Pilot/Escort Vehicle Operators

STUDENT STUDY GUIDE

U.S. Department of Transportation
Federal Highway Administration

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16. Abstract The *Pilot/Escort Vehicle Operator Student Study Guide* is the accompanying document for the *Pilot/Escort Vehicle Operator Training Course*. The study guide is designed to serve as a review document to help students prepare for the end-of-course test in order to receive a certification certificate demonstrating successful completion of the training course. The guide includes a number of questions and references to particular sections in the student training manual.			
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MODULE 1

Course Introduction and Industry Background

Lessons 1 and 2: Course Overview and Industry Background

1. **Is pilot/escort vehicle operator (P/EVO) certification valid in all 50 States?**

   No. P/EVO certification cards are valid in the State in which they are issued, in States that have agreements in place to accept certification from certain other States, and in States that require certification. As of early 2016, States that require P/EVOs be certified include Arizona, Colorado, Florida, Georgia, Minnesota, New York, North Carolina, Oklahoma, Utah, Virginia, and Washington. (p. 12-13)

2. **What are the primary reasons for certifying P/EVOs?**

   The purpose of certification is to enhance the safety of all roadway users, the load driver, and the P/EVO; to prevent damage to transportation infrastructure, all vehicles, and the load being escorted; to prevent or minimize disruptions in the normal flow of traffic; to reduce accidents and loss rates, including public cost of replacing transportation infrastructure and insurance costs; to enhance the profession; to standardize the escort industry; and to harmonize standards from State to State. (p. 7-8)

3. **What is the essential purpose for having P/EVOs in place?**

   The primary purpose for P/EVOs is to warn approaching motorists of the presence of large loads. (p. 10) When the job is done well, P/EVOs assist not only in reducing fatalities and injuries, but also in preventing damage to the transportation infrastructure, including bridges, signs, and guardrails; to the load, the load vehicle, and the escort vehicle; and to all other vehicles on the roadway. (p. 7)

4. **Why do laws pertaining to escort drivers differ from State to State?**

   The State-to-State variance in rules affecting P/EVOs exists because there are very few Federal rules governing escort operations. Therefore, this area of rulemaking, as a matter of public safety, falls to each individual State. States have substantially different approaches to permitting and regulating oversize load movement, including defining situations in which escorts are required, how many escorts are required under certain conditions, and the equipment and signs the P/EVO must have, among others. It is the responsibility of the P/EVO to know the laws of each State in which they drive, just as it is for drivers with a commercial driver's license or a basic driver's license. (p. 1-2)

5. Who issues P/EVO certification cards?

Designated individuals, companies, schools, or agencies within each certifying State issue P/EVO certification cards.

MODULE 2

Pilot/Escort Operator and Vehicle Equipment Requirements

Lesson 1: Pilot/Escort Operator Requirements

1. **What determines the route to be followed and the dates and times of travel?**

   Many aspects of the load movement will be specified on the permit; for example, the route to be followed, the specific dates of travel and times of day that movement is allowed, local jurisdictions and utilities that must be contacted, the number of escorts required, along with many other requirements. (p. 11)

2. **How old must pilot/escort vehicle operators (P/EVO) be?**

   Many States require P/EVOs be 21, while several allow P/EVOs to be certified at age 18. (p. 12)

3. **Certification typically lasts how long?**

   Most certifying States require students attend a one-day course, typically every 3 to 5 years. (p. 12)

4. **When is it appropriate for a P/EVO to wear or display uniforms, emblems, or vehicle decals that resemble those of a law enforcement officer?**

   P/EVOs should have a professional appearance and manner; however, they must not display any badge, shield, emblem, or uniform of color or design that may be mistaken for a law enforcement badge, emblem, or uniform, pursuant to 18 U.S.C. § 912. (p. 13)

5. **What is a TWIC card?**

   Transportation Worker Identification Credential (TWIC) cards (required by the Maritime Transportation Security regulations, 46. CFR.10.203) have been required since 2009 for anyone entering a secure area of a maritime port. (p. 137)

⏩Lesson 2: Escort Vehicle Equipment Requirements

1. **Are cargo vans or panel trucks recommended as escort vehicles? Why or why not?**

   Some States focus on visibility, requiring escort vehicles that enable the driver to see 360 degrees from the driver's seat. Cargo vans or panel trucks are not allowed in that situation. (p. 14)

2. **What are the advantages of putting the Oversize Load sign on the top of the vehicle rather than on the bumpers?**

   The trend is for the Oversize Load sign to be on top of the escort vehicle. This improves visibility for highway users, and, since safety technologies such as crash prevention devices are often installed in vehicle bumpers of both load vehicles and passenger vehicles used by P/EVOs, mounting signs on the bumper is not always advisable. (p. 14-15)

3. **What is the minimum size for the STOP/SLOW paddle? What is the recommended size for controlling traffic at highway speeds of 60 mph or more?**

   Most States require P/EVOs carry at least one 18-inch *STOP/SLOW* paddle. The paddle should have a reflective surface and be standard in color and shape; i.e., octagonal. The "STOP" side must be red with white letters, and the "SLOW" side must be orange with black letters. The minimum size is 18 inches with 6-inch letters; however, when controlling traffic at highway speeds, a 24-inch paddle is recommended. (p. 18)

4. **How tall should the pole for the STOP/SLOW paddle be? Why?**

   The P/EVO should have a pole about 7 feet tall for mounting the *STOP/SLOW* paddle when traffic control will be needed for more than a few minutes. Standard traffic signs are installed so that the bottom of the sign is 7 feet from the ground. By having a pole this length, the *STOP/SLOW* paddle will be in the area drivers commonly see stop signs. This also places the *STOP/SLOW* paddle well above the flagger's head in nearly all situations. (p. 18)

5. **Why are CB radios recommended for P/EVO operations?**

   CBs do not require a driver to dial or scan contacts lists, reducing substantially the visual distractions inherent in cell phone use. CBs also reduce temptation to use text messaging. Drivers learn of accidents, fires, weather conditions, and other traffic situations from other drivers in the area who are tuned to the same channel. (p. 20)

MODULE 3

Route Planning

Lesson 1: Route Selection and Review

1. **Why is it recommended that the route survey be conducted by the person who will be the lead pilot/escort vehicle operator (P/EVO) during the load movement?**

   Although the responsibility for the permit and meeting any of its conditions, including a route survey requirement, lies with the carrier, many P/EVOs conduct those route surveys. In fact, many individuals in the P/EVO industry agree that the route survey should be done by the lead P/EVO, who will actually run the height pole during load movement. Proponents suggest that this provides an extra measure of safety, since having seen the restrictions along the route while performing the route survey greatly enhances the lead P/EVO's ability to notify the load driver of hazards in time to avoid problems. (p. 23)

Lesson 2: Route Survey

1. **What equipment/materials are needed to conduct a route survey?**

   P/EVOs need several pieces of equipment to conduct route surveys. For example, P/EVOs should have *top quality and up-to-date maps*, measuring devices, a height pole, dashboard camera, digital voice recorder, and a camera that shoots both still frames and video, and safety equipment adequate for roadside operations. Use bridge clearance, weight and width restriction data made available by State departments of transportation in hard copy or on websites. (p. 24-25)

2. **What safety equipment should be used when conducting a route survey?**

   A Route Survey banner, *STOP/SLOW* paddle, safety vest, hardhat, amber light on vehicle, flashlight with cone, and triangles/cones for protecting the surveyor when measuring overpasses, etc., are strongly recommended. (p. 25)

3. **Under what two conditions do railroad crossings become most hazardous?**

   Railroad crossings (and other elevation changes) are especially hazardous for loads with low ground clearance and for long loads. (p. 28-29)

MODULE 4

Pre-Trip Activities

Lesson 1: Pre-Trip Planning and Procedures

1. **Why is an open climate of cooperation among members of the load team so critical to safety?**

   It is critically important to cultivate a climate of cooperation in which any member of the team can safely raise a question, issue, or concern at any time and about any aspect of the project. The importance of a well-informed movement team and an open climate of cooperation among team members must not be underestimated. (p. 31-32)

2. **What question does contingency planning address?**

   What if? (p. 32-33)

3. **What are the benefits of contingency planning?**

   Contingency plans assist in identifying risks, measures that should be in place to protect lives and property, individual and group/organizational roles and responsibilities, as well as in establishing interpersonal networks among team members. (p. 33-34)

Lesson 2: Pre-Trip Safety Meeting

1. **What information should be obtained when confirming a Pilot/Escort Vehicle Operator (P/EVO) assignment? During pre-trip safety meeting?**

   When confirming an assignment, the P/EVO should get as much information as possible about the load: height, length, width, weight, any overhangs or articulations, or other aspects of the configuration of the vehicle carrying the load. Find out about the origination point, the target departure and arrival dates, the route, and destination point. This information can be used to identify risks and determine the need for any special equipment and personnel. Getting information about these aspects of the move prior to departing also increases the time available for developing contingency plans, contacting local jurisdictions, or pre-running portions of a route, for example. (p. 35)

2. What determines the number of escorts required for a specific load? What determines the route? Curfews?

The permit. When reviewing the permit, P/EVOs should confirm dates of travel, origination point, details about the permitted route, and the destination point. In addition, review information about the load dimensions, travel restrictions, and curfews. All of these elements are crucial to making adequate contingency plans.

3. What is meant by the statement, "For the P/EVO, every job is a prototype?"

Even if the P/EVO is escorting the same load—same vehicle configuration, same load driver and escorts, from the same origination to the same destination—some aspect of the trip will vary from the previous experience; for example, the weather will be different, or there will be fewer hours of daylight than the last trip. P/EVOs are in a profession that requires continuous information exchange, vigilance, and plan modification. (p. 38, p. 93)

4. If communication cannot be established between P/EVOs and the load driver, what is the recommended procedure?

If all forms of electronic communication are unavailable, the load should be parked until communication can be re-established. During contingency planning, determine what forms of communication are to be used if two-way radio communication equipment fails. (p. 35-36)

5. What is meant by a "pick up on the move?" How does it change pre-trip responsibilities?

In some situations, P/EVOs engage in non-stationary transfers of responsibilities, or what is referred to by some as a "pick up on the move." This situation occurs when the load doesn't stop, but the original escorts do stop traveling with the load as new escorts pick up the escorting responsibilities. This situation is challenging because of the lack of information, lack of contingency planning, and lack of knowledge of team members and their preferences and skills. A "pick up on the move" happens initially without any of the benefits described in Lesson 1. (p. 33) Sharing information, planning for contingencies, and developing team dynamics are delayed in a non-stationary transfer, but they should be delayed no longer than absolutely necessary. (p. 40)

6 In what situations might non-stationary transfers of responsibility be used?

These transfers of responsibility are used for a variety of reasons. Sometimes P/EVOs are not needed to accompany a load on interstate highways but are required on two-lane roads. Sometimes escorts are not certified to operate in a certain State, or the load driver needs the particular skills of a P/EVO in certain places. (p. 40-41)

7. **What are the two methods of completing a "pick up on the move?" Which of the two is recommended?**

   At a minimum, the successor escort must know how the transfer is to take place. Will the P/EVOs overlap or will the transfer be an abrupt change? If P/EVOs overlap, it is possible for the successor P/EVOs to have a few miles to "read" what the departing escorts are doing, and this overlap, when it lasts until the location for the safety meeting is reached, creates a safer environment for highway users and the load and driver. If an overlapping P/EVO transfer isn't possible, the load and successor escorts should take the first safe opportunity to conduct the meeting, inspections, and reviews. This abrupt-change option should be the exception rather than the rule, as it poses the greater risk of the two "pick up on the move" options. (p. 40-41)

⏩Lesson 3: Vehicle Inspections

1. **What is meant by the statement: "Inspection is a process, not an event"? When should vehicle inspections be conducted?**

   Vehicles should be inspected at every opportunity. Before beginning each day, at every fuel and rest stop, and at the end of every day. Vehicle defects found during pre-trip and other inspections not only improve safety, but also reduce on-the-road breakdowns, violations, and fines. Of course, on-the-road breakdowns are expensive, and studies show that while unsafe vehicles contribute to crashes, disabled vehicles contribute directly to crashes. (p. 42, p. 45-47)

2. **What should be done if a P/EVO has mechanical problems or an illness, for example, and cannot continue with the load movement team?**

   When a pilot/escort vehicle has mechanical problems or the operator an illness, the load doesn't move until the vehicle is repaired or another P/EVO vehicle can take over. It is important to do everything possible to avoid mechanical problems by having well maintained vehicles and equipment, an adequate array of spare parts and tools, and contingency plans for who can take over in the event that either a vehicle cannot be repaired in a reasonable time or a driver becomes ill. (p. 43)

3. **What should be checked, at a minimum, when inspecting the escort vehicle?**

   The P/EVO should check all mandatory equipment for each State in which the team will be operating. Mounting signs, checking lights, adjusting mirrors, checking radios, and other activities must be completed during this time. On longer trips, this routine should be repeated every morning before the load moves and at every opportunity during the day. (p. 43)

4. What should be checked inside the escort vehicle?

P/EVOs should be sure drivers have the railroad emergency visor card, relevant maps, a clear understanding of the route (especially understanding all turns and potential hazards up to the first planned stop), exit numbers for fueling stops and breaks, etc., before the team rolls.

Review copies of the carrier's accident policy and incident report forms (should be in glove compartment of all vehicles), the railroad safety visor card, extra copies of licenses, certification cards, medical cards, and other trip-related documents for each driver who may join the load movement team along the route.

This is an important process in orienting new drivers to the open climate of cooperation and support among team members and should be handled in a non-threatening manner. Load movement team members should not ask another team member for any documentation they would not be willing to provide themselves, for example. The process is about safety, and team members should help each other stay in compliance and operate safely.

Verifying all licenses are in force (not expired or suspended), that escort certifications are up-to-date, and that P/EVOs meet the age requirements are important. The P/EVO should be free of health conditions—physical, mental, and emotional—that may negatively affect driving. P/EVOs must not be under the influence of any substance (prescription drugs, over-the-counter medications, or illicit drugs) that potentially impairs their ability to fulfill their responsibilities safely.

A brief safety reminder can be delivered as the inspection process is completed, for example, reminding drivers of laws and policies, and about the dangers and inexcusability of distracted driving incidents. (p. 43-44)

5. During the trip, what must P/EVOs monitor?

In the interest of safety, as well as to prevent expensive repairs and avoiding breakdowns and down time, P/EVOs must monitor gauges for signs of trouble. Be familiar with all warning messages and icons in the dashboard display of the vehicle being used. Check critical items on the escort vehicle when stopped for fuel, rest, or food, including tire inflation and conditions of wheels and rims and all lights including head and tail lights and brake and turn signal lights. Also confirm that reflectors and flags are in place according to relevant State rules. With respect to the load vehicle, help check tires and wheels, brake and electrical connections, load vehicle lights, and trailer coupling and cargo securement devices. Look for fluid leaks underneath all the vehicles. Check the load for any shifting or loose tie-downs. (p. 44-45)

6. **What is meant by the statement that drivers should "look, listen, smell, and feel?"**

   During load movement, it is important to be vigilant about changes in braking or steering related to the vehicle or roadway conditions, and drivers must respond to unexpected changes in internal and external surroundings, the feel of the brakes or steering, unusual smells and sounds, etc. Drivers must know the meaning of and proper responses to all warning messages and icons in the dashboard array. (p. 44)

7. **Why should P/EVOs be familiar with the "Seven-Step Inspection Method?"**

   Having a method that is successfully used by large numbers of commercial drivers is important for consistency across the industry, including the movement of oversize loads and the operations of escort and load drivers in that context. And, standardizing the inspection process reduces the likelihood that an element of inspection will be missed. (p. 45-47)

MODULE 5

Trip Operations

Introduction

1. **When is it appropriate for pilot/escort vehicle operators (P/EVO) to ignore traffic laws?**

   Never. It must be clear to individuals operating pilot/escort vehicles that P/EVOs must stop at all stop signs and traffic lights, must yield to oncoming traffic, and must follow all laws and regulations in the jurisdictions in which they operate. It is never appropriate for P/EVOs to ignore stop signs, traffic signals, speed limits, or move-over laws, or to cross centerlines, run motorists off the road, or violate any other traffic laws. (p. 49)

2. **What are common characteristics of oversize loads that P/EVOs must understand and accommodate?**

   P/EVOs must remember that the oversize load is operationally more difficult to drive and has more blind spots. The oversize load is less maneuverable, takes longer to stop and accelerate, and has a wider turning radius. Drivers of oversize load vehicles have difficulty maintaining speeds on roads with moderate to severe grades. The oversize load vehicle is less stable, may be more likely to roll over, and is subject to trailer sway and rearward amplification, tail swing, offtracking, and other phenomena that produces encroachment into other lanes of traffic, including oncoming traffic. Oversize load vehicles have more and bigger blind spots than other vehicles. (p. 49-50)

3. **How is stopping distance affected by speed?**

   Stopping distances increase by the SQUARE of the amount the speed is increased. So if speed doubles from 20 mph to 40 mph, the distance needed to stop increases by 4 times. (p. 51)

Lesson 1: Load Movement—The Role of the Pilot/Escort Vehicle Operator

1. **What are the primary duties of P/EVOs?**

   It is generally agreed among the States that the P/EVO is responsible for **warning motorists** about the presence of an oversize load. In addition, where permitted by State law, the P/EVO is also responsible for **controlling traffic**, often in conjunction with law enforcement escorts, to allow the oversize load driver to negotiate turns, avoid striking roadway structures and vehicles, and adapt to traffic conditions. (p. 52)

2. What are the benefits of standardizing P/EVO rules, requirements, processes and procedures?

Standardizing P/EVO rules, processes and procedures is an important safety issue. Uniform operating procedures, designed with safety as the primary goal, reduce confusion of highway users, load movement teams, and even enforcement officers while promoting effective operations and improving load movement safety. This lack of standardization is perhaps one of the most difficult tasks the P/EVO encounters: how to comply with diverse rules and permit restrictions in each State or local jurisdiction. Standardization would greatly simplify basic P/EVO operations, allowing more attention to be put toward safe load movement. (p. 52)

3. What determines the route for oversize loads?

Routes are selected first and foremost to provide extra measures of safety for the general public. With safety as the primary focus, the route may involve increased distances or restrictions on specific times of movement that make the load movement more time consuming or difficult. However, failure to follow the route as specified on a permit constitutes a violation of the permit that in most States renders the permit invalid. (p. 52)

4. What must the load movement team do just prior to load movement?

Just prior to load movement, check communication equipment and make sure and all paperwork is in the vehicle. And, in the last few minutes before the load moves, perform:

- ✓ ***Paperwork check:*** Licenses, P/EVO cards, Transportation Worker Identification Credential (TWIC) cards, insurance, permit, route survey, maps.
- ✓ ***Vehicle check:*** All required equipment for all States, warning light and headlights on, signs displayed, flags in place, height pole installed and calibrated, if required.
- ✓ ***Route check:*** Ensure all load movement team members know the route, and specifically review the first few turns and/or the route and all known hazards up to the next stop. Discuss curfews and parking issues, identify next planned stop and any emergency pullover areas along the route.
- ✓ ***Traffic Control Plan(s):*** Review flagging procedures for narrow bridges or for turning longer loads. Ensure all team members know what to do and when to stop traffic when required and allowed.
- ✓ ***Communication equipment check:*** Select channel, test all equipment, identify team members, and establish voice recognition.
- ✓ ***Emergency procedures:*** Review with the entire team the immediately relevant emergency procedures, such as becoming lodged at a crossing or a vehicle breakdown. (p. 53)

5. What must all P/EVOs do during load movement?

During the trip, P/EVOs should report everything they see, hear, smell, or anything that feels or looks different in the way the vehicles or load rides or handles.

The load and escort vehicles should be inspected at every stop, and all dashboard instruments, including temperature, oil pressure gauges, tire pressure, and engine warning lights, should be monitored while on the road. (p. 53-54)

6. When should load drivers and/or P/EVOs signal to motorists when it is safe to pass the oversize load?

It is *NOT* recommended that P/EVOs or load drivers wave cars around or make any attempt to signal other motorists when it may be safe to pass. The load driver and the P/EVOs must focus on the specific job they are doing. It is not possible to safely drive and direct traffic simultaneously. (p. 54)

7. When should the load and P/EVOs pull over and allow traffic to pass?

When delaying traffic more than 5 minutes or when more than 10 vehicles are behind the load, if possible, move over and allow the vehicles to pass. In certain situations, it may be necessary for the load and P/EVOs to stop and flag traffic around the load (See Lesson 4, below); for example, when a collision on a roadway nearby increases traffic flow substantially on the permitted route and vehicles begin to queue behind the load. (p. 55)

8. What is the primary skill that lead P/EVOs, in particular, must develop?

Maintaining an attentive and proactive visual lead is perhaps the most important skill front P/EVOs must cultivate. Monitoring obstructions such as bridge abutments, signs, guardrails, and mailboxes is critical to the safe movement of oversize loads, but monitoring is only the beginning of this task. If the distance between the escort and the load is too small, or if the P/EVO does not notice the hazard in time to notify the driver, no amount of monitoring will ensure the safety of highway users, the load driver, the P/EVOs, and transportation infrastructure. Even if the P/EVO has time to notify the load driver about the hazard, there is too frequently no time left for the driver to avoid it. These situations also highlight the vital nature of effective communication equipment and processes. (p. 55)

9. What is the number one cause of injuries and death in construction work zones?

Speeding traffic is the number one cause of injuries and death in roadway work zones, and it is also the number one cause of citations issued to drivers in work zones. To operate safely, drivers must observe posted speed limits at all times, and especially when approaching and driving through work zones. Drivers must be mindful of their speed and avoid increasing speed while traveling through the work zone, especially long sections of construction. Maintain adequate following distance. Decrease speed in adverse weather or road conditions and when workers are near the roadway. Avoid distractions when traveling through work zones. (p. 56)

10. What are the primary functions of the rear P/EVO?

The tasks required of the rear P/EVO for safe load movement include watching motorists approaching from the rear, watching the amount of traffic behind the load, and reporting information to the team. Additionally, the rear escort (also known as the chase car) must watch the load and the load vehicle to report shifting of load, flat tires, tie-down malfunctions, and anything about the load or load vehicle that might interfere with safe load movement. It is especially important to notify the load driver when other large vehicles are approaching from the rear. (p. 58-59)

11. What is meant by the term "offtracking?"

Offtracking occurs when a vehicle's front and rear wheels do not follow the same path. An oversize load typically has a large turning radius. This limitation may result in excessive offtracking when the vehicle turns through an intersection, negotiates an interchange, or rounds a curve. The danger is that offtracking may result in lane encroachment. The P/EVO must understand this maneuvering limitation to adequately protect motorists. The extent of offtracking generally increases with the spacing between the vehicle axles and decreases for turns with a larger radius. (p. 60)

12. How does being top-heavy (having a high center-of-gravity) affect the maneuverability of the load?

A high center of gravity increases rollover chances. For top-heavy loads, P/EVOs must be vigilant about warning drivers about curves and slopes on entry/exit ramps, for example. Oversize loads are frequently more susceptible to rollover incidents. They are subject to trailer sway, tail swing, and rearward amplification.

The vehicle's level of stability is affected by the height of the vehicle's center of gravity; weight and load distribution; type and condition of connections; number of articulation points; trailer length, type, and condition; road demographics; speed; and driver skill. (p. 61)

13. What is the primary hazard a load with low ground clearance encounters?

Trailers today sometimes have only a few inches of ground clearance. This is a critical concern for the oversize load driver encountering changes in grade, such as a railroad crossing. P/EVOs and route surveyors must assess each railroad crossing and other grade changes along the route when escorting low-clearance loads, even sections of rough roadway surface or rocks in the roadway. Some loads are not even carried on trailers, but are suspended between trailers, leaving the load skimming barely above the surface of the roadway. (p. 61)

14. How do the driving abilities of drowsy drivers and drinking drivers compare?

Tests have shown that after being awake for 18 hours, drivers score **no better on driving skill tests than drivers with a blood alcohol concentration of .05 percent**. After being awake for 24 hours, the driver's skill is reduced to that demonstrated by drivers at the .10 blood alcohol concentration. Planning for rest is as important as any other plans made for moving loads safely. (p. 62) Drowsy drivers may feel morally superior to the drinking driver, or feel that fatigue is not as dangerous as drinking and driving, but **tests show fatigued drivers are no better at driving than those who have been drinking alcohol.** (p. 63-64, p 102-107)

▸▸Lesson 2: Equipment Deployment and Operation

1. What equipment must flaggers have?

Each State has its own requirements for P/EVO equipment, so it is important for the P/EVO to know the equipment that each State requires. It is also useful to review, from time to time, the regulations at 49 CFR 393.95 for information about emergency equipment requirements and the *Manual on Uniform Traffic Control Devices* (MUTCD)[1] for flagging and flagger equipment standards and guidance. (p. 65-66, p. 73)

Overwhelmingly, States require hardhats (Type II recommended) and retroreflective safety vests in fluorescent orange-red, fluorescent yellow-green, or a combination of the two, with retroreflective material visible at 1,000 feet.

Most States require P/EVOs to carry at least one 18-inch *STOP/SLOW* paddle. The paddle should have a reflective surface and be standard in color and shape; i.e., octagonal with the "STOP" side being red with white letters, and the "SLOW" side being orange with black letters. The minimum size is typically 18 inches with 6-inch letters; however, when controlling traffic at highway speeds, a 24-inch paddle is recommended. It is also recommended that P/EVOs have an extra *STOP/SLOW* paddle; this is because traffic may need to be controlled in several directions, such as at intersections. In these situations, the load driver may need to help with traffic control, and load drivers are not currently required to carry a *STOP/SLOW* paddle.

In addition, many States also require P/EVOs carry a 24-inch by 24-inch red flag (or red-orange or fluorescent versions of those colors) for controlling traffic in an emergency ***only*** when no *STOP/SLOW* paddle is available. A flashlight with a cone (traffic wand) is required by many States and is strongly recommended for use when controlling traffic at night. (p. 64-65, p. 73-74)

1 The FHWA has incorporated by reference the *Manual on Uniform Traffic Control Devices for Streets and Highways* (MUTCD), pursuant to 23 CFR 655.601(d)(2).

2. What must flaggers NOT have?

Nothing should be near the flagger—no devices such as music players or smart phones, no food or other distractions. No people should be near the flagger. Just as with driver distractions, flaggers must maintain attention and vigilance at all times when controlling traffic. (p. 74)

3. Where should warning devices be placed in vehicle breakdown or other roadside emergency situations?

When a load vehicle is stopped on the traveled portion of the shoulder of a multi-lane highway, as soon as possible—and certainly within 10 minutes—the driver should place required warning devices in the following manner:

a. One warning device (triangle reflector, flare, or cone) on the traffic side and four paces (approximately 3 meters or 10 feet) from the stopped commercial motor vehicle in the direction of approaching traffic.
b. A second warning device at 40 paces (approximately 30 meters or 100 feet) from the stopped commercial motor vehicle in the center of the traffic lane or shoulder occupied by the vehicle and in the direction of approaching traffic.
d. A third warning device at 40 paces (approximately 30 meters or 100 feet) from the second device (approximately 210 feet from the vehicle) and in the direction of approaching traffic. (p. 65)
e. The STOP/SLOW paddle should never be left unattended, such as propped on equipment or stuck in a safety cone.

4. What is the function of a height pole?

When loads are over a certain height, the lead P/EVO (or sometimes a third P/EVO) must use a height pole. Height pole operation is designed to prevent the load from hitting bridges, power and utility lines, signs, traffic lights, and other primarily overhead obstructions. (p. 65) The P/EVO operating the height pole must have an unobstructed view of the pole and must be far enough ahead of the load to be able to communicate to the load driver in enough time to get the load stopped before striking any overhead obstruction. (p. 67-68)

5. How are height poles calibrated?

States vary in what they require when installing the height pole; established best practice is that all height poles should be, at a minimum, set **3 to 6 inches** above the tallest part of the load. Measure the load and set the height pole with the assistance of the load driver. Confirm the height with the load driver. (p. 68)

6. **What is a tillerman and what does he/she do?**

   A tillerman (or steerman) is a person who steers articulated trailers. As with most other P/EVO regulations, it is necessary to check with the State agency that oversees oversize load permits and P/EVO operations to find out what the rules are regarding steering articulated trailers. It is not recommended, and is unlawful in many States, for a single individual to perform two driving tasks simultaneously; that is, functioning as both the P/EVO and the tillerman at the same time. This is true regardless of how the trailer is steered. In many States, a tillerman/steerman must have a Class A commercial driver's license (CDL). (p. 68-69)

⏩Lesson 3: Roadway Positions and Procedures

1. **What determines the number of escorts and their placement relative to the load (that is, front or back)?**

   The number of P/EVOs required for a particular load varies from State to State; however, some similarities exist. It is the State permit, ultimately, that determines the minimum number of P/EVOs required and where they are to be positioned relative to the load during movement. It should be noted that, as is the case with most State laws, requirements set forth on the permit (or in laws) are minimum standards. The carrier or the owner of the load itself may provide more P/EVOs than required by permitting officials. (p. 69)

2. **Why are many laws and rules governing P/EVOs ambiguous and non-specific?**

   Because of the prototypical nature of the job, specific rules are not possible. Each situation requires the load movement team to adjust to current conditions and the limitations of the load. For example, there are few if any rules that establish the distance in actual feet that P/EVOs should be positioned in front of or behind the oversize load vehicle. This decision should be made in light of the situation rather than a rule. For example, factors affecting safe distance from the load include weather conditions, night or day, speed of traffic, volume of traffic, features of the terrain, type and condition of roadway surface, and the unique size and configuration of the load. Rules are necessarily non-specific in order to provide latitude for the load movement team to appropriately and safely adjust procedures to conditions. (p. 69)

3. **What should be considered when establishing distance between the P/EVOs and the oversize load vehicle?**

   Properly estimating **stopping distance** is crucial in determining the safe vehicle spacing between the P/EVOs and the load vehicle as well as the space between the load movement team and all other highway users.

   The P/EVO must be located a safe distance from the load while also **giving the traveling public maximum warning**. Distances should be adjusted for nighttime travel, rainy conditions, and other potential hazards that negatively affect visibility, traction, or braking. However, the distance should not exceed ½ mile, in order to stay within radio range.

The lead P/EVO must be far enough ahead of the load to **give the load driver ample time to take action when obstacles or hazards are encountered**. All drivers face two choices when confronting an obstruction: to stop before hitting it or to steer around it. Both of these choices take much longer to execute in an oversize load vehicle. While it is impossible to consider every potential situation, some common scenarios are described below. (p. 70-71)

4. **What common traffic maneuvers require extra vigilance on the part of P/EVOs?**

   Passing a slower vehicle, operating with restricted visibility, merging onto a highway, and making turns. (p. 71-72)

⏩Lesson 4: Traffic Control Operations

1. **In what situations might P/EVOs be required to control (flag) traffic?**

   P/EVOs may be required to flag traffic not only in known, or ***planned situations,*** such as closing a narrow bridge to allow the oversize load to cross, but also in emergencies, or ***unplanned situations,*** such as a vehicle breakdown or a weather or traffic event that makes load movement unsafe or impossible. Therefore P/EVOs must be prepared to control traffic at any time and in any conditions: night or day, hot or cold, wet or dry, even when the load moves only from daylight to dark. (p. 72)

2. **When is it appropriate to control traffic from inside a vehicle?**

   Never. Several States explicitly prohibit flagging traffic from a vehicle, and none of the dozens of procedure descriptions and illustrations found in the MUTCD (where national flagger standards are found) depict flaggers inside vehicles. (p. 73)

3. **What does TTC stand for? Why is it dangerous?**

   Temporary traffic control (TTC) is particularly dangerous, in part because the flagger does not have advantages typically found in other traffic control situations such as construction work zones. There are no advance warning signs such as Flagger Ahead or One-Lane-Road for P/EVOs and others working in TTC zones. TTC zones "present constantly changing conditions that are unexpected by the road user. This creates an even higher degree of vulnerability for the workers and incident management responders on or near the roadway." (MUTCD, Section 6D.03) The lack of advance warning devices combined with the unpredictability inherent in moving oversize loads together produce a potentially dangerous situation. To reduce these dangers, it is critical that flaggers be in the standard position (right shoulder of lane being controlled) with standard equipment (STOP/SLOW paddle), at the standard height (7-foot pole) and wearing standard safety gear (hardhat, safety vest) to control traffic safely. (p. 74)

4. **When is it appropriate to control traffic by parking a vehicle across lanes of traffic?**

   Never. It is never appropriate to attempt to control traffic by parking a vehicle across lanes of traffic, especially at highway speeds. This behavior is exceedingly dangerous and irresponsible. One of the first rules new drivers are taught is to never, ever stop in a roadway. (p. 74)

5. **What should be considered when deciding where to place a flagger?**

   Conditions to be considered when deciding where to place a flagger include how fast traffic is moving, features of the terrain (hills and curves), and the condition and type of roadway surface (wet or dry, asphalt or gravel, for example). Other considerations include weather, darkness, traffic volume, and the duration of time traffic will need to be controlled. (p. 74)

6. **How big, according to the MUTCD, are typical stop signs on highways with speed limits of 60 mph or more?**

   According to Table 2B-1 (MUTCD, 2009, p. 46), stop signs on multi-lane highways are 36 inches by 36 inches and mounted so that the bottom of the sign is 7 feet from the ground. This should be carefully considered when P/EVOs decide whether or not to carry and use a 24-inch by 24-inch *STOP/SLOW* paddle on roadways with speed limits of 60 mph or more. The 18-inch by 18-inch *STOP/SLOW* paddle is only ½ the size that motorists are used to seeing.

7. **Are P/EVOs authorized to control traffic in all States?**

   No. States also differ in the authority extended to P/EVOs to control traffic. Many States allow it, but some do not. As mentioned, if P/EVOs are not authorized to control traffic in a given jurisdiction, this responsibility is typically delegated to law enforcement officials—and these officials are in charge of the load movement while they are engaged in the process. (p. 73)

⏩Lesson 5: Railroad Crossings

1. **When escorting a load with low ground clearance, what must P/EVOs do daily?**

   Because railroad crossings and other grade fluctuations present high levels of risk for oversize loads with low ground clearance, P/EVOs must be familiar with the oversize load and its limitations in order to be able to warn highway users and load drivers of problematic crossings. All railroad crossing (and other grade changes) should (or as required by the States) be included in the route survey, along with emergency contact numbers for each crossing. **This information should be reviewed daily**; that is, before starting travel for the day, the load movement team should be reminded of the hazardous crossings on that day's route and the emergency procedures and contingency plans to be followed if the load should become lodged at a crossing. (p. 77)

2. How long does it take a train to stop?

It can take more than a mile for a train to stop once emergency brakes are applied. Freight trains average a mile in length and travel at 50 mph and more. Stopping distances for passenger trains are comparable to freight trains. Specifically, a 150-car freight train at 50 mph needs 8,000 feet (about 1 and ½ miles) to stop; an 8-car passenger train at 79 mph needs about 6,000 feet (1 and 1/8 miles) to stop. Simply put, if you see a train, it cannot stop before it hits you. And, similarly, when a train engineer sees an obstruction at a crossing, effectively about a half-mile ahead of the crossing, it is already too late to avoid a collision. (p. 78)

3. What railroad crossing violations exist for CDL holders?

Railroad crossing violations for CDL holders (see State CDL manuals/handbooks) include failing to stop before reaching the crossing if the tracks are not clear, failing to slow down and check that the tracks are clear of an approaching train, failing to come to a complete stop when required to do so, failing to have sufficient space to drive completely through the crossing without stopping; failing to obey a traffic control device or the directions of an enforcement official at a crossing, and failing to negotiate a crossing because of insufficient undercarriage clearance. (p. 78)

4. What information about railroad crossings should be included in a route survey?

Route surveys should include each railroad crossing along with any potential obstructions and nearby transportation infrastructure. Whether a route survey is conducted or not, the following should be considered:

- What is the **rise** (upward slope) of the crossing from the level road approaching the crossing on the ascending edge?
- What is the **drop** (downward slope) from the crossing to the level road on the descending edge?
- What is the **length** of the top of the crossing, or the number of tracks in the crossing?
- What is the **approach** to the crossing? Straight? Turn? Curve?
- What is the **descent** from the crossing? Straight? Turn? Curve?
- What are the requirements/instructions for **advance notification** to the railroad company? (p. 80)

5. What are two types of railroad crossings?

Types of crossings include passive and active crossings. A **passive crossing** does ***not*** have any traffic control devices such as a gate. The decision to stop or proceed rests entirely with drivers. Passive crossings typically have yellow circular advance warning signs, pavement markings, and other advance warning signs. **Active crossings** have traffic control devices installed to regulate traffic, including flashing red lights (with or without bells) and gates. (p. 80)

6. **Where should the load stop in relation to the tracks? How does this affect where the P/EVOs should be?**

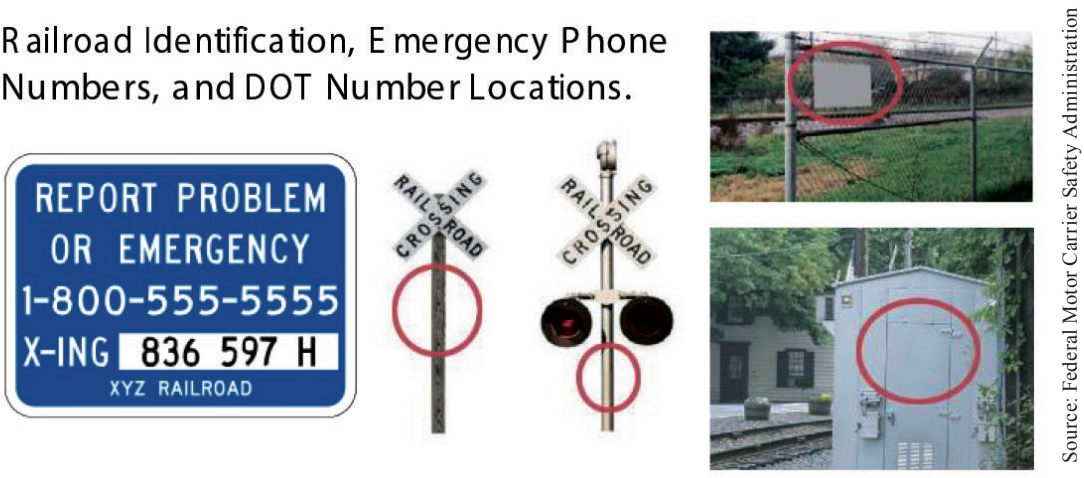
   The Federal Motor Carrier Safety Administration (FMCSA) recommends the load stop at least 15 feet but not more than 50 feet from the railroad track(s). When stopping, the load driver and P/EVOs should turn on emergency flashers and use pull-out lanes if available.

   Make sure the load can get completely across all tracks before attempting to cross any of them. It takes a typical tractor-trailer about 14 seconds to clear a single track, and more time must be allowed to cross multiple tracks. Load vehicles and P/EVOs must be at least 6 feet past the rail before stopping, because trains overhang the rail by at least that much. (p. 80-81)

7. **What must be done if a load becomes lodged at a railroad crossing?**

   If hung at a railroad crossing, first, get out of the vehicle and off the tracks. Locate the crossing information (if it isn't on the route survey or permit), and call the railroad to let them know the vehicle is lodged on the track.

   - Get out of the vehicle and off the tracks immediately. Do not go back onto the tracks for any reason.
   - Move away from the tracks. Move TOWARD an oncoming train, and AWAY from the tracks. When a vehicle is struck by a train, debris moves in the same direction the train is moving.
   - Locate the emergency phone number and DOT crossing identification number located near the intersection. (See Figure 1 below.)



Source: Federal Motor Carrier Safety Administration

Figure 1. Illustration. Where to find information for reporting trouble on the track.

- Call for help. Call the railroad's emergency phone number, the local police, and/or 911. Note: Call the local police or 911 if you cannot locate the railroad emergency phone number at the site. This information for each railroad crossing on the route should be included in the route survey.

Detailed plans about the response of each individual team member if the load becomes lodged at the crossing must be set out during the pre-trip meeting. Every member of the team must know how to find the emergency contact information for railroad issues and what his or her exact responsibility is if this hazard becomes an emergency. P/EVOs should assist local law enforcement in controlling traffic until the issues are resolved and the load is safely off the tracks. (p. 81-82)

⏩Lesson 6: Emergency Procedures

1. **What common characteristics do emergencies have?**

   a. An emergency is **unexpected**.

   b. An emergency **threatens a population**.

   c. Threats may **be real or possible**.

   d. Emergencies demand a **rapid, sometimes immediate, response**.

   e. Responses **may reduce or enhance** an emergency. (p. 84)

2. **What two options do drivers have when confronting an obstacle in the roadway?**

   Drivers have two choices when facing a collision: **stop or steer**. Chances of avoiding a crash depend on how well a driver responds in an emergency situation. (p. 85)

3. **For P/EVOs, what two types of emergencies are most common?**

   Emergencies related to traffic (p. 85-87) and emergencies related to vehicles (p. 87-90). Traffic emergencies include obstacles in the roadway and collisions. Vehicle emergencies include brake failure, tire failure, skids, and completing roadside operations (such as vehicle repairs).

MODULE 6

Post-Trip Activities

Lesson 1: After the Trip: Vehicle and Equipment Tasks

1. **What are the recommended/required post-trip activities related to the escort vehicle?**

   The pilot/escort vehicle operator **(**P/EVO) must comply with State requirements regarding the pilot/escort vehicle, including the removal and storage of signs, flags, lights, and warning lights and other devices. P/EVOs should check the integrity and cleanliness of all equipment as it is being removed or turned off. This includes all lights, lenses, mounts, bulbs, OVERSIZE LOAD signs, flags, and the height pole, if applicable. (p. 93) As discussed in previous modules, P/EVOs are responsible for knowing and following the laws in any State in which they operate. (p. 93)

2. **What other tasks, besides removing the necessary devices from the escort vehicle, must be completed at the end of the trip?**

   P/EVOs should gather all data needed to complete trip logs, including vehicle mileage, date and time of delivery, names of individuals related to the delivery, an the exact location of the delivery. In addition, the carrier or escort broker/company may require daily written report(s) or a final report at the end of each trip. (p. 94)

Lesson 2: Post-Trip Evaluation

1. **What is the minimum amount of information to include in a post-trip evaluation?**

   Post-trip evaluations should include discussion about all aspects of the load movement, including the adequacy of pre-trip planning, preparations for the move, operating procedures used during the trip, and, if an emergency occurred, the adequacy of the team's response to it. (p. 94, p. 96)

   The review is an opportunity for team members to voice concerns and suggest possible changes to operating procedures. Discussions about what went right, what went wrong, and what can be done better are critical. Team members must feel safe to raise issues and offer suggestions. (p. 96-98)

2. What aspects of pre-trip activities should be evaluated?

During this review, it is important to assess the assignment overall, the route survey, communication equipment and procedures, and emergency response evaluation, if applicable. (p. 96-98)

Team members should consider whether pre-trip planning was adequate, whether the team was effective, and what lessons can be learned from the experience. Another area for analysis involves comparing plans to actual events; e.g., compare the elements of the route survey to the actual route, or the proposed schedule to events as they actually occurred. Were risks addressed adequately? Did other risks appear unexpectedly? Were the procedures designed to reduce risk adequate?

3. What aspects of communication should be evaluated?

With respect to communication, both equipment and processes should be reviewed. Communication equipment it should be assessed for adequate range and functionality (portability for flagger use, for example). Did the equipment function properly? Did it have the expected range? Was the technical quality adequate so that all team members were able to identify the speaker? Was communication equipment for flaggers adequate? Were all team members familiar with the equipment and how to use it? (p. 97)

Communication procedures must also be considered. Were all team members professional, brief, and clear in their communication? Did each team member respond appropriately? Did team members relay relevant information? Did they provide information in enough time for the load driver and other PEVOs to react appropriately? Did team members use standard terminology? If traffic control operations were required, were flaggers able to communicate effectively with other members of the team? Were communications between flaggers clear and adequate? (p. 97)

4. Why is post-trip evaluation of emergency responses so important?

Emergency responses, if experienced, must be very carefully analyzed and discussed from the points of view of all team members. To fail to learn from mistakes made in emergency situations is a serious breach of public and team member trust and confidence. Once an emergency situation is stabilized, P/EVOs should document all actions taken in response to an emergency, taking a few minutes to jot down information about the time of the incident, exact location, vehicles involved, the sequence of events, calls made, and any other activity that may be significant. All team members involved should be encouraged to do this while memories are intact. These observations should be compiled as soon after the emergency as possible and records and reports carefully stored. (p. 97-98)

Lesson 3: Written Reports and Trip Logs

1. What should be included in trip logs?

Trip logs should include a detailed summary of the assignment: the dates of the trip, origin and destination, load description and vehicle configuration, description of the route, and information about emergencies, inadequacies, and malfunctions. Record names of team members, the carrier, and P/EVOs as well as support personnel and notification documentation. Emergencies should be documented to the greatest degree possible, including onboard camera footage and still photographs.

The report should address any training needs that are apparent, the levels of experience that are needed, and any special expertise required such as height pole operation, route survey specialist, or P/EVOs with experience moving long loads. The focus of the report is inherently to provide an honest critique of the trip. The report need not be negative; rather, its purpose is to learn from experience. The report should address the primary question: How can we do a better job, based on the experience gained on this trip?

MODULE 7

Driver Safety Issues

Lesson 1: Distractions

1. **What are the three types of distractions?**

   The Centers for Disease Control and Prevention (CDC) describes three main types of distractions while driving: *visual* distractions that cause you to take your eyes off the road, *manual* distractions that cause you to take your hands off the wheel, and *mental distractions*, which occur when drivers to take their mind off the task of driving. Distractions include (but are not limited to) talking to passengers; adjusting the radio or media player, climate controls, and mirrors; eating, drinking, or smoking; reading maps or other printed material; picking up something that fell; reading billboards; watching other motorists or their passengers; and, of course, talking on cell phones, texting, or checking email while driving. (p. 102-103)

2. **Are hands free devices safe to use while driving? Are they substantially different than handheld devices?**

   No. Studies suggest that headset cell phone use is not substantially safer than hand-held phone use. (p. 100)

3. **What is meant by the statement, "Driving is multitasking?"**

   Driving requires seeing, deciding, acting, reacting, assessing risk, monitoring the environment in all directions, monitoring the vehicle, and numerous other tasks. (p. 100)

4. **How can drivers avoid becoming distracted?**

   Ways to avoid becoming distracted include reviewing and becoming familiar with all safety features of the vehicle being driven, being totally familiar with all in-vehicle electronics before driving, pre-programming radio stations and pre-loading music, and clearing the vehicle of any unnecessary objects that may fall or roll around. Review maps and plan the route before driving. Adjust all mirrors, seat, and steering wheel before driving. Do not attempt to read or write while driving. Avoid smoking, eating, and drinking while driving. Do not use cell phones or any other electronic devices while driving. When drivers need to make phone calls, they should find a safe place to park to make telephone calls. Never use the cell phone for social conversations while driving. (p. 101)

5. **How much more likely are talking drivers to crash, when compared to non-talking drivers? How much more likely are texting drivers to crash?**

   Talking drivers are 400 percent more likely to be involved in a collision than non-distracted drivers. Texting drivers (and drivers interacting with screens generally) are 2300 percent more likely to crash than non-distracted drivers. (p. 100)

6. **Why is texting (or dialing a phone or scanning contacts or checking email—anything that involves interacting with a screen) so much more dangerous than talking on a cell phone?**

   Because texting, dialing, scanning, and checking involve all three types of distractions simultaneously: texting requires hands off the wheel, eyes off the road, and mind off the task. Driving tasks are on "pause" while a driver is interacting with the device, often for 4 or 5 seconds at a time, and often while the vehicle is moving more than 100 feet per second (approximately 70 mph). (p. 102)

⏩Lesson 2: Drowsy Driving (Fatigue)

1. **How does getting 7 to 9 hours of sleep each day affect a driver's crash involvement?**

   Individuals who snore or sleep 6 hours or less each day were more likely to report falling asleep behind the wheel, and **drivers who get 7 to 9 hours of sleep each day are involved in less than half as many crashes** whether they snore or not. Truck drivers **working for more than 8 hours are twice as likely to crash**. (p. 103)

2. **How does fatigue/drowsy driving affect driving skills?**

   According to CDC, drowsy drivers are less attentive, have slower reaction times, and are less capable of making quick decisions. (p. 105) The National Highway Traffic Safety Administration (NHTSA) also found that fatigued drivers were slower to react, were less vigilant to conditions and less attentive to driving in general, and could not make decisions as quickly in crucial situations. (p. 104-105)

3. **How does time of day affect driver alertness?**

   When drivers are unable to respond to events quickly, regardless of the reason, they are compromising safety. Studies suggest driver alertness and performance are more consistently related to time-of-day than to time-on-task. During their daily main sleep period, drivers slept for only about 5 hours, at least 2 hours less sleep than the ideal of 7 to 9 hours. (p. 104)

   The time period during which the risk of fatigue is elevated is after lunch. For many people, the two hours after lunch is the most difficult time to stay awake. Even when team members get enough rest overnight, it is important for pilot/escort vehicle operators **(**P/EVO) to monitor themselves and each other during times when alertness is compromised. (p. 105)

4. What are "micro-sleeps?"

After about 17 hours of being awake, people become drowsy and the body begins to experience "micro-sleeps," brief lapses that can last for several seconds. At 50 miles per hour, during a 4-second lapse, the vehicle moves 300 feet. If ***any*** of the following happen, it is time for the driver to rest:

- Eyes close or driver has difficulty focusing.
- Hits the rumble strip repeatedly.
- Has trouble keeping head up.
- Can't stop yawning.
- Has wandering, disconnected thoughts.
- Doesn't remember driving the last few miles.
- Tailgates or misses traffic signs.
- Keeps jerking the vehicle back into the lane or drifting across lanes.
- Misses a turn or exit.
- Has difficulty remembering exit numbers, addresses, or street names.

Perhaps of most importance, though, is that **P/EVOs must have the courage to speak up and stop driving when fatigue is present**. Drivers too frequently continue driving when fatigued, and the consequences are very similar to those that involve drinking drivers. (p. 105)

5. How do fatigued drivers and drinking drivers compare in terms of driving skill?

Numerous studies have shown that drowsy drivers perform no better on driving tasks than drinking drivers. And in addition, low levels of alcohol (below the legal limit of .08 percent for drivers; .04 percent for CDL holders) amplify the effects of inadequate sleep. While drowsy (or fatigued) drivers may feel morally superior to the drinking driver, or feel that fatigue is not as dangerous as drinking and driving, tests show fatigued drivers are no better at driving than those who have been drinking alcohol. (p. 105)

6. What should drivers do to avoid fatigue?

Get enough sleep and seek treatment for sleep disorders. Arrange work schedules to avoid starting a trip with a sleep deficit and try to schedule trip for the hours drivers are typically awake. Avoid alcohol or medicines that contribute to drowsiness. Exercise regularly and take breaks that involve physical activity. Keep the vehicle cool and, most importantly of all, speak up when experiencing symptoms of fatigue. (p. 106-107)

Lesson 3: Aggression

1. **What are the differences between aggressive driving and road rage?**

   NHTSA defines **aggressive driving** as a situation in which "individuals commit a combination of moving traffic offenses so as to endanger other persons or property." Others specify committing three or more moving violations during a single continuous sequence of driving acts that endanger people and property. **Road rage** is a criminal offense, defined as "an assault with a motor vehicle or other dangerous weapon by the operator or passenger(s) of one motor vehicle on the operator or passenger(s) of another motor vehicle or is caused by an incident that occurred on a roadway." (p. 109) The American Association of Motor Vehicle Administrators (AAMVA) defines aggressive driving as operating a vehicle in a selfish, bold, or pushy manner without regard for the rights or safety of others. Road rage, according to the AAMVA, is operating a vehicle with the intent of doing harm to others or physically assaulting a driver or his/her vehicle. (p. 108)

2. **What are some of the behaviors exhibited by aggressive drivers?**

   Behaviors typically associated with aggressive driving include exceeding the posted speed limit, following too closely, changing lanes erratically or unsafely, improperly signaling or failing to signal lane changes, and failing to obey traffic control devices (stop signs, yield signs, traffic signals, railroad grade cross signals, etc.). NHTSA labels running a red light as one of the most dangerous forms of aggressive driving.

   A dangerous form of passive/aggressive behavior is obstructing traffic; in particular, driving the speed limit or going slower in the left lane. Most States have rules indicating the left lane is for passing only; when drivers ignore that law, they create moving roadblocks that further frustrate drivers. (p. 108-109)

3. **What can P/EVOs do if confronted by an aggressive driver or if they witness an incident of road rage?**

   If the team encounters an aggressive driver, make every attempt to get out of the way. Do not challenge an aggressive driver or attempt to restrict their movement. Avoid eye contact and ignore any gestures. Avoid cutting people off and be responsive to the needs of other drivers—change lanes when they need to merge, for example. Report aggressive drivers to the appropriate authorities by providing a vehicle description, license number if possible, (do not tailgate in order to read the tag number, however) and the vehicle's location and direction of travel. If an aggressive driver is involved in a crash, stop a safe distance from the crash scene, wait for the police to arrive, and report what you witnessed, according to the AAMVA. (p. 109)

Lesson 4: General Safe Driving Practices

1. **What is meant by the terms "hazardous conditions" or "good conditions?"**

   Adverse or hazardous conditions include anything that negatively affects visibility, traction, or braking. Conversely, good conditions means flat, level, dry pavement in the daytime. (p. 110)

2. **Drivers should dim lights (from high beam to low beam) within _____ feet of oncoming vehicles or when approaching a vehicle from behind.**

   If using high beams in the absence of nearby traffic, dim lights within 500 feet of oncoming vehicles or vehicles in front. Headlights from behind, shining into cars moving in the same direction, also create glare from reflections in mirrors. So, dim headlights when moving within 500 feet of a vehicle ahead. As mentioned, look at the side of the road, at the fog line if present, when meeting vehicles. Do not turn on high beams within 500 feet of an oncoming driver. This is dangerous as the glare can blind the driver and he/she may drift across the centerline. (p. 111)

3. **When should headlights be used?**

   All drivers should use low beam headlights at all times, day and night. (p. 111)

4. **Stopping distance equals what?**

   Stopping distance = perception distance + reaction distance + braking distance

   Stopping distance is affected by many things: the size, weight, and vehicle configuration; the speed the vehicle is moving; road conditions and type of roadway surface; whether the vehicle is moving downhill or uphill; the quality and adjustment of the brakes; curves and (inside to outside) slope of roadway; quality of tires and accurate inflation; and, of primary importance, the vigilance of the driver. (p. 115)

5. **Why should drivers avoid driving alongside other vehicles?**

   At least three issues are involved when traveling next to others. First, another driver may change lanes suddenly or may experience a mechanical failure such as a blown tire. This could lead to a crash when vehicles are very close together. Second, the oversize load and/or P/EVOs may get trapped when needing to make a lane change or a turn. And, third, strong winds make controlling large vehicles more difficult, especially in mountainous terrain and exiting tunnels. (p. 117)

Lesson 5: Safety Technologies

1. What are benefits of crash avoidance technologies?

Crash avoidance technologies may help mitigate driver distractions and show a lot of promise in reducing crashes associated with distraction (physical, visual, and mental). In addition, fatigue can be monitored to some degree with these new technologies. (p. 120)

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