time weighting for the **Crash BASIC** works the same as the other six BASICs: 3 within the last 12 months, 2 within 12 to 24 months and 3 within 24 to 36 months.

If you are crash-free for 36 months, the **Crash BASIC** will not have any crashes to be valued, and you will not even be scored in this BASIC.

For carriers: The time weighting is slightly different.

Once each month, drivers' Crash "values" are totaled by the SMS to determine the measure in the **Crash BASIC**. Like the other BASICs, the score for the **Crash BASIC** is expressed as a percentile ranking. Drivers who have not been involved in a crash are not included in the percentile rankings.

To determine the percentile ranking, drivers with the lowest **Crash BASIC Measure** are given a zero percentile ranking and drivers with the highest **Crash BASIC Measure** are assigned a percentile ranking of 100. The remaining drivers are ranked between zero and 100, depending on their **Crash BASIC Measures**, and their percentile ranking becomes their **BASIC Score**.

There are no driver peer groups for the **Crash BASIC**.

For carriers: The method for scoring is the same except that carriers have their total of all crashes normalized. This is done by dividing the total of all crashes by a normalizing factor to create a fair number for comparison purposes. After normalization, carriers are percentile ranked within peer groups.

What YOU can do to keep your Crash Indicator BASIC Score low

Your goal in all BASICs is to have a low percentile ranking or **BASIC Score**. In the **Crash BASIC**, achieving a low score is easy: *Don't be involved in a crash!*

That means driving defensively, operating within the regulations, and anticipating the actions of other drivers on the road. And it means training. Upgrading and refreshing your skills on a regular basis can be an effective way to avoid involvement in a crash.

For carriers: The key objective is to prevent crashes. First, carriers need to make sure all drivers receive complete and current training in defensive driving *and* that all drivers understand that consistently practicing defensive driving is an expected part of job performance.

Monitoring driver compliance using log books, on-board data collection, and on-road observation can help ensure that drivers are meeting carrier expectations.

Furthermore, carriers should investigate all crashes, not just DOT-recordable crashes. These investigations can be instrumental in uncovering causal factors and root causes.

The results of these investigations should be used to guide a systematic approach to preventing future crashes.

How BASIC Scores are Determined in CSA

As we have discussed each of the seven BASICS we've given examples to illustrate how the scoring process works. In this section, we'll discuss scoring as it applies to drivers and carriers. Since most violations start with a roadside inspection report, we'll begin with drivers.

You should know that your BASIC Measures and Scores are confidential. And if you feel a violation was wrong, assigned to you in error, or is otherwise incorrect, there is an appeal process you can pursue. You'll find information about appealing a violation at the FMCSA website.

While there are some differences among the BASICS in determining scores, all begin by gathering the violations. This refers to the fact that *each month*, all the violations in each BASIC are recorded for every driver. If a driver has a roadside inspection with no violations, that, too, is factored into the scoring process.

Next, the severity weights of the various violations are assigned, with the highest severity weights given to violations that have demonstrated the greatest correlation with crash causation.

In some BASICS—specifically **Fatigued Driving, Driver Fitness, Vehicle Maintenance**, and **Cargo Related**—an out-of-service penalty of 2 points is added if the roadside inspection resulted in an out-of-service order.

“Severity weights” are multiplied by “time weights” to give more recent violations a higher value than violations that occurred in the more distant past.

Driver time-weighting table:

If the event took place...	The time weighting is...
Within the last 12 months	3
12 to 24 months ago	2
24 to 36 months ago	1

Using this method, the “value” of each violation diminishes over time and is eliminated after 36 months.

In the Safety Measurement System (SMS), when a violation’s “severity weight” is multiplied by the “time weight” the result is called the “full value” of the violation.

In some BASICS—specifically the **Unsafe Driving, Drugs and Alcohol**, and **Crash BASICS**—the “full value” of all violations are totaled to generate a number called the “BASIC Measure.”

But the “measure” is not the “score.” Reaching the “score” requires a bit more math.

The “score” is reached by determining the “percentile ranking” of drivers within the BASIC, relative to other drivers. *And here is one place where having no violations is a huge benefit.* If you have no violations in these BASICS, then you’re eliminated from the pool of drivers who are ranked—end of story.

All the remaining drivers, those that do have violations, are ranked in ascending order—those with the lowest “measure” are given a “percentile ranking” of 0, and those with the highest “measure” are given a “percentile ranking” of 100.

The drivers with “measures” in between these two extremes are assigned “percentile rankings” between 0 and 100, depending on their relative measures—lower measures receive lower percentile rankings and higher measures receive higher percentile rankings. This “percentile ranking” is considered the driver’s “BASIC Score.”

And those drivers with a percentile ranking that *exceeds* a predetermined threshold may be subjected to an FMCSA intervention **if** their carrier undergoes an investigation.

For the **Fatigued Driving, Driver Fitness, Vehicle Maintenance and Cargo Related** BASICS, a “normalizing factor” is used to accurately compare drivers. Normalization involves dividing the total of the driver’s violation “values” by the number of ‘time-weighted relevant inspections.’

The time weighting of inspections uses the same table of time weights assigned to violations: 3 for inspections that occurred in the last year, 2 for inspections that occurred between one and two years ago, and 1 for inspections that occurred between two and three years ago.

A “relevant inspection” is any *driver* inspection conducted and documented by a trained officer in the last 36 months in the **Fatigued Driving and Driver Fitness** BASICS and any *vehicle* inspection conducted and documented by a trained officer in the last 36 months in the **Vehicle Maintenance and Cargo Related** BASICS.

Once the total of all violation values has been normalized, the normalized measure is compared to other drivers’ normalized measures within “peer groups.” The peer groups are based on the number of relevant inspections the drivers have undergone in the previous three years.

For carriers: The scoring system is similar, but the time frames are different. Calculating the carrier’s score begins as it does for drivers: by gathering the violations. In the carrier’s case, this refers to all the violations committed by drivers operating under the carrier’s DOT number.

Carrier time-weighting table:

If the event took place...	The time weighting is...
Within the last 6 months	3
6 to 12 months ago	2
12 to 24 months ago	1

Next, severity weights are assigned, including a severity-weight “penalty” of 2 *additional* points for certain violations that resulted in an out-of-service order in the **Fatigued Driving, Driver Fitness, Vehicle Maintenance and Cargo Related** BASICS. “Severity weights” are then multiplied by “time weights.”

For carriers: Here’s where they are treated differently from drivers: The “time weight” assigned to carriers for violations within 6 months is 3, within 6 to 12 months is 2, and within 12 to 24 months is 1.

After all the severity-weighted and time-weighted violations are added together they are subjected to a “normalizing factor.”

For the **Unsafe Driving and Crash** BASICS, the “normalizing factor” relates to the characteristics of the carrier so that companies with similar sizes and activities are fairly compared.

For the **Fatigued Driving, Driver Fitness, Drugs and Alcohol Vehicle Maintenance, and Cargo-Related** BASICS, the “normalizing factor” relates to ‘time-weighted relevant inspections.’

For carriers: After these calculations are completed, the “percentile ranking” is determined. The first step is to remove carriers with too few relevant inspections or too few violations to be meaningfully compared.

Next, the remaining carriers are divided into one of five “peer groups” based on their operational characteristics in the **Unsafe Driving and Crash** BASICS and based on the number of relevant inspections in the **Fatigued Driving, Driver Fitness, Vehicle Maintenance, Drugs and Alcohol, and Cargo Related** BASICS.

Within each peer group, carriers are ranked according to their “measures” for each BASIC. The carrier with the lowest measure in their peer group is ranked 0, and the carrier with the highest are assigned the top percentile, 100. The remaining carriers (with a predetermined number of violations placed in the BASIC) are assigned a “percentile ranking” between 0 and 100 depending on their “measure” within the BASIC.

Because the percentile ranking of both drivers and carriers determines FMCSA enforcement actions, keeping violations to a minimum *should be a high priority.*

FMCSA Interventions

When a carrier's score for one or more of the seven BASICs exceeds the threshold that the FMCSA has established for intervention, the carrier involved may be subject to a variety of actions designed to address specific and documented safety issues.

Before CSA, the worst-performing carriers were subject to a comprehensive, time consuming on-site audit. And drivers were only indirectly part of the process. Under CSA, the FMCSA has a range of intervention tools that can be applied to carriers and to drivers.

Carrier interventions can be triggered by exceeding the threshold scores in one or more BASICs; demonstrating a high crash rate; involvement in a fatal crash; or receiving a complaint.

The interventions that are applied to carriers are designed to be progressive—increasing in severity as more serious safety issues are identified.

The FMCSA organizes interventions into three categories: early contact, investigations, and follow-on interventions.

Early contact interventions include: Warning Letters and Targeted Roadside Inspections.

Investigations include: Off-site investigations, Focused On-site investigations, and Comprehensive On-site investigations.

Follow-on interventions include: Cooperative Safety Plans, Notices of Violation, Notices of Claim, Settlement Agreements, and the ultimate intervention, Unfit Suspension—placing the motor carrier out-of-business. *The specifics of imposing an 'unfit suspension' are subject to a rulemaking process and will be spelled out in a future regulation.*

The types of interventions chosen are at the discretion of the FMCSA investigator and are based on the carrier's BASIC Scores and enforcement history. Even though most interventions will be used to promote safety improvements by carriers, drivers play a key role in seeing that their employer is not targeted for enforcement.

In fact, drivers can also be the subjects of interventions. Under CSA, the FMCSA will use the Safety Measurement System (SMS) to iden-

tify high-profile drivers with BASIC Measures that point to an overall poor safety history and who work for carriers that have been selected for investigation.

Another thing you should be aware of: If you didn't get cited for a violation on the road, that doesn't mean you're necessarily off the hook. If your company undergoes an investigation, and violations are found during that investigation, you may be fined and your carrier may have their related BASIC evaluation changed to 'deficient' and possibly have their safety rating lowered.

As an example: If an hours-of-service violation is found in your logs during a carrier investigation, that violation will become a data point in your company's SMS score, even though it was not found during a roadside inspection, and you may still be fined. This is another good reason to keep your hours-of-service records and other required records up to date, true, complete, and correct.

Also, remember, if your carrier is subject to an intervention due to a high BASIC Score, the FMCSA will review all the carrier's individual driver's BASIC Scores.

If the investigation confirms significant driver violations, the FMCSA can take action against drivers, such as a Notice of Violation or a Notice of Claim. *These actions could result in significant fines for the identified drivers.*

The surest way to avoid these FMCSA actions is to generate low BASIC Scores on all of the seven BASICs by driving defensively, knowing the regulations, and continuing to upgrade your training.

Conclusion

In this handbook, we've covered a lot of material about the Federal Motor Carrier Safety Administration's CSA program.

If you are a professional driver who knows and complies with the regulations, the CSA program will have little impact on your day-to-day work life. In fact, it may improve your work life and your personal safety on the road by identifying safety issues with carriers and drivers who are not as conscientious as you are.

Frequently Asked Questions

Question: Can a driver's license be taken away due to having a high BASIC Score?

Answer: Driving privileges have nothing to do with the CSA program. Drivers' licenses and CDLs are issued by states and revoked or suspended based on citations and convictions. This program is run by the FMCSA (who does not give out drivers' licenses and CDLs), and it tracks roadside inspection violations and DOT recordable crashes, and then generates a score based on peer comparisons to locate high-risk drivers. High-risk drivers are then potentially subjected to either a "warning letter" called a Notice of Violation or a fine, called a "Notice of Claim," if they come to the attention of the FMCSA during a carrier intervention.

Question: Does the CSA scoring affect the driver's state license (i.e., add to the "points" on their license)?

Answer: No. The CSA program is totally separate from the driver licensing system. The CSA program tracks entirely different data (violations noted on roadside inspection reports). The driver licensing system captures tickets issued and convictions for those tickets.

Question: Are there new physical requirements attached to passing a roadside inspection due to CSA?

Answer: No, officers will only verify that the driver has a valid medical card, just like they do now.

Question: What additional documents will a driver have to carry due to CSA?

Answer: None. The driver only needs to carry the documents that are presently required under the regulations: Driver's license (and proof of HM training, if Canadian-based and carrying HM), medical card (and waiver paperwork, if applicable), and a log book (if applicable).

Question: Is there a number of "points" that, if exceeded, will require a carrier to terminate a driver?

Answer: The FMCSA has not said (and will not say) what action a carrier should take against a driver with a lot of violations. That is left up to the carrier. Also, driver scores are not available to carriers. The only thresholds the FMCSA has are the ones that trigger carrier interventions, which are investigations.

Question: If a driver gets a citation in his/her personal vehicle, does that affect his/her CSA scores?

Answer: No. If the driver is operating a personal vehicle, the officer will not fill out a roadside inspection report. So, there is no way for any violations discovered to come into the FMCSA's data system. The only thing that comes into the FMCSA's data system are violations noted on a roadside inspection report.

Question: If law enforcement finds a headlight out, but the driver repairs it in front of the officer, will it still be written up on the inspection report and will the driver still have the violation placed in the SMS?

Answer: Yes. There is no change from present procedures. The inspecting officer documents the condition of the vehicle at the time of the contact or inspection on the inspection report—not after the driver has completed the repair.