

Suggested Subject Outline for Tractor-Trailer Driver Training Programs

Introduction

The Commercial Vehicle Training Association has received a number of inquiries requesting guidance regarding the structure of a commercial driver-training curriculum. The Association does not certify programs of instruction; nor does it require that its members follow a specific curriculum. However, in response to various inquiries the Association is providing this outline as a suggested list of subjects to be taught to all entry-level commercial driver trainees.

In 1984, the Federal Motor Carrier Safety Administration developed "Proposed Minimum Standards for Training Tractor-Trailer Drivers." On August 15, 2003, the Federal Motor Carrier Safety Administration issued a Notice of Proposed Rulemaking; Request for Comments (hereinafter "Notice") on Minimum Training Requirements for Entry-Level Commercial Vehicle Operators." 68 *Fed. Reg.* 48,863 (August 15, 2003). The Notice requested that interested parties submit their views on proposed minimum training requirements. In the Notice, the FMCSA stated:

The agency believes that the Model Curriculum represents the basis for training adequacy. It is based on minimum training standards that were adopted by the agency after an analysis of heavy truck driver training that was being provided by the industry in the 1980's.

68 *Fed. Reg.* 48, 865.

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In the Notice, the agency stated its intention to rely on the Model Curriculum, and other curricula based on the Model Curriculum, to determine the adequacy of entry-level driver training. In addition to the use of the Model Curriculum, the Agency also proposed the following rules:

§ 380.503 Entry-level driver training requirements.

Entry-level driver training must include instruction addressing the following four areas:

- (1) Driver qualification requirements: The federal rules on medical certification, medical examination procedures (49 CFR part 391, subparts B and E), and drug and alcohol testing (49 CFR part 382).

(2) Hours of service of drivers: The limitations on driving hours and the requirement to be off-duty for certain periods of time (49 CFR part 395).

(3) Driver wellness: Basic health maintenance including diet and exercise. The importance of avoiding alcohol and drug abuse. Fatigue countermeasures as a means to avoid accidents.

(4) Whistleblower protection: The right of an employee to question the safety practices of an employer without the employee's risk of losing a job or being subject to reprisals imply for stating a safety concern (29 CFR part 1978).

Id. At 48, 873-4.

The period for public comment on the proposed rules closed on October 14, 2003, and CVTA submitted comments to the FMCSA. As the result of a settlement in an unrelated legal action, the Agency is required to publish Final Rules by May 31, 2004.

CVTA believes that in view of the foregoing, all member schools should review their current curriculum to ensure that it is based on the Model Curriculum, and develop plans to include instruction in the four areas that the FMCSA has proposed. Further, if the curriculum of a member program is based on the Model Curriculum, the Association believes that the course materials, student handbooks, etc., should clearly state that.

The Model Curriculum

The Proposed Minimum Standards, as issued by the Bureau of Motor Carrier Safety, is a comprehensive set of documents that includes a Student Manual, an Instructor's Manual, and a School Administrator Manual. The Introduction to the "Standards" states:

The curriculum, and the other recommendations in the curriculum manuals, can improve tractor-trailer driver skills. However, it must be emphasized that *the provisions of the Standards are intended to serve as guide to be used at the discretion of the reader and should not be viewed as mandatory requirements.*

"Proposed Minimum Standards for Training Tractor-Trailer Drivers," Bureau of Motor Carrier Safety, at 1. (Italics added).

The Model Curriculum contained in the "Standards" is divided into five sections, with each section being divided into units and then lessons. The "Standards" are as follows:

GENERAL CURRICULUM STANDARDS

OVERVIEW

The General Curriculum Standards recommended by BMCS provide a basic instructional program for training tractor-trailer drivers. This section contains an overview of the curriculum subjects; instructional sequence, objectives, and methods; and the minimum number of hours necessary for accomplishing the objectives of these Standards.

This curriculum is designed for students who are already licensed as automobile drivers. Therefore, many of the traditional subjects found in other driver training courses are not included.

ORGANIZATION

The curriculum is divided into Sections, Units, and Lessons. Five sections of instruction are used, with each section containing from three to nine units and each unit containing two or more lessons. In the five sections, a total of 29 units and 72 lessons are presented.

SECTIONS

Each section has different objectives:

Section 1 - Basic Operation-This section covers the interaction between students and the vehicle. It is intended to teach students to control the motion of the vehicle, ensure it is in proper operating condition, and correctly coupled to trailers.

Section 2 - Safe Operating Practices-This section covers the interaction between the student/vehicle combination and the highway traffic environment. It is intended to teach students to apply their basic operating skills in a way that ensures their own safety and that of other road users.

Section 3 – Advanced Operating Practices-This section covers the higher-level skills needed to cope with the hazards of the roadway-traffic environment. Its purpose is to develop perceptual skills needed to recognize the potential hazard as well as the manipulative skills needed to handle the vehicle in an emergency.

Section 4 - Vehicle Maintenance-This section covers the manner in which the various components of the vehicle work so students can recognize a malfunction or safety hazard before it causes serious damage or an accident. Its purpose is to teach students to perform routine service functions and simple maintenance tasks, and to recognize when the vehicle needs repairs.

Section 5 - Non-vehicle Activities-This section covers activities not directly related to the vehicle. Its purpose is to teach students to

carry out these activities in a way that protects their safety and the safety of the vehicle, cargo and other motorists.

Units and Lessons

A unit is a set of instructional activities, with the same instructional objectives, and is divided into lessons. A course outline follows which contains an overview of the 29 units and 72 lessons. Lessons are divided into the following categories by the type of activity used to instruct students:

Classroom Lessons-Classroom instruction occurs indoors, accomplished by instructional aids that allows large numbers of students to be taught effectively at one time.

Lab Lessons-Laboratory instruction refers to any instruction occurring outside of a classroom that does not involve actual operation of the vehicle or its components. It may take place in a parking lot, garage, or facility owned by a dealer or fleet operator.

Range Lessons-Range instruction is instruction that occurs on a protected off-street "Driving Range," where students may make use of tractor-trailers without hazard from cars or other road users. Those schools that lack access to off-street facilities may conduct range instruction on public property provided adequate control of other traffic is available to avoid danger to students, instructors, or other road users.

Street Lessons-Street instruction refers to behind-the-wheel (BTW) instruction that occurs in roadway configurations and traffic conditions needed to satisfy the objectives of the lessons for which the instruction is required.

NOTE: No lesson involves more than a single mode.

COURSE OUTLINE

Section 1--Basic Operation

Purpose

To introduce students to curriculum components of the tractor-trailer and basic maneuvers. At end of section, students will have acquired the skill and knowledge to operate a tractor-trailer combination well enough to begin on-street driving lessons

Unit 1.1 Orientation

Introduces student to course content and vehicle through Instructor points out key components of tractor-trailer in demonstration

Lesson 1 - Orientation to Tractor-Trailer Driver Training (Classroom)

Unit 1.2 Control Systems

Introduces students to function, operation and meaning of instruments and controls, e.g., gear shift, tachometer, etc. Instructor points out controls, instruments and their operation during demonstration

Lesson 1 - Introduction to Vehicle Instruments and Controls (Classroom)

Lesson 2 - Instrument and Control Familiarization (Lab)

Unit 1.3 Vehicle Inspections

Detailed classroom instruction on how to inspect tractor- trailer before operating, while in operation, and at the end of a trip

Instructor will demonstrate pre-trip inspection. Students will practice and continue practicing throughout course

Lesson 1 - Vehicle Inspections: Procedures (Classroom)

Lesson 2 - Vehicle Inspections: Practice (Lab)

Unit 1.4 Basic Control

Students introduced to basic vehicle operation and concepts in class. Instructor demonstrates starting, stopping, backing with students. Students take turns at controls of a tractor-trailer. Students gain initial practice in basic control on range.

Lesson 1 - Introduction to Basic Control Maneuvers (Classroom)

Lesson 2 - Starting and Turning Off the Engine (Range)

Lesson 3 - Putting the Vehicle in Motion (Range)

Lesson 4 - Turning the Tractor-Trailer (Range)

Unit 1.5 Shifting

Students introduced to basic gear shifting procedures and shift patterns for most common tractor transmissions

Instructor demonstrates shifting on range Students practice shifting up through the first three gears

Lesson 1 - Shifting Procedures (Classroom)

Lesson 2 - Development of Shifting Skills (Range)

Unit 1.6 Backing

Students introduced in classroom to methods and concepts of backing a tractor-trailer. Instructor demonstrates and students practice variety of backing exercises on range

Lesson 1 - Backing Procedures (Classroom)

Lesson 2 - Development of Backing Skills (Range)

Unit 1.7 Coupling and Uncoupling

Students introduced to procedures for safely coupling and uncoupling a tractor-trailer. Instructor demonstrates coupling and uncoupling procedures and students begin practice under supervised conditions. Students develop proficiency throughout course by performing activity before and after street session

Lesson 1 - Coupling and Uncoupling Procedures (Classroom)

Lesson 2 - Coupling and Uncoupling Skills (Range)

Unit 1.8 Proficiency Development: Basic Control

All skills learned in units 1.2 - 1.6 practiced. A series of basic exercises are practiced on the range until students develop sufficient proficiency to drive on street. Initial on-street practice occurs after sufficient proficiency is developed on range.

Lesson 1 - Introduction to Proficiency Development Exercises (Classroom)

Lesson 2 - Proficiency Development Exercises (Range)

Lesson 3 - Proficiency Development: Practice in Basic Control (Street)

Unit 1.9 Special Rigs

Handling and operational characteristics of vehicles on which students are not trained are discussed in class, e.g., tankers, refrigerated vehicles. Field trip taken to observe special rigs and special rigs observed during all on-street practice

Lesson 1 - Characteristics of Special Rigs (Classroom)

Lesson 2 - Observation of Special Rigs (Lab)*

Section 2--Safe Operating Practices

Purpose

To allow students to learn and practice safe operation - techniques in highway traffic

Unit 2.1 Visual Search

Classroom instruction on the principles of visual search Range instruction on the use of mirrors. On-street practice in use of visual search techniques.

Lesson 1 - Visual Search Principles (Classroom)

Lesson 2 - Use of Mirrors (Lab)

Lesson 3 - Application of Visual Search (Street)

Unit 2.2 Communication

Classroom instruction on communication, e.g., signaling, use of horn, etc. On-street practice in communication techniques in variety of settings

Lesson 1 - Principles of Communication (Classroom)

Lesson 2 - Application of Communication (Street)

Unit 2.3 Speed Management

Classroom instruction on speed management principles, (e.g., maintaining safe speed in variety of situations, operating on hills, curves, etc.).

Lesson 1 - Speed Management Principles (Classroom)

Lesson 2 - Speed Management Demonstration (Range)

Unit 2.4 Space Management

Classroom instruction on principles of managing space in traffic (e.g., following distances, space to the sides and rear, passing, etc.) On-street driving practice in space management techniques

Lesson 1 - Space Management Principles (Classroom)

Lesson 2 - Application of Space Management (Street)

Unit 2.5 Night Operation

Classroom instruction on inspection at night, preparation for night operation, hazards of night driving, and actual operations at night. Range practice inspecting vehicle at night On-street lessons requiring application of night driving principles

Lesson 1 - Night Operation (Classroom)

Lesson 2 - Night Operation: Basic Maneuvers (Range)

Lesson 3 - Night Operation: On-street (Street)

Unit 2.6 Extreme Driving Conditions

Classroom instruction on driving in cold and hot weather, stormy conditions, mountainous terrains. Practice in putting on chains and towing a stuck vehicle.

Lesson 1 - Operation During Extreme Driving Conditions (Classroom)

Lesson 2 - Techniques Used During Extreme Conditions (Range)

Unit 2.7 Proficiency Development: Safe Operating Procedures

All safe driving practices from units 2.1 through 2.5 (and unit 2.6 if applicable) practiced as students develop proficiency

Lesson 1 - Procedures for Safe Operation (Classroom)

Lesson 2 - Practice in Safe Operation (Street)

Section 3--Advanced Operating Practices

Purpose

To enable students to acquire the advanced skills needed to handle hazards and emergencies

Unit 3.1 Hazard Perception

Classroom instruction and exercises in recognizing hazards early enough to prevent them from becoming emergencies.

On-street driving sessions involving application of hazard recognition principles

Lesson 1 - Recognizing Hazards (Classroom)

Lesson 2 - Application of Hazard Recognition (Street)

Unit 3.2 Emergency Maneuvers

Classroom discussion of emergency braking techniques, evasive actions and responses to other emergencies. Emergency stopping and evasive actions practiced on range.

Lesson 1 - Emergency Procedures (Classroom)

Lesson 2 - Emergency Skills (Range)

Unit 3.3 Skid Control and Recovery

Classroom instruction on causes of skidding and jackknifing and techniques for avoiding and recovering from skids, jackknifes

Lesson 1 - Techniques of Skid Control and Recovery (Classroom)
Lesson 2 - Skid Control and Recovery Exercises (Range)*

Section 4--Vehicle Maintenance

Purpose

To prepare students to recognize causes of vehicle malfunctions and to perform simple maintenance and simple emergency repairs

Unit 4.1 Vehicle Systems

Classroom instruction on function and operation of all key vehicle systems, e.g., engine, engine auxiliary systems, brakes, drive train, coupling systems, suspension, etc. Instructor gives detailed description of each system, its importance to safe and efficient operation and what is needed to keep system in good operating condition.

Lesson 1 - Vehicle Systems (Classroom)
Lesson 2 - Vehicle Systems Demonstration (Lab)

Unit 4.2 Preventive Maintenance and Servicing

Supervised student practice in vehicle servicing, including checking engine fluids, changing fuses, checking tire inflation, changing tires, draining air tanks and adjusting brakes, performing emergency repairs.

Lesson 1 - Nature and Importance of Preventive Maintenance (Classroom)
Lesson 2 - Engine Fluids, Filters, Lights and Fuses (Lab)
Lesson 3 - Changing Tires and Checking Tire Air Pressure (Lab)
Lesson 4 - Reservoir Drainage and Brake Adjustment (Lab)

Unit 4.3 Diagnosing and Reporting Malfunctions

Classroom instruction on identification of vehicle malfunctions. Students given a series of exercises in which they troubleshoot Problems. Students practice emergency starting procedures.

Lesson 1 - Diagnosing and Reporting Malfunctions (Classroom)
Lesson 2 - Emergency Starting Procedures (Lab)

Section 5--Nonvehicle ActivitiesPurpose

PURPOSE

To enable students to carry out those activities not directly related to the vehicle that professional drivers must perform.

Unit 5.1 Handling Cargo

Basic principles of loading and unloading cargo, including weight distribution and techniques for securing and covering cargo

Students practice loading a vehicle under instructor's supervision.
Students visit local freight handling company to observe operations.

Lesson 1 - Basic Cargo Handling Procedures and Requirements (Classroom)

Lesson 2 - Techniques for Loading, Securing, and Unloading Cargo (Classroom)

Lesson 3 - Demonstration of Cargo Securement (Lab)

Lesson 4 - Observation of Cargo Handling Operations (Lab)*

Unit 5.2 Cargo Documentation

Discussion of basic forms and procedures required when driver handles cargo, e.g., bills of lading and other freight documentation.
Basic procedures and responsibilities for placarding vehicles that carry hazardous materials.

Lesson 1 - Cargo Documentation: Basic Forms and Procedures (Classroom)

Lesson 2 - Cargo Documentation Problems (Classroom)

Unit 5.3 Hours of Service Requirements

Classroom instruction in permissible hours of duty, rest periods, etc.
Introduction to and practice using driver log to record time. Use of log to record time for remainder of course.

Lesson 1 - Basic Requirements of Hours of Service Regulations (Classroom)

Lesson 2 - Complying with the Hours of Service Regulations (Classroom)

Lesson 3 - Log Keeping Exercise (Classroom)

Unit 5.4 Accident Procedures

Basic instructions for handling the scene of an accident, reporting accidents, rules and regulations related to accidents. Introduction to basic first aid practices* Introduction to use of fire extinguishers and basic fire-fighting techniques, especially those related to truckers,

Lesson 1 - Accidents and Accident Reporting (Classroom)

Lesson 2 - Principles of First Aid (Classroom)*

Lesson 3 - Fires and Firefighting (Classroom)

Lesson 4 - Firefighting Demonstration (Classroom or Lab)

Unit 5.5 Personal Health and Safety

Physical requirements for driving an interstate vehicle, medical examination and certification. Discussion of basic health maintenance requirement, diet, exercise, use of alcohol, drugs and avoidance of fatigue. Discussion of common non-driving safety hazards and use of special equipment (e.g., gloves, hard hats, goggles, equipment used with hazardous material).

Lesson 1 - Personal Health and Driving (Classroom)

Lesson 2 - Safety Equipment and Practices (Classroom)

Lesson 3 - The Truck Driver's Environment (Classroom)

Unit 5.6 Trip Planning

Class discussion of importance of and requirements for planning trips. Federal and State requirements, including need for permits, vehicle size and weight limitations, etc. Classroom exercise in which students plan an overnight trip with school vehicle, including identification of permits, estimating time of arrival, fuel stops, etc.

Lesson 1 - Trip Analysis and Trip Procedures (Classroom)

Lesson 2 - Trip Planning Exercise (Classroom)

Unit 5.7 Public and Employer Relations

Classroom instruction and discussion on maintaining a good image, public relations problems of trucking industry, dealing with public and customers. Classroom instruction and discussion of relationship to employer, including how to look for a job, get a job and keep a job. Student practices interviewing for a job.

Lesson 1 - The Driver's Role in Public Relations (Classroom)

Lesson 2 - Employer Relations (Classroom)**

* indicates an optional lesson. ** indicates portion of lesson is optional.

Please refer to the appropriate Curriculum Unit Standards for details on optional lessons.

MINIMUM CURRICULUM REQUIREMENTS

The units in this course outline are mandatory under these Standards. The lessons are not required if all of the instructional objectives for each Curriculum Unit Standard are satisfied fully.

Instructional Sequence

The units may be taught in any sequence that leads to efficient learning. The first three sections form a natural learning sequence beginning with basic control of the vehicle's motion (section 1), then the needs of the highway traffic environment (section 2), and, finally, introducing the advanced skills (section 3), that can be acquired only after mastery of the more fundamental skills.

Units of sections 4 and 5 are independent and can be taught in any sequence. Because they involve classroom and laboratory instruction for the most part, they may be scheduled concurrently with the behind-the-wheel (BTW) instruction of sections 1-3 to make the best use of school equipment and facilities.

Instructional Objectives

Objectives of instruction are provided at the beginning of each Curriculum Unit Standard. They are not divided among individual lessons as the various classroom, lab, range, and street lessons are all applied toward attaining the same objectives.

Purpose of Objectives

The purpose of the objectives is to make instructional goals for each unit explicit. The objectives describe the performances that students are expected to be capable of performing after completing the unit, as well as the knowledge, skills, and attitudes they must possess to

attain performance objectives. Making the objectives explicit is intended to enable the user of these Standards to:

- Gain a clear understanding of instructional goals necessary to fulfill training standards.
- Be able to communicate to instructors what is expected of the instructors.
- Be in a position to modify training to meet local needs and changing times and remain in compliance with these Standards.

CVTA recommends that its member schools review the guidance provided by the above “Standards” to ensure that their course curriculum follows the “Standards” as closely as possible.