

Crash BASIC Countermeasures

C1 – Preventing Crashes Caused by Vehicle Defects

This countermeasure is designed to assist the motor carrier in preventing crashes caused by vehicle defects. For more information, see the Vehicle Maintenance BASIC Safety Management Cycle.

Worn, failed, or incorrectly adjusted components can cause or contribute to crashes. Preventative maintenance and periodic inspection procedures help to prevent failures from occurring while the vehicle is being operated. Such procedures reduce reliance on the driver, who may have limited skill and knowledge for detecting vehicle defects.



Safety Management Process

Policies and Procedures	Roles and Responsibilities	Qualification and Hiring
<ul style="list-style-type: none"> Develop preventative maintenance management measures, and schedule periodic inspection and maintenance activities. Establish a policy requiring the use of a record-keeping system to track maintenance, repair, and inspection. Develop guidelines or rules for placing vehicles out-of-service until necessary repairs are made in accordance with Part 396. 	<ul style="list-style-type: none"> Identify, clearly define, and document the roles and responsibilities of drivers, dispatchers, mechanics, and technicians in relation to vehicle inspection, repair, and maintenance. Identify, clearly define, and document the role of senior manager(s) for implementing periodic inspection, repair, and maintenance policies and monitoring compliance with these policies. 	<ul style="list-style-type: none"> Check with previous employer(s) and references regarding maintenance responsibilities and quality of previous work, including whether the maintenance services were systematic and well documented. Consider enhancing the recruitment process to identify and attract applicants who qualify under the FMCSRs by using outside sources: websites, insurance companies, industry groups, consultants, etc.

Training and Communication	Monitoring and Tracking	Meaningful Action
<ul style="list-style-type: none"> Communicate to drivers, dispatchers, mechanics, and managers the importance of adhering to vehicle inspection, repair, and maintenance company policies and procedures, and provide new-hire and refresher training to ensure compliance with Parts 393 and 396. Train drivers to detect maintenance and repair needs and to refer vehicles for maintenance. Train mechanics and maintenance supervisors to frequently perform inspections and repairs correctly and in a timely manner. 	<ul style="list-style-type: none"> Track maintenance, repair, and inspection by using an adequate record-keeping system. Evaluate the effectiveness of preventative maintenance procedures. Ensure that all vehicles in the fleet can pass the minimum periodic inspection standards set out by FMCSR. Evaluate the performance of all staff (drivers, dispatchers, mechanics, and managers) involved in fleet maintenance, and the effectiveness of compliance with vehicle maintenance policies, procedures, and regulations. 	<ul style="list-style-type: none"> Consider utilizing incentives and/or reward/recognition programs to reward behavior and performance related to vehicle maintenance regulations and company policies. Consider providing feedback to employees as soon as the company is aware that their knowledge in this area is deficient, and address with appropriate training. Consider designing and implementing a progressive disciplinary program for failure to follow established guidelines.

Driver Safety Improvement Practices

- Check whole vehicle carefully, pre-trip and post-trip. (Pre-trip and post-trip inspection reports are important parts of the job.)
- Ensure that annual vehicle inspection report or decal is in or on the vehicle.
- Do not drive a faulty vehicle. Communicate vehicle defects to management.

REFERENCES: FMCSR 392.7 – Equipment, inspection and use;
 Part 393 – Parts and accessories necessary for safe operation;
 Part 396 – Inspection, repair and maintenance;

Crash BASIC Countermeasures

C2 – Ensuring Vehicles Are In Safe Operating Condition

This countermeasure is designed to assist the motor carrier in ensuring that vehicles are in safe operating condition while driven. For more information, see the Vehicle Maintenance BASIC Safety Management Cycle.

The driver is ultimately responsible for making sure that the vehicle is in safe operating condition. To assist in ensuring the safe operating condition of vehicles, appropriate inspection procedures and reports are needed. The driver is in a position to detect vehicle defects and communicate them to maintenance for repairs. Some vehicle defects cannot be detected by periodic preventative maintenance and inspection procedures, so the driver has to be vigilant and communicate any vehicle issues to maintenance and management.



Safety Management Process

Policies and Procedures	Roles and Responsibilities	Qualification and Hiring
<ul style="list-style-type: none"> Ensure drivers are trained and complete daily vehicle inspection reports as required (Part 396.11). Ensure all drivers submit copies of all inspections to carrier management within a designated timeframe (Part 396.9(d)(1)). Ensure the maintenance crew is responsive to driver-reported vehicle defects (Part 396.9(d)(2), 396.11(c)). Establish a set of standards for placing vehicles out-of-service (Part 396.3, 396.7). 	<ul style="list-style-type: none"> Identify, clearly define, and document the roles and responsibilities of drivers in relation to vehicle inspection reports and procedures and reporting vehicle defects. Identify, clearly define, and document the role of senior manager(s) for implementing policies and procedures for inspection report and monitoring compliance with these policies. 	<ul style="list-style-type: none"> Check with previous employer(s) regarding drivers' vehicle inspection reports and procedures. Consider enhancing the recruitment process to identify and attract applicants who qualify under the FMCSRs by using outside sources: websites, insurance companies, industry groups, consultants, etc.

Training and Communication	Monitoring and Tracking	Meaningful Action
<ul style="list-style-type: none"> Train drivers on how to fill out daily vehicle inspection reports. Train drivers to inspect safety-critical components and determine whether their condition is adequate. Ensure that all drivers are equipped with inspection aids and necessary report forms. 	<ul style="list-style-type: none"> Periodically ensure that inspection and reporting procedures are in compliance with FMCSR rules. Evaluate all drivers' vehicle inspection reports. Evaluate the performance of all staff (drivers, dispatchers, mechanics, and managers) involved in fleet maintenance, and the effectiveness of compliance with vehicle maintenance policies, procedures, and regulations. Monitor and track vehicles that have been placed out-of-service. 	<ul style="list-style-type: none"> Consider utilizing incentives and/or reward/recognition programs to reward drivers for completing inspection reports properly and in a timely manner consistently. Consider providing feedback to employees as soon as the company is aware that their knowledge in this area is deficient, and address with appropriate training. Consider designing and implementing a progressive disciplinary program for failure to follow established guidelines.

Driver Safety Improvement Practices

- Federal and state laws require that you may not drive a vehicle unless you are satisfied that it is in safe operating condition.
- Carefully inspect the vehicle and report on its condition as required.
- During a trip, you should monitor the condition of vehicle components that may affect the safety of the vehicle.
- If something seems to be wrong with the vehicle, stop and check it out. Do not continue with the trip until you are satisfied it is safe to do so.

REFERENCES: FMCSR 392.7 – Equipment, inspection and use;
 Part 396 – Inspection, repair, and maintenance; Part 396.3; Part 396.7; Part 396.9(d)(1); Part 396.9(d)(2);
 Part 396.11 – Driver vehicle inspection report(s);
 Part 396.13 – Driver inspection;

Crash BASIC Countermeasures

C3 – Preventing Brake Performance-Related Crashes

This countermeasure is designed to assist the motor carrier in reducing crashes associated with insufficient braking ability. For more information, see the Vehicle Maintenance BASIC Safety Management Cycle.

The braking system is one of several key safety-related components. Catastrophic brake failure, such as sudden air loss, may lead to loss of control and the driver’s inability to recover. Progressive brake deterioration, such as brake-shoe wear without corresponding adjustment, can be even more troublesome because it may appear innocuous during normal operations but may precipitate a crash during emergency applications.



Safety Management Process

Policies and Procedures	Roles and Responsibilities	Qualification and Hiring
<ul style="list-style-type: none"> Develop adequate preventive maintenance procedures to detect and repair worn or defective brake system components (Part 396.3). Establish guidelines or rules used for placing vehicles out-of-service for brake system components that deteriorate progressively: air leaks, brake shoe wear, drum wear, bearing seal leakage (Part 396.3). Develop a policy that ensures that drivers, mechanics, and maintenance supervisors are trained properly in accordance with Parts 393 and 396. 	<ul style="list-style-type: none"> Identify, clearly define, and document the roles and responsibilities of drivers, mechanics, and maintenance crews to detect brake defects during inspections. Identify, clearly define, and document the role of senior manager(s) for implementing training related to vehicle maintenance and repair for drivers, mechanics, and maintenance supervisors. 	<ul style="list-style-type: none"> Check with previous employer(s) and review references regarding maintenance responsibilities and quality of previous work, including whether the maintenance services were systematic and well documented. Consider enhancing the recruitment process to identify and attract applicants who qualify under the FMCSRs by using outside sources: websites, insurance companies, industry groups, consultants, etc.

Training and Communication	Monitoring and Tracking	Meaningful Action
<ul style="list-style-type: none"> Train drivers to detect deteriorated brake system conditions and repair needs, and to refer them for maintenance. Train mechanics and maintenance supervisors to frequently perform inspections and repairs correctly and in a timely manner. Provide new-hire and refresher training for meeting policies and procedures. 	<ul style="list-style-type: none"> Evaluate the effectiveness of preventative maintenance procedures. Evaluate the performance of all staff (drivers, dispatchers, mechanics, and managers) involved in fleet maintenance, and the effectiveness of compliance with vehicle maintenance policies, procedures, and regulations. Monitor and track inspection results in order to ensure that brake system defects are repaired and documented promptly and to prevent out-of-service vehicles from operating prior to being repaired. 	<ul style="list-style-type: none"> Consider utilizing incentives and/or reward/recognition programs to reward behavior and performance related to vehicle maintenance regulations and company policies. Consider providing feedback to employees as soon as the company is aware that their knowledge in this area is deficient, and address with appropriate training. Consider designing and implementing a progressive disciplinary program for failure to follow established guidelines.

Driver Safety Improvement Practices

- Test your brakes for stopping performance before going on the highway.
- Assure yourself adequately that your brakes are properly adjusted.
- Learn how to determine if the air system is operating satisfactorily.
- Check to make sure that low-air-warning devices are functioning.
- During a trip, before entering severe downgrades, stop and check brake adjustment.

REFERENCES: FMCSR Part 393 – Parts and accessories necessary for safe operation; Part 393 Subpart C – Brakes;

Crash BASIC Countermeasures

C4 – Preventing Improper Tire Inflation Crashes

This countermeasure is designed to assist the motor carrier in preventing loss-of-control crashes due to tire failure. For more information, see the Vehicle Maintenance BASIC Safety Management Cycle.

Tires are one of several key safety-related components. Improper tire pressure, either too little or too much, can lead to deterioration and eventual catastrophic failure.



Safety Management Process

Policies and Procedures	Roles and Responsibilities	Qualification and Hiring
<ul style="list-style-type: none"> Ensure drivers and maintenance crew are trained to check tire inflation and follow tire manufacturers' specifications for inflation and loading (Part 393, 396.3). 	<ul style="list-style-type: none"> Identify, clearly define, and document the roles and responsibilities of drivers, mechanics, and maintenance crew to check tire inflation. Identify, clearly define, and document the role of senior manager(s) for implementing training related to checking tire inflation for drivers, mechanics, and maintenance supervisors. 	<ul style="list-style-type: none"> Check with previous employer(s) and review references regarding maintenance responsibilities and quality of previous work, including whether the maintenance services were systematic and well documented. Consider enhancing the recruitment process to identify and attract applicants who qualify under the FMCSRs by using outside sources: websites, insurance companies, industry groups, consultants, etc.

Training and Communication	Monitoring and Tracking	Meaningful Action
<ul style="list-style-type: none"> Train drivers and maintenance crew to check tire inflation. Ensure that all drivers receive tire inflation guidelines and proper equipment to check tire inflation. Communicate consequences of improper tire inflation and loading. 	<ul style="list-style-type: none"> Evaluate the performance of all staff (drivers, dispatchers, mechanics, and managers) involved in fleet maintenance, and the effectiveness of compliance with vehicle maintenance policies, procedures, and regulations. 	<ul style="list-style-type: none"> Consider utilizing incentives and/or reward/recognition programs to reward behavior and performance related to vehicle maintenance regulations and company policies. Consider providing feedback to employees as soon as the company is aware that their knowledge in this area is deficient, and address with appropriate training. Consider designing and implementing a progressive disciplinary program for failure to follow established guidelines.

Driver Safety Improvement Practices
<ul style="list-style-type: none"> During extended trips, monitor tire inflation frequently. Do not operate tires with inflation pressures other than those specified by the manufacturer.

REFERENCES: FMCSR Part 393.75 – Tires;
Part 396 – Inspection, repair, and maintenance;

Crash BASIC Countermeasures

C5 – Preventing Tire Wear and Deterioration Crashes

This countermeasure is designed to assist the motor carrier in preventing loss-of-control crashes due to tire failure. For more information, see the Vehicle Maintenance BASIC Safety Management Cycle.

The tires are one of several key safety-related components. A tire that is worn or damaged may fail as a blowout and result in loss of control of the vehicle. The principal indicators of deterioration are tread wear, tread and sidewall damage, and air leakage.



Safety Management Process

Policies and Procedures	Roles and Responsibilities	Qualification and Hiring
<ul style="list-style-type: none"> Establish standards for indicating when tires should be taken out-of-service (Part 393, 396.3). Develop a policy requiring compliance with the minimum tread-depth standards in accordance with Part 393.75. 	<ul style="list-style-type: none"> Identify, clearly define, and document the roles and responsibilities of drivers and maintenance crew to inspect for tire wear and deterioration. Identify, clearly define, and document the role of senior manager(s) for implementing training related to inspecting tire wear and deterioration. 	<ul style="list-style-type: none"> Check with previous employer(s) and references regarding maintenance responsibilities and quality of previous work, including whether the maintenance services were systematic and well documented. Consider enhancing the recruitment process to identify and attract applicants who qualify under the FMCSRs by using outside sources: websites, insurance companies, industry groups, consultants, etc.

Training and Communication	Monitoring and Tracking	Meaningful Action
<ul style="list-style-type: none"> Train drivers and maintenance crew to make determinations during inspections as to whether or not a tire should be taken out-of-service (Part 393.7). 	<ul style="list-style-type: none"> Evaluate the performance of all staff (drivers, dispatchers, mechanics, and managers) involved in fleet maintenance, and the effectiveness of compliance with vehicle maintenance policies, procedures, and regulations. Monitor and track maintenance files and inspection report results to ensure that vehicles with tire wear and deterioration are repaired or placed out-of-service. 	<ul style="list-style-type: none"> Consider utilizing incentives and/or reward/recognition programs to reward safe behavior and performance. Consider providing feedback to employees as soon as the company is aware that their knowledge in this area is deficient, and address with appropriate training. Consider designing and implementing a progressive disciplinary program for failure to follow established guidelines.

Driver Safety Improvement Practices
<ul style="list-style-type: none"> Check tires regularly to ensure that they meet the minimum FMCSR tread-depth requirement and that the conditions of the tires are within company-established out-of-service criteria. Do not mount mismatched sizes or pair tires with significantly different wear in duals. Do not mix bias and radial tires on the same axle. Follow company standards for out-of-service conditions. Replace tread only on sound casings. During a trip, monitor tires for road damage or deterioration. Look for: <ul style="list-style-type: none"> Tread or sidewall separation. Cuts or gouges. Flat spots or uneven wear. Leaks (monitor tire inflation). Flat tires at duals.

REFERENCES: FMCSR Part 393.75 – Tires;
Part 396 – Inspection, repair, and maintenance;

Crash BASIC Countermeasures

C6 – Preventing Wheel Failure Crashes

This countermeasure is designed to assist the motor carrier in preventing loss-of-control crashes due to wheel failure. For more information, see the Vehicle Maintenance BASIC Safety Management Cycle.

The wheels are one of several key safety-related components. Incorrectly assembled or damaged wheel components can result in collapse of the wheel assembly and consequent loss of control.



Safety Management Process

Policies and Procedures	Roles and Responsibilities	Qualification and Hiring
<ul style="list-style-type: none"> Establish standards for indicating when wheels should be taken out-of-service. Develop a policy requiring compliance with the minimum periodic inspection standards in accordance with Part 393.205. 	<ul style="list-style-type: none"> Identify, clearly define, and document the roles and responsibilities of drivers and maintenance crew to inspect wheels. Identify, clearly define, and document the role of senior manager(s) for implementing training related to inspecting the wheels. 	<ul style="list-style-type: none"> Check with previous employer(s) and references regarding maintenance responsibilities and quality of previous work, including whether the maintenance services were systematic and well documented. Consider enhancing the recruitment process to identify and attract applicants who qualify under the FMCSRs by using outside sources: websites, insurance companies, industry groups, consultants, etc.

Training and Communication	Monitoring and Tracking	Meaningful Action
<ul style="list-style-type: none"> Train drivers and maintenance crew to identify and take worn or deteriorated wheel and rim components out-of-service during vehicle inspections. 	<ul style="list-style-type: none"> Evaluate the performance of all staff (drivers, dispatchers, mechanics, and managers) involved in fleet maintenance, and the effectiveness of compliance with vehicle maintenance policies, procedures, and regulations. Monitor and track maintenance files and inspection report results to ensure that vehicles with damaged wheel components are repaired or placed out-of-service. 	<ul style="list-style-type: none"> Consider utilizing incentives and/or reward/recognition programs to reward safe behavior and performance. Consider providing feedback to employees as soon as the company is aware that their knowledge in this area is deficient, and address with appropriate training. Consider designing and implementing a progressive disciplinary program for failure to follow established guidelines.

Driver Safety Improvement Practices
<ul style="list-style-type: none"> Use established company or industry guidelines to determine whether components should be returned to service. Attempt to determine cause of damage or deterioration. Analysis may help identify improper use or maintenance procedures, enabling corrections to future maintenance. When inspecting wheels, look for: <ul style="list-style-type: none"> Cracks in wheels and rims. Improperly seated lock rings. Rust around wheel nuts – check for tightness. Tightness of wheel nuts after recent tire change. Missing components.

REFERENCES: FMCSR Part 393.205 – Wheels;
Part 396 – Inspection, repair, and maintenance;

Crash BASIC Countermeasures

C7 – Preventing Steering Performance Crashes

This countermeasure is designed to assist the motor carrier in preventing loss of control due to steering system deterioration. For more information, see the Vehicle Maintenance BASIC Safety Management Cycle.

The steering system is one of several key safety-related components. It can fail catastrophically or deteriorate progressively. Progressively increasing steering-wheel play will make it difficult for the driver to steer and should be viewed as an indicator of a deteriorating steering system. Deteriorating components of the steering system can lead to catastrophic failures. Steering-wheel should be monitored at the driver inspection level.



Safety Management Process

Policies and Procedures	Roles and Responsibilities	Qualification and Hiring
<ul style="list-style-type: none"> Develop preventive maintenance measures and procedures to inspect for steering system component deterioration (Part 396.3, 396.7). Establish a policy for inspecting steering-wheel play against an out-of-service criterion (Part 396.3, 396.7). 	<ul style="list-style-type: none"> Identify, clearly define, and document the roles and responsibilities of drivers and maintenance crew to inspect the steering system. Identify, clearly define, and document the role of senior manager(s) for implementing training related to inspecting the steering system. 	<ul style="list-style-type: none"> Check with previous employer(s) and references regarding maintenance responsibilities and quality of previous work, including whether the maintenance services were systematic and well documented. Consider enhancing the recruitment process to identify and attract applicants who qualify under the FMCSRs by using outside sources: websites, insurance companies, industry groups, consultants, etc.

Training and Communication	Monitoring and Tracking	Meaningful Action
<ul style="list-style-type: none"> Train drivers and maintenance crew to identify and take deteriorating steering components out-of-service during vehicle inspections. 	<ul style="list-style-type: none"> Evaluate the performance of all staff (drivers, dispatchers, mechanics, and managers) involved in fleet maintenance, and the effectiveness of compliance with vehicle maintenance policies, procedures, and regulations. Monitor and track maintenance files and inspection report results to ensure that vehicles with damaged steering components are repaired or placed out-of-service. 	<ul style="list-style-type: none"> Consider utilizing incentives and/or reward/recognition programs to reward safe behavior and performance. Consider providing feedback to employees as soon as the company is aware that their knowledge in this area is deficient, and address with appropriate training. Consider designing and implementing a progressive disciplinary program for failure to follow established guidelines.

Driver Safety Improvement Practices
<ul style="list-style-type: none"> Check for excessive steering-wheel play during pre-trip inspections. Follow established company policies for taking vehicles out-of-service. Write up steering deficiencies on your vehicle inspection report.

REFERENCES: FMCSR Part 393.209 – Steering wheel systems;
Part 396 – Inspection, repair, and maintenance; Part 396.3; Part 396.7

Crash BASIC Countermeasures

C8 – Preventing Improper or Defective Coupling Crashes

This countermeasure is designed to assist the motor carrier in preventing crashes due to trailer separation. For more information, see the Vehicle Maintenance BASIC Safety Management Cycle.

Trailer separation can occur due to improper hitching or inadequate, damaged equipment. Pintle hooks and ball hitches can uncouple if improperly latched. Hitch mounts could separate due to damage or lack of maintenance.



Safety Management Process

Policies and Procedures	Roles and Responsibilities	Qualification and Hiring
<ul style="list-style-type: none"> Develop a policy requiring towing vehicles to be equipped with properly rated ball hitches, pintle hooks, chains, and breakaway brakes (Part 396.3, 396.7). Develop preventative maintenance measures and procedures to properly maintain pintle hooks and ball hitches (Part 396.3, 396.7). 	<ul style="list-style-type: none"> Identify, clearly define, and document the roles and responsibilities of drivers and maintenance crew to use and maintain the hitching equipment properly. Identify, clearly define, and document the role of senior manager(s) for implementing training related to maintaining the hitching equipment. 	<ul style="list-style-type: none"> Check with previous employer(s) and references regarding maintenance responsibilities and quality of previous work, including whether the maintenance services were systematic and well documented. Consider enhancing the recruitment process to identify and attract applicants who qualify under the FMCSRs by using outside sources: websites, insurance companies, industry groups, consultants, etc.

Training and Communication	Monitoring and Tracking	Meaningful Action
<ul style="list-style-type: none"> Train maintenance crew to identify deteriorating hitching equipment during vehicle inspections and maintenance. Train drivers in the proper use of hitching equipment. 	<ul style="list-style-type: none"> Evaluate the performance of all staff (drivers, dispatchers, mechanics, and managers) involved in fleet maintenance, and the effectiveness of compliance with vehicle maintenance policies, procedures, and regulations. Monitor and track maintenance files and inspection results related to hitching equipment. 	<ul style="list-style-type: none"> Consider utilizing incentives and/or reward/recognition programs to reward safe behavior and performance. Consider providing feedback to employees as soon as the company is aware that their knowledge in this area is deficient, and address with appropriate training. Consider designing and implementing a progressive disciplinary program for failure to follow established guidelines.

Driver Safety Improvement Practices
<ul style="list-style-type: none"> Check to see that hitch components are in good condition on trailer and vehicle. Adjust coupler if necessary. Ensure that pintle hook or ball hitch is properly locked. Ensure that safety chains are properly connected. Ensure that electric and air lines are properly connected.

REFERENCES: FMCSR Part 393 Subpart F – Coupling devices and towing methods;
 Part 396.3 – Inspection, repair and maintenance;
 Part 396.7 – Unsafe operations forbidden

Crash BASIC Countermeasures

C9 – Preventing Trailer Connection Crashes

This countermeasure is designed to assist the motor carrier in eliminating crashes due to trailer separation, inactive trailer brakes or running lights, or trailer axle separation. For more information, see the Vehicle Maintenance BASIC Safety Management Cycle.

Proper coupling procedures of semitrailers ensure that the coupling equipment remains in good order, the landing gear is not damaged, the air lines and electric lines are hooked up, the axle loads are balanced, and the coupling is secure.



Safety Management Process

Policies and Procedures	Roles and Responsibilities	Qualification and Hiring
<ul style="list-style-type: none"> Establish procedures in proper coupling for drivers (Part 396.3, 396.7). Develop preventative maintenance measures and procedures to maintain proper coupling procedures (Part 396.3, 396.7). 	<ul style="list-style-type: none"> Identify, clearly define, and document the roles and responsibilities of drivers and maintenance crew for properly checking and maintaining the coupling equipment. Identify, clearly define, and document the role of senior manager(s) for implementing training related to coupling procedures. 	<ul style="list-style-type: none"> Check with previous employer(s) and references regarding maintenance responsibilities and quality of previous work, including whether the maintenance services were systematic and well documented. Consider enhancing the recruitment process to identify and attract applicants who qualify under the FMCSRs by using outside sources: websites, insurance companies, industry groups, consultants, etc.

Training and Communication	Monitoring and Tracking	Meaningful Action
<ul style="list-style-type: none"> Train drivers in proper coupling procedures and how to check for proper condition of coupling equipment. Train maintenance crew in preventative maintenance and service procedures of coupling equipment. 	<ul style="list-style-type: none"> Evaluate the performance of all staff (drivers, dispatchers, mechanics, and managers) involved in fleet maintenance, and the effectiveness of compliance with vehicle maintenance policies, procedures, and regulations. Monitor and track maintenance files and inspection reports related to coupling equipment. 	<ul style="list-style-type: none"> Consider utilizing incentives and/or reward/recognition programs to reward safe behavior and performance. Consider providing feedback to employees as soon as the company is aware that their knowledge in this area is deficient, and address with appropriate training. Consider designing and implementing a progressive disciplinary program for failure to follow established guidelines.

Driver Safety Improvement Practices
<ul style="list-style-type: none"> Adjust trailer height to minimize coupling impact. Check conditions of kingpin and jaws. Check that the jaws are locked after coupling. Ensure that the landing gear is raised. Hook up air and electric lines carefully. If the trailer axle is adjustable, make sure it is locked properly. Check to see that the kingpin is not riding on top of the jaws. If the tractor has an adjustable fifth wheel, make sure adjustment is locked. Do not pull the trailer with the slide stops. Before driving away, apply the trailer brakes and pull gently against them to check coupling.

REFERENCES: FMCSR 393 Subpart F – Coupling devices and towing methods;
 Part 396.3 – Inspection, repair and maintenance;
 Part 396.7 – Unsafe operations forbidden

Crash BASIC Countermeasures

C10 – Preventing Crashes Related to Vehicle Lighting and Conspicuity

This countermeasure is designed to assist the motor carrier in reducing the number of crashes due to other drivers' inability to see the vehicle. For more information, see the Vehicle Maintenance BASIC Safety Management Cycle.

Trucks or tractor-trailer combinations, due to their length and lower maneuverability, may be struck by other vehicles because other drivers do not see the vehicle and its movement in time. Other drivers on the road can be assisted by having an adequate truck lighting system and reflectors. The commercial motor vehicle driver should use extra care in crossing traffic lanes and making turns during adverse-visibility conditions.



Safety Management Process

Policies and Procedures	Roles and Responsibilities	Qualification and Hiring
<ul style="list-style-type: none"> Develop a policy requiring the installation and preventative maintenance of proper lighting devices and reflectors (Part 396.3, 396.7). Establish a standard to use proper visibility devices when carrying unusual loads that project from the rear or sides of the vehicle (Part 393, 396). 	<ul style="list-style-type: none"> Identify, clearly define, and document the roles and responsibilities of drivers and maintenance crew to inspect and maintain the vehicle lighting system. 	<ul style="list-style-type: none"> Check with previous employer(s) and references regarding maintenance responsibilities and quality of previous work, including whether the maintenance services were systematic and well documented. Consider enhancing the recruitment process to identify and attract applicants who qualify under the FMCSRs by using outside sources: websites, insurance companies, industry groups, consultants, etc.

Training and Communication	Monitoring and Tracking	Meaningful Action
<ul style="list-style-type: none"> Train maintenance crew in preventative maintenance and service procedures of the vehicle lighting system. Communicate to drivers the importance of reporting any vehicle lighting defects or issues to the maintenance crew and management. 	<ul style="list-style-type: none"> Evaluate the performance of all staff (drivers, dispatchers, mechanics, and managers) involved in fleet maintenance, and the effectiveness of compliance with vehicle maintenance policies, procedures, and regulations. Monitor and track maintenance files and inspection report results to ensure that vehicles with lighting defects or issues are repaired. 	<ul style="list-style-type: none"> Consider utilizing incentives and/or reward/recognition programs to reward safe behavior and performance. Consider providing feedback to employees as soon as the company is aware that their knowledge in this area is deficient, and address with appropriate training. Consider designing and implementing a progressive disciplinary program for failure to follow established guidelines.

Driver Safety Improvement Practices
<ul style="list-style-type: none"> Ensure that all lights and reflectors are operable and clean. Use extra care when making turns or crossing intersections during poor-visibility conditions. Use extra care when pulling low-profile trailers, such as empty flatbed tractors, an empty container chassis, construction equipment trailers, or pole trailers.

REFERENCES: FMCSR Part 392.33 – Obscured lamps or reflective devices/material;
 Part 393 Subpart B – Lamps, reflective devices, and electrical wiring;
 Part 396.3 – Inspection, repair and maintenance;
 Part 396.7 – Unsafe operations forbidden

Crash BASIC Countermeasures

C11 – Preventing Size & Weight Cargo Related Crashes

This countermeasure is designed to assist the motor carrier in reducing the number of crashes caused by overloading, poor load placement and/or distribution, and lack of clearance with regard to fixed objects including Hazardous Materials. For more information, see the Cargo Related BASIC Safety Management Cycle.

Many crashes are caused by inadequate loading procedures or route planning. Heavy, high, or offset loads can precipitate rollovers during emergency steering maneuvers or when driving at excessive speeds. High trailers or outside loads can result in collisions when routes are not planned.



Safety Management Process

Policies and Procedures	Roles and Responsibilities	Qualification and Hiring
<ul style="list-style-type: none"> Ensure drivers are able to perform procedures for load-limit verification, loading/unloading, securement, sealed cargo, offset or top-heavy cargo, improper axle-weight distribution, and en-route inspections, including HM cargo. (Part 391.13, 392.9, 393). Develop procedures that ensure that dispatchers are able to match cargo and vehicles. Develop policies and procedures ensuring that purchasing agents supply, verify, and communicate requirements for adequate securement devices, equipment, and spare parts. 	<ul style="list-style-type: none"> Identify, clearly define, and document the roles and responsibilities of drivers, dispatchers, managers, and purchasing/parts inventory agents in relation to vehicle inspection, repair, and maintenance regulations and company policies and procedures. Identify, clearly define, and document the role of senior manager(s) for implementing training related to cargo loading and securement. 	<ul style="list-style-type: none"> Query applicants, check with previous employer(s) and references, and obtain necessary documents regarding cargo-loading and securement violations, qualifications, training, and work experience, and create a detailed written record of each inquiry. Consider enhancing the recruitment process to identify and attract applicants who qualify under the FMCSRs by using outside sources: websites, insurance companies, industry groups, consultants, etc.

Training and Communication	Monitoring and Tracking	Meaningful Action
<ul style="list-style-type: none"> Train drivers to perform procedures for load-limit verification, loading/unloading, securement, sealed cargo, offset or top-heavy cargo, improper axle-weight distribution, and en-route inspections. Train dispatchers to match cargo and vehicles properly. 	<ul style="list-style-type: none"> Regularly review cargo-loading and securement methods, procedures, and equipment and devices used, and evaluate opportunities for new methods. Evaluate the performance of all staff involved in cargo securement (i.e., drivers and managers), and the effectiveness of compliance with vehicle maintenance policies, procedures, and regulations. 	<ul style="list-style-type: none"> Consider utilizing incentives and/or recognition programs to reward and encourage effective performance of cargo-handling, loading, and securement responsibilities. Consider providing feedback to employees as soon as the company is aware that their knowledge in this area is deficient, and address with appropriate training. Consider designing and implementing a progressive disciplinary program for failure to follow established guidelines.

Driver Safety Improvement Practices

- Know your vehicle and tire-weight ratings, and ensure that they are compatible with the load and driving conditions. Ensure that your vehicle and axle weights are within legal limits. Ensure that the suspension and coupling ratings are appropriate for the load.
- When trailer is being loaded with mixed cargo, have the heavier items loaded on the bottom. Ensure that heavy items are not offset to one side of the trailer.
- Reduce your speed when driving with a heavy or high load. Remember that you may have to make an emergency lane change.
- Curve-speed-advisory signs normally do not apply to heavily loaded commercial vehicles.
- Be aware that trailer wheels off-track and may collide with curbs or track onto shoulders, leading to loss of control when the vehicle is heavily loaded.
- Know your vehicle height, and plan your route so that you are not surprised by low bridges.
- Know the payload characteristics when you pick up sealed cargo.

REFERENCES: FMCSR Part 391.13 – Responsibilities of drivers; Part 392.9 – Inspection of cargo, cargo securement devices and systems; Part 393 Subpart I – Protection against shifting and falling cargo

Crash BASIC Countermeasures

C12 – Preventing Cargo Securement Crashes

This countermeasure is designed to assist the motor carrier in reducing the number of vehicle rollovers or falling-cargo crashes. For more information, see the Cargo Related BASIC Safety Management Cycle.

Cargo that breaks loose on the road can create control difficulties for the driver and present a hazard for other drivers. Shifting cargo can cause loss of control and vehicle rollover.



Safety Management Process

Policies and Procedures	Roles and Responsibilities	Qualification and Hiring
<ul style="list-style-type: none"> Ensure drivers are able to perform procedures for proper load-securement methods, especially for unusual payloads. Develop a policy that ensures that drivers and dock personnel are able to perform proper blocking and bracing methods (Part 391.13, 392.9, 393). Develop a policy equipping trailers with proper tiedowns and front-end structures. 	<ul style="list-style-type: none"> Identify, clearly define, and document the roles and responsibilities of drivers to perform proper load-securement methods. Identify, clearly define, and document the role of senior manager(s) for implementing training related to cargo-loading and securement. 	<ul style="list-style-type: none"> Query applicants, check with previous employer(s) and references, and obtain necessary documents regarding cargo-loading and securement violations, qualifications, training, and work experience, and create a detailed written record of each inquiry. Consider enhancing the recruitment process to identify and attract applicants who qualify under the FMCSRs by using outside sources: websites, insurance companies, industry groups, consultants, etc.

Training and Communication	Monitoring and Tracking	Meaningful Action
<ul style="list-style-type: none"> Train drivers to perform procedures for proper load-securement methods. Train drivers and dock personnel to perform proper blocking and bracing methods. 	<ul style="list-style-type: none"> Regularly review cargo-loading and securement methods, procedures, and equipment and devices used, and evaluate opportunities for new methods. Evaluate the performance of all staff involved in cargo securement (i.e., drivers and managers), and the effectiveness of compliance with vehicle maintenance policies, procedures, and regulations. 	<ul style="list-style-type: none"> Consider utilizing incentives and/or recognition programs to reward and encourage effective performance of cargo-handling, loading, and securement responsibilities. Consider providing feedback to employees as soon as the company is aware that their knowledge in this area is deficient, and address with appropriate training. Consider designing and implementing a progressive disciplinary program for failure to follow established guidelines.

Driver Safety Improvement Practices
<ul style="list-style-type: none"> Ensure that the lading has been properly secured. Periodically check that the tiedowns and bracing are still intact and the cargo has not shifted. (Part 392.9(b)) Some cargo or lading, such as liquids in cargo tanks or portable tanks, has a tendency to shift. Drive at a reduced speed, especially during turns or braking. Pay attention to bracing and tiedowns when picking up unusual cargo. Ensure that you are satisfied with loading and securement performed by the loading personnel.

REFERENCES: FMCSR Part 391.13 – Responsibilities of drivers;
 Part 392.9 – Inspection of cargo, cargo securement devices and systems;
 Part 393 Subpart I – Protection against shifting and falling cargo;

Crash BASIC Countermeasures

H1 – Hazardous Material Incident Prevention Manual

Please visit the following link for more information on Hazardous Material Incident Prevention:

<http://www.fmcsa.dot.gov/safety-security/hazmat>

