

Curriculum Standard Guidelines for Entry-Level Tractor-Trailer Driver Courses



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PREFACE

This publication is made available in the interest of truck safety and the advancement of tractor-trailer driver training.

The skill standards and accompanying curriculum standards that may be attached hereto are the product of the collective wisdom of more than 250 motor carrier safety personnel, drivers, and educators teaching in the field of tractor-trailer operating, curriculum and safety. The curriculum standards represent the touchstones that a tractor-trailer 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.

The curriculum standards that may be attached hereto incorporate the curricular recommendations of the U. S. Department of Transportation's Federal Highway Administration's Office of Motor Carriers. They represent the minimum curriculum judged by the Professional Truck Driver Institute, Inc. (PTDI) to be necessary prior to operating a tractor-trailer.

The standards and requirements for course certification that may be attached hereto have been adopted as the official policy of PTDI and serve as the criteria by which PTDI evaluates the training course(s) and curriculum of organizations seeking certification. The standards specified in this document must be substantively met before PTDI approves of and issues its certification to a driver training course.

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.

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TABLE OF CONTENTS

	Page
Introduction	4
Basic Curriculum	5
Minimum Training Hours	6
Time Waiver Requirements for Independent Study & Waiver Form	7-8
Discretionary Classroom Hours	9
Defensive Driving Course	9
Recommended Additional Classroom Time That Exceeds Recommendations	9
Externship Option & Extended Externship	10
Ratios	11
Time Exemptions	11
Definitions of Terms	12
Content	14
Organization Of The Standards	14
Exhibit 1: Programmatic Course Options In Hour	15
Exhibit 2: Minimum Hours For Training	16

CURRICULUM UNIT STANDARDS

UNIT 1 - BASIC OPERATION

1.1 Orientation	17
1.2 Control Systems	18
1.3 Vehicle Inspections	19
1.4 Basic Control	20
1.5 Shifting	21
1.6 Backing and Docking	22
1.7 Coupling and Uncoupling	23

UNIT 2 - SAFE OPERATING PRACTICES FOR BASIC OPERATION

2.1 Visual Search	24
2.2 Vehicle Communication	25
2.3 Speed Management	26
2.4 Space Management	27

UNIT 3 - ADVANCED OPERATING PROCEDURES

3.1 Night Operation	28
3.2 Extreme Driving Conditions	29
3.3 Hazard Perception	31
3.4 Emergency Maneuvers/Skid Avoidance	32
3.5 Skid Control and Recovery	33
3.6 Passive (Unmarked or Uncontrolled) Railroad Crossings	34

UNIT 4 - VEHICLE SYSTEMS AND REPORTING MALFUNCTIONS

4.1 Identification and Maintenance	35
4.2 Diagnosing and Reporting Malfunctions	36

UNIT 5 - NON-VEHICLE ACTIVITIES

5.1 Handling and Documenting Cargo	37
5.2 Environmental Issues	38
5.3 Hours of Service Requirements	39
5.4 Accident Procedures	40
5.5 Managing Life on the Road/Personal Resources	41
5.6 Trip Planning	42
5.7 Communication Skills	43

INTRODUCTION

Formal training is the most reliable way to learn the many special skills required for entry-level tractor-trailer driving. The more skills learned in supervised training, the fewer that must be mastered on the job. Formal, supervised training is available from private truck driver training schools, public institutions, and in-house motor carrier training programs. Because of their important role in truck safety, these training organizations are guided by minimum standards against which the quality of their training courses can be measured. It is with these standards in mind that the Professional Truck Driver Institute offers the Tractor-Trailer Driver Curriculum Standard Guidelines.

The curriculum standards are based on the skills, knowledge, tasks, and duties of entry-level truckers, as explained and rated by truckers. They also incorporate the curricular recommendations of the Proposed Minimum Standards for Training Tractor-Trailer Drivers, issued by the U.S. Department of Transportation's Federal Highway Administration's Office of Motor Carriers (formerly BMCS) in 1985. The USDOT recommended curriculum was adapted by the PTDI to meet the minimum criteria and requirements of the PTDI course certification program.

Note that the curriculum standards 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. Some items listed as skill standards should not be taught by schools due to liability issues, excessive costs, or the desire by employers to teach these duties to their own specifications. Therefore, some tasks, skills and knowledge are more appropriately taught by the employing trucking company. Still other skills must be self-taught and mastered by the individual driver.

Note: These Curriculum Standard Guidelines are one of three sets of standards – “Skill Standards for Entry-Level Tractor-Trailer Drivers,” “Curriculum Standard Guidelines for Entry-Level Tractor-Trailer Driver Courses” and “Certification Standards & Requirements for Entry-Level Tractor-Trailer Driver Courses.”

BASIC CURRICULUM

The curriculum standards outline the **minimum** curriculum content necessary for mastering the skills for the entry-level tractor-trailer driver; that is, the minimum training required to become a second-seat driver who will continue on-the-job training with a trucking firm upon completion of this course in a teaching institution.

A "**second seat**" driver is an individual who has the knowledge and skill to operate a commercial vehicle safely, but, without supervision, lacks the experience to perform as a solo driver. The longer programs that include the additional recommended instruction and an externship will prepare the student to be a solo driver. A "**solo**" driver is an individual who has the knowledge, skills, and experience to operate a commercial vehicle safely from the point of origin to the ultimate destination without supervision. This individual can, within regulation, achieve the outcome of moving freight efficiently.

This perspective mirrors the DOT model curriculum which indicates that the BMCS Standards are minimum standards. Therefore, this Curriculum is to be considered a basic or "**core type**" curriculum. Graduates of this Curriculum cannot be considered fully-trained, "ready-to-solo" type drivers. This can only be accomplished when the Curriculum is considerably expanded and enriched to provide both additional driving time and material pertinent to the particular driving job that the student is being trained for. Students graduating from this basic Curriculum will still need additional road experience and vocational-type of training (such as loading tankers, chaining on loads, etc.) under the guidance and supervision of an experienced, professional driver before being considered fully qualified to operate in interstate or foreign commerce (as required by Regulation 391 of the Federal Motor Carrier Safety Regulations.)

The program combines competency (proficiency) with a minimum of hours of training necessary to achieve **basic skills**. Most lessons involve both classroom/lab instruction and some practical application behind the wheel, either on the range or on the road.

MINIMUM TRAINING HOURS

Instructional time may be calculated as either **60- or 50-minute hours**. There are 8880 minutes required in a 60-minute hour course and 8900 minutes in a 50-minute hour course. **In this document training hours are expressed as 60-minute hours, followed by 50-minute hours shown in parentheses; e.g. 148 (178).**

The minimum total hours of instruction is 148 hours (178 hours in 50-minute hours), with at least 44 (53) of those hours being behind-the-wheel time while the student is actually driving the vehicle. Observation and break time is in addition to the 148 (178) hours. In other words, the minimum required per-student hours of instruction is 148 (178) hours. In order to determine the programmatic hours of any particular course, one would need to use the ratio of students per vehicle that the course employs in order to multiply the number of behind-the-wheel hours to calculate total course time. For example, if the student to vehicle ratio (SVR) is 3:1, the total hours must be 236 in 60-minute hours or 284 (50-minute hours):

In 60-minute hours:

44 hours BTW per student x 3 students = 132 hours + 104 classroom/lab = 236 hours

In 50-minute hours:

53 hours BTW per student x 3 students = 159 hours + 125 classroom/lab = 284 hours

See Exhibit 1, “Programmatic Course Options in Hours.” Also see Standard 5.2 – Instructional Time in “Certification Standards & Requirements for Entry-Level Tractor-Trailer Driver Courses.” ”

There are **required hours for each of the five units of instruction** within the curriculum. (See Exhibit 2 – “Minimum Hours for Training”.) The hours relate both to classroom and laboratory hours as well as to behind-the-wheel hours. The training institution has the prerogative of arranging and allocating those hours within each unit to best suit the needs of the students and carriers that the specific training institution serves. *On a case-by-case basis, up to 15 percent of the required classroom/lab training hours may be adjusted among the units of instruction at the discretion of the training institution. However, the 44 hours behind the wheel may not be reduced.*

Of the 44 (53) hours of individual **behind-the-wheel instructional time**, at least 12 (14) hours must be spent on the range and at least 12 (14) hours must be spent on the street/road for individual trainees. The remaining 20 (25) hours may be used in any combination of range and street/road BTW time.

The 44 (53) hours of **behind-the-wheel time** means actual driving time; observation and break time is in addition to the 44 (53) hours.

Some of the **behind-the-wheel time** is expected to occur **at night** in areas without illumination. Two hours can be spent on the range and one hour can be spent on the street/road. The standard recognizes that some locations may be precluded from meeting this standard due to geographic considerations.

It is the training institution’s discretion as to how time will be allocated between the functions of classroom and laboratory time.

TIME WAIVER REQUIREMENTS FOR INDEPENDENT STUDY

Up to one-third (33%) of the minimum classroom instructional hours may be waived through the use of suitable quality, independent study materials for any unit of instruction that requires two or more hours of instructional time. Visual, auditory, simulator, computer-assisted materials, and problem solving activities are encouraged for independent study.

To qualify for this waiver, the applicant organization must accomplish the following:

1. Complete and submit the accompanying form on page 8 (Proposed Substitution of Independent Study for Classroom Hours) for each unit of instruction for which a waiver is requested.
2. Provide sufficient documentation that the independent study materials, when combined with classroom instruction, are capable of enabling students to attain all of the specific objectives of the unit.

Independent study materials, like all other instructional materials, are considered suitable when they meet these qualifications:

Comprehensive - The materials and lessons are sufficiently comprehensive in that they help to enable students to meet unit objectives.

Current and Accurate - The instructional materials are up-to-date and accurate.

Qualified Authorship - Authors are identified and recognition is given to their qualifications in the field. If standard textbooks or video tapes are used, titles, authors, publishers, and copyright dates are listed.

Reading Levels - Reading level is keyed to the reading competence of the average student.

Carefully review Standard 5.10, Independent Study, for all components that must be addressed to qualify for the time waiver. See "Certification Standards & Requirements for Entry-Level Tractor-Trailer Driver Courses."

Note: Independent study and homework are not synonymous.

PTDI Requirements for Course Certification

**PROPOSED SUBSTITUTION OF INDEPENDENT STUDY FOR
CLASSROOM HOURS
(TIME WAIVER)**

Please complete a separate time waiver form for each unit for which you are requesting a waiver. See “Curriculum Standard Guidelines for Entry-Level Tractor-Trailer Driver Courses” page 6 for instructions.

Unit for which it is proposed that independent study be substituted:

- Unit 1 – Basic Operation _____
- Unit 2 – Safe Operating Practices for Basic Operation _____
- Unit 3 – Advanced Operating Procedures _____
- Unit 4 – Vehicle Systems and Reporting Problems _____
- Unit 5 – Non-Vehicle Activities _____
- Other – _____

Classroom hours required for that unit (Refer to Page 15 of “Curriculum Standard Guidelines for Entry-Level Tractor-Trailer Driver Courses”): . _____

Total number of hours being submitted for a time waiver for this unit: _____

Performance objectives for this unit (Refer to Curriculum Guidelines Pages 17-43):

Knowledge objectives for this unit:

Independent Study Material:

Title _____ Author _____

Chapter No. _____ Title _____

or
Other material _____

Estimated time to study this material or to complete the project _____

Procedure used to determine whether the student did in fact study the material _____

If test, provide copy of the test. Training day and time test will be given _____

DISCRETIONARY CLASSROOM HOURS

In addition to the prescribed 89 (108) hours for the five classroom/lab units (see Exhibit 2: Minimum Hours for Training), there are an additional 15 (17) **discretionary classroom hours** that the individual training institution may allocate as it wishes across their various instructional units, either by expanding the five PTDI curriculum units or by adding topics such as additional DOT regulations; First Aid/CPR; CDL written preparation; a defensive driving course; or information about the job search. However, these hours may not substitute for driving hours. Each institution is responsible for providing discretionary hour information and explanation in its record keeping to PTDI.

Note: The 89 (108) prescribed hours for the five classroom/lab units plus the 15 (17) discretionary classroom/lab hours equals the total minimum 104 (125) required classroom/lab hours.

DEFENSIVE DRIVING COURSE

Formal **Defensive Driving** content may be used as part of the material associated with units on Hazard Perception, Visual Search and Space Management.

RECOMMENDED ADDITIONAL CLASSROOM TIME THAT EXCEEDS MINIMUM

The 148 (178) hours refers to the minimum requirements of student contact hours. PTDI recommends an additional 21 (25) hours of classroom time to that minimum amount, with the time in the classroom distributed across at least five subjects: additional DOT regulations; First Aid/CPR; CDL written preparation; a defensive driving course; and information about the job search. In the recommended program, the 44 (53) hours behind-the-wheel requirement does not vary, but may be expanded at the discretion of the course. See Exhibit 1 “Programmatic Course Options in Hours.”

EXTERNSHIP OPTION

There also is an **externship option** that allows a training program to defer up to 14 (17) of the 44 (53) behind-the-wheel training hours of any individual to a trucking firm, where that time would actually be completed under the close supervision of a driver-trainer attached to the firm. That is, of the total 44 (53) behind-the-wheel (BTW) hours, 30 (36) hours must be conducted during the school/residence part of the program.

In **externship** designs, **time equivalents** indicate that three (3) hours of externship in-the-truck instruction equals one (1) hour of PTDI-certifiable course in-truck instruction conducted at the school. Therefore, if 14 (17) hours are moved from residence at the school to a carrier, the 14 (17) must be multiplied by three (3). Forty-two (42) (51) hours in externship at a carrier equals 14 (17) PTDI-certifiable hours.

At a minimum, an **externship option** should contain the following elements:

- (a) weekly student evaluations;
- (b) objectives that specify and direct training;
- (c) skilled and experienced driver-trainers to teach and monitor learning;
- (d) quality training materials;
- (e) a curriculum that describes the elements of training that the trainee will experience;
- (f) performance assessments of critical skills;
- (g) a system of feedback and record keeping for the trainee, for both the trainee and the cooperating school;
- (h) clearly articulated program policies on issues such as attendance, pay, insurance, and liability; and
- (i) a formal agreement between the carrier and the training institution.

In such a situation, the hours and activities involved in the externship would be closely monitored and included in the total training time provided to the student.

See Standard 9.1 – Externship Option in "Certification Standards & Requirements for Entry-Level Tractor-Trailer Driver Courses."

EXTENDED EXTERNSHIP

An externship of 140-240 hours of instruction can provide the additional training and experience necessary for an entry-level driver to progress to a solo driver.

Externships are useful innovations for longer courses of instruction.

Please note that the recommended program of additional time and the encouraged program of externship are initial attempts within PTDI to begin to create a program that may fit with the expected move in graduated licensing requirements over the next several years.

RATIOS

The maximum number of **students per vehicle/truck (SVR)** is 4 to 1. However, the recommended number of students per vehicle is 3 to 1. Case-by-case exceptions to the 4 to 1 ratio may be granted for certain orientation activities if the course reduces the ratio to 1 to 1 or 2 to 1 for continuing instruction.

The maximum number of **vehicles/trucks per instructor on the driving range** is three trucks to one instructor.

The maximum number of **vehicles/trucks per instructor on the street** is one truck to one instructor.

The **classroom ratio of students to instructors** is expected to average 30 trainees over a one-year period, never to exceed 36 trainees to one instructor in any class.

See Standard 5.4, Student/Instructor/Truck Ratios in "Certification Standards & Requirements for Entry-Level Tractor-Trailer Driver Courses."

TIME EXEMPTIONS

Some time exemptions may be authorized where:

- Attainment of instructional objectives for each unit can be demonstrated through objective measures on an individual basis.
- Students already have achieved partial fulfillment of objectives through verifiable experience prior to entering the training curriculum.
- Students are being trained by or for a specific company whose operations make attainment of certain objectives unnecessary.

DEFINITIONS OF TERMS

Behind The Wheel (BTW)

Behind the Wheel time is supervised time when the student has actual control of the power unit during the driving lesson that is being conducted on the range or on the street/road.

Breaks

Training schedules should contain reasonable breaks for both the student and the instructors. A fifteen-minute break in the morning, a half-hour to one-hour lunch period and at least a fifteen-minute break in the afternoon would correspond with the normal workday and is considered reasonable. Breaks are not PTDI-certifiable time.

Certification

The process of initially confirming that the minimum standards of the PTDI have been met or exceeded.

Classroom Instruction

Instruction that occurs in a non-vehicle, non-laboratory environment and is accompanied by instructional aids that facilitate large numbers of students at one time. Note: students are under direct supervision of an instructor who is not otherwise engaged.

Course

All the operations – including administration, qualified instructors, facilities and equipment – designed to provide qualified students with a course of instruction in the safe and responsible operation of tractor-trailer vehicles. Each course is evaluated and certified separately.

Course of Instruction

The curriculum -- instructional intent, content, methods, and materials.

Direct Contact Instructional Hours

An hour of scheduled instruction given to students; i.e., classroom, lab, behind-the-wheel time, observation time, and independent study, if used. (Note: observation time is not PTDI-certifiable time but is counted for purposes of determining the 10-hour maximum average length of day.)

Discretionary Hours

The 15 (17) hours in addition to the hours prescribed for the five PTDI curriculum units to complete the 104 required classroom/lab hours. These hours may consist of additional hours in those five PTDI curriculum units or additional topics such as additional DOT regulations, First Aid/CPR, CDL written preparation, a defensive driving course, or information about the job search. However, these hours may not substitute for driving hours.

Externship

The option that allows a training course to defer up to 14 (17) of the 44 (53) behind-the-wheel training hours of any individual student to a trucking firm, where that time is completed under close supervision of a driver-trainer attached to the firm. Three (3) BTW hours with the carrier equals one (1) hour BTW time conducted at the school; i.e., 3 hours with the carrier translates to 1 hour of PTDI-certifiable time.

Independent Study

An alternative method of guiding student learning in addition to traditional classroom instruction. It must meet the same objectives with regard to content, time on task and mastery of materials. It is not the same as homework, which merely reinforces materials covered in class. Time waivers may be used for independent study for up to one third (33%) of classroom instruction (maximum of 34 hours), with sufficient documentation. See Standard 5.10 – Independent Study in “Certification Standards & Requirements for Entry-Level Tractor-Trailer Driver Courses” and the time waiver instructions in “Curriculum Standard Guidelines for Entry-Level Tractor-Trailer Driver Courses” for details. Visual, auditory, simulator, computer-assisted materials and problem solving activities are appropriate independent study.

Instructional Hours

The hours in which actual training occurs. Training hours are expressed in the PTDI standards in two ways and in the following order – 60 minute hours (60 minutes of actual instruction) and 50 minute hours (shown in parentheses) in which only 50 minutes of actual instruction takes place within the hour.

DEFINITIONS OF TERMS continued

The minimum total hours of instruction is 148 hours (178 hours in the 50 minute hour) Note the total minutes of training are 8800 (8900). At least 44 (53) of those hours must be behind-the-wheel when the trainee is actually in control of the vehicle. Note: This minimum total hours (148 (178)) represents a one instructor to one student ratio.

Laboratory Instruction

Instruction occurring outside a classroom that does not involve actual operation of the vehicle and its components. Examples of laboratory instruction would include pre-trip, diagnosing/reporting malfunctions and handling cargo. Note: Students are under direct supervision of an instructor who is not otherwise engaged. Instruction that takes place on the range that is not BTW is considered lab time. Note: Lab time is calculated with classroom time.

Observation Time

Time spent observing while other students perform range and street BTW activities. Observation time is not PTDI-certifiable training time.

Organization

Any entity that provides a course of training and testing of tractor-trailer drivers. It includes for-hire and private motor carriers; colleges, universities, and vocational schools; career schools; business organizations devoted to training or testing; government agencies; labor and trade associations; and organizations who jointly sponsor a course.

Range Instruction (BTW)

Instruction that normally occurs in a protected area or “driving range” where students may make use of tractor-trailers without hazard from other road users. Note: Students are considered to be under direct supervision of an instructor who is not otherwise engaged in non-instructional activities. Range instruction means BTW time. Instruction that occurs on the range that is not BTW is considered lab time. At least 12 (14) of the required 44 hours BTW time per student must be on the range.

Recertification is the PTDI process of officially reconfirming that the minimum standards of the PTDI have been met or exceeded.

Street/Road Instruction (BTW)

Instruction that normally occurs on public streets and highways. During the street instruction the vehicle travels over a pre-planned route, or in a designated area, that is known to provide the road and traffic conditions needed to satisfy the instructional objectives of the street lesson being taught. Note: Students are considered to be under direct supervision of an instructor who is not otherwise engaged in non-instructional activities. At least 12 (14) of the required 44 (53) BTW time per student must be on the street/road.

Student:Vehicle Ratio (SVR) - Range

The number of students normally assigned to a vehicle/truck during range (BTW) training activities.

Student:Vehicle Ratio (SVR) – Street/Road

The number of students normally in the cab of the tractor-trailer, along with the instructor, during the street/road training portion of your program. (See Certification Standard 3.1 for instructor qualifications.)

Time Waiver

The form and documentation required in order to request that up to one third (33%) of normal classroom time be used for independent study.

CONTENT

The curriculum is outlined by units of instruction for preparing entry-level tractor-trailer drivers. Five broad sections of curriculum are suggested, each with a focus on its own particular information.

The outline provided is for presentation purposes only. The school's actual course of study does not necessarily have to be organized or taught according to the suggested sequence of units, but must deal with suggested content and hours of instruction.

Unit 1 deals with **Basic Operation**, and incorporates both classroom and range or street behind-the-wheel training. These materials introduce trainees to the vehicle and provide an opportunity to understand how to control the vehicle when in motion. Among the many practical skills learned in this section are backing skills and shifting.

Unit 2 deals with **Safe Operating Practices** for basic operation. It includes units on the visual search, communication on the road, speed management, and space management. It includes some classroom instruction and a good bit of behind-the-wheel training.

Unit 3 deals with **Advanced Operating Practices** and includes subjects on hazard perception, night operation, extreme driving conditions, emergency maneuvers, and passive railroad crossing. This section focuses on helping trainees identify and act proactively and reactively to deal with hazards.

Unit 4 deals with **Vehicle Systems and Reporting Malfunctions** and enables the trainee to understand the basic workings of the vehicle and how to cope with difficult situations that may occur on the road.

Unit 5 deals with **Non-Vehicle Activities**. It is a particularly important section, and contains many classroom hours. Among the many topics covered in this section are materials on managing life on the road, dealing with environmental hazards and regulations, and documenting a driver's hours of service.

Exhibit 1: Programmatic Course Options in Hours. Use this as a basis for planning the total time for programs. In contrast, the hours associated with each unit are broken down by classroom and behind-the-wheel, and are presented in **Exhibit 2: Minimum Hours for Training**. Note that this exhibit contains only the minimum time requirements for training.

ORGANIZATION OF THE STANDARDS

Each curriculum unit is presented as a standard. Within that unit, there usually is a statement of purpose that indicates why the unit is important. In addition, there is a statement of the performance criteria for the standard that expresses what the student must do and how well they must do it. Further, there are two sets of objectives—one set of objectives deals with the **skill objectives** that a trainee should master; the second relates to **knowledge objectives** that the student should learn.

Exhibit 1: Programmatic Course Options In Hours¹

	Classroom & Lab	BTW Range & Street/Road		Totals	
		<u>1:1 Ratio</u>	<u>3:1 Ratio</u>	<u>1:1 Ratio</u>	<u>3:1 Ratio</u>
Required Minimum Hours of Training	104 (125)	44 (53)	132 (159)	148 (178)	236 (284)
Additional Time in Recommended Training *	<u>21 (25)</u>	<u>0</u>	<u>0</u>	<u>21 (25)</u>	<u>21 (25)</u>
Total	125 (150)	44 (53)	132 (159)	169 (203)	257 (309)

If you have capacity for a longer course of study, an **externship** would be a good innovation to consider.

An **externship** of 140-240 hours of instruction (on duty time) can provide the additional training and experience needed for an entry-level driver to progress to a solo driver. For example, a school with a resident program of 257 (309) hours of instruction may incorporate an externship of 160 hours as part of their formal course. The entire program length would extend to 417 (469) total instructional hours. If the externship were 240 hours, the program length would be a total of 497 (549) hours of instruction.

* See Page 9 for recommended subjects.

¹ Hours in 60 minute and (50 minute) increments.

Exhibit 2: Minimum Hours for Training

<u>Unit</u>	<u>Classroom & Lab*</u>	<u>BTW Range & Street**</u>
1 Basic Operation		
1.1 Orientation #	18 (22)	24 (29)
1.2 Control Systems #		
1.3 Vehicle Inspections		
1.4 Basic Control		
1.5 Shifting		
1.6 Backing and Docking		
1.7 Coupling and Uncoupling		
2 Safe Operating Practices for Basic Operation	8 (10)	17 (20)
2.1 Visual Search		
2.2 Vehicle Communication		
2.3 Speed Management		
2.4 Space Management		
3 Advanced Operating Practices	14 (17)	3 (4)
3.1 Night Operation		
3.2 Extreme Driving Conditions		
3.3 Hazard Perception		
3.4 Emergency Maneuvers/Skid Avoidance		
3.5 Skid Control and Recovery		
3.6 Passive (Unmarked or Uncontrolled) Railroad Crossings		
4 Vehicle Systems and Reporting Malfunctions #	6 (7)	0 (0)
4.1 Identification and Maintenance		
4.2 Diagnosing and Reporting Malfunctions		
5 Non-Vehicle Activities #		
5.1 Handling and Documenting Cargo	43 (52)	0 (0)
5.2 Environmental Issues		
5.3 Hours of Service Requirements		
5.4 Accident Procedures		
5.5 Managing Life on the Road/Personal Resources		
5.6 Trip Planning		
5.7 Communication Skills		
Discretionary Hours^{+#}	<u>15 (17)</u>	<u>0</u>
Total	<u>104 (125)</u>	<u>+ 44 (53)</u>

Total Hours Classroom/Lab + BTW Range/Street 148 (178)

* Total of range and street BTW must equal at least 44 (53) hours per student.

• Hours are expressed as 60 and (50) minute hours.

+ Discretionary hours are discussed on Page 9 of this document.

Units are non-driving subjects so driving time is not awarded.

Note: 15% of required classroom/lab hours may be adjusted among units. See Page

6.

1.1 Orientation

Purpose: The orientation deals with introducing the student to both the trade of truck driving and to the tractor-trailer. It is intended as a time to better acquaint the student with the industry that they are about to enter.

Performance Criteria: Trainee will identify major components of the tractor-trailer and explain some of the importance of the industry to the broader economy.

Trainee Skills Objectives:

None.

Trainee Knowledge Objectives:

Identify major components of the tractor-trailer.

Discuss general operation of the trucking industry.

Discuss course objectives and rules for student conduct.

Discuss safety rules to be observed in class, in lab, on the range, and on the street.

Discuss methods of trainee evaluation.

Discuss minimum requirements for graduation.

1.2 Control Systems

Purpose: The trainee will be familiar with the vehicle instruments and controls.

Performance Criteria: Trainee will learn use and location of each control.

Trainee Skill Objectives:

Read gauges and instruments correctly after indicating use and acceptable range.

Demonstrate the purpose and use of control switches and pedals.

Demonstrate seat adjustment and safety belt use.

Trainee Knowledge Objectives:

Identify, locate, and explain function of each of the primary controls including those required for - steering, accelerating, shifting, braking, and parking.

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.

Identify, locate, explain, 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 systems.

Realize and be willing to read and use gauge information in making on-going decisions.

Realize that instruments malfunction so that displayed information must be augmented from other sources.

1.3 Vehicle Inspections

Purpose: Teach trainee to conduct pre-trip, enroute, and post-trip inspections.

Performance Criteria: Trainees must inspect and make a 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; emergency equipment; and cargo securement device(s). Trainee must perform pre-trip inspections in a regular, systematic sequence that is accurate, uniform, and time efficient. Further, trainee must perform en route inspections by checking mirrors for signs of trouble; checking connections, hoses, and gauges; monitoring instruments and looking, listening and feeling for indications of malfunctions; making periodic roadside stop inspections of critical items; and meeting en route requirements for transporting various cargo. Trainees must perform post-trip inspections by making accurate notes of actual and suspected component abnormalities or malfunctions that occurred during the trip. Trainees must not operate a vehicle found to be in unsafe (for vehicle, drivers, and other road users) operating condition, either prior to a trip or enroute.

Trainee Skill Objectives:

Perform each type of inspection.

Complete Vehicle Condition Report (V.C.R.)

Inspect and determine the condition of critical vehicle components, including the instrument and controls; engine and drive train; chassis and suspension; steering system; braking system; coupling system; emergency equipment; and cargo securement devices.

Perform pre-trip inspections in a regular, systematic sequence that is accurate, uniform, and time efficient.

Perform enroute 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 enroute requirements for transporting dangerous cargo.

Perform post-trip inspections by making accurate notes of actual and suspected component abnormalities or malfunctions.

Trainee Knowledge Objectives:

Explain systematic procedure to assure quick and complete inspection.

Suggest the effect of undiscovered malfunctions upon safety, effectiveness, and economy.

Know federal, state/provincial, and other regulations governing inspection, including special regulations for hazardous cargo.

Know procedures for post-trip inspection.

Know out-of-service CVSA criteria for drivers and vehicles.

Know their responsibilities include ensuring vehicles are in safe operating condition before taking them on the road.

Know how to report malfunctions and problems.

Know location and tolerances for all components and systems.

Know consequences of vehicle out-of-service orders at roadside inspections and recognize negative impact on CV driver, company, shipper, and entire industry.

Know that time spent on inspections saves lives and down time later.

1.4 Basic Control

Purpose: Trainee will learn to move (drive) and steer a tractor-trailer.

Performance Criteria: Trainee must drive tractor-trailer such that he/she scores acceptable proficiency rating on the operational checklist for basic controls in areas such as executing sharp left and right turns, centering the vehicle, and maneuvering in restricted areas.

Trainee Skill Objectives:

- Get into cab, adjust seat and mirrors, and fasten seatbelt.
- Start, warm-up, and shut down engine according to specifications.
- Put vehicle in motion and achieve increasingly smooth motion and acceleration, then bring vehicle to a smooth stop.
- Monitor controls, mirrors, instruments, and gauges.
- Center vehicle in lane and drive straight line.
- Maintain appropriate vehicle and engine speed on upgrades and downgrades.
- Judge paths, negotiate left and right curves and sharp turns and track vehicle in road and alley for various trailer lengths.
- Judge clearances at rear, front, sides, and overhead. Recognize space requirement of overhang.
- Get out and check position for obstructions.
- Maneuver into restricted areas to rear, sides, and front in both a straight line and jackknife position.
- Back slowly, in idle speed, in straight line. Use reverse steering. Use warning flashers.

Trainee Knowledge Objectives:

- Know clearance requirements of rig for all dimensions.
- Know starting, warm-up, and shut down procedures according to manufacturer's specifications.
- Know modulation procedure for air brakes. Know steering techniques to track vehicle in lane and drive a straight line.
- Know the purpose/use of the P.D.L.
- Illustrate proper position from which to begin a turn and how to "set-up", execute, and recover from a turn.
- Know the purpose/use/consequences of engine retarders.
- Know space requirements for 48' and 53' trailers.
- Describe consequences of excessive idling.
- Understand split axle and dump valve. Know proper hand placement on wheel.
- State how to apply A.B.S. and non-A.B.S. brakes.
- Accept that "Safety is an Attitude".

1.5 Shifting

Purpose: Teach trainee to execute up and down shifting techniques on multi-speed dual range transmission.

Performance Criteria: Trainee must execute shifting in a variety of road and traffic conditions, and match shifting to engine needs and safe operations for road conditions.

Trainee Skill Objectives:

Shift up and down through all gears of multi-speed, dual range transmissions.

Double clutch and time shift for smooth and fuel-efficient performance.

Select proper gear for speed, traffic, terrain, turns, and highway conditions.

Avoid riding the clutch.

Demonstrate progressive shifting technique.

Demonstrate and explain skip shifting.

Demonstrate proper gear recovery.

Trainee Knowledge Objectives:

Know shifting procedures and patterns for different transmissions.

Read instruments and controls necessary to shift gears.

Recognize common shifting errors and their consequences.

Know gears that most likely will be the best choice under certain traffic, turns, highway, and terrain conditions.

Know outcomes of proper shifting in terms of improved fuel mileage, reduced operating costs, and other benefits.

Know the importance of matching RPM and MPH for down shifting.

Psychomotor Requirements: Coordinate hand and feet movement, eyesight, hearing to execute safe, smooth, and efficient operation.

1.6 Backing and Docking

Purpose: The trainee will learn to back tractor-trailer safely.

Performance Criteria: Trainee must back trailer on performance test on range and street. Test must include parking and backing into restricted areas with appropriate tolerances; backing in straight and curved lines; and parking at docks, in jackknife and parallel positions.

Trainee Skill Objectives:

Check and adjust mirrors.

Get out and check dock area for obstructions, position, and paths.

Execute reverse steering of an articulated vehicle.

Position vehicle correctly before beginning a backing/docking maneuver.

Activate warning flashers prior to using reverse. Tap horn periodically if no back-up alarm is available.

Judge path and clearances of trailer.

Back in straight and curved lines, using idle speed.

Back into restricted space.

Park trailer in jackknife and parallel positions.

Parallel park rig.

Perform serpentine backing.

Judge side, rear, and overhead clearances and park trailer.

Trainee Knowledge Objectives:

Know proper mirror adjustment and use.

Know rules and procedures for backing in and across traffic.

Know procedures for backing, "jerk and chase", parallel, and jackknife parking.

Identify and explain hazards of backing and specific dangers/problems in various situations.

Explain how to stop traffic and warn of backing process.

Explain principles of reverse steering.

Explain hazards associated with backing.

Know that the "best" backing is finding a way not to back.

1.7 Coupling and Uncoupling

Purpose: The trainee will demonstrate safe coupling and uncoupling of a tractor-trailer unit.

Performance Criteria: Trainee must couple and uncouple tractor-trailer in accord with approved safe practices.

Trainee Skill Objectives:

- Align tractor and trailer units in a straight line for coupling.
- Secure trailer against movement, if applicable.
- Connect and check air and electrical lines.
- Back tractor into trailer kingpin if appropriate, at right level, and with appropriate force; check coupling and make adjustments.
- Set in-cab air brake controls.
- Retract and secure landing gear handle.
- Back at idle speed.
- Spot trailer on surface capable of supporting weight.
- Lower gear to raise trailer to correct height and check support.
- Disconnect air and electrical units prior to uncoupling.
- Uncouple trailer(s) and disconnect dolly, if applicable.

Trainee Knowledge Objectives:

- Know about and use mirrors to achieve proper alignment and position.
- Know the importance of confirming trailer number.
- Know components and function of fifth wheel, trailer apron, kingpin, and safety lock.
- Know coupling test procedures.
- Know position, components, and function of air and electrical lines.
- Know connection procedures.
- Know the importance of a trailer inspection prior to driving.
- Know signs of improper/incomplete connections.
- Know coupling technique of a chassis vs. a trailer.
- Know air pressure requirements.
- Add new trailer number to logbook.
- Know how to adjust mirrors for optimal vision field.
- Know the effect on coupling a trailer with spring suspension vs. air ride suspension.
- Know surface conditions and characteristics necessary to support weight.
- Know air pressure system and controls.
- Know position, components, and function of air and electrical lines.
- Know that accidents caused by improper coupling are preventable.

2.1 Visual Search

Purpose: Upon completion, the trainee will know how to conduct a visual search of the road for potential hazards and critical objects.

Performance Criteria: Trainee will demonstrate proficient visual search technique in various types of traffic and locations, as scored on the performance test, using a running commentary.

Trainee Skill Objectives:

Maintain a minimum 12-15 second eye lead time.

Correctly adjust any type of rear view mirror.

Scan both side and rear mirrors every few seconds, and always before changing speed and direction.

Read and interpret the images presented by flat and convex mirrors.

Check instrument panel frequently.

Demonstrate proper head/eye movement.

Maintain vehicle in a straight-line path whenever necessary to divert attention from the path ahead. Avoid diverting attention.

Demonstrate a necessary commentary for potential hazards.

Monitor overtaking traffic to be aware of vehicles in rear and side blind spots.

Look ahead as far as possible in turns.

Trainee Knowledge Objectives:

Know the correct adjustments for various types of mirrors.

Know the differences in images presented by flat and convex mirrors.

Know the importance of making all visual checks to the sides and rear of the vehicle quickly in order to limit the amount of time their eyes are off the road ahead.

Know the relationship between speed and sight distance.

Know the search patterns appropriate for straight driving, changing speed or direction, and entering or crossing traffic.

Recognize that effective visual searches will reduce fatigue.

Recognize importance of visual searches as critical techniques for monitoring changing road and traffic conditions.

2.2 Vehicle Communication

Purpose: Learn techniques for different types of communication on the road.

Performance Criteria: Trainee will demonstrate techniques of vehicle communication in practice behind the wheel.

Trainee Skill Objectives:

Signal intention to change position before pulling onto or off of the road or changing lanes.

Cancel turn signals after completing turns.

Time signals so that they are not confusing to other drivers.

Flash brake lights to warn following drivers that the tractor-trailer is slowing or stopping.

Use four-way flashers according to state laws and company policies.

Use headlights in daytime under conditions of low visibility.

Position vehicle where it can be seen by other drivers.

Make selective use of horn and lights to prevent collisions.

Limit use of CB radio to communications that will enhance safety and traffic flow.

Avoid hand and light signals to signal "all clear" to turn or pass.

Trainee Knowledge Objectives:

Know when to activate turn signals to provide adequate warning without creating confusion.

Know state traffic laws for turn signals.

Recognize importance of signaling to the prevention of accidents.

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.

2.3 Speed Management

Purpose: Trainee will learn to manage speed effectively in response to various road, weather, and traffic conditions.

Performance Criteria: Trainee must adjust speed to the configuration and condition of the roadway; weather and visibility conditions; traffic conditions; and vehicle, cargo, driving conditions, or operator conditions.

Trainee must obey the legal speed limit and/or drive at speeds appropriate to road and/or weather conditions.

Trainee Skill Objectives:

Obey speed limit.

Maintain proper speed to manage the space around the truck.

Judge and adjust maximum safe speed at which vehicle control can be maintained under traffic conditions, crosswinds, road conditions, and limited visibility.

Judge maximum safe speed that traction will permit.

Judge maximum safe speed at which a curve and on/off ramps can be entered.

Recognize and interpret all types of driving conditions and road surfaces.

Trainee Knowledge Objectives:

Know the relationship of speed to stopping distance, hydroplaning, crash severity, ability to maneuver, and fuel economy.

Know the proper use of cruise control.

Know the effect on maximum safe speed of vehicle weight, center of gravity, loss of stability, available sight distance, and road surface conditions.

Know consequences of speeding violations.

2.4 Space Management

Purpose: Trainee will learn to properly manage the space required for safe vehicle operation.

Performance Criteria: Trainee must 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 road users; position tractor-trailer 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, road surface, visibility, and vehicle weight; maximize separation from traffic when vehicle is disabled; and avoid structures having inadequate overhead clearance.

Trainee Skill Objectives:

Judge adequacy of gaps in traffic for passing, crossing traffic and entering traffic, and changing lanes.

Use proper visual search techniques.

Properly position vehicle for making all driving moves.

Judge clearances on all sides of rig.

Adjust following distances for load and road conditions.

Trainee Knowledge Objectives:

Know the appropriate following distances for various conditions.

Know the importance of maintaining maximum separation from other vehicles to ensure room to maneuver when responding to errors of other drivers.

Know the importance of checking positions of one's own vehicle and other road users by mirrors.

Know the dangers of trailer overhang.

Know dangers created by overhead obstructions.

State the regulations concerning commercial vehicle following distances, lane use, changing lanes, and passing other vehicles.

3.1 Night Operation

Purpose: The trainee will learn and demonstrate how to operate safely at night.

Performance Criteria: The trainee must adjust speed, following distance/separation, and gap selection to nighttime conditions; demonstrate improved scanning techniques; use high beams wherever legally permitted; dim headlights in accordance with state laws and to minimize interference with visibility of other drivers; respond safely to the glare of other vehicles by averting eyes and by not retaliating; and use any auxiliary lighting properly.

Trainee Skill Objectives:

Judge and adjust speed, distances/separation and gaps under nighttime conditions.

Demonstrate scanning technique appropriate to night operations.

Use high beams legally.

Respond safely to glare of other vehicles.

Trainee Knowledge Objectives:

Know the procedures for carrying out the performance objectives.

Know that use of cruise control at night is not recommended.

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.

Understand that night driving has additional requirements for driving safely and requires additional attributes and skills.

3.2 Extreme Driving Conditions

Purpose: Discuss adjustments for driving in cold and hot weather, stormy conditions, mountain and desert driving. Trainee will learn how to put chains on a stuck vehicle.

Performance Criteria: Explain adjustments for various extreme-driving conditions.

Trainee Skill Objectives:

Adverse Weather

Prepare for operation in cold weather, including activating the front brake limiting valve; removing snow and ice from windows, mirrors, brakes, lights, and hand holds, etc.; and installing tire chains when necessary or calling for assistance.

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.

Make sure that moisture is expelled from the air tanks after each trip.

Check weather information before and during trips and adjust plan accordingly.

Check for ice accumulation on brakes, slack adjuster, air hoses, electrical wiring, and radiator shutters during operation.

Adjust operation of vehicle to weather conditions, including speed selection, braking, direction changes, and following distance to maintain control and avoid jackknifing.

Assure safe operation of brakes after driving through deep water.

Trainee Knowledge Objectives:

Adverse Weather

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 road 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.

Know how to mount and dismount tire chains, if applicable to area and liability.

Explain how to extricate the vehicle from snow, sand, and mud by maneuvering or towing.

Explain the importance of proper clothing and surplus food.

Continued

Use windshield wipers, washers, and defrosters to maintain visibility.

Start engine in cold weather.

Observe road surface for changes in conditions.

Adjust rate of change in speed and direction to road conditions to avoid skidding

Coordinate acceleration and shifting to overcome the resistance of snow, sand, and mud.

Hot Weather

Know procedures for hot weather driving.

Know hazards of hot weather driving.

Know the effect of hot weather upon vehicle operation.

Know the effect of hot weather upon tire pressure and tire life.

Hot Weather:

Check tires, lubrication, levels and operation of cooling system, fan belts, fans and hoses and check the radiator for debris.

Carry an ample supply of drinking water.

Inspect tires frequently.

Avoid leaving the vehicle if it is disabled in the desert.

Mountains

Know the effect of vehicle weight and speed upon 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 attempting to downshift on steep declines is too dangerous to attempt.

Know proper use of special speed reduction devices properly; e.g., engine exhaust brakes.

Know proper use of truck escape ramp, if available, when brakes fail on a downgrade.

Know that only the driver can make the decision to park the truck when necessary.

Mountains:

Check brake adjustment prior to mountain driving.

Use right lane or special truck lane going up grades.

Place transmission in appropriate gear for engine braking before starting downgrade.

Use proper braking technique and maintain proper engine braking before starting downgrades.

Observe temperature gauge frequently when pulling heavy loads up long grades.

3.3 Hazard Perception

Purpose: Learn to (1) recognize the potential dangers in the driving environment and (2) take appropriate defensive action(s) before the dangers develop into emergency situations.

Performance Criteria: The trainee must identify road conditions and other road users that are a potential threat to the safety of the tractor-trailer and suggest appropriate adjustments, as indicated by use of "commentary driving" and passing a written test on the topic.

Trainee Skill Objectives:

Perceive immediately a potential threat from visible characteristics and actions of other road users; then be able to initiate prompt defensive or evasive action.

Demonstrate good visual search techniques.

Respond appropriately to temporary direction and speed signs for lane closure and so forth.

Practice good visual search techniques.

Trainee Knowledge Objectives:

Know the visible characteristics of road conditions that present a hazard to safe operations including slippery, soft, sloping, or uneven surfaces; dangerous curves; obstructions to visibility; and locations where there are likely to be strong cross-winds.

Know the characteristics of other road users (drivers or pedestrians) that make them potentially dangerous, including obstructed vision; distractions; confusion; impatience; impairment; and low speed.

Know how to respond to emergency vehicles.

Know activities of other road users (drivers and pedestrians) that provide clues to potential danger, including head and body movement; vehicle movement; and conflict situations.

Know the consequences of using the engine retarder or trailer brake on slippery roads.

Know that only the driver can be willing to stop, report conditions and stand firm.

3.4 Emergency Maneuvers/Skid Avoidance

Purpose: Trainee will learn appropriate responses when confronted with driving emergencies. Further, the trainee will learn the causes, preventive measures, and recovery techniques involved in skidding and jackknifing incidents.

Performance Criteria: Trainee must demonstrate through proper speed and space management, and proper acceleration and braking techniques he/she should be able to avoid a skid.

Trainee Skill Objectives:

Use brakes in a manner that will stop the vehicle in the shortest possible distance while maintaining directional control.

Operate brakes properly to provide maximum braking without loss of control.

Judge maximum safe speed for slippery surface conditions.

Perform evasive turn on dry surface.

Maintain control of vehicle and yourself.

Trainee Knowledge Objectives:

Know that the vehicle can be turned more quickly than it can be stopped.

Know that in an impending head-on collision, it is generally safer to leave the roadway to the right than to strike another vehicle.

Know procedures for quick stops, quick turns, and evasive turns off the roadway.

Know procedures for handling brake failure and blowouts.

Know that trailer brakes are not to be used for skid recovery.

Know the role of skid control in preventing crashes.

Know skid dynamics, including friction, wheel load, and force.

Know causes of skidding - power and braking.

Know the characteristics of a tractor jackknife, trailer jackknife, front wheel skids, and all wheel skids.

Know skid recovery procedures - focus on where you want to go, power off, and clutch in.

State how to apply A.B.S. and non-A.B.S brakes.

Know technique to counter steer out of a skid in a way that will regain directional control and not produce another skid.

3.5 Skid Control and Recovery

Purpose: Discuss causes of skidding and jackknifing and techniques for avoiding and recovering from skids and jackknifes.

Performance Criteria: Trainee will explain causes of and techniques to avoid skids and jackknifes.

Trainee Skill Objectives:

None.

Trainee Knowledge Objectives:

Know how to maintain directional control while operating over a slippery surface.

Know how to bring tractor-trailer to a stop in the shortest possible distance while maintaining directional control when operating on a slippery surface.

Know how to recover from tractor or trailer skids induced by snow, ice, water, oil, sand, wet leaves, or other slippery surfaces.

Know the best prevention for skidding is to control driving, i.e., reduce speed.

Know the role of skid control in preventing accidents.

Know skid dynamics, including friction, wheel load, and force.

Know causes of skidding.

Know the characteristics of a trailer jackknife, front wheel skids, and all wheel skids.

Know procedures for handling brake failure and blowouts.

Know that skids may occur at any speed and identify skid recovery procedure.

3.6 Passive (Unmarked or Uncontrolled) Railroad Crossings

Purpose: Learn to recognize potential dangers and appropriate safety procedures at railroad crossings.

Performance criteria: Trainee will explain rules and reasons for care and appropriate safety procedures used at railroad crossings. Trainee will correctly demonstrate skill.

Trainee's Skill Objectives

Insure full attention to situation.

Note all visual impediments associated with the crossing.

Demonstrate effective visual search techniques.

Trainee Knowledge Objectives

Understand dangers associated with active and passive crossings and identify search differences in the situations.

Know and discuss how physical characteristics of crossings affect driver's ability to see train.

Know/explain illusions with speed of train.

Identify behavior factors that inhibit ability to see.

Identify common driver distractions that affect safety, especially at intersections with railroad crossings.

Identify and explain steps on "best practice" for dealing with railroad crossings.

Know rules and procedures associated with different types of loads and railroad crossings.

4.1 Identification and Maintenance of Vehicle Systems

Purpose: Explain function, and how to check all key vehicle systems, e.g., engine, engine exhaust auxiliary systems, brakes, drive train, coupling systems, and suspension. Provide detailed description of each system, its importance to safe and efficient operation, and what is needed to keep system in good operating condition.

Performance Criteria: Trainee will explain system function and indications of problems for various systems.

Trainee Skill Objectives:

Check and service engine, fuel, oil, coolant, battery, and filters.

Check tire air pressure.

Check tires for excessive wear.

Check for proper tire and wheel mounting.

Drain moisture from air brake supply reservoirs and fuel system.

Check brakes. Adjust, if allowed, or report problem.

Clean and replace bulbs and lens.

Change fuses and reset circuit breakers.

Trainee Knowledge Objectives:

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.

Describe simple emergency repairs to enable a vehicle to reach a maintenance facility.

Know the procedure for performing inspections and authorized maintenance and repairs.

Know the importance of periodic inspections and authorized maintenance and repairs.

Know to avoid attempting repairs for which they are unqualified.

Recognize the importance of periodic inspections and repair to prevent enroute breakdowns, longevity of parts, safety, and economy of operation.

Know the inspection, repair, and maintenance regulations of the Federal Motor Carrier Safety Regulations.

4.2 Diagnosing and Reporting Malfunctions

Purpose: Learn to identify vehicle malfunctions.

Performance Criteria: Trainee will identify if a problem is likely to exist, troubleshoot for problems, and report as required, using a Vehicle Condition Report (V.C.R.).

Trainee Skill Objectives:

Identify vehicle systems or components that are functioning properly, are in imminent danger of failing, or functioning improperly.

Describe symptoms of improper operation completely and accurately to maintenance personnel.

Avoid attempting to perform maintenance for which they are unqualified.

Properly report breakdowns occurring enroute.

Properly complete a Vehicle Condition Report (V.C.R.)

Trainee Knowledge Objectives:

Know the procedures for starting vehicles with dead batteries or without air pressure (if equipped with air starters.)

Recognize the symptoms of improper operation revealed through instruments, vehicle operation characteristics, sight, sound, feel, and smell.

5.1 Handling and Documenting Cargo

Purpose: Gain an understanding of the cargo documentation process; responsibilities of drivers in the preparation and handling of cargo documents; weight distribution guidelines; how to secure and cover cargo; and how to load/unload safely and efficiently.

Performance Criteria: Trainee will verify nature, amount, and condition of cargo on both pick-up and delivery; verify load is placed and tied down correctly for weight; 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; and properly prepare a manifest.

Trainee Skill Objectives:

- Prepare manifest, as required.
- Verify cargo types.
- Verify load distribution.
- Verify placards.
- Safely operate common types of cargo handling equipment.
- Select proper sizes of chain, cable, nylon webbing, steel strapping, or rope.
- Secure chains, cables, webbing, strapping, or ropes using appropriate system to secure load.
- Block and brace cargo properly.
- Demonstrate how to move heavy loads.

Trainee Knowledge Objectives:

- Know the procedures for proper completion of freight bill, cargo manifest, bill of lading, and other required forms.
- Know rules/regulations for Hazmat.
- Know that it is the driver's responsibility for ensuring paperwork is properly filled out.
- Know what "driver count" means.
- Explain the possible consequences and penalties of improperly completed documentation.
- Know proper lifting techniques.
- Know procedures for loading and unloading.
- Know procedures for securing cargo -- including methods of blocking, bracing, packing, stacking; and use of straps, rope, cable, chains, and chain binders for tie down to prevent damage and accidents.
- Know the nature, function, and operation of common cargo handling equipment -- including pallets, jacks, dollies, hand trucks, forklift trucks, nets, slings, rug poles, Johnson bars, and other equipment.
- Know federal and state/provincial regulations on loading, weight limits, and distribution of cargo, bridge law, and the special concerns of a 53' trailer.
- Know rules about various categories of cargo.
- Know how to install the various types of seals and record the seal number on the paperwork.

5.2 Environmental Issues

Purpose: Trainee will learn to recognize environmental hazards and obligations and act to take care of responsibilities.

Performance Criteria: Trainee will identify hazard and match correct response with problems as written on a situational test.

Trainee Skill Objectives:

Check hoses, couplings, and other components that may contribute to environmental issues.

Monitor idle and make appropriate adjustments.

Avoid spills while fueling and servicing.

Trainee Knowledge Objectives:

Know environmental regulations that affect the profession.

Recognize symptoms of problems.

Know how to contain the spill.

Know how to report and document problems.

Know federal and state/provincial regulations about environmental issues.

Know what actions to take at the scene of a spill or problem by referring to the Emergency Response Guide (E.R.G.)

Know accepted safe practices.

Know environmental impact of excessive idle time.

5.3 Hours of Service Requirements

Purpose: Teach the basic concepts and requirements of the Federal Motor Carrier Safety Regulations Part 395 "Hours of Service Regulations" and complete a Driver's Daily Log and logbook recap.

Performance Criteria: Trainee will comply with hours of service requirements and maintain a complete, neat, and accurate driver's daily log and logbook recap while in training.

Trainee Skill Objectives:

Interpret hours of service categories correctly.

Perform arithmetic calculations necessary to recap and apply totals to the hours of service regulations.

Determine driving hours remaining on a particular day or tour of duty.

Keep pick-up and delivery record, if applicable.

Maintain a legal logbook in school.

Trainee Knowledge Objectives:

Know all the requirements and rules of Part 395 of The FMCSR covering Hours of Service...the 10-15-60-70 Rules.

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.

Explain the consequences of failure to comply with hours of service regulations.

Know enroute inspection requirements.

Know electronic methods of double-checking documentation/records, according to company policy.

Explain how to use logbooks in planning a trip/meeting schedules.

Identify and recognize the potential pressures in the industry to exceed hours-of-service units and know strategies for dealing with them.

5.4 Accident Procedures

Purpose: Learn how to follow safe and legal procedures at an accident scene, and to properly report accidents.

Performance Criteria: Trainee will pass a written test on accident procedures. Among the topics to include are: guarding the scene of an accident to prevent further injury or damage, and obtain assistance; obtaining all information needed for accident reports to law enforcement, the employer, and the insurance company; (rendering assistance to any injured parties, including providing first aid, provided he/she has had proper training; extinguishing fire including cargo, engine, electrical, and tire fires); and discussing liability only with law enforcement, the company, or their representative.

Trainee Skill Objectives:

Obtain information (role playing) for completion of Accident Reporting Kit.

Trainee Knowledge Objectives:

Know state laws and company requirements dealing with stopping and rendering assistance at the scene of an accident.

Explain procedures for protecting the scene of an accident and federal and state/provincial requirements for same.

Identify federal, state/provincial, insurance company, and employer requirements regarding accident reporting.

Suggest proper first aid procedures for the types of injuries most likely to be sustained in highway accidents.

Distinguish types of fire extinguishers appropriate to each class of fire.

Know procedures for extinguishing cargo, engine, electrical, and tire fires.

Explain where to stop vehicle in the event of a fire.

Know how to gather information at the scene.

Know how to complete Accident Reporting Kit.

Know the importance of carrying a camera.

Never admit guilt or say "I'm sorry".

Know how to use the Emergency Response Guide.

5.5 Managing Life on the Road/Personal Resources

Purpose: Learn to actively manage own life and resources so as to take care of self and job.

Performance Criteria: Trainee will correctly identify problems and strategies that deal effectively with personal resources by describing, demonstrating, and matching problems and solutions for issues.

Trainee Skill Objectives:

Employ fatigue-reducing strategies.

Use stress-reducing techniques, as needed.

Exercise restraint with diet and recreation while on the road.

Get exercise while on the road.

Make good decisions about where to stop and stay.

Practice good personal hygiene.

Practice good communication skills with family.

Trainee Knowledge Objectives:

Recognize signs of fatigue.

Know symptoms of stress and match personal techniques of how to deal with the problem.

Know strategies for dealing effectively with fatigue.

Know the elements of a good diet.

Understand the pay process.

Identify good exercise program for life on the road.

Know personal sleep requirements and individual biorhythms or patterns.

Identify safe and quiet truck stops.

Know the effects of drugs and alcohol.

Discuss stress caused by life on the road and being away from home.

Know dynamics of industry and the role and importance of the driver.

5.6 Trip Planning

Purpose: Discuss importance of and requirements for planning trips, federal and state/provincial requirements on need for permits, vehicle size, and weight limitations.

Performance Criteria: Plan several overnight trips, including breaks, sleep, identification of permits, estimating time of arrival, fuel stops, use of money, and other issues.

Trainee Skill Objectives:

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.

Request permits required by the nature of the vehicle, its cargo, and route to be traveled.

Arrange a secure place for vehicle on layovers, especially when transporting hazardous materials.

Use math to calculate miles, fuel use, and expenses.

Interpret maps.

Estimate travel time and plan rest stops and layovers.

Estimate fuel consumption and plan fuel stops.

Estimate needed expense money and obtain funds and/or credit cards.

Trainee Knowledge Objectives:

Know the types of vehicles, cargoes, and routes requiring special permits.

Know and use State regulations and the procedures for obtaining special permits.

Identify common map symbols.

Learn methods for good record keeping.

Know procedures for route planning, including preparing paperwork, route selection, and estimating time, fuel, money, and personal needs.

Know State and local law restrictions on vehicle size and weight.

Know how to use the *Truckers Atlas*.

Know how permit system operates.

Know failure to obtain necessary permits can result in extensive delay and fines.

Know how to document expenses.

5.7 Communication Skills

Purpose: Demonstrate effective communication techniques.

Performance Criteria: Trainee will demonstrate effective use of communication skills by achieving a passing score and will use techniques on the street.

Trainee Skill Objectives:

Signal intentions such as lane change, hazards, and backing up.

Use horn and headlights appropriately.

Establish and use eye contact with drivers and pedestrians as a warning.

Avoid making decisions only on basis of another's signal.

Interact tactfully with customers and general public, family, and company.

Use effective and appropriate conversation with customers, company personnel, and family.

Use on-board communication devices. To extent possible, operate devices when vehicle is not moving.

Trainee Knowledge Objectives:

Know universally accepted signals.

Know laws/regulations concerning traffic signals.

Know relationship of signals to intent and that signals do not convey the "right" to execute maneuver.

Know and use procedure for handling complaints.

Know how to listen and respond effectively.

Read and respond to on-board messages.

Know procedures for using (receiving and sending messages) on-board devices.