

Skill Standards for Entry-Level Commercial Motor Vehicle Driver Courses



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PREFACE

The Professional Truck Driver Institute (PTDI) is a 501(c)(3) organization established for the purposes of developing uniform skill, curriculum, and course standards for entry-level commercial motor vehicle (CMV) driver training, and certifying training courses that, at a minimum, meet those standards. This publication is made available in the interest of CMV safety and the advancement of CMV driver training.

PTDI has developed three sets of standards: skill standards; curriculum standards and guidelines; and standards and requirements for course certification. This publication contains PTDI's standards and requirements to obtain PTDI course certification. The skill and curriculum standards are published in separate documents.

All of PTDI's standards result from the collective efforts and consensus of representatives from the motor carrier and insurance industries, drivers, and educators. The curriculum standards incorporate the curricular recommendations of the U. S. Department of Transportation's Federal Highway Administration's former Office of Motor Carriers Model Curriculum. The curriculum standards represent the minimum training elements that a commercial motor vehicle driver-training course should contain, and against which any such course may be judged. The absence of any particular performance element(s) and/or criterion/criteria from a training program should not signify a deficiency in that program, as each course of instruction must be considered individually.

PTDI STATEMENT OF REPRESENTATIONS AND DISCLAIMER

The contents of this publication do not represent official policy of any governmental or quasi-governmental agency. PTDI expressly disclaims any and all liability for the content, use, and application of these skill, curriculum, and course certification standards, and makes no representation or warranty as to the fitness of any individual who has been trained in accordance with the standards or procedures detailed herein.

A school's compliance with PTDI's standards is purely voluntary. PTDI's certification of a course is evidence of a school's compliance with PTDI's curriculum and certification standards. PTDI certifies training courses, not schools. PTDI does not accredit schools or courses. PTDI is not a trade association and, therefore, has no members. Graduates of a PTDI-certified course are not themselves certified for having attended such a course.

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Provisions of the "Certification Standards and Requirements for Entry-Level Commercial Motor Vehicle Driver Courses" were in effect as of September 10, 1999. Substantive revisions or additions to this publication (formerly called "Certification Standards and Requirements for Entry-Level Tractor-Trailer Driver Courses") which have been made since that date are clearly identified. Updates for flow, consistency, clarification and relevancy may not be indicated. Also, see "Notes."

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SECTION 1: General Information

Professional Truck Driver Institute – Entry Level Driver Skill Standards

INTRODUCTION

These skill standards describe in detail the tasks and responsibilities of a CMV driver. The standards provide a basis for curriculum, instructional materials, performance, and assessment used by training organizations. They also encourage drivers to assess their progress and establish goals for improving personal performance. Employers can use the skill standards to differentiate themselves by providing safe and professional services with the greatest possible productivity.

Skill standards are the statements of what drivers must actually know and do on the job, as reported by the drivers themselves. The skill standards are intended to teach “entry level drivers” the basic skills needed to safely operate a commercial motor vehicle. They do not address every skill, knowledge, task, duty or ability suggested by drivers as necessary for entry-level drivers to possess and use. Schools appropriately teach many of the skills and knowledge, and those are included in these curriculum standards. Skill standards and curriculum standards are not the same. Skill standards are a "role map" of content for driver training programs to use as they develop curriculum and instructional exercises. Curriculum standards are what and how the schools teach their selected course content. Schools are not responsible for teaching all the skills and knowledge listed in the Skill Standards; trucking firms also must teach some of the information, and the driver must master additional information on his/her own

OVERVIEW OF THE STANDARDS

The standards describe the skill and knowledge base as well as the performance criteria critical for success as an entry-level driver. The standards are based on information collected from high performance drivers, as nominated by their companies throughout the United States. The skills address issues ranging from managing life on the road to backing a CMV in traffic. The materials form a baseline from which to develop curriculum, instructional materials, exercises, and assessment routines in training.

APPROACH

The skill standards have been developed through a collaborative effort of schools, truck drivers, trucking firms, and trucking associations throughout the industry. The information builds from data originally created by the U.S. Department of Transportation and the Professional Truck Driver Institute (PTDI) about the tasks, skills, and duties necessary to be a successful truck driver. The process of updating that information involved performing an extended search of the literature; conducting extensive structured interviews with high performance truck drivers; and involving truckers, trucking firm representatives, and driver/trainers in a survey to document the importance and frequency of the skills, tasks, and knowledge suggested through the extended search and the structured group interviews.

That information then was compiled into a role map for CMV drivers which was reviewed and refined by experts from trucking firms and schools and was used as the basis of developing the skill standards. The standards then were reviewed and elaborated upon by owners and trainers from trucking firms, as well as teachers and school administrators from trucking schools.

The result is a set of standards, originally released in September 1999 and updated for release in 2011, that should be useful to guide the training and performance of entry-level CMV drivers.

BENEFITS

The benefits arising from skill standards include specific outcomes useful to each of the major stakeholders in the industry. That is, there are benefits from skill standards for employers, for education and training providers, and for individual workers. Each of those is expressed below.

For employers, skill standards will:

- Improve employee recruitment and retention by more clearly identifying skill requirements.
- Encourage improved responsiveness and performance of education and training providers.
- Enlarge the pool of skilled workers.
- Focus attention on the importance of the training investment.

For education and training providers, skill standards will:

- Provide information on changes in the modern workplace for all major industries and occupations.
- Contribute to program and curriculum development by providing an inventory of critical work performances.
- Strengthen the relationship between education and training providers and the trucking industry.
- Help them communicate with students and workers to improve career planning.

For students and workers, skill standards will:

- Help them make better decisions about careers and the training necessary to obtain well-paying jobs.
- Allow them to communicate more effectively to an employer what they know and can do.
- Allow them to work more effectively with employers in career development and skill upgrading.

FORMAT

The following standards are for entry-level CMV drivers and do not assume attainment of solo, first-seat skills. Standards are presented for each of the major duties or functions of entry-level truck drivers, as defined by the role map. Each standard contains a statement of the duty competency, a performance criterion, and a list of necessary elements for the duty. It starts with describing how, in an ideal situation using a high performing driver what the skill would look like - that is the “Statement of Work to be Performed.” The “Performance Criteria” breaks down the skill into subparts and describes more specifics about the performance. The final part (“Performance Elements and Assessment Criteria”) describes additional conditions and factors at which the skill must be demonstrated and assessed. Knowledge required to perform the duty, attitude statements (if applicable), and the skill matrix are included in the appendices.

NOTES

These skill standards are one of three sets of standards – “Skill Standards for Entry-Level Commercial Motor Vehicle Drivers,” “Curriculum Standards and Guidelines for Entry-Level Commercial Motor Vehicle Driver Courses” and “Certification Standards and Requirements for Entry-Level Commercial Motor Vehicle Driver Courses.”

The terms “commercial motor vehicle” and “CMV” are used throughout this document to reflect the broad category of vehicles that require a commercial driver’s license to operate.

The term “highway” as used in these standards includes public streets, roads, roadways and highways.

SECTION 2: Functions and Skills

Professional Truck Driver Institute – Entry Level Driver Skill Standards

COMMERCIAL MOTOR VEHICLE (CMV) OPERATOR PRIMARY FUNCTIONS/DUTIES

1. Read and Interpret Control Systems
2. Perform Vehicle Inspections
3. Exercise Basic Control
4. Execute Shifting
5. Back and Dock CMV
6. Couple Trailer
7. Uncouple Trailer
8. Perform Visual Search
9. Manage and Adjust Vehicle Speed
10. Manage and Adjust Vehicle Space Relations
11. Check and Maintain Vehicle Systems and Components
12. Diagnose and Report Malfunctions
13. Identify Potential Driving Hazards and Perform Emergency Maneuvers
14. Identify and Adjust to Difficult and Extreme Driving Conditions
15. Handle and Document Cargo
16. Address Accident Scenes and Reporting Procedures
17. Address Environmental Issues
18. Plan Trips/Make Appropriate Decisions
19. Use Effective Communications
20. Manage Personal Resources While on the Road
21. Record and Maintain Hours of Service Requirements

Performance Skill #1: READ AND INTERPRET CONTROL SYSTEMS

PERFORMANCE SKILL STANDARD:

Conditions of Performance:

Given the cab instrumentation and control panels of a typical CMV that is in operation,...

Statement of Work to be Performed:

... the driver will identify and locate, read, and interpret the typical vehicle instruments and controls of a CMV.

Performance Criteria:

- Identify and locate each of the vehicular driving controls and the various monitoring devices (gauges, alarms, lights, etc.) required to operate the vehicle safely and efficiently.
- Read instrument/gauge accurately within ± 1 unit of measure correctly each time.
- Operate controls and switches correctly.
- Interpret gauge and control readings and assimilate with other available information.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA:

1. Identify, locate, read and operate each of the primary controls including those required for steering, accelerating, shifting, braking, and parking.
2. Identify, locate, and operate each of the secondary controls including those required for control of lights, signals, windshield wipers and washers, interior climate, engine starting and shutdown, suspension and coupling.
3. Identify, locate, read and operate, and indicate the acceptable reading range of the various instruments required to monitor vehicle and engine speed as well as the status of fuel, oil, air, cooling, exhaust, and electrical and electronic systems.
4. Use information from all sources, given that instruments may malfunction or not be entirely accurate.
5. Read and understand in-cab safety systems.

Performance Skill # 2: PERFORM VEHICLE INSPECTIONS

PERFORMANCE SKILL STANDARD:

Conditions of Performance:

Given a typical CMV and a trip,...

Statement of Work to be Performed:

... the driver will conduct vehicle inspections in accordance with the Federal Motor Carrier Safety Regulations (FMCSR).

Performance Criteria:

- Inspect and make a correct determination of the condition of various critical vehicle components, including instruments and controls; engine and drive train; chassis and suspension; steering system; braking system; tires; wheels and rims; lighting and signaling system; coupling system; emergency equipment; and cargo securement device(s).
- Perform inspections in a regular, systematic sequence that is accurate, uniform, and time efficient, and document in accordance with FMCSR.
- Refuse to operate a vehicle found to be in unsafe (for vehicle, drivers, and other highway users) operating condition, either prior to a trip or en route.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA:

1. Perform pre-trip, en route, and post-trip inspections.
2. Inspect and determine the condition of critical vehicle components, including the instruments and controls; seat adjustment; engine and drive train; chassis and suspension; steering system; braking system; tires; wheels and rims; lighting and signaling system; coupling system; emergency equipment; and cargo securement device(s).
3. Perform pre-trip inspections in a regular, systematic sequence that is accurate, uniform, and time efficient. Review previous day's post-trip inspection report to verify corrections.
4. Perform en route inspections by checking mirrors for signs of trouble; monitoring instruments and looking, listening, and feeling for malfunctions; making periodic roadside inspections of critical components; and meeting en route requirements for transporting all types of cargo.
5. Perform post-trip inspections by making accurate notes of actual and suspected component abnormalities or malfunctions.
6. Complete driver vehicle inspection report (DVIR).

Performance Skill #3: EXERCISE BASIC CONTROL

PERFORMANCE SKILL STANDARD:

Conditions of Performance:

Given a typical CMV with a typical load, a typical road surface, and a pre-determined route,...

Statement of Work to be Performed:

... the driver will start, operate and steer the CMV.

Performance Criteria:

- Start, operate, and shut down CMV such that the driver scores an acceptable proficiency rating on an operational checklist for basic controls in areas such as turning the vehicle, centering the vehicle in lane, and backing in a straight line.
- Achieve smooth and effective acceleration and stopping.
- Position CMV to begin and complete turns in lane.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA:

1. Enter cab properly and adjust all safety components.
2. Start and warm up the engine.
3. Place vehicle in motion and accelerate smoothly.
4. Monitor controls, mirrors, instruments and gauges
5. Center and maintain vehicle in lane
6. Maintain appropriate vehicle and engine speed on upgrades and downgrades.
7. Negotiate left and right curves and sharp turns for various trailer lengths.
8. Judge clearances around vehicle and physically check position for obstructions.
9. Maneuver into restricted areas in various positions.
10. Use proper backing maneuvers using reverse steering and warning flashers.

Performance Skill #4: EXECUTE SHIFTING

PERFORMANCE SKILL STANDARD:

Conditions of Performance:

Given the type of transmission and any number of driving conditions (traffic, terrain, turns, speed, and highway conditions),...

Statement of Work to be Performed:

... the driver will execute proper up and down shifting technique.

Performance Criteria:

- Match shifting to engine needs and safe operations for road conditions.
- Shift smoothly to protect equipment.
- Shift to maximize fuel efficiency.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA:

1. Shift up and down through all gears of typical multi-speed, dual range transmissions.
2. Double clutch and time shift for smooth and fuel-efficient performance.
3. Select proper gear for traffic, terrain, turns, speed, and highway conditions.
4. Avoid riding the clutch.
5. Demonstrate progressive shifting technique.
6. Demonstrate skip shifting.
7. Demonstrate proper gear recovery.
8. Demonstrate how to stop in any gear.

Performance Skill #5: BACK AND DOCK CMV

PERFORMANCE SKILL STANDARD:

Conditions of Performance:

Given a typical CMV, a load, a direction to back, and a place to park,...

Statement of Work to be Performed:

... the driver will back and dock the CMV.

Performance Criteria:

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- Back CMV on performance test to acceptable criteria on range and/or highway with at least three backing maneuvers and to within three feet of dock.
- Back and park in restricted area within appropriate tolerances.
- Back in straight and curved lines within appropriate tolerances.
- Back and park in various positions and conditions.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA:

1. Check and adjust mirrors.
2. Set parking brake, get out and check area for obstructions, position, and intended path.
3. Determine appropriate path and clearances prior to backing.
4. Activate warning flashers prior to moving into reverse gear. Sound horn prior to backing if CMV does not have a back-up alarm. Keep window open and radio off.
5. Position vehicle correctly before beginning a backing or docking maneuver.
6. Use appropriate ground guide spotter with clear signals, as necessary.
7. Execute reverse steering of an articulated vehicle.
8. Back slowly (using idle speed) in straight and curved lines.
9. Back into restricted space.
10. Constantly check when backing – look in mirrors; watch for conditions that could tilt trailer; identify obstructions.
11. Pull up and start over when necessary.
12. Back and park vehicle according to space conditions.

Performance Skill # 6: COUPLE TRAILER

PERFORMANCE SKILL STANDARD:

Conditions of Performance:

Given verbal or written instructions to connect to a specific trailer,...

Statement of Work to be Performed:

... the driver will demonstrate safe coupling procedures of CMV.

Performance Criteria:

- Couple CMV safely within 8 to 10 minutes and in accordance with manufacturer's specifications.
- Complete coupling by checking secure connections to include air lines and electrical cables.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA:

1. Align tractor and trailer units in a straight line for coupling.
2. Check trailer height. Trailer nose should be slightly higher than fifth wheel.
3. Secure trailer against movement, if applicable.
4. Back tractor into trailer kingpin, slowly at right level, and with appropriate force; check coupling and pin engagement.
5. Check connection for security by pulling tractor forward gently. If connection is complete, release brake; if not, secure connection.
6. Connect and check air and electrical lines.
7. Check for symptoms of improper or incomplete connections and make necessary adjustments.
8. Set in-cab air brake controls.
9. Retract and secure landing gear and handle.

PERFORMANCE SKILL #7: UNCOUPLE TRAILER

PERFORMANCE SKILL STANDARD:

Conditions of Performance:

Given verbal or written instructions about where and when to leave a trailer, and a trailer of any size attached to a tractor,...

Statement of Work to be Performed:

... the driver will demonstrate safe uncoupling of typical combination CMV.

Performance Criteria:

- Uncouple combination CMV safely within 5-7 minutes and in accordance with manufacturer's specifications.
- Secure trailer from movement.
- Follow correct sequence for disconnecting electric lines and air hoses.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA:

1. Spot trailer on surface capable of supporting weight and secure vehicle against movement.
2. Lower gear to raise trailer to correct height and check support.
3. Disconnect and secure air and electrical lines prior to uncoupling.
4. Uncouple trailer(s) using correct procedures for individual equipment, if applicable.

Performance Skill #8: PERFORM VISUAL SEARCH

PERFORMANCE SKILL STANDARD:

Conditions of Performance:

Given a typical CMV and a driving situation,...

Statement of Work to be Performed:

... the driver will conduct a visual search of the highway using all available visual tools and instrumentation for potential hazards and critical objects.

Performance Criteria:

- Demonstrate visual search techniques by pointing out important obstacles in various types of traffic and locations, as scored on the performance test, using the "commentary driving" technique.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA:

1. Adjust all mirrors to appropriate specifications.
2. Visually scan up to 10 to 12 seconds ahead of current position to identify potential hazards.
3. Scan both sides of the highway using quick glances to observe roadside activity and vehicles nearby.
4. Check mirrors for hazards regularly, and always before changing speed or direction.
5. Check instrument panel frequently.
6. Look ahead as far as possible during turns and on curves.
7. Check both sides before turning or changing lanes.
8. Monitor overtaking traffic in order to be aware of vehicles behind and in blind spots.
9. Avoid diverting attention from the path ahead.

Performance Skill #9: MANAGE AND ADJUST VEHICLE SPEED

PERFORMANCE SKILL STANDARD:

Conditions of Performance:

Given a CMV a trip, a route of travel, and varying traffic conditions,...

Statement of Work to be Performed:

... the driver will read/identify conditions, adjust speed, and manage speed in response to various road, weather, and traffic conditions.

Performance Criteria:

- Adjust speed to conform with vehicle configuration and cargo; highway conditions; and weather, visibility, traffic and other driving conditions.
- Maintain entrance and exit ramp speed 10 mph below posted speed, under ideal conditions.
- Obey the legal speed limit.
- Drive at speeds in response to highway condition and necessary stopping distances.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA:

1. Judge safe speed at which a curve and on/off ramps can be entered and slow speed to less than posted to allow for load and other conditions.
2. Obey speed limit.
3. Maintain proper speed to manage the space around the truck.
4. Judge and adjust speed to maintain traction.
5. Recognize and interpret all types of driving conditions and highway surfaces.
6. Judge and adjust speed at which vehicle control can be maintained under traffic conditions, crosswinds, highway conditions, weather conditions, size of the load, and limited visibility.

Performance Skill #10: MANAGE AND ADJUST VEHICLE SPACE RELATIONS

PERFORMANCE SKILL STANDARD:

Conditions of Performance:

Given a typical CMV, a trip, a route of travel, and varying traffic conditions,...

Statement of Work to be Performed:

... the driver will properly manage the space required for safe vehicle operation.

Performance Criteria:

- Select a lane offering the best mobility and least traffic interruption, in accordance with the law, to cause minimum interference to other vehicles.
- Assure a safe gap before changing lanes, passing other vehicles, merging, and crossing or entering traffic; position vehicle correctly in the lane and relative to crosswalks so as to minimize hazards to other highway users.
- Position CMV appropriately before initiating and completing a turn so as to prevent other vehicles from passing on the wrong side and to minimize encroachment on other lanes.
- Maintain a following distance appropriate to traffic, highway surface, visibility, speed, and vehicle weight;
- Park a maximum distance from all traffic if CMV is disabled; if approaching a disabled vehicle, slow down and change lanes when possible to maintain a maximum distance from the disabled vehicle.
- Avoid structures having inadequate overhead clearance.
- Note position and movement of bicyclists and pedestrians.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA:

1. Explain basic formula for determining safe following distance.
2. Judge adequacy of gaps in traffic for passing, crossing traffic, entering traffic, and changing lanes.
3. Use proper visual search techniques to determine and achieve appropriate space.
4. Properly position vehicle for making all driving maneuvers and avoid placing other vehicles or pedestrians in jeopardy.
5. Determine safe clearances on all sides, including height of vehicle.
6. Adjust following distances for traffic, loads and highway conditions.

Performance Skill #11: CHECK AND MAINTAIN VEHICLE SYSTEMS AND COMPONENTS

PERFORMANCE SKILL STANDARD:

Conditions of Performance:

Given a typical CMV, a trip, and a basic tool kit,...

Statement of Work to be Performed:

... the driver will check each system function, correctly note indications of problems for various systems, and report those problems in accordance with FMCSR. Systems to check include engine systems, steering systems, tires, air intake and exhaust systems, brakes, drive train, coupling systems, lighting systems, and suspension.

Performance Criteria:

- Explain proper range of function for all primary vehicle systems.
- Check each component and vehicle system.
- Note symptoms or problems.
- Complete vehicle inspection report in accordance with FMCSR and carrier policy.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA:

1. Check engine systems to include fuel, oil, coolant, battery and electrical systems, air intake and filters, and exhaust system
2. Check steering for excessive steering wheel play.
3. Check tire air pressure and proper tire and wheel mounting.
4. Drain moisture from air brake supply reservoirs and fuel system.
5. Check brakes. Report problems or adjust according to regulation, certification and company policy.
6. Clean lenses and replace light bulbs when required.
7. Change fuses and reset circuit breakers.
8. Check drive train coupling and suspension systems.

Performance Skill #12: DIAGNOSE AND REPORT MALFUNCTIONS

PERFORMANCE SKILL STANDARD:

Conditions of Performance:

Given a typical CMV with a description of problem or symptoms of poor performance,...

Statement of Work to be Performed:

... the driver will describe symptoms, identify vehicle malfunctions, and report problem.

Performance Criteria:

- Identify and describe symptom.
- Report problem accurately and according to guidelines.
- Fix problems in accordance with company policy and FMCSR.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA:

1. Check each component and vehicle system. Identify vehicle systems or components that are functioning properly, are in imminent danger of failing, or functioning improperly.
2. Match symptom to possible list of problems.
3. Describe symptoms of improper operation completely and accurately to maintenance personnel.
4. Correct problems in accordance with company policy.
5. Avoid attempting to perform maintenance for which driver is unqualified.
6. Report breakdowns occurring en route according to company policy.
7. Complete a driver vehicle inspection report (DVIR) properly.

<p align="center">Performance Skill #13: IDENTIFY POTENTIAL DRIVING HAZARDS AND PERFORM EMERGENCY MANEUVERS</p>
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PERFORMANCE SKILL STANDARD:

Conditions of Performance:

Given a typical CMV, a trip, and any of a number of potential problems,...

Statement of Work to be Performed:

... the driver will recognize the potential dangers in the driving environment and take appropriate action(s) before the dangers develop into emergency situations.

Performance Criteria:

- Identify highway conditions and other highway users that are a potential threat to the safety of the CMV.
- Identify appropriate adjustments, as indicated by use of “commentary driving” and passing a written test on the topic or demonstrating skill.
- Explain causes of and techniques to avoid skids and jackknifing.
- Explain how to recover from skids and jackknifing.
- Demonstrate through proper speed and space management and proper acceleration, braking systems and braking techniques to avoid a skid or jackknifing.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA:

1. Perceive immediately a potential threat from visible characteristics and actions of other highway users, highway conditions, and the environment.
2. Match and initiate prompt defensive or evasive action.
3. Use proper evasive steering techniques.
4. Respond appropriately to highway changes.
5. Identify situations where skids and jackknifing are likely to occur.
6. Utilize braking systems to stop the vehicle in the shortest possible distance while maintaining control.
7. Describe how to steer out of a skid in a way that will regain directional control without producing another skid.
8. Determine and maintain safe speed for slippery surface conditions.
9. Describe proper steering and stopping in the event of an emergency.

<p align="center">Performance Skill #14: IDENTIFY AND ADJUST TO DIFFICULT AND EXTREME DRIVING CONDITIONS</p>

PERFORMANCE SKILL STANDARD:

Conditions of Performance:

Given a typical CMV, a load, a route, and a set of difficult or extreme driving conditions,...

Statement of Work to be Performed:

... the driver will identify the conditions and make the appropriate adjustments.

Performance Criteria:

- Explain or demonstrate correct defensive adjustments for at least the following conditions:
 - Night operations
 - Cold weather operation
 - Hot weather operation
 - Mountainous terrain
 - Wet conditions
 - Windy conditions
 - Construction zones
 - Railroad crossings

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA:

Night Operations

- Judge and adjust speed, distances, and separation under nighttime conditions.
- Demonstrate heightened scanning night technique.
- Use high beams legally; dim headlights in accord with law and safety.
- Respond safely to glare of other vehicles.
- Manage driver's fatigue.
- Use proper signaling techniques.

Cold Weather Operation

1. Prepare for operation in cold weather, including removing snow and ice from windows, mirrors, brakes, lights, hand holds, and steps.
2. Inspect for cold weather operation by paying special attention to coolant level and mixture, heater, defrosters, wipers, washers, tire tread, brakes, lights, reflectors, wiring system, hoses, fuel, exhaust system, and fifth wheel.
3. Make sure that moisture is expelled from the air tanks after each trip.
4. Check weather information before and during trips and adjust plan accordingly.
5. Check for snow and ice accumulation (and remove it) on all surfaces, as well as brakes, air hoses, electrical wiring, lights and radiator shutters during operation. This includes trailer components and surfaces.
6. Utilize cold weather engine starting procedures.
7. Observe highway surface for changes in conditions.
8. Adjust rate of change in speed and direction to highway conditions to avoid skidding.
9. Coordinate acceleration and shifting to overcome the resistance of snow, sand, and mud.
10. Carry additional food and clothing to deal with weather conditions and delays.

Hot Weather:

1. Check tires, lubrication, levels and operation of cooling system, fan belts, fans and hoses, and check the radiator for debris.
2. Carry an ample supply of drinking water.
3. Inspect tires frequently.

Mountainous Terrain:

1. Check brake adjustment prior to mountain driving.
2. Use right lane or designated truck lanes.
3. Place transmission in correct gear for engine speed on downgrade.
4. Use proper braking technique and maintain proper engine speed on downgrades.
5. Explain or demonstrate operation of special speed reduction devices properly; e.g., engine brakes.
6. Monitor brakes for overheating.
7. If brakes fail on a downgrade, use truck escape ramp, if available.
8. Observe temperature gauge frequently when pulling heavy loads up long grades.
9. Use 4-way flashers in accordance with local laws.

Wet Conditions

1. Operate CMV within the capabilities and limitations of equipment.
2. Check anti-lock brakes stability control.
3. Adjust speed for conditions.
4. Select proper gear for highway conditions and surface.
5. Maintain increased following distance.
6. Adjust operation of vehicle to weather conditions, including speed selection, braking, direction changes, and following distance to maintain control and avoid jackknifing.
7. Ensure safe operation of brakes after driving through deep water.
8. Use windshield wipers, washers and defrosters to maintain visibility.

Windy Conditions

1. Operate CMV within the capabilities and limitations of the equipment.
2. Judge and adjust speed and following distance for conditions.
3. Adjust steering to compensate for side forces generated by wind.
4. Scan for unusual debris on highway.
5. Maintain increased following distance.

Construction Zones

1. Maintain adequate following distance.
2. Adjust speed for conditions or as directed when entering, exiting, or driving within the construction zone.
3. Perform visual search for vehicles approaching from rear, particularly on right side.
4. Observe and adjust to pavement surface differences.
5. Observe and identify right of way for pedestrians and construction equipment.

Passive (Unmarked or Uncontrolled) Railroad Crossings

1. Stop when required at proper distance from crossing.
2. Maintain speed without shifting or stopping at crossing.
3. Do not cross until ample room is available for CMV to clear.
4. Do not stop until CMV has cleared crossing.
5. Approach crossing with caution, turn off communication devices and roll window down to listen for oncoming traffic and warnings.
6. Ensure there is ample undercarriage clearance before crossing.
7. Obey railroad signals or directions at crossing.

Performance Skill #15: HANDLE AND DOCUMENT CARGO

PERFORMANCE SKILL STANDARD:

Conditions of Performance:

Given a typical load, and a bill of lading or cargo list,...

Statement of Work to be Performed:

... the driver will perform all CMV cargo inspection, handling, and documentation procedures, including hazardous materials, in accordance with regulatory requirements.

Performance Criteria:

- Verify nature, amount, and condition of cargo on both pick-up and delivery.
- Verify load is distributed and contained correctly to meet legal and safety requirements.
- Verify information on bill of lading and properly record and report discrepancies and damage to the cargo.
- Obtain appropriate signatures on delivery receipts and other required forms.
- Prepare a manifest properly.
- Move heavy loads safely, as verified by a performance test.
- Obtain hazardous materials endorsement prior to carrying hazardous materials.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA:

1. Prepare manifest, as required.
2. Verify cargo types, nature, amount, and condition on pick-up and delivery.
3. Verify seals, if used.
4. Cover cargo, as necessary.
5. Obtain appropriate signatures.
6. Verify information on bill of lading and properly record/report discrepancies and damage.
7. Verify that load distribution on trailer fits within regulations.
8. Verify that placards match load and meet regulations; correct placards, as necessary.
9. Operate common types of cargo handling equipment safely.
10. Select proper sizes of chain, cable, nylon webbing, steel strapping, or rope.
11. Secure load in accordance with applicable regulatory requirements.
12. Stop and inspect cargo, according to regulations.
13. Demonstrate proper lifting techniques required to safely load and unload cargo.

<p style="text-align: center;">Performance Skill #16: ADDRESS ACCIDENT SCENES AND REPORTING PROCEDURES</p>

PERFORMANCE SKILL STANDARD:

Conditions of Performance:

Given an accident on the highway,...

Statement of Work to be Performed:

... the driver will follow applicable accident procedures .

Performance Criteria:

- Guard the scene of an accident to prevent further injury or damage, and obtain assistance.
- Obtain all information needed for accident reports to law enforcement, the employer, and the insurance company.
- Render assistance to any injured parties, including providing first aid, provided he/she has had proper training.
- Extinguish fire including cargo, engine, electrical, and tire fires.
- Discuss liability only with law enforcement, the company, or their representative.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA:

1. Stop and park CMV appropriately in safe location.
2. Notify emergency responders; place warning devices as required.
3. Provide aid for injured individuals if properly trained and certified.
4. Cooperate with first responders or emergency personnel.
5. Operate fire extinguishers correctly, if required.
6. Protect self from blood-borne pathogens.
7. Direct traffic, if necessary, until emergency personnel arrive.
8. Obtain information for accident reporting, including photographs in accordance with company policy.
9. Discuss accident details only with appropriate officials.
10. If hazardous materials are involved, call appropriate authorities and secure the area.
11. Stay at scene until emergency personnel and company grant permission to leave.
12. Notify carrier in accordance with policy.

Performance Skill #17: ADDRESS ENVIRONMENTAL ISSUES

PERFORMANCE SKILL STANDARD:

Conditions of Performance:

Given a typical CMV and a trip,...

Statement of Work to be Performed:

... the driver will recognize environmental hazards and issues related to the CMV and load, and take action to meet city, county, state/provincial, and federal requirements.

Performance Criteria:

- Identify environmental hazards and take appropriate action in accordance with regulatory and company requirements.
- Understand various idle requirements and adjustments required to comply.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA:

1. Check hoses, couplings, and other components that may contribute to environmental issues.
2. Monitor idle time and make appropriate adjustments.
3. Check regularly for signs of leaks.
4. Fuel carefully to avoid spills.
5. Recognize and report environmental issues.

Performance Skill #18: PLAN TRIPS/MAKE APPROPRIATE DECISIONS

PERFORMANCE SKILL STANDARD:

Conditions of Performance:

Given a proposed trip order, load, and resources,...

Statement of Work to be Performed:

... the driver will plan the trip.

Performance Criteria:

- Identify and obtain necessary/required permits.
- Estimate time of arrival correctly.
- Identify fuel stops.
- Calculate and budget trip expenses.
- Choose most effective and authorized routes for time, budget, load, and conditions.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA:

1. Plan a route from one point to another that is optimal in terms of travel time, fuel costs, potential hazards, and federal, state/provincial, and local travel restrictions.
2. Arrange to secure permits required by the nature of the vehicle, its cargo, and route to be traveled.
3. Arrange a secure place for vehicle on layovers, especially when transporting hazardous materials.
4. Calculate miles, fuel use, stops and expenses. Obtain funding for expenses.
5. Interpret maps/program Global Positioning Systems.
6. Estimate travel time and plan rest stops and layovers to ensure adequate rest to comply with hours of service regulations.
7. Document expenses according to policy.

Performance Skill #19: USE EFFECTIVE COMMUNICATIONS

PERFORMANCE SKILL STANDARD:

Conditions of Performance:

Given a CMV and a route,...

Statement of Work to be Performed:

... the driver will demonstrate effective communication skills with company, customers and the general public.

Performance Criteria:

- Convey clear intentions in all communication.
- Receive and send clear messages from/to dispatcher with on-board devices.
- Present a professional image to the general public.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA:

In-Vehicle

1. Signal intentions such as lane changes, hazards, and backing up.
2. Use horn, headlights, and other lights appropriately.
3. Establish and use eye contact with drivers and pedestrians as a warning.
4. Avoid making decisions only on basis of another's signal.
5. Avoid directing traffic.
6. Use on-board and personal communication devices only when vehicle is parked.

Personal Interaction

1. Use on-board and personal communication devices only when vehicle is parked.
2. Communicate clearly, professionally and effectively with company, customers, and general public.
3. Present a professional image while in control of a CMV.

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Performance Skill #20: MANAGE PERSONAL RESOURCES WHILE ON THE ROAD

PERFORMANCE SKILL STANDARD:

Conditions of Performance:

Given a trip over the road that requires days and nights away from home,...

Statement of Work to be Performed:

... the driver will effectively manage lifestyle and resources so as to take care of personal needs, career and family/support system.

Performance Criteria:

- Develop and implement strategies to effectively manage personal issues such as:
 - Fatigue
 - Diet
 - Exercise
 - Personal hygiene
 - Stress
 - Personal finances
 - Lifestyle changes

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA:

1. Identify elements of fatigue. Employ control strategies.
2. Identify characteristics of stress, and adopt stress reducing techniques.
3. Follow healthy diet and recreation practices while on the road.
4. Establish a good exercise program while on the road.
5. Make safe decisions about where to stop and stay.
6. Practice good personal hygiene.
7. Communicate with family and/or support system frequently or as needed.

<p style="text-align: center;">Performance Skill #21: RECORD AND MAINTAIN HOURS OF SERVICE REQUIREMENTS</p>
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PERFORMANCE SKILL STANDARD:

Conditions of Performance:

Given a trip and a CMV,...

Statement of Work to be Performed:

... the driver will adhere to the requirements of the Federal Motor Carrier Safety Regulations (FMCSR) Part 395 "Hours of Service for Drivers" and complete a driver's daily log and logbook recap.

Performance Criteria:

- Comply with hours of service requirements.
- Maintain a complete, legible, and accurate driver's daily log and logbook recap or demonstrate ability to enter data into electronic on-board recording system.
- Perform all necessary calculations correctly to the closest quarter (1/4) hour.

PERFORMANCE ELEMENTS AND ASSESSMENT CRITERIA:

1. Interpret and demonstrate compliance with hours of service regulations.
2. Record time accurately.
3. Perform calculations necessary to recap and apply daily totals to the hours of service regulations.
4. Determine driving hours remaining on a particular day or tour of duty.
5. Understand and maintain support documents in accordance with regulatory requirements.

APPENDIX A: Skill Matrix

Read and Interpret Control Systems (Performance Skill #1)

1. Identify, locate, read and operate each of the primary controls including those required for steering, accelerating, shifting, braking, and parking.
2. Identify, locate, and operate each of the secondary controls including those required for control of lights, signals, windshield wipers and washers, interior climate, engine starting and shutdown, suspension and coupling.
3. Identify, locate, read and operate, and indicate the acceptable reading range of the various instruments required to monitor vehicle and engine speed as well as the status of fuel, oil, air, cooling, exhaust, and electrical and electronic systems.
4. Use information from all sources, given that instruments may malfunction or not be entirely accurate.
5. Read and understand in-cab safety systems.

Perform Vehicle Inspections (Performance Skill #2)

1. Perform pre-trip, en route, and post-trip inspections.
2. Inspect and determine the condition of critical vehicle components, including the instruments and controls; seat adjustment; engine and drive train; chassis and suspension; steering system; braking system; tires, wheels and rims; lighting and signaling system, coupling system; emergency equipment; and cargo securement device(s).
3. Perform pre-trip inspections in a regular, systematic sequence that is accurate, uniform, and time efficient. Review previous day's post-trip inspection report to verify corrections.
4. Perform en route inspections by checking mirrors for signs of trouble; monitoring instruments and looking, listening, and feeling for malfunctions; making periodic roadside inspections of critical components; and meeting en route requirements for transporting all types of cargo.
5. Perform post-trip inspections by making accurate notes of actual and suspected component abnormalities or malfunctions.
6. Complete driver vehicle inspection report (DVIR).

Exercise Basic Control (Performance Skill #3)

1. Enter cab properly and adjust all safety components.
2. Start and warm up the engine.
3. Place vehicle in motion and accelerate smoothly.
4. Monitor controls, mirrors, instruments and gauges.
5. Center and maintain vehicle in lane.
6. Maintain appropriate vehicle and engine speed on upgrades and downgrades.
7. Negotiate left and right curves and sharp turns for various trailer lengths.
8. Judge clearances around vehicle and physically check position for obstructions.
9. Maneuver into restricted areas in various positions.
10. Use proper backing maneuvers using reverse steering and warning flashers.

Execute Shifting (Performance Skill #4)

1. Shift up and down through all gears of multi-speed, dual range transmissions.
2. Double clutch and time shift for smooth and fuel-efficient performance.
3. Select proper gear for traffic, terrain, turns, speed and highway conditions.
4. Avoid riding the clutch.
5. Demonstrate progressive shifting technique.
6. Demonstrate skip shifting.
7. Demonstrate proper gear recovery.
8. Demonstrate how to stop in any gear.

Back and Dock CMV (Performance Skill #5)

1. Check and adjust mirrors.
2. Set parking brake, get out and check area for obstructions, position, and intended path.
3. Determine appropriate path and clearances prior to backing.
4. Activate warning flashers prior to moving into reverse gear. Sound horn prior to backing if CMV does not have a back-up alarm. Keep window open and radio off.
5. Position vehicle correctly before beginning a backing or docking maneuver.
6. Use appropriate ground guide spotter with clear signals, as necessary.
7. Execute reverse steering of an articulated vehicle.
8. Back slowly (using idle speed) in straight and curved lines.
9. Back into restricted space.
10. Constantly check when backing – look in mirrors; watch for conditions that could tilt trailer; identify obstructions.
11. Pull up and start over when necessary.
12. Park in various positions.

Couple Trailer (Performance Skill #6)

1. Align tractor and trailer units in a straight line for coupling.
2. Check trailer height. Trailer nose should be slightly higher than fifth wheel.
3. Secure trailer against movement, if applicable.
4. Back tractor slowly and straight into trailer kingpin, at right level, and with appropriate force; check coupling and pin engagement.
5. Check connection for security by pulling tractor forward gently. If connection is complete, release brake; if not, secure connection.
6. Connect and check air and electrical lines.
7. Check for symptoms of improper or incomplete connections and make necessary adjustments.
8. Set in-cab air brake controls.
9. Retract and secure landing gear and handle.

Uncouple Trailer (Performance Skill #7)

1. Spot trailer on surface capable of supporting weight and secure vehicle against movement.
2. Lower gear to raise trailer to correct height and check support.
3. Disconnect and secure air and electrical lines prior to uncoupling.
4. Uncouple trailer(s) using correct procedures for individual equipment, if applicable.

Perform Visual Search (Performance Skill #8)

1. Adjust all mirrors to appropriate specifications.
2. Scan both sides of the highway using quick glances to observe roadside activity and vehicles nearby.
3. Check mirrors for hazards regularly, and always before changing speed or direction.
4. Check instrument panel frequently.
5. Look ahead as far as possible during turns and on curves.
6. Check both sides before turning or changing lanes.
7. Monitor overtaking traffic in order to be aware of vehicles behind and in blind spots.
8. Avoid diverting attention from the path ahead.
9. Visually scan up to 10 to 12 seconds ahead of current position to identify potential hazards.

Manage and Adjust Vehicle Speed (Performance Skill #9)

1. Judge safe speed at which a curve and on/off ramps can be entered and slow speed to less than posted to allow for load and other conditions.
2. Obey speed limit.
3. Maintain proper speed to manage the space around the truck.
4. Judge and adjust speed to maintain traction.
5. Recognize and interpret all types of driving conditions and highway surfaces.
6. Judge and adjust speed at which vehicle control can be maintained under traffic conditions, crosswinds, highway conditions, weather conditions, size of the load, and limited visibility.

Manage and Adjust Vehicle Space Relations (Performance Skill #10)

1. Explain basic formula for determining safe following distance
2. Judge adequacy of gaps in traffic for passing, crossing traffic, entering traffic, and changing lanes.
3. Use proper visual search techniques to determine and achieve appropriate space.
4. Properly position vehicle for making all driving maneuvers, and avoid placing other vehicles or pedestrians in jeopardy.
5. Determine safe clearances on all sides including height of vehicle.
6. Adjust following distances for loads and highway conditions.

Check and Maintain Vehicle Systems and Components (Performance Skill #11)

1. Check engine systems to include fuel, oil, coolant, battery and electrical systems, air intake and filters, and exhaust system.
2. Check steering for excessive steering wheel play.
3. Check tire pressure and proper tire and wheel mounting.
4. Drain moisture from air brake supply reservoirs and fuel system.
5. Check brakes. Report problems or adjust according to regulation, certification and company policy.
6. Clean lenses and replace light bulbs, when required.
7. Change fuses and reset circuit breakers.
8. Check drive train coupling and suspension systems.

Diagnose and Report Malfunctions (Performance Skill #12)

1. Check each component and vehicle system. Identify vehicle systems or components that are functioning properly, are in imminent danger of failing, or functioning improperly.
2. Match symptom to possible list of problems.
3. Describe symptoms of improper operation completely and accurately to maintenance personnel.
4. Correct problems in accordance with company policy.
5. Avoid attempting to perform maintenance for which driver is unqualified.
6. Report breakdowns occurring en route according to company policy.
7. Complete a driver vehicle inspection report (DVIR).

Identify Potential Driving Hazards and Perform Emergency Maneuvers (Performance Skill #13)

1. Perceive immediately a potential threat from visible characteristics and actions of other highway users, highway conditions, and the environment.
2. Match and initiate prompt defensive or evasive action.
3. Use proper evasive steering techniques.
4. Respond appropriately to highway changes.
5. Identify situations where skids and jackknifing are likely to occur.
6. Utilize braking systems to stop the vehicle in the shortest possible distance while maintaining control.
7. Describe how to steer out of a skid in a way that will regain directional control without producing another skid.
8. Determine and maintain safe speed for slippery surface conditions.
9. Describe proper steering and stopping in the event of an emergency.

Identify and Adjust to Difficult and Extreme Driving Conditions (Performance Skill #14)

Night Operations

1. Judge and adjust speed, distances, and separation under nighttime conditions.
2. Demonstrate heightened scanning technique for night.
3. Use high beams legally; dim headlights in accord with law and safety.
4. Respond safely to glare of other vehicles.
5. Manage driver's fatigue.
6. Use proper signaling techniques.

Cold Weather Operation

1. Prepare for operation in cold weather, including removing snow and ice from windows, mirrors, brakes, lights, hand holds, and steps.
2. Inspect for cold weather operation by paying special attention to coolant level and mixture, heater, defrosters, wipers, washers, tire tread, brakes, lights, reflectors, wiring system, hoses, fuel, exhaust system, and fifth wheel.
3. Make sure that moisture is expelled from the air tanks after each trip.
4. Check weather information before and during trips and adjust plan accordingly.
5. Check for snow and ice accumulation (and remove it) on all surfaces, as well as brakes, air hoses, electrical wiring, lights and radiator shutters during operation. This includes trailer components and surfaces.
6. Utilize cold weather engine starting procedures.
7. Observe highway surface for changes in conditions.
8. Adjust rate of change in speed and direction to highway conditions to avoid skidding.
9. Coordinate acceleration and shifting to overcome the resistance of snow, sand, and mud.
10. Carry additional food and clothing to deal with weather delays.

Hot Weather:

1. Check tires, lubrication, levels and operation of cooling system, fan belts, fans and hoses, and check the radiator for debris.
2. Carry an ample supply of drinking water.
3. Inspect tires frequently.

Mountainous Terrain:

1. Check brake adjustment prior to mountain driving.
2. Use right lane or designated truck lanes.
3. Place transmission in correct gear for engine speed on downgrade.
4. Use proper braking technique and maintain proper engine speed on downgrades.
5. Explain or demonstrate operation of special speed reduction devices properly; e.g., engine brakes.
6. Monitor brakes for overheating on downgrades.
7. If brakes fail on a downgrade, use truck escape ramp, if available.
8. Observe temperature gauge frequently when pulling heavy loads up long grades.
9. Use 4-way flashers in accordance with local laws.

Wet Conditions

1. Operate CMV within the capabilities and limitations of equipment.
2. Check anti-lock brakes stability control.
3. Adjust speed for conditions.
4. Select proper gear for highway conditions and surface.
5. Maintain increased following distance.
6. Adjust operation of vehicle to weather conditions, including speed selection, braking, direction changes, and following distance to maintain control and avoid jackknifing.
7. Assure safe operation of brakes after driving through deep water.
8. Use windshield wipers, washers and defrosters to maintain visibility.

Windy Conditions

1. Operate CMV within the capabilities and limitations of the equipment.
2. Judge and adjust speed and following distance for conditions.
3. Adjust steering to compensate for side forces generated by wind.
4. Scan for unusual debris on highway.
5. Maintain increased following distance.

Construction Zones

1. Maintain adequate following distance.
2. Adjust speed for conditions or as directed when entering, exiting, or driving within the construction zone.
3. Perform visual search for vehicles approaching from rear, particularly on right side.
4. Observe and adjust to pavement surface differences.
5. Observe and identifies right of way for pedestrians and construction equipment.

Passive (Unmarked or Uncontrolled) Railroad Crossings

1. Stop when required at proper distance from crossing.
2. Maintain speed without shifting or stopping at crossing.
3. Do not cross until ample room is available for CMV to clear.
4. Do not stop until CMV has cleared crossing.
5. Approach crossing with caution, turn off communication devices and roll window down to listen for oncoming traffic and warnings.
6. Insure there is ample undercarriage clearance before crossing.
7. Obey railroad signal or direction at crossing.

Handle and Document Cargo (Performance Skill #15)

1. Prepare manifest, as required.
2. Verify cargo types, nature, amount, and condition on pick-up and delivery.
3. Verify seals, if used.
4. Cover cargo, as necessary.
5. Obtain appropriate signatures.
6. Verify information on bill of lading and properly record/report discrepancies and damage.
7. Verify that load distribution on trailer fits within regulations.
8. Verify that placards match load and meet regulations; correct placards, as necessary.
9. Operate common types of cargo handling equipment safely.
10. Select proper sizes of chain, cable, nylon webbing, steel strapping, or rope.
11. Secure load in accordance with applicable regulatory requirements.
12. Stop and inspect cargo, according to regulations.
13. Demonstrate proper lifting techniques required to safely load and unload cargo.

Address Accident Scenes and Reporting Procedures (Performance Skill #16)

1. Stop and park CMV appropriately in safe location.
2. Notify emergency responders; place warning devices as required.
3. Provide aid for injured individuals if properly trained and certified.
4. Cooperate with first responders or emergency personnel.
5. Operate fire extinguishers correctly, if required.
6. Protect self from blood-borne pathogens.
7. Direct traffic, if necessary, until emergency personnel arrive.
8. Obtain information for accident reporting, including photographs in accordance with company policy.
9. Discuss accident details only with appropriate officials.
10. If hazardous materials are involved, call appropriate authorities and secure the area.
11. Stay at scene until emergency personnel and company grant permission to leave.
12. Notify carrier in accordance with company policy.

Address Environmental Issues (Performance Skill #17)

1. Check hoses, couplings, and other components that may contribute to environmental issues.
2. Monitor idle time and make appropriate adjustments.
3. Check regularly for signs of leaks.
4. Fuel carefully to avoid spills.
5. Recognize and report environmental issues.

Plan Trips/Make Appropriate Decisions (Performance Skill #18)

1. Plan a route from one point to another that is optimal in terms of travel time, fuel costs, potential hazards, and federal, state/provincial, and local travel restrictions.
2. Arrange to secure permits required by the nature of the vehicle, its cargo, and route to be traveled.
3. Arrange a secure place for vehicle on layovers, especially when transporting hazardous materials.
4. Calculate miles, fuel use, stops and expenses. Obtain funding for expenses.
5. Interpret maps/program and Global Positioning Systems.
6. Estimate travel time, plan rest stops and layovers to ensure adequate rest to comply with hours of service regulations (where applicable).
7. Document expenses according to policy.

Use Effective Communications (Performance Skill #19)

In-Vehicle

1. Signal intentions such as lane changes, hazards, and backing up.
2. Use horn, headlights, and other lights appropriately.
3. Establish and use eye contact with drivers and pedestrians as a warning.
4. Avoid making decisions only on basis of another's signal.
5. Avoid directing traffic.
6. Use on-board and personal communication devices only when vehicle is parked.

Personal Interaction

1. Use on-board and personal communication devices only when vehicle is parked.
2. Communicate clearly, professionally and effectively with company, customers, and general public.
3. Present a professional image while in control of a CMV.

Manage Personal Resources While on the Road (Performance Skill #20)

1. Identify elements of fatigue. Employ control strategies.
2. Identify characteristics of stress, and adopt stress reducing techniques.
3. Follow healthy diet and recreation while on the road.
4. Establish a good exercise program while on the road.
5. Make safe decisions about where to stop and stay.
6. Practice good personal hygiene.
7. Communicate with family and/or support system frequently or as needed.

Record and Maintain Hours of Service Requirements (Performance Skill #21)

1. Interpret and demonstrate compliance with hours of service regulations.
2. Record time accurately.
3. Perform calculations necessary to recap and apply daily totals to the hours of service regulations.
4. Determine driving hours remaining on a particular day or tour of duty.
5. Understand and maintain support documents in accordance with regulatory requirements.

APPENDIX B: Related Skills and Knowledge

Duty	Knowledge
Read and Interpret Control Systems	<p>Identify, locate, and explain function of each of the primary controls including those required for steering, accelerating, shifting, braking, and parking.</p> <p>Identify, locate, and explain function of each of the secondary controls including those required for control of lights, signals, windshield wipers and washers, interior climate, engine starting and shutdown, suspension and coupling.</p> <p>Identify, locate, explain, and indicate the acceptable operating range of the various instruments required to monitor vehicle and engine speed as well as the status of fuel, oil, air, cooling, exhaust, and electrical systems.</p> <p>Realize that instruments malfunction so that displayed information must be augmented from other sources.</p> <p>Identify, locate and explain emergency equipment</p>
Perform Vehicle Inspections	<p>Explain systematic procedure to assure quick and complete inspection.</p> <p>Know the effect of undiscovered malfunctions upon safety, effectiveness, and economy.</p> <p>Know federal, state/provincial, and other regulations governing inspection, including special regulations for hazardous cargo.</p> <p>Know procedures for pre-trip, en route and post-trip inspection and how to prepare a driver vehicle inspection report (DVIR).</p> <p>Know out-of-service criteria and FMCSR rules for operating unsafe vehicles.</p> <p>Know how to report malfunctions and problems.</p> <p>Know locations and tolerances for required components and systems.</p> <p>Know length and height of vehicle.</p>
Exercise Basic Control	<p>Know clearance requirements of CMV.</p> <p>Know starting, warm-up, and shut down procedures according to manufacturer's specifications.</p> <p>Know correct operating procedures for air brakes in all conditions.</p> <p>Know correct operating procedures for using anti-lock brakes and non anti-lock brakes.</p> <p>Know steering techniques to track vehicle in lane and drive a straight line.</p> <p>Know the purpose/use of the Positive Differential Lock.</p> <p>Demonstrate proper position from which to begin a turn and how to "set-up", execute, and recover from a turn.</p> <p>Know/recognize space requirements for various trailer lengths.</p> <p>Know operation of specialized equipment such as split axle and dump valves.</p> <p>Know purposes and consequences of engine brakes.</p> <p>Know proper hand placement on steering wheel.</p>

Execute Shifting	<p>Know shifting procedures and patterns for different transmissions.</p> <p>Know RPM and MPH for proper gear selection.</p> <p>Recognize common shifting errors and their consequences.</p> <p>Know gears that most likely will be the best choice under certain traffic, turns, highway, and terrain conditions.</p> <p>Know benefits of progressive shifting in terms of improved fuel mileage and reduced operating costs.</p> <p>Know the importance of matching RPM and MPH for down shifting.</p>
Back and Dock CMV	<p>Know proper mirror adjustment and use.</p> <p>Know procedures for routine backing situations including visual search and warning communication.</p> <p>Know rules and procedures for backing in and across traffic.</p> <p>Identify and explain hazards of backing and specific dangers in various situations including blind side backing.</p> <p>Explain principles of reverse steering.</p> <p>Know that the "best" backing is finding a way not to back.</p>
Couple Trailer	<p>Know proper chocking procedures.</p> <p>Know components and function of fifth wheel coupling.</p> <p>Know coupling procedures and king pin-lock testing.</p> <p>Know components, function, and connection procedures of air and electrical lines.</p> <p>Know air pressure requirements.</p> <p>Know how to adjust mirrors for optimal vision field.</p> <p>Know surface conditions and characteristics necessary to support weight.</p>
Uncouple Trailer	<p>Know uncoupling procedure for individual equipment.</p> <p>Know components, functions and disconnection procedures of air and electrical lines.</p>
Perform Visual Search	<p>Know the correct adjustments and specifications for various types of mirrors.</p> <p>Know the differences in images presented by flat and convex mirrors.</p> <p>Know the importance of making all visual checks to the sides and rear of the vehicle.</p> <p>Know the relationship between speed and sight distance.</p> <p>Know the search patterns for straight driving, changing speed or direction, and entering or crossing traffic.</p>
Manage and Adjust Vehicle Speed	<p>Know the relationship of speed to stopping distance.</p> <p>Know the proper use of cruise control.</p> <p>Know the effect of speed on center of gravity, loss of stability, available sight distance, and highway surface conditions.</p> <p>Know consequences of speeding violations.</p>
Manage and Adjust Vehicle Space Relations	<p>Know the proper following distances for various conditions to ensure room to maneuver and respond to errors of other drivers.</p> <p>Know the importance of checking mirrors.</p>

	<p>Know how the trailer reacts in individual maneuvers such as turning or backing.</p> <p>Know dangers created by overhead obstructions.</p> <p>Know guidelines concerning commercial vehicle following distances, lane use, changing lanes, and passing other vehicles.</p>
<p>Check and Maintain Vehicle Systems and Components</p>	<p>Know the location, function, operation, and common failures of the following vehicle components: frames, suspension, and axles; engines; fuel systems, air intake and exhaust systems; lubrication systems; cooling systems; electrical systems; drive trains; brake systems; wheels, bearings, rims and tires; steering systems; and coupling systems.</p> <p>Know the inspection, repair, and maintenance regulations of the Federal Motor Carrier Safety Regulations.</p> <p>Know how to perform CMV inspections.</p> <p>Know to avoid attempting repairs, if unqualified.</p>
<p>Diagnose and Report Malfunctions</p>	<p>Know the procedures for starting vehicles with dead batteries.</p> <p>Recognize the symptoms of vehicle malfunction revealed through instruments, operation characteristics, sight, sound, feel, and smell.</p> <p>Know procedures for reporting malfunctions.</p> <p>Know how to complete a driver vehicle inspection report (DVIR).</p> <p>Know company maintenance policy.</p>
<p>Identify Potential Hazards and Perform Emergency Maneuvers</p>	<p>Know the visible characteristics of highway conditions that present a hazard to safe CMV operation.</p> <p>Know the characteristics of other highway users (drivers or pedestrians) that make them dangerous or provide clues to potential dangers.</p> <p>Know the consequences of using the engine braking systems or trailer brake on slippery roads.</p> <p>Know that in an impending head-on collision, it is generally safer to leave the highway to the right than to strike another vehicle.</p> <p>Know procedures for quick stops, quick turns, and evasive maneuvers.</p> <p>Know procedures for handling brake failure and blowouts.</p> <p>Know the role of skid control in preventing accidents.</p> <p>Know skid dynamics, including friction, wheel load, and force.</p> <p>Know causes of skidding - power and braking.</p> <p>Know types and causes of skidding (e.g., change in speed and change in direction.)</p> <p>Know the characteristics of a tractor jackknife, trailer jackknife, front and all wheel skids.</p> <p>Know skid recovery procedures.</p> <p>Know how to maintain directional control and bring a CMV to a stop in the shortest possible distance while maintaining directional control when operating on a slippery surface.</p> <p>Know the operating characteristics of A.B.S. and non-A.B.S. brakes.</p>

<p>Identify and Adjust to Difficult and Extreme Driving Conditions</p>	<p><u>Night Operation</u> Know the effect of level of illumination on ability to see. Know the value of high beams to nighttime visibility. Know state/provincial laws covering use of headlights and auxiliary lights. Know the symptoms and danger of fatigue. Know the effect of headlight glare on visibility of others and its implications for the safety of both drivers. Know the general factors affecting night vision, including interior illumination and use of sunglasses during daytime. Know about increased wildlife movement at night. Know proper use of cruise control at night.</p> <p><u>Cold Weather Operation</u> Know how to mount and dismount tire chains, in accordance with applicable state regulations. Explain how to extricate the vehicle from snow, sand, and mud by maneuvering or towing. Know how to inspect vehicle components for cold weather operations. Know the effect of cold temperatures on fuel. Understand basic survival skills in the event a vehicle becomes inoperable.</p> <p><u>Hot Weather Operation</u> Know procedures for hot weather driving. Know hazards of hot weather driving. Know the effect of hot weather on vehicle operation. Know the effect of hot weather on tire pressure and tire life.</p> <p><u>Mountainous Terrain</u> Know the effect of vehicle weight and speed on braking and shifting ability on long downgrades. Identify the function and value of escape ramps. Understand the meaning and use of percent of grade signs. Recognize that the weight of the truck poses hazards on long downgrades unless the truck is put into proper gear. Know that attempting to downshift on steep declines is too dangerous to attempt. Know how to mount and dismount tire chains, in accordance with applicable state regulations.</p> <p><u>Wet Conditions</u> Know the conditions that produce low traction, including initial rainfall, ice, snow, and mud. Identify the effects of rain, snow, and ice upon the ability to maneuver and stop the vehicle. Explain causes and procedures for avoiding skidding and jackknifing. Recognize the nature of hydroplaning and the highway and vehicle conditions that produce it. Know the effect of ice, snow, water, mud, and debris on the operation of the brakes. Recognize the need to make sure all wheels are free to turn.</p>
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	<p><u>Windy Conditions</u> Know the impact windy conditions may have on fuel mileage and adjust trip planning accordingly. Know the effect wind can have on the ability to properly steer and control a CMV and adjust accordingly.</p> <p><u>Construction Zones</u> Know that equipment, workers, or pedestrians may enter your path, so increase visual search to avoid construction hazards. Know that driver must maintain an adequate following distance and stay in your lane. Driver may have to double or triple following distance in bad weather. Know that driver must check, or scan mirrors for drivers that may not have observed the change in the highway conditions, or are attempting to pass, particularly from the right. Know that when following a construction vehicle into the work zone, driver must maintain additional following distance and be prepared for sudden stops or lane changes. Know how to use advance warning signs and reduce your speed accordingly. At night, these signs may be more difficult to see; look for work lighting or flashing warning signals. Know to adjust speed to, or below, the posted speed limits. Know that pavements and highway surfaces may be soft and there may be significant drop-offs between lanes and between the pavement and the shoulder. The uneven surface of a median crossover may cause severe rocking of vehicle. Know that rain and high winds can increase hazards around construction zones. Know that driver must exit construction zones with caution.</p> <p><u>Passive (Unmarked or Uncontrolled) Railroad Crossings</u> Know when driver is required to stop at a railroad crossing. Identify active and passive railroad crossings. Know how physical characteristics of crossings affect a driver's visibility. Identify common driver distractions that affect safety at crossings. Know rules governing convictions of federal, state/provincial, or local laws dealing with railroad crossings. Know that there is sufficient undercarriage clearance to negotiate a crossing. Know rules and procedures associated with various loads and railroad crossing.</p>
<p>Handle and Document Cargo</p>	<p>Know rules for checking loads. Know the procedures for proper completion of freight bill, cargo manifest, bill of lading, and other required forms. Know that it is the driver's responsibility for ensuring paperwork is properly filled out. Explain the possible consequences and penalties of improperly completed documentation.</p>

	<p>Know applicable recordkeeping requirements.</p> <p>Know applicable regulatory requirements for vehicle weight.</p> <p>Know procedures for loading and unloading.</p> <p>Know regulatory requirements for cargo securement.</p> <p>Know common use of cargo handling equipment such as pallets, jacks, dollies, hand trucks, forklift trucks, nets, slings, rug poles, Johnson bars, and other equipment, in accordance with applicable federal/state/provincial regulations (e.g., OSHA).</p>
Address Accident Scenes and Reporting Procedures	<p>Know applicable laws and company requirements regarding stopping and rendering assistance at the scene of an accident.</p> <p>Explain procedures for protecting the scene of an accident and applicable requirements for same.</p> <p>Identify accident reporting requirements regarding accident reporting.</p> <p>Distinguish types of fire extinguishers appropriate to each class of fire.</p> <p>Know procedures for extinguishing cargo, engine, electrical, and tire fires.</p> <p>Explain where to safely stop vehicle in the event of a fire.</p> <p>Know how to gather information at the accident scene.</p> <p>Know how to complete Accident Reporting Forms.</p> <p>Know how to use the Emergency Response Guide.</p>
Address Environmental Issues	<p>Know environmental regulations that affect the profession.</p> <p>Recognize symptoms of problems.</p> <p>Know how to contain the spill.</p> <p>Know how to report and document problems.</p> <p>Know federal and state/provincial regulations about environmental issues.</p> <p>Know what how to refer to the Emergency Response Guide (E.R.G.) for appropriate procedures in the event of a spill or leak.</p>
Plan Trips/Make Appropriate Decisions	<p>Know the types of vehicles, cargoes, and routes requiring special permits.</p> <p>Know and follow regulations and the procedures for obtaining special permits.</p> <p>Identify common map symbols.</p> <p>Learn methods for good record keeping.</p> <p>Know procedures for route planning, including preparing paperwork, route selection, and estimating time, fuel, money, and personal needs.</p> <p>Know regulatory restrictions on vehicle size and weight.</p> <p>Know that failure to obtain necessary permits can result in extensive delay and fines.</p>
Use Effective Communications	<p><u>In-Vehicle</u></p> <p>Know when to activate turn signals to provide adequate warning without creating confusion.</p> <p>Know state/provincial laws/regulations for turn signals.</p> <p>Recognize importance of signaling to the prevention of accidents.</p>

	<p>Know importance of not giving signals that lead to the assumption of liability (e.g., inviting others to pass.) Know importance of using horn solely to give warning. Know conditions under which other drivers may give false signals. Know that signaling intention is essential to safe operations. Know sources of and methods to minimize distracted driving.</p> <p><u>Personal Interaction</u> Know and use proper procedures for handling complaints and concerns. Know how to listen and respond effectively. Know how to use communication devices to convey appropriate and effective communications. Know how to control anger when interacting with others. Understand the importance of presenting a good image through communications. Be aware of technology used in communications within the trucking industry.</p>
<p>Manage Personal Resources While on the Road</p>	<p>Understand and know how to address driver wellness topics including: diet, exercise, personal finance, stress and techniques to control it, sleep requirements and biorhythms, effects of drugs and alcohol, and signs of and control of fatigue. Understand employer's payroll process. Know the importance of communicating with family and/or support system frequently. Identify safe and quiet truck stops.</p>
<p>Record and Maintain Hours of Service Requirements</p>	<p>Know all the requirements of Part 395 of the FMCSR covering Hours of Service. Understand how to comply with the Hours of Service Regulations and know the procedures for completing the driver's daily log. Know the procedures for using logbook recap. Know the consequences of failure to comply with hours of service regulations. Know en route inspection requirements. Know industry methods for recording hours of service. Know how to use logbooks in planning a trip and meeting schedules.</p>

APPENDIX C: Attitudes, Aptitudes, Psychomotor Skills

Duty	Attitude/Aptitude
Read and Interpret Control Systems	Be willing to read and use gauge information in making on-going decisions while driving.
Perform Vehicle Inspections	Believe that the time spent on inspections saves lives and down time later.
Exercise Basic Control	Accept that "Safety is an Attitude."
Execute Shifting	Coordinate hand and feet movement, eyesight, hearing to execute safe, smooth, and efficient operation.
Back and Dock CMV	Be willing to get out and look. Be willing to stop process and begin again.
Couple Trailer	Believe that accidents caused by improper coupling are preventable. Have strength to raise landing gear and deal with chocks (if used).
Uncouple Trailer	Believe that accidents caused by improper uncoupling are preventable.
Perform Visual Search	Value visual searches as critical techniques for monitoring changing highway and traffic conditions.
Manage and Adjust Vehicle Speed	Believe that only through proper speed management can he/she acquire the space to safely maneuver the truck.
Manage and Adjust Vehicle Space Relations	Believe that space management is critical to the safe operation of the truck.
Check and Maintain Vehicle System and Components	Understand that vehicle is lifeline that provides driver economic stability; that inspecting and maintaining equipment and systems saves down time and protects the driver's and public's safety.
Diagnose and Report Malfunctions	
Identify Potential Hazards and Perform Emergency Maneuvers	Be willing to stop, report conditions, and stand firm. Driver must believe that good judgment is essential for skid avoidance.
Identify and Adjust to Difficult and Extreme Driving Conditions	Understand that night driving has additional requirements for driving safely, and requires additional attributes and skills. Acknowledge that adverse weather conditions require special driving techniques and that bad weather accidents

	<p>and jackknifing can be prevented by proper driving techniques.</p> <p>Understand that windy conditions can create additional requirements for driving safely and requires additional attributed and skills.</p> <p>Acknowledge that windy conditions require special driving techniques and can greatly affect CMV handling and fuel mileage chrematistics.</p>
Handle and Document Cargo	Be willing to exercise care with paperwork, securing loads, and reporting damage.
Address Accident Scenes and Reporting Procedures	Be able to maintain self-control and be a professional. Be willing to offer assistance.
Address Environmental Issues	Obey the rules for states and nation. Recognize that environmental issues are everyone's concern.
Plan Trips/Make Appropriate Decisions	
Use Effective Communication	Be willing to demonstrate self control when communicating. Be willing to use proper signaling techniques. Recognize that signals do not convey the "right" to execute a maneuver.
Manage Personal Resources While on the Road	Become a professional driver and accept the responsibility of being one. Recognize need for strong support group at home.
Record and Maintain Hours of Service Requirements	Accept responsibility of keeping an accurate, legal, and current log book at all times.