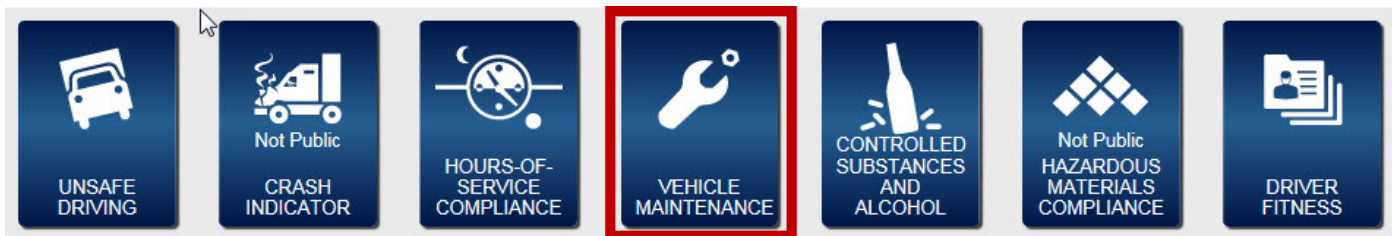




Safety Measurement System – Vehicle Maintenance BASIC.



The Federal Motor Carrier Safety Administration’s (FMCSA) Safety Measurement System (SMS) contains seven Behavior Analysis and Safety Improvement Categories (BASICS). The Vehicle Maintenance BASIC addresses vehicle maintenance and cargo securement, covering violations of regulations found primarily in Parts 392, 393 and 396 of the Federal Motor Carrier Safety Regulations (FMCSR). **This publication is specific to the vehicle maintenance portion of this BASIC.**

The SMS assesses the Vehicle Maintenance BASIC using relevant violations recorded during roadside inspections to calculate a measure for individual motor carriers. Violations are severity and time

weighted. These measures are used to generate percentile ranks that reflect each carrier’s driver safety posture relative to carriers with similar numbers of relevant inspections.

Vehicle Maintenance percentiles above 80% (75% for hazmat and 65% for passenger carriers) generate an alert and may prompt interventions by the FMCSA. **Organizations can keep their percentile low by ensuring controls are in place to reduce relevant violations, particularly those with a high severity weight.** There are 220 relevant violations for this BASIC. The following are summarized examples of the violations with a severity weighting of four (4) or more.

| Group | Examples of violations | Severity weight ¹ |
|---------------------|--|------------------------------|
| Vehicle jumping OOS | • Operating an OOS vehicle | 10 |
| Tires | • Flat/fabric exposed or audible air leak • Tire tread and/or sidewall separation • Tire-ply or belt material exposed or cut • Tire-bus regrooved/recap on front wheel • Tire front tread depth less than 4/32 and others 2/32 | 8 |
| Suspension | • Suspension issues including leaf springs, coil springs, torsion bar, air suspension, etc. | 7 |
| Lighting | • Inoperative/defective lighting, tail lamps, or turn signals. Non-compliant or improper lamps. Lighting obscured/covered. | 6 |
| Steering mechanism | • Steering mechanism issues | 6 |
| Brakes | • Brake defects, out of adjustment, air pressure issues, insufficient drum/rotor/lining/pad thickness, etc. | 4 |
| Inspection reports | • Driver failing to conduct a pre-trip inspection • No or inadequate driver vehicle inspection report (DVIR) • No reviewing driver’s signature on DVIR • Failure to correct defects found in inspections • No periodic (annual) inspection | 4 |

¹A severity weight is assigned to each violation ranging from 1 to 10 (10 being most severe). Out-of-service violations are given an additional 2 point weight. A time weight of 3 (0-6 mo.), 2 (6-12 mo.) or 1 (12-24 mo.) is also assessed based on how long ago the violation occurred. The severity weight is multiplied by its time weight. The FMCSA may periodically adjust the violations used and severity weights.

Best practices for keeping your Vehicle Maintenance BASIC Low.

| | Do not exist | Need improvement | Are adequate |
|--|--------------------------|--------------------------|--------------------------|
| New driver hiring: | | | |
| 1. Driver Information Resource records ² (DIRs) are pulled on prospective drivers to identify past maintenance violations. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Driver hiring standards and driver policies stipulate acceptable number of violations on DIRs. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Written vehicle inspection and maintenance policy: | | | |
| 1. Policy exists and has been reviewed by management within the last year. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Policy is reviewed by each driver during new hire orientation and at least annually thereafter. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Policy includes requirements for pre- and post-trip inspections, maintaining vehicles, reporting vehicle issues, reporting violations, etc., and prohibits operating equipment that has been placed out of service (OOS) until repairs have been made. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Driver training and awareness: | | | |
| 1. New hire orientation and periodic refresher training includes training on the North American Standard Inspection Procedure (NASIP) or other equivalent inspection process. Training provided on brake inspection and adjustment, if applicable. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Drivers are educated about the impact violations have on their careers, and drivers have been encouraged to obtain a DIR on themselves and have been instructed on how to obtain their DIR. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Daily vehicle inspections: | | | |
| 1. Driver completes pre-trip inspection. While documentation isn't required, it's a best practice. Driver ensures items noted on previous daily vehicle inspection record (DVIR) are corrected (driver signature required). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Drivers complete required DVIR. Issues identified are immediately reported and repair procedure set forth. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. DVIRs audited to ensure they are being completed properly and that they are being signed by the "next" driver, acknowledging that repairs have been made. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Procedure in place to ensure equipment that is out for several days receives inspection by maintenance personnel upon return. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Designated "inspection-friendly" inspection site in yard or building to facilitate thorough inspections. Adequate lighting for inspections in non-daylight hours. Dry, smooth surface to prevent driver from getting wet or muddy and allows for use of creepers. Mirrors set-up to allow drivers to test lights and turn signals from cab. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Service/Repairs/Equipment: | | | |
| 1. Each piece of equipment on specific service and inspection interval. All inspections and service documented. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Individual service/inspection files on each piece of equipment. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Process in place to ensure issues identified in inspection reports are prioritized and repairs made before equipment is placed in service. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. "Approved" repair facilities identified along frequent routes to facilitate quick repairs. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



| | Do not exist | Need improvement | Are adequate |
|---|--------------------------|--------------------------|--------------------------|
| 5. Tags or other procedure in place to ensure OOS equipment is not placed in service. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Complete NASIP carried out before placing equipment back in service. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Periodic (annual) inspection completed by qualified individual and documentation with vehicle. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Service record obtained on permanently leased equipment every 30 days. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Permanently leased equipment required to be thoroughly inspected by approved shop prior to being placed in service and annually thereafter. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Tracking system in place to ensure equipment does not go past required service/inspection intervals, annual inspections, 30-day leased equipment report, etc. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Vehicles are equipped with spare light bulbs and fuses so lighting problems can be fixed immediately. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Maintenance personnel: | | | |
| 1. Qualified and certified where applicable. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Knowledgeable regarding service requirements, inspection and repair procedures for specific equipment being worked on. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Knowledgeable regarding FMCSRs on vehicle inspection and maintenance (393 & 396). | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Accountability: | | | |
| 1. Formal corrective action program in place to address drivers who receive violations or obtain an unacceptable number of violations. Incentive program in place to reward drivers for violation-free inspections. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Permanently leased-on operators monetarily charged for violations and incentives in place for clean inspections. Terms stipulated in lease. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Management reviews FMCSA portal on at least a weekly basis to identify drivers who have received roadside inspection violations. Procedure in place to ensure equipment violations are fixed. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Process in place to identify drivers who are not doing an adequate job of vehicle inspections—FMCSA inspectors, maintenance personnel or other drivers finding equipment problems that should have been identified in pre-trip inspections or DVIRs. Retraining and other corrective action taken. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Process in place to identify shop personnel who are not doing an adequate job of vehicle inspections and repairs—equipment issues found or violations received on equipment recently released from the control of the shop. Retraining and other corrective action taken. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Shop/maintenance managers are held accountable for poor Vehicle Maintenance SMS scores to the degree they are responsible. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

²Driver Information Resource Record (DIR).

Through the FMCSA's Pre-Employment Screening Program (PSP) prospective employers can obtain Driver Information Resource (DIR) records on drivers with the driver's consent, and drivers can obtain their own DIR (\$10). A DIR contains five years of crash data and three years of roadside inspection data on a driver.

A driver's past violation history may be a good indication of how likely he or she will be to have violations in the future. Organizations should

establish guidelines for the acceptability of drivers with poor DIR histories. As with any hiring procedure, use of DIRs should be reviewed by legal counsel.

Drivers with poor DIRs may have difficulty finding jobs. Organizations are encouraged to educate drivers about DIRs. Drivers who are aware of the impact violations have on their driving careers may do a better job of staying in compliance with FMCSRs, which is beneficial to your organization.

For more information on DIRs visit FMCSA's Pre-Employment Screening Program at: www.psp.fmcsa.dot.gov.



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