

Pilot/Escort Vehicle Operator

Certification Training Handbook *Washington State*



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Introduction

Evergreen Safety Council has developed this course to certify drivers as Pilot/Escort Vehicle Operators (P/EVOs) in Washington State.

The information in this handbook is in accordance with Washington State codes and standards. All P/ EVOs operating in, or escorting Oversize Loads into, adjoining states must read and be familiar with that state's Pilot/Escort laws, regulations, and requirements before entering.

By completing this course, you will:

- Gain an understanding of the responsibilities of a P/EVO, including the federal, state, and local regulations that must be followed
- Learn about the on-the-job skills you will need to master as a certified P/EVO
- Understand the equipment needed for a P/E vehicle
- Know how to conduct a pre-trip planning meeting and inspection, including permits, routes, load measurements, and personnel
- Gain basic comprehension of the different types of maneuvers that P/EVOs typically undertake during a move, including turns, merges, lane changes, high pole usage, bridges and tunnels, and leapfrogging, as well as traffic control and flagging duties
- Understand the hazards associated with Oversize Loads, and know what to do in different types of emergencies

Getting certified is only the first step in learning to be a P/EVO. If you are new, you should ride with an experienced operator before piloting on your own. You may also need more than just a P/EVO card. Some states might require flagger, defensive driving, First Aid/CPR training, or other types of credentials.

In Washington State, P/EVOs must be re-certified every three years.

This course has been approved by the Washington State Department of Transportation (WSDOT), and has been based on best practices developed by both state and federal agencies.

WSDOT maintains responsibility for oversight, and provides official Washington State P/EVO Certification cards to Evergreen Safety Council.

Evergreen Safety Council provides the course and materials, conducts testing, issues Washington State P/EVO Certification cards, and maintains records of test scores and certifications.

How to Use This Book

This book is designed to be used in an instructor-led P/EVO certification course. Short activities appear throughout, with room for you to write in answers or notes.

Important reminders appear in boxes like this one. Pay special attention to this information.

Specialized terms appear in **red**. There is a glossary at the back of the handbook.

After you complete the course, you should keep this handbook for reference, ideally in your P/E vehicle.

CHAPTER 1

The Job of a P/EVO

P/EVO stands for Pilot/Escort Vehicle Operator. As a P/EVO you will be cooperating with the load driver and other P/EVO(s) on your team to help protect both the load itself and others on the road (including motorists and pedestrians). You are the load driver's extra set of "eyes," and will help signal to the public using warning lights and signs when they need to use caution around the load.

You will be in constant communication with the load driver and other P/EVO(s), helping your team to safely navigate things like speed and lane changes, vertical obstructions such as bridges, roadway obstacles such as debris or parked cars, turns, and traffic.

In this chapter you'll learn about ...

- P/EVO qualifications
- Why P/E vehicles are necessary
- The roles of the P/E Vehicles
- Team roles and responsibilities
- The process of a move
- What makes a good P/EVO

1.1 // P/EVO Qualifications

All states have their own laws regarding P/EVOs. You should always know the applicable laws for states you will be operating in.

The following qualifications are general requirements for P/EVOs:

- Must carry a valid certification card (if required for the state in which they are operating—not all states require certification cards).
- Must carry proof of the required insurance for each state they are entering or working in.
- □ Must be in possession of a valid driver's license.
- \Box Must be at least 18 years of age.
- □ Should be able to follow written and verbal instructions.
- □ If corrective lenses are necessary, the operators must be wearing the lenses while performing P/E duties.

- Must be able to perform emergency flagging and traffic control duties an traffic control (including, if necessary, standing for long periods of time in various weather conditions).
- □ Must be drug and alcohol free when performing P/EVO duties.
- □ Must be healthy and free of fatigue.
- Must not display badge, shield, emblem, or uniform of color or design that may be mistaken for law enforcement badge, emblem or uniform.



1.2 // Why P/E Vehicles are Necessary

Not all Oversize Loads require one or more P/E (Pilot/Escort) vehicles to accompany them. When they do, it is because their **height**, width, **length**, weight, or some combination of these makes it difficult for them to maneuver safely on their own.

Oversize dimensions affect stopping distance, visibility, lane usage, ability to pass under overhead obstructions, and many other things.

Depending on the specifics of the load and the route, an Oversize Load may require a lead P/E, a rear P/E, or both—and in some special cases, an Advance Warning Vehicle (a second lead P/E) may also be required.

1.3 // The Roles of the P/E Vehicles

The lead and rear P/EVOs have slightly different roles, but each may periodically share tasks, depending on the needs of a given situation. P/EVOs use two-way radios to communicate with their teams and coordinate load movements. Communications are covered in Sections 4.2 and 6.2.

The Lead Escort

The lead P/EVO is chiefly responsible for looking for hazards and warning traffic ahead of the Oversize Load.

Main duties of the lead P/EVO:

- Provide general warning to oncoming traffic using signs and lights.
- Stay within a prudent distance of the load.
- Provide advance communication and guidance to the load driver and other P/EVO(s) with regard to obstructions or road hazards, traffic congestion, lane changes, turns, temporary or emergency stops, and other movements.
- Help to control traffic during maneuvers.

Generally, in highway situations, the lead P/EVO should be ¼ to ½ mile ahead of the load, as radio communications permit. Off of the highway, the lead P/EVO will be followed more closely by the load.

No matter where or when you are driving, you should always be scanning ahead, to the sides, and behind your vehicle.

The Rear Escort

Sometimes known as a "chase car," the rear escort acts as a "rear-view mirror," monitoring traffic and obstacles that appear to the rear or sides of the load, as well as the security and integrity of the load itself. The rear escort also helps with maneuvering by holding lanes or directing traffic.

Main duties of the rear P/EVO:

- Provide a warning to traffic approaching from the rear using signs and lights.
- Stay within a prudent distance of the load (generally three to four seconds of following distance).
- Watch for vehicles approaching from the side or rear that may present a hazard, and notify the driver if necessary.
- Keep an eye on the load. Watch for things like load shifting, binders/tie-downs that are loose, flat tires, or debris. Some loads have booms that may shift.
- Monitor traffic buildup behind the load and notify the driver and other P/EVO(s) if necessary.
- Assist the load in maneuvering obstacles, lane changes, temporary or emergency stops, and other movements by providing communication and traffic control.

Some loads only require one escort vehicle—either lead or rear, depending on the permit. In these cases, the P/EVO must be able to perform tasks that are associated with both lead and rear roles as needed.

Advance Warning Vehicle or "Push Car"

In some cases, a permit may require a third P/E vehicle in order to give advance warning. This advance warning P/E vehicle will precede both the lead P/E vehicle and the permitted load to alert oncoming traffic. This may include motioning traffic to the side of the road and stopping traffic when necessary.



Photo courtesy of Boeing. All rights reserved.

1.4 // Team Roles and Responsibilities

Moving an Oversize Load requires the cooperation of many different groups of people, each with different (but often overlapping) responsibilities.

Carrier

- Submit the request for an Oversize Load permit to the DOT and other authorities.
- Verify that the route is approved by the DOT and other authorities.
- Provide load measurements to the DOT and the P/EVO.
- Coordinate the load movement with the P/EVO.

Photo courtesy Perkins STC. All rights reserved.

Load Driver and P/EVOs

- Carry a copy of the permit(s) and be familiar with the contents.
- Participate in a pre-trip meeting and inspection.
- Comply with everything stipulated in the permit, including speeds, **curfews**, and route.
- Get approval for a detour when necessary. Any deviations from the permitted route must be approved by the corresponding authorities.
- Maintain radio contact with each other, and use the radio only for operational communications.

State Patrol

- Inspect P/E vehicles in connection with Oversize Loads.
- Enforce laws and regulations regarding Oversize Load transport.

Local Law Enforcement Officers

• If needed on a particular route, act as escorts using official police vehicles or motorcycles.

If a law enforcement officer is directing the load onto a route that has not been approved (for example, if there has been an accident), the P/EVO and load driver should pre-drive and review the new route before taking the load. Once in motion, P/E vehicles and the permitted load driver must follow the officer's directions.

1.5 // The Process of a Move

An Oversize Load move can have many steps that may or may not involve P/EVOs. Here are the steps involved in Oversize Load moves:



For more information on route surveys, see Chapter 9.

1.6 // What Makes a Good P/EVO

Every driver, load, route, and environment is different. A good P/EVO has the knowledge, skills, and attitude to adapt to these factors while also maintaining a calm, patient, and team-oriented frame of mind.



THINK ABOUT IT

Name some of the qualities you think a good P/EVO needs on the job:

Chapter 1 // The Job of a P/EVO

CHAPTER 2

Oversize Loads and Permits

Many state Departments of Transportation (DOTs) require carriers to obtain special permits when loads exceed 11 feet wide, 100 feet long, 14' 6" high, or if they cannot maintain the speed of the surrounding traffic flow on state highways. Loads with special permits are often—though not always—required to be accompanied by Pilot/Escort (P/E) vehicles.

In this chapter you'll learn about ...

- Types of loads
- Key agencies and regulations
- Permits: what you need to know

Loads that exceed legal dimensions are generally called "Oversize" or "**extra-legal**." In this handbook, we use the term "Oversize Load" to refer to these types of extra-legal loads.

2.1 // Types of Loads

Legal (Non-Permitted) Loads

The following are the legal dimensions for operating on WSDOT roads. Legal loads do not require permits or Pilot/Escort vehicles. For legal weight limits, see the Appendix.



The maximum dimensions for legal loads:

- Max Width: 8 ft 6 in
- Max Height: 14 ft
- Max Front Overhang: 3 ft from normal bumper
- Max Rear Overhang: 15 ft from center of last axle

The maximum lengths for legal loads:

- Single Unit: 40 ft
- Logging trucks: 61 ft
- Single Trailers: 53 ft
- Two Trailing Units: 61 ft
- Truck/Trailer Combo: 75 ft

Oversize (Permitted) Loads

Special permits are required for loads that exceed legal dimensions (usually called "Oversize Loads").

Not all Oversize Loads require P/E vehicles. The carrier and permitting agencies will determine whether P/E vehicles are necessary, based on the specific dimensions of the load and the regulations along the route it will be taking.

Superloads

Some very large loads are designated as "**Superloads**." In Washington State, a Superload is any **non-divisible** load exceeding 200,000 pounds gross weight, and/or loads with outside dimensions exceeding 16 feet in height, 16 feet in width, or 125 feet in length. Refer to the Appendix for more information on Superloads.

There may be cases where a carrier decides to have a P/E vehicle along to help the load driver maneuver a route, even if a P/E vehicle is not legally required.



Photo courtesy Perkins STC. All rights reserved.

Divisible vs. Non-Divisible Loads

On permits, you will often see loads specified as "divisible" or "non-divisible."

A divisible load is one that can be separated into other loads and takes less than 8 hours to disassemble. (Most loads driving down the road fall into this category.) Types of products that are considered "divisible" might include things like landscape material, gravel, sand, top soil, trash, or pallets. Special permits may still be issued for divisible loads based on particular needs for transport.

A non-divisible load is any load or vehicle exceeding length or weight limits which, if separated into smaller loads or vehicles, would:

- 1. compromise the intended use of the vehicle
- 2. destroy the value of the load or vehicle
- 3. and/or require more than 8 work hours to dismantle using appropriate equipment.

Examples of non-divisible loads are things like airplane fuselages, wind turbine blades, or large cranes.

THINK ABOUT IT

From a P/EVO's perspective, how are Superloads often handled differently from other Oversize Loads?

2.2 // Key Agencies and Regulations

Depending on the route the load will be required to travel, it may be subject to rules or regulations from several different agencies. In this handbook, we have worked to include both federal and state regulations and best practices, but it is up to you to know the law.

The regulations listed below are all available online. See the Resources section for specific titles.

Federal Regulations

Federal regulations apply to highways and other federal roads across the whole United States. USDOT does not issue permits for Oversize Loads, but you do need to follow USDOT rules when accompanying a load on a federal road.

You can find details about these laws in the Electronic Code of Federal Regulations, Titles 49 and 23, and through the Federal Motor Carriers Safety Association (**FMCSA**, a division of USDOT).

The Federal Highway Administration (a division of USDOT) publishes the Manual on Uniform Traffic Control Devices (**MUTCD**), which contains regulations for flagging and traffic control.

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State Regulations

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WSDOT issues permits for Oversize Load movement on state-owned roads (interstates, U.S. routes, and state routes). When they overlap (as on an interstate highway), WSDOT regulations comply with and exceed those of the USDOT.

You can find WSDOT regulations in the following two places:

- The Revised Code of Washington (RCW). This is a compilation of permanent Washington state laws now in force, arranged by topic. Title 46, Chapter 44 covers Oversize Loads.
- The Washington Administrative Code (WAC). These are regulations of executive branch agencies. Title 468, Chapter 38 covers Oversize Loads, and P/EVO regulations can be found in section 10 of that chapter.

Farm Implements and Manufactured Housing

In Washington, special terms apply to moves of farm implements and manufactured housing. See the Washington State Administrative Code parts 468-38-290 and 468-38-960 for details.

Local Regulations

The use of county roads or city streets is subject to approval by the jurisdictions maintaining those roadways. A permit from a state does not authorize the use of these roadways. Local authorities must be contacted for permission to operate an Oversize Load on their roadways. Note that the ferry system has its own requirements.

The special restrictions and requirements for each jurisdiction on your route should be listed on the permits issued for your load.

🔰 THINK ABOUT IT 🛛 –

It is up to you to stay up-to-date on changes to the law. How would you check to see if any new laws have been added to the Washington State code?

2.3 // Permits: What You Need to Know

As a P/EVO operator, you will always need to carry a copy of the permit(s) with you on the job (unless the carrier is operating on an annual permit). Your team may not deviate from the route and other regulations on the permit(s). Doing so makes the permit(s) invalid. There are some situations where a permit can be extended or changed, but only with the permission of the agency that issued it.



Here is what to look for on permits:

- Load dimensions: Size and weight of the load, **divisible** or **non-divisible** (note that this may not be included on annual permits).
- P/EVOs: How many P/EVOs are required based on the dimensions of the load?
- Start and end dates: Are these correct?
- Route: Each permit will list a route. See Chapter 9 for more on route planning.
- **Curfew hours:** Some loads may be limited to **daylight** or **nighttime hours**, or there may be restrictions to particular hours of the day.
- Weather restrictions: Under certain weather conditions, there may be additional restrictions placed on the movement of the load. You may need to go to the nearest "safe haven." In some states, this is listed on the permit itself.



CHAPTER 3

The P/E Vehicle and Equipment

Each P/EVO is responsible for properly preparing and maintaining their vehicle. This includes making sure the vehicle itself is in good working condition and purchasing and installing the required P/EVO equipment and supplies.

States have different policies regarding the equipment that can be used on a P/E vehicle and where it needs to be placed. This chapter covers the requirements for Washington State.

In this chapter you'll learn about ...

- P/E vehicle requirements
- Outfitting your P/E vehicle
- Required equipment
- Recommended equipment
- Passenger restrictions

3.1 // P/E Vehicle Requirements



A P/E vehicle can be a passenger vehicle or two-axle truck. It must meet the size requirements for a legal (non-permitted) vehicle.

Required dimensions:

- Must be between 60 and 102 inches wide
- Must have a GVWR of no more than 16,000 lbs
- If the vehicle is a service truck, it must be non-placarded

3.2 // Outfitting Your P/E Vehicle

Sign

A double-sided sign (printed on both front and back) reading OVERSIZE LOAD in black lettering on a yellow background must be mounted over the roof. The sign must be visible from both the front and back of the vehicle.

When the vehicle is not acting as a Pilot/Escort, the sign must be removed, retracted or otherwise covered.



Lights

P/E vehicle headlights and taillights must be on at all times when escorting a permitted load. A P/E vehicle must also have at least one roof-mounted flashing or rotating amber (yellow) strobe light. Lights must be visible 360 degrees for a minimum of 500 feet. In Washington State, light bars, with appropriately colored lights that meet the visibility minimums, are also acceptable.

The lighting system must not be obstructed in any way by the Oversize Load sign or materials carried by the P/E vehicle. Whenever the P/E vehicle is not escorting apermitted load, the amber warning lights must be deactivated.

Remember to check that you have your headlights and taillights—and not just your running or parking lights—switched on when you are piloting.







LIGHT MOUNTED UNDER SIGN

LIGHT MOUNTED TO THE SIDE

LIGHT MOUNTED OVER SIGN



High Poles

The high pole (or "height pole") is one of the most important tools for a P/EVO leading an overheight load. It helps the P/EVO determine the vertical clearance when passing under things like wires, signal lights, or overpasses, or when passing over bridges that have overhanging structures.

Running with a high pole is an advanced skill. You should not run a high pole if you are an inexperienced P/EVO. Some states require additional certification for running a high pole.

High poles must:

- Have an upper portion that is flexible so that they do not damage overhead objects or break when coming into contact with them.
- Be nonconductive (to prevent electrical currents from entering the P/E vehicle if contact is made with power lines).
- Be adjustable to allow for various overheight loads.
- Be stable and flexible enough to tolerate high freeway speeds.
- Per Washington law, high poles must always be set 3 to 6 inches above the maximum height of the permitted load.

High poles must be mounted on the front of the lead escort vehicle. The mountings must be strong enough to prevent any changes to the high pole elevation or position, even when traveling at high speeds.

It is a good idea to have high pole mounts on different places across the front of your vehicle, so that you can measure heights from various positions within a lane (left, center, right). Some operators carry more than one high pole for this purpose. Make sure that the mount does not interfere with the vehicle's airbag sensor.

When not escorting an oversize load or pre-running a route, high poles must be removed, tied down, or lowered to legal height.

See Section 4.4 for more information about setting up, measuring, and using a high pole.





It is highly recommended that you invest in a professional-grade high pole. If the high pole fails, you risk causing expensive and hazardous accidents.

Radio Equipment

P/EVOs and load drivers communicate using two-way radios. Here are the recommendations for radio equipment.

- Select quality 40-channel, 4-watt radios, antenna(s), speakers, and noise-canceling microphones, and have them installed by a qualified technician.
- Voice activated or other "hands-free" equipment is recommended.
- Carry at least one extra two-way radio for emergencies, and extra batteries for handheld CB units.



THINK ABOUT IT

Do you have a radio installed in your vehicle? Is it compliant? If you don't, where will you have one installed?

3.3 // Required Equipment

The following are the equipment and supply requirements for Washington State. You should check the requirements for any other state(s) in which you operate.

- 3 bi-directional emergency reflective triangles
- A flashlight with a red nose cone, additional batteries, and extra bulb
- A standard 18-inch STOP/SLOW paddle (for use during **daylight hours**)
- A retroreflective, high visibility ANSI Class 2 or 3 garment
- A highly visible colored hard hat with 12 square inches of retroreflective banding
- A 5-pound B, C fire extinguisher
- A first-aid kit



Photo courtesy DSW Pilot Car Services. All rights reserved.



STOP/SLOW Paddles

The STOP/SLOW paddle must be at least 18 inches wide and octagonal in shape, with a rigid handle and a semi-rigid face. The STOP face must be red with a white border and white letters at least 6 inches high. The SLOW face must be orange with a black border and black letters at least 6 inches high. Both sides of the sign must be retroreflective.

If you are going to be flagging at night, consider using a 24-inch STOP/SLOW paddle.

When purchasing a STOP/SLOW paddle, make sure it is not only MUTCD compliant, but also retroreflective. Many STOP/SLOW paddles available online and in retail stores are NOT retroreflective.

The full requirements for this and other flagging equipment can be found in the MUTCD. See Resources and Appendix for details.

High Visibility Clothing

When directing traffic outside of your vehicle, you must wear the following:

• Safety clothing that meets **ANSI** Class 2 (or Class 3) standards. The acceptable high visibility colors are fluorescent yellow-green, fluorescent orange-red, or fluorescent red.

>>> These are the requirements listed in the **MUTCD**. States may have additional requirements.

• A highly visible hard hat. Acceptable colors include white, yellow, yellow-green, orange, or red. During **nighttime hours**, it must be marked with at least 12 square inches of retroreflective material applied to provide 360 degrees of visibility.

See the Appendix for more details on required clothing.

First Aid Kit

The P/E vehicle must contain a first aid kit. One that complies with **OSHA** standard 1910.266 App A should be sufficient for P/E vehicles.

Your first aid kit should be in an easily accessible place, in a container that protects from dirt and moisture, and should be inspected monthly.

THINK ABOUT IT

What do you need to look for when buying a STOP/SLOW paddle, high visibility clothing, and a hard hat?

Fire Extinguisher

A combination type B, C extinguisher with a metal head must be maintained in the vehicle. Get it mounted in your trunk or truck bed so that it doesn't roll around and you can access it quickly if needed (this is a requirement in many states). It is also a good idea to take fire extinguisher training if you can.

Inspect the extinguisher at least once a month by:

- Checking that it is charged
- Making sure the seal and lock pin are firmly in place
- Checking for dents, scratches, corrosion, or clogged nozzle
- If it is a dry chemical extinguisher, shake it at least once a month to loosen and circulate the compacted powder

1. Pull pin. Hold unit upright 2. Stand back six feet. Aim at base of fire. 3. Squeeze lever 4. Sweep side to side

3.4 // Recommended Equipment

Height Measuring Device

Though not officially required by law, you will need to have a height measuring device that can be used to verify load height or the height of possible obstructions on the road. (This is sometimes called a "height pole," not to be confused with the high pole that is mounted to the vehicle.) You should also carry an extra-long tape measure to double-check your heightand pole measurements.

It is highly recommended that you carry a professional-grade height measuring device. Accurately measuring the load and overhead obstructions is one of the most important parts of a P/EVO's job.



Traffic Control Equipment

To assist with traffic control, it is highly recommended that you have:

- At least one weighted, 24-inch red flag mounted on a 36-inch staff
- 3 or more 28-inch orange traffic cones with retroreflective collars
- A 24-inch retroreflective STOP/SLOW paddle
- An additional STOP/SLOW paddle mounted to a 6-to 7-foot staff



Dashcams

Some P/EVOs use a dashcam, digital voice recorder, and/or a smartphone mounted on their dashboard or windshield to assist in completing route surveys. Remember that you are not allowed to use your mobile device while you are piloting a load, except for emergency communications.

Repair Supplies

- Tool box with basic tools
- Electrical or duct tape
- Rope
- Work gloves, tarp
- Jumper cables
- Flat tire inflator, spare tire
- Antifreeze, motor oil, windshield washer fluid, automotive fuses, fan belt
- Extra headlight and taillight bulbs

Emergency Supplies and Equipment

- Whistle
- High visibility gloves
- Lighted warning devices or flares/fusees
- Tire chains
- Emergency supply of food and drinking water
- Emergency blanket, cold weather clothing, and rain gear
- Safety glasses and/or non-reflective sunglasses, sunscreen
- Accident report kit

THINK ABOUT IT

For the routes you expect to be running and the companies you will be working for, what are some of the most important recommended supplies from these lists?

3.5 // Passenger Restrictions

No passengers (human or animal) are allowed to be carried in a P/E vehicle when escorting a permitted load, unless those passengers are certified P/EVOs.

The only exceptions are a person who is necessary to perform flagging duties, or a service animal but service animals cannot be in the front seat.



CHAPTER 4

Pre-Trip Planning and Trip Conclusion

Before you get on the road, you'll need to know the details of the assignment, gather information about the route and the other members of your team, collaborate with your team to plan the trip and prepare for emergencies, and inspect all of the vehicles.

You don't want to be unpleasantly surprised along the route. Breakdowns, missing permits, tickets, and accidents are costly and potentially dangerous.

The safety of the load, the drivers, and others depends on your good planning, communication, and teamwork. As a P/EVO, you have a chance to help the team succeed by demonstrating open, positive, and professional communication during the pre-trip planning process.

In this chapter you'll learn about ...

- When you get your assignment
- The pre-trip meeting
- Vehicle and load configuration
- Preparing for overheight loads
- Planning for emergencies
- Alternate routes
- Modified or "on the go" meetings
- Trip conclusion

4.1 // When You Get Your Assignment

You may not have a choice as to when you get your assignment. You may have a week or more to plan, or you may have just a few hours. Either way, start planning as far in advance as you can. Don't wait!

Conducting a Pre-Run

Conditions on the road change quickly. Even if you have recently moved a load along the exact same route, and/or a route survey has already been conducted, you may still need to do a pre-run. This means driving the route with your high pole (if needed) properly set and verifying that the load will be able to maneuver safely through the entire route.

4.2 // The Pre-Trip Meeting

What is a Pre-Trip Meeting For?

Pre-trip planning and inspection is the best way to ensure the safety of your team, the public, the load, and your business. Every year, there are thousands of bridge hits in the United States. The majority of these accidents happen either because accurate load dimensions are not given to the permitting agency or because the load takes an unplanned route.

It is the responsibility of the carrier and/or driver to schedule and conduct the pre-trip meeting. The load driver(s) and P/EVO(s) should attend this meeting in person.



Depending on the route and restrictions, others may need to be on the phone during the meeting, including representatives from law enforcement, public utilities, or state or local permitting bodies.

During the pre-trip meeting, your team should address:

- Checking of driver's licenses, certifications, and insurance for all drivers
- Communications channels and preferences
- Vehicle and load configuration
- Permit conditions, including special restrictions
- The route, including the possible need for a pre-run

- Preferred positioning of P/EVOs
- Need for additional flaggers or law enforcement escorts
- Breaks and additional meetings along the route
- Emergency plans

Driver Readiness

A P/EVO who is ill, tired, or under the influence of substances should never be escorting a load.

Always make sure that you and everyone on your team:

- Are healthy and free of fatigue
- Are not under the influence of any substances, including prescription or over-the-counter drugs, that may alter your ability to safely operate a vehicle
- Are wearing clothing that allows you to assist with flagging and other duties as needed

Contact Information

You should have the following information with you throughout the move. It is the load driver and/or carrier's responsibility to alert the proper authorities about any deviations from the permit, but you should have this contact information in case you need to make a call on their behalf.

Team information:

- Personal contact details (name, phone number)
- Two emergency contacts for each person
- Vehicle descriptions
- Information about any chronic health conditions and what to do about them

Information for outside agencies:

- Carrier emergency contact
- Towing companies
- Railroad companies
- Utility companies
- State and local jurisdictions
- Radio jurisdictions

Paperwork

Everyone on the team must carry a copy of the permit. Team members should verify that each person is carrying the correct certifications, licenses, and insurance.

Communications

As a team, you should decide on your communication protocols.

- Make sure you know everyone on your team by face, name, and voice.
- Pick channels and alternates to be used.
- Test your equipment to make sure it is compatible.
- Agree on a backup to use if radio communications fail.
- Remember that if there is no communications capability, the load should be parked!



It is your responsibility to know the age, certification, and insurance requirements for the state(s) in which you will be operating.

Your safety vest should be worn at all times in case of emergency.

Roles, Route, and Breaks

Discuss the roles and responsibilities for each team member during each portion of the route, and make sure you agree on where P/EVOs should be positioned.

If additional personnel are needed for any portion of the route, how will they be notified? Where will they be positioned? What will their roles be?

Familiarize yourself with the route. Ensure that all team members know the route, turn by turn, and plan for any obstructions or hazards you think you may encounter.

Plan for breaks, fueling, and other stops along the route. If the move will take multiple days, estimate daily travel distance as accurately as you can. Discuss safe places to stop if needed.

4.3 // Vehicle and Load Configuration

Vehicle Inspections

Inspections of both the load and the P/E vehicles should be conducted before the trip, as well as at every stop, including meals, rest and fuel stops, or overnight stays. It is recommended that you always conduct inspections in the same order. See the inspection checklist in the Appendix.

Load Configuration

Make sure you verify the dimensions and specs of the load with the driver. Every load is different, even if it has the exact same measurements as a previous load! Pay special attention to ground clearance, height, and maneuverability.



If the load contains hazardous materials, you should have basic info about the nature of those materials, as well as access to the required paperwork in case the driver becomes incapacitated.

THINK ABOUT IT

What types of hazards come with different trailer configurations?

4.4 // Preparing for Overheight Loads

Setting and Checking a High Pole

If your load is overheight, on the day of the move, you should double-check the load height with the trailer fully aired up. Never take someone else's word for the measurements of an overheight load.

Start with the measurement of the load at its highest point. If the load is uneven, note which side is highest. Also measure the distance that your vehicle dips when you are in the driver's seat, and take this into account when setting your high pole. When extending your high pole, always use the largest-diameter sections possible. This will reduce bending.

In Washington State, you are required to set the high pole 3-6" above the load height.

Know your trailer types. Each type of trailer

the specifics of their trailer.

configuration comes with its own hazards. You'll

need to know what to watch for-especially if

you're the rear pilot. Ask the load driver about



You should have a good understanding of how your particular high pole's flexibility will affect its height at different speeds (this is called **deflection**.) This varies from pole to pole. At higher speeds, the tip of a high pole may be 2 or more inches shorter due to bending.



🔰 THINK ABOUT IT

If your vehicle is ¾ of an inch lower to the ground on the driver's side when you are in the driver's seat, how will you adjust the height of your pole to compensate? Will this be different depending on where your pole is set along the front of the vehicle?

Checking the High Pole

Ensure that all your lock pins and clamps are in place and tight. Measure your high pole with your height measuring device. Make sure that your height measuring device is absolutely parallel to the high pole when you do this—otherwise, your measurements will be wrong! You may also want to double-check your measurements using a tape measure.

4.5 // Planning for Emergencies

The most important part of emergency planning is that everyone knows their roles and responsibilities in different situations. Make sure you ask the carrier for any written documentation of their policies and emergency procedures, including how to document an emergency.

In your pre-trip meeting, consider issues such as:

- What if there are weather conditions that make a road impassable? Where are the nearest **safe havens?** Who will pre-run an alternate route?
- What if there is a breakdown? Do you have contact info for the towing or repair company?
- What are the reporting protocols if the load gets stuck at a railroad crossing or hits an overhead obstruction like a bridge?
- What if there needs to be an unplanned personnel change during the route because someone gets sick or injured?

- Where are the fire extinguishers? Who is qualified to use them?
- What if the load shifts or spills, or one of the tie-downs comes loose?
- Discuss communications plans and roles: who will alert the authorities (call 911 or C/B channel 9)?
- If you are flagging in an emergency situation, what audible signal should you use to alert your team if a car fails to stop (see Section 7.5)?

4.6 // Alternate Routes

If you can, check the traffic and road conditions along your route, and plan for alternate routes if needed. Once you are moving, if you cannot take the planned route, follow these steps:

- Determine an alternate route.
- Survey the alternate route using a P/E vehicle.

If the permitted route cannot be taken due to weather, emergency, or other unexpected conditions, the driver and P/EVO must pre-drive an alternate route and then request a modified permit.

• The driver and/or carrier must request a permit revision if the alternate route is not listed on the permit already. As the P/EVO, you should verify that this has been completed before pursuing the alternate route.

Whenever a potential hazard cannot be adequately assessed by sight, the load should be safely parked and warning devices placed, and the escort driver and load driver should proceed and physically assess the hazard.

4.7 // Modified or "On the Go" Meetings

Meetings may also need to be held during the trip, either because the route or conditions change, personnel changes, an emergency happens, or because the trip extends for more than one day. For longer trips, a pretrip meeting should be conducted before getting underway each day.

Sometimes, P/EVOs must make a "non-stationary" or "on the go" transfer of responsibilities (sometimes called a "pick up on the move"). In this situation, the existing escorts hand over responsibility to new ones who join along the way.

Ideally, the P/EVOs who join the load will have been involved in the original pre-trip planning meeting, but this is not always possible. It is also preferable if the new P/EVOs have a chance to follow the load along with the existing P/EVOs for a little while in order to get a feel for how the move is progressing. "On the go" meetings should be conducted with as little pressure to get back on the road as possible. A wrong turn, accident, or ticket will cost the team a lot more time and money than a thorough meeting.



If the new P/EVOs have not had a chance to meet with the team, the load should stop as soon as possible and the team should conduct a pre-trip meeting as described above, including permit review, route review, communications, and vehicle inspections.
Until the meeting place is reached, minimum safety procedures must be followed:

- Ensure effective radio communication is possible.
- Identify team members and their positions.
- Be clear when giving your own name and position in order to help others recognize your voice.
- Ask for information about the load and current status of the move.

4.8 // Trip Conclusion

When your move is concluded, make sure to do the following:

- Turn off additional exterior lights, and cover them per state regulations.
- Remove or cover Oversize Load signs and flags.
- Remove or retract your high pole(s).

CHAPTER 5

Hazards and Safe Driving

Oversize Loads are less stable and harder to stop than other vehicles on the road, and other motorists are often unaware of the limited maneuverability or other special needs of the load. This means that P/EVOs must be extra vigilant when it comes to both potential hazards and safe driving practices.

In this chapter you'll learn about ...

- Hazards for Oversize Loads
- Road conditions and stopping distance
- Distracted, drowsy, and aggressive driving

5.1 // Hazards for Oversize Loads

Overwide

Overwide loads are especially vulnerable to obstructions on the shoulder. P/EVOs should be highly aware of road width and any obstructions, such as narrow bridges, parked vehicles, or narrow or nonexistent shoulders.

It is also important to understand the different types of roadway markers and delineators. Some are flexible and some are not.

THINK ABOUT IT -

What are some different types of roadway markers and





Weather, especially rain, may soften roadway shoulders so much that they are unusable for an overwide load. You can see that a shoulder is soft if there are large, broken patches of asphalt lying to the side of the road. In these cases, the load may be forced to use more of the adjacent or oncoming lane.

Overheight

Many of the accidents associated with Oversize Loads occur because of wrong height estimations for vertical clearance. Hitting a structure such as a bridge a or wire with an Oversize Load not only damages the load, but may also permanently damage the structure, even if no immediate damage is visible.

Overlength

Overlength loads can have trouble on curves, interchanges, and entrances and exits to roadways. P/EVOs and drivers must take extra precaution with regard to tail swing (see Section 6.4). Overlength loads must also be evaluated for railroad crossings to make sure that they do not become high centered.



Overweight

Overweight loads often travel at reduced speeds. Whenever permitted loads cannot maintain the speed of the surrounding vehicles and there is a delay of five or more vehicles, the overweight load will be required to pull over and allow the traffic to pass.

5.2 // Road Conditions and Stopping Distance

For Oversize Loads, hazards that might be minor for smaller vehicles can become huge problems because of increased stopping distance and limited maneuverability. Remember that visibility will also play a role in how quickly you can see hazards. If heavy rain, snow, or fog limits your ability to see, you will need to slow down or stop.

The most important factors to think about when stopping are your reaction time and your braking distance.

Reaction time

For the average driver, it takes about one second from the time you see a hazard to the time you get your foot onto the brake pedal.

Oversize Loads require much longer to stop than other types of vehicles. For commercial vehicles traveling at freeway speeds, stopping distance can be longer than the length of a football field.

Braking distance

Your braking distance is the distance covered from the time the brakes are applied until the vehicle stops. This varies with speed, weight, type of vehicle, and road conditions (like ice or wet pavement).

One plus one second rule

This rule applies to both stopping distance and the following distance between the load and the lead pilot car. You should allow one second of lead space for every 10 feet of the Oversize Load's length, and add one second if you are traveling over 40 mph. For each adverse road condition (such as rain, fog, ice and snow, gravel), add at least one additional second.



5.3 // Distracted, Drowsy, and Aggressive Driving

Distractions

There are three main types of driver distractions:

- Visual: things that take your eyes off the road
- Physical: things that take your hands off the wheel
- Mental: things that take your mind off the task of driving

When you are distracted in any of these three ways, you are not able to perform your duties as a P/EVO.

Typical distractions include talking to passengers, adjusting the radio, heat, or A/C, eating, drinking, or



The USDOT has banned texting and cell phone use by commercial drivers. Cell phones may only be used in emergencies. smoking, reading maps, picking up fallen items, looking at billboards or other motorists, and talking on the phone or texting.

Remember that P/EVOs are not permitted to have another person or animal in the car with them unless they are a certified P/EVO or service animal. Service animals are not allowed in the front of the vehicle.

P/EVOs should also beware of other distracted drivers on the road.

Drowsy Driving

Driving while sleepy or drowsy is much more dangerous than drivers think. Although P/EVOs are not required to follow the same rules as commercial drivers, they should still get 7 to 9 hours of sleep per day.

You should also be aware that there are particular times of day (such as after lunch) that drivers tend to become more drowsy.

Both tiredness and lack of sleep negatively affect your attention to detail, reaction time, and ability to make decisions.



HERE ARE THE SIGNS THAT YOU NEED TO REST:

- You have trouble focusing or keeping your eyes open.
- Your vehicle repeatedly hits the rumble strips.
- You have trouble keeping your head up.
- You can't stop yawning.
- You have wandering, disconnected thoughts.

- You don't remember the last few miles.
- You are tailgating or missing traffic lights.
- Your vehicle is drifting across lanes or out of your lane.
- You miss a turn or exit.
- You have difficulty remembering directions.

Distracted and drowsy driving are just as dangerous as drinking and driving.

Aggressive Driving

It goes without saying that P/EVOs should not drive aggressively, but other drivers on the road are likely to do so, especially if they feel their progress is impeded by the Oversize Load. Reacting negatively to these drivers puts you and the load in jeopardy. Be as calm, patient, and careful as you can.

THINK ABOUT IT

What should you do if you encounter an aggressive driver on the highway? In town? On a merge?

CHAPTER 6

Maneuvering the Load

P/EVOs assist Oversize Load drivers in several different ways, including:

- Warning and directing other motorists and pedestrians to make way for the load
- Watching for and communicating with the load driver about hazards including obstructions and other vehicles
- Assisting the load driver with starts and stops, speed and lane changes, and turns
- Monitoring the load

You are the load driver's extra set of "eyes," and will be in constant communication with the driver and other P/EVOs about these issues.

In this chapter you'll learn about...

- Spacing and positioning of P/EVOs
- Communications for maneuvering
- Facilities
- Maneuvering in town
- Merging, interchanges, and cloverleafs
- Passing
- Roundabouts
- Winding roads with blind curves and/or hills

- Bridges and tunnels
- Railroad crossings
- Weigh stations and ports of entry

6.1 // Spacing and Positioning of P/EVOs

Regardless of the number of lanes on a road, the Oversize Load should always stay as far to the right as possible. It should travel in the right lane on a **multilane** highway, and as far to the right as possible on a **two-lane** road to allow for obstructions on the right (such as mailboxes or parked vehicles).

As discussed in Section 1.3, the lead P/E vehicle drives ahead of the load (usually between ¼ and ½ mile

ahead on a highway; closer if maneuvering in town) to watch for obstructions and warn oncoming traffic that an Oversize Load is following.

The rear P/E vehicle should follow the load (usually at a 3-4 second following distance) to watch for obstructions, monitor the load, hold lanes, and warn and protect traffic to the rear and sides. The rear P/E vehicle should usually be positioned on the left side of the right lane of the highway. P/EVOs should always maintain "prudent" (common sense) distances from the load. For the lead P/EVO this can be up to ½ mile. (The FMCSA recommends a distance of 1 second for each 10 feet of the vehicle's length plus 1 second for speeds over 40 mph.) For the rear P/EVO, this is usually a 3- to 4-second interval.



Signs and lights do not mean you can break the rules. If your team gets separated because of a traffic signal or other delay, the rest of the team must stop and/or pull over until all parties can catch up.

THINK ABOUT IT

When and why might the P/E vehicles need to adjust their distance from the load?

One-Car Escort (Lead or Rear Only)

When there is only one P/E vehicle required, whether it is a lead or a rear, it may be required to change locations depending on the road conditions. The permitted driver may request the P/EVO to move to the front or rear to check on the load or help maneuver through turns, bridges, or narrow streets.

6.2 // Communications for Maneuvering

When communicating over the radio, remember that you should always keep your statements short (no extra chatter, just the necessary information) and professional (use appropriate language).

Some of the key things that P/EVOs will need to state in their communications are:

- What's ahead: the lead P/EVO should remind the team of the distance to the next step in the route, including ramp numbers and turns, as well as any obstructions that are unexpected.
- What's behind: during lane changes or merges, the rear P/EVO should tell the load driver if lanes are clear or if vehicles are approaching from behind. The rear P/EVO should also announce the speed of the load so that the lead doesn't get too far ahead.
- Suggested speed limits on ramps or curves, and grades on hills.

Make sure you agree on a system for lane designations. Typically, lanes are called from left to right, with the left-most lane being "Lane 1," and with numbers increasing from left to right. It is good to keep in mind that some agencies, such as the Washington State Patrol, call lanes differently.

6.3 // Facilities

If you are escorting a load from a facility, even if it is not in an urban area, you will need to understand the roads and traffic conditions in and around the pick-up point. A private facility may have its own traffic hazards.



6.4 // Maneuvering in Town

You will be exposed to many hazards while moving an Oversize Load through towns and on city streets, especially if the load is overheight. The P/EVOs and the driver of the Oversize Load must be aware of low-hanging wires, lights, landscaping, branches, and signs, as well as pedestrians, cyclists, and car doors being opened into traffic—not to mention other vehicles on the road.

In towns or cities, the Oversize Load may need to be driven astride the lane divider line. This helps prevent motorists from attempting to pass the Oversize Load, and will reduce the risk of hitting anything on the sides of the road. Most other drivers don't understand the special maneuvers that Oversize Loads need to make, and often motorists may try to beat the Oversize Load through an intersection or try to pass the load at inappropriate locations.

When there is a traffic build-up behind the Oversize Load, it is best to communicate with the lead P/EVO and the driver of the permitted vehicle and coordinate between the team to clear traffic often. You do not want anyone delayed by the load to get so impatient that they make a dangerous move to get around the load.

Tail Swing

OVERSIZE LOAD

When you are moving an Oversize Load with a **rear overhang**, you must be extra watchful when turning corners. While the Oversize Load is making a turn, the rear P/E vehicle should monitor the **tail swing**.

On right turns, this may mean moving to the left lane to see around the load into oncoming traffic. The rear P/EVO must also keep an eye out for traffic or obstacles on the right—such as the car pictured below. If any part of the load comes close to an obstacle or other vehicle, the rear P/EVO should notify the permitted load driver to stop immediately.

> Depending on the length of the overhang, the swing can travel three to four times faster than the truck pulling the load.

Right Turns

Here is the typical protocol for right turns:

The lead P/EVO should turn right ahead of the load. They should drive far enough down the next street to warn oncoming traffic that the Oversize Load is approaching and, if necessary, use **Temporary Traffic Control** measures (see Chapter 7) to stop oncoming vehicles.

- Oversize Loads often need a significant distance to complete a turn and return to their lane. The lead P/EVO may need to hold traffic six or more car-lengths (a small city block) along the street the load is turning onto.
- The load driver may need to navigate into the left lane in order to prepare for the turn.
- The rear P/EVO should hold the right lane and use their flag or STOP paddle to try to prevent motorists from coming between them and the Oversize Load (either on the right or left).
- As the load driver takes the left turn, the rear P/EVO should monitor the load for tail swing and other obstructions.



Left Turns

Here is the typical protocol for left turns:

- The lead P/EVO should turn left and warn oncoming traffic that the Oversize Load is approaching. If necessary, they should use Temporary Traffic Control measures to hold traffic at a sufficient distance to accommodate the turning load.
- While waiting for a traffic signal, the Oversize Load may take up all of (or more than) the length of the left turn lane. In this case, the rear P/EVO should remain behind the load in the left-most lane with their turn signal on and their flag or STOP paddle out the driver's-side window to keep others from following the load too closely.
- As the load driver takes the left turn, the rear P/EVO should monitor the load for tail swing and other obstructions.



Navigating Overhead Obstructions

If your load is overheight, you should follow the high pole protocols described in Sections 4.4 and 9.3.

If the permit(s) have the correct height, the route described on the permit(s) should work for the load, but it is still the job of the P/EVO to re-verify all overhead clearances during the move. The lead P/EVO should be far enough ahead of the load to take these critical measurements and be able to give the driver time to stop or maneuver around the obstruction.

If your high pole makes contact with any overhead obstacle, you must be able to tell the driver of the Oversize Load which way to maneuver to miss the obstruction completely.

P/EVOs should never lift utility lines. There are no exceptions! Doing so risks serious injury or death. The handling of telephone, cable TV or power lines must be done by professionals from utility companies.





Traffic or pedestrians should not pass beside the load when it is navigating overhead obstacles. Falling parts could injure or kill someone if the load hits an obstruction.

Photos courtesy of Perkins STC. All rights reserved.

Zigzagging

Some overheight loads will be able to navigate between signal lights or other obstructions such as wires without leaving their lane. Other loads may need to "zigzag" through intersections to miss lights or wires completely. If this is the case:

- The lead P/EVO must stop the oncoming traffic on the other side of the signal to make room for the Oversize Load to go around all of the lights at an intersection and return to their lane.
- The rear P/EVO should hold traffic until the Oversize Load can navigate back into its proper lane. They should also try to gain a clear view of both the load and the signal so that they can warn the driver of clearance issues and monitor the signal change.
- Try to stick together. If the Oversize Load driver or rear P/EVO does not make it through a red light, the members who are ahead should pull off and wait, if possible.

6.5 // Merging, Interchanges, and Cloverleafs

Here is the typical protocol for navigating merges or interchanges:

- The lead P/E vehicle will merge onto the new road in a way that warns oncoming motorists, and will watch for hazards.
- While remaining behind the load, the rear P/E vehicle should merge onto the highway first in order to warn traffic and hold the lane so that the load can merge safely.
- Once given the okay from the rear P/EVO, the load driver should merge with caution, and get up to the prevailing speed as quickly as possible.
- Once on the highway, the lead and rear P/EVOs should assume their normal positions.



- >> Try to avoid driving on the **gore strip**, even if you need to merge left quickly.
- >>> Especially in urban areas, on-ramps may have traffic signals to meter traffic. The P/EVOs and the load must obey this traffic signal.

Merging onto a highway from a cloverleaf is similar to other interchanges. However, the P/EVOs and load driver should pay special attention to the following:

- The lead P/EVO should be far enough ahead to double-check the grade and height clearance under the overpass, and warn of any obstructions or issues with the upcoming merge.
- The rear P/E vehicle should monitor the **tail swing** of the Oversize Load as it moves through the cloverleaf interchange, and keep the driver informed of how close the load is to any structures or other obstructions (walls, lights).
- The load driver and rear P/EVO should monitor overhead clearance as the load moves under the overpass.



6.6 // Passing

Passing a Slower Vehicle

Slow-moving vehicles (such as other large trucks) can sometimes make it hard to see the road ahead. In these cases, it may be necessary to pass them.

- The lead P/EVO should make sure that the whole team can clear the slower vehicle. Then they should inform the rest of the team of the intent to pass.
- The lead P/E vehicle should pass the slower vehicle first, and keep the team informed of any obstructions ahead.
- As the lead P/E is passing the slower vehicle, the rear P/EVO will need to temporarily monitor the lanes or shoulders to warn of any obstructions.
- If the team is on a **multilane** road, the rear P/E vehicle should move left to hold the lane and prevent traffic from passing the Oversize Load. The rear P/EVO should tell the permitted load driver, "You are clear one lane left." It is helpful to include a description (color and make/model) of the last vehicle to pass the load in the left lane. Example: "You are clear after the red Mustang".
- The Oversize Load may then move into the passing lane and pass the slower vehicle.
- When the load has cleared the slower vehicle, the rear P/EVO should check that the right lane is clear and safe, then radio, "Clear, back right." The load and P/E vehicles can then move back into normal traveling positions.



Passing an Obstruction on the Right

Sometimes the load must move left to clear an obstruction on the right, such as a parked vehicle, road sign, or mailbox.

- The lead P/EVO should notify the team by radio of the obstruction as soon as possible.
- The lead P/EVO should move left far enough to clear the obstruction and notify the team of the obstruction in feet: for example, "There is a car on the shoulder, 1 foot off the fog line. Move one lane left."

- The rear P/E vehicle should move left to prevent traffic from passing the load from the rear.
- When the rear P/E vehicle is in place and drivers behind cannot pass, the permitted load driver should be directed via radio to "Move left and pass," and when clear of the obstruction, "Move right, clear."
- The permitted load driver should not move right until given a "clear, move right" call from the rear P/EVO.

6.7 // Roundabouts

The number of roundabouts is increasing, and bypass routes are often limited. Even if the roundabout has a truck apron, it is important to pre-run it to ensure the Oversize Load can maneuver through it. Remember to check for undercarriage clearance if the truck apron must be used. In addition to using the apron, a load may straddle both lanes of the roundabout while completing the turn.

The rear P/EVO should watch for clearance issues on both sides of the Oversize Load, especially if there is no truck apron. Since it is the law for vehicles entering the roundabout to yield to traffic already in it, there is no need to block entering lanes. However, if traffic is heavy, the lead P/EVO may need to hold vehicles in the roundabout in order for the load to enter.



6.8 // Winding Roads with Blind Curves and/or Hills

Traffic cannot be stopped on a blind curve or hill. A line of sight of 500 feet or more is needed to safely stop traffic. When on roads with blind curves or hills, the lead P/EVO should always be one corner/curve or one hill ahead of the Oversize Load, and keep in radio contact with the driver to warn them of oncoming traffic or other hazards. The load driver will ultimately be the one to decide whether or not the load can maneuver through a given turn or hill without using the oncoming lane(s).

Radio contact can be lost in hilly terrain. If the load and lead P/EVO must stay relatively close in order to keep in radio contact, the whole team must slow down.



Temporarily Parking the Load

When maneuvering the load will impede two-way traffic, the Oversize Load must be stopped and temp-orarily parked until the P/EVOs can safely control traffic. This is sometimes called "**leapfrogging**."

Make sure not to park in a blind spot. Traffic approaching from the rear should be able to see the rear P/E vehicle with ample time to safely stop.

Traffic Control and Moving the Load

The lead P/EVO should move ahead to a point where oncoming traffic can be safely controlled, and the rear P/EVO should be positioned to stop traffic approaching from behind.

It is most efficient if the P/EVOs can remain in their vehicles. If you must leave your vehicle to flag, you should be wearing the proper clothing and use **Temporary Traffic Control** measures as described in Chapter 7.

lead

P/EVO

Once the P/EVOs have safely stopped traffic, they should radio to the driver of the permitted vehicle that they can proceed.

The traffic that has been held up behind the Oversize Load should be cleared after the Oversize Load has reached the next safe parking zone.

When Radio Communication is Impaired

If radio communication is not possible, the lead P/EVO should give a red flag or ribbon to the last car that they let through, and ask them to give it to the load driver or rear P/EVO to signal that it is clear to proceed.

In very dangerous areas, you may be required to use two lead P/E vehicles.



If the load must be parked for 10 minutes or more, warning devices (reflective triangles, fusees/flares, and/or warning lights) must be used to warn approaching traffic both in front of and behind the load. See Chapter 8 for more details.

📕 THINK ABOUT IT 📑

What are some other factors that your team would need to consider when leapfrogging?

6.9 // Bridges and Tunnels

The Oversize Load may navigate **multilane** bridges or tunnels as on a normal highway. Remember to check overhead clearances, and also remember that if the load must move left to avoid an obstruction, the rear P/EVO must hold the left lane first.

When the load must navigate a **two-lane** bridge or tunnel with two-way traffic, traffic must be stopped to allow the Oversize Load to pass through. This is similar to the "**leapfrogging**" procedure described above, and it is also extremely hazardous.



The lead P/EVO proceeds across the bridge or through the tunnel to stop traffic.

- If there is a line of traffic, do not try to stop it until there is a break.
- When there is a break in traffic, pull your P/E vehicle all the way to the edge of the centerline (while staying in your legal lane), with your flag displayed out of your window.

The rear P/EVO must hold traffic behind the load.

- If any unauthorized traffic comes from behind the rear P/EVO during this maneuver, they must notify the team immediately.
- Notify the lead P/EVO of the make/model of the last vehicle to pass through.



When both the lead and rear have traffic controlled and both P/EVOs confirm that the road is clear, the load driver should move to the center of the lane in order to cross or pass through.

through the maneuver.

• The rear P/EVO should talk the Oversize Load

If it appears that oncoming traffic is not going to stop, you should drop the sign and pull your arm into your vehicle.

• Depending on the size of the load crossing the bridge, the rear P/EVO may need to traverse back and forth while the Oversize Load is crossing the bridge or moving through a tunnel to ensure clearance on either side and above the load.

Once the bridge or tunnel has been cleared by the load, the traffic that has been held up behind the Oversize Load should be allowed to pass as soon as possible.

HELPFUL HINTS FOR NAVIGATING BRIDGES AND TUNNELS

- Use your C/B radio to notify oncoming truckers of your intention to shut down the bridge or tunnel. Calling out mile markers is helpful.
- If there is a long line of traffic that will be stopping before the Oversize Load clears the bridge or tunnel, the lead P/EVO may want to ask the first car in line to wait there until the load clears, and then slowly proceed forward with their lag extended to warn traffic and prevent an accident at the end of the line.
- Manufactured homes usually travel in two separate halves, but given the hazards of a tunnel or bridge and the effort it takes to stop traffic, it is recommended that both halves complete this maneuver at the same time. It is often the case that the second unit has caught up to the first unit by the time traffic has been stopped for the first unit. After both halves clear the bridge, they must resume their half-mile separation between the units.

6.10 // Railroad Crossings

During their pre-trip planning, Oversize Load carriers must identify the locations where the load is routed across railroad tracks, including urban light rail tracks.

In some cases, railroads must be notified if a permitted load will be going over a crossing. In all cases, railroad or light rail tracks should be crossed with care and planning (see Section 9.2 for how to survey a railroad crossing). Many bridges and tunnels have different height measurements for different lanes. Bridge lists may list maximum and minimum height clearances, but these numbers do not apply equally to all lanes. You should always verify clearance in person if your load is overheight.





Urban light rail systems present special problems, especially if they are operated as street-level trolleys with overhead cables. You must ensure that you do not block tracks, enter an intersection when a train or trolley is approaching, or hit an overhead cable.

Left photo: © Visions Of America LLC/123RF.COM

Maneuvering the Load Across Railroad Tracks

- The load should stop between 15 and 50 feet from the tracks. Use pull-out lanes if available.
- All vehicles should turn on their emergency flashers.
- Look and listen carefully: roll down windows and turn off radios and fans.
- Make sure the load can get completely across all tracks before proceeding. Pay special attention to clearances—both at ground level and overhead. If there is traffic ahead, wait for it to clear.
- Remember that it takes a typical semi truck about 14 seconds to clear a single track.

For what to do in an emergency, see Section 8.4.

6.11 // Weigh Stations and Ports of Entry

Loads and P/E vehicles are required to stop at all weigh stations and ports of entry for inspection. Weigh station personnel may inspect the P/E vehicles for safety compliance and state certification. Operators can be expected to show routes of travel, a P/EVO certification card, proof of insurance, a copy of the permit, and required safety equipment.

If the load is of extreme dimensions, there should be a plan in the proposed route of travel to deal with ports of entry and weigh stations.

When Entering Weigh Stations

- As the team approaches the scale house, the lead and rear P/E vehicles should be aware of any obstacles such as light poles, barricades, scale house buildings and other vehicles that may pose clearance problems for the load.
- The P/E vehicles should follow the instructions of the weigh station personnel and either proceed across the scales directly before and after the Oversize Load, or take another route as directed.

When the Oversize Load is required to enter a port of entry or weigh station, they will be visually inspected by the scale house personnel. If the permitted vehicle is required to "park and bring papers," the lead and rear P/E vehicles should proceed to the parking area out of the way of the Oversize Load and other truck traffic.

CHAPTER 7

Traffic Control

P/EVOs often need to direct traffic, whether in planned or unplanned situations, from inside or outside their vehicles. It is essential that you understand the proper techniques for traffic control so that everyone stays safe.

In this chapter you'll learn about ...

- Controlling traffic from inside and outside your vehicle
- Requirements for flagging
- Equipment and clothing
- Positioning for safety
- Flagging signals

In a typical flagging operation (such as road construction), a flagger has advance warning signs that inform road users that there is work ahead and prepare them to stop. Unfortunately for P/EVOs, there are no such signs in place. This makes acting as a flagger more dangerous.

P/E Operators who must flag need to be alert and observant, and take extra safety precautions to ensure that they are visible to motorists.

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7.1 // Controlling Traffic From Inside Your Vehicle

There will be situations in which you need to control traffic from inside your vehicle.

When doing so, keep in mind:

- Many P/EVOs put their STOP/SLOW paddle out of their driver's side window to help signal to traffic, but it is easier and safer to use a flag on a 36-inch staff.
- P/E vehicles are never allowed to drive into an oncoming lane. You must stay within your lane markers.
- If an oncoming vehicle does not appear to be stopping, drop your paddle or flag, pull your arm into your vehicle and radio your team immediately.

7.2 // Controlling Traffic From Outside Your Vehicle

Sometimes you will need to get out of your vehicle in order to control traffic.

P/EVOs should use the flagger techniques described in the Manual on Uniform Traffic Control Devices (**MUTCD**, Chapter 6E). Information on emergency traffic control devices can be found in Chapter 8. Flagging from outside the P/E vehicle should only be done if there is no other way to move traffic around the load.

7.3 // Requirements for Flagging

Per the MUTCD, flaggers should be able to:

- □ Receive and communicate specific instructions clearly, firmly and courteously
- \Box Move and maneuver quickly in order to avoid danger from vehicles
- □ Control signaling devices (such as paddles and flags) to provide clear guidance to drivers
- Understand and apply safe traffic control practices, sometimes in stressful or emergency situations
- D Recognize dangerous traffic situations and warn others in sufficient time to avoid injury

Always carry your current P/E Vehicle Operator Certification Card and your driver's license with you while performing the duties of a flagger. If you are flagging because of an emergency such as a vehicle breakdown or accident, make sure to also follow the emergency procedures outlined in Chapter 8.

Staying Alert: A Matter of Life and Death

As with any part of your P/EVO duties, you must keep your mind on your job at all times when flagging. Daydreaming could endanger your life and the lives of motorists and your team.

When flagging, you should try to anticipate every reasonable hazard that could happen in that particular roadway situation. It is very important to remember that approaching drivers may not see you, may be unable to stop, or may lose control of their vehicles. Never assume that a driver can see you.

7.4 // Equipment and Clothing

If you are flagging outside your vehicle, you must have the proper clothing and equipment as outlined in Section 3.3. In Washington State, if you are flagging during **nighttime hours** or in special weather conditions such as heavy fog or snow, there are additional requirements for clothing. These can be found in the Appendix. Remember—requirements for flagger clothing and equipment vary from state to state. Check with the state you will be entering to find out their requirements.

Always use your STOP/SLOW paddle when signalling outside the vehicle. It is highly recommended that

you have a STOP/SLOW paddle attached to a 6–7 foot staff. In certain emergency situations, you may be flagging for several hours. A staff will allow you to do this safely and without exhaustion. See Section 3.4 for additional recommended equipment. Remember that in Washington State, you must also have a flashlight with a red nose cone for nighttime flagging.

Anytime you exit the P/E vehicle, you should already be wearing your high visibility garment and be placing your hard hat on your head.

Extreme Weather Conditions

P/EVOs can expect to experience extreme and varied weather conditions on the job. Depending on the time of year and the route, you might experience extremely hot temperatures reflected by the roadway, or icy winds that can make your hands and feet stiff with cold.

It is recommended that you always carry hot and cold weather gear with you in case of emergency Beware of health conditions that can affect you due to weather, including heat exhaustion or heat stroke, frostbite, and hypothermia.



7.5 // Positioning for Safety

A well-managed traffic control zone will help reduce drivers' confusion, allow them enough time to respond (slow or stop), keep traffic congestion to a minimum, provide access for emergency vehicles (if necessary), and keep you (the person acting as a flagger) as safe as possible.

Positioning Guidelines

- Approaching traffic must be able to see you from at least 500 feet away.
- Your flagger station should be at least 50 feet from your P/E vehicle. Do not lean, sit, or lie on a vehicle or anything else.
- Stand alone in a visible, uncluttered spot on the shoulder of the road with your pole or paddle on the **fog line**.
- If possible, use cones, flares, and/or reflective triangles to indicate where vehicles should stop and to provide additional visibility between you and oncoming traffic. Remember that if the load is stopped for more than 10 minutes, you must do this. See Section 8.3 for more on setting these up.
- Position your body with toes facing the fog line, which allows you to easily face oncoming traffic, and see the load and vehicles approaching from the other direction.
- Never step into the traffic lane.
- When two P/EVOs are flagging, they should be able to see each other clearly. If that is not possible, they should use two-way radios or devise another method to communicate with each other.
- Remain at your position until you are relieved or the load is ready to proceed.

Emergency Escape Plan

When setting up your flagging station, plan for an emergency. Allow yourself enough space to escape if a vehicle fails to stop.

If you must make an emergency escape, do not attempt to carry the paddle—drop it away from your direction of exit. Exit at 90 degrees to the path of the oncoming vehicle.

Your team should agree on an audible signal to use in case a vehicle fails to stop or comply with your directions—for instance, a series of short blasts on your whistle or airhorn, or yelling the word "traffic."

Drivers are often inattentive and easily confused. Make eye contact. Never assume that a driver sees you.

If a car overshoots the flagging station before coming to a stop, never walk behind them. The driver may back up. Instead, walk to the front of the vehicle before crossing to the driver's side of the lane.



7.6 // Flagging Signals

The following flagging signals are per the MUTCD.

Signaling with a STOP/SLOW Paddle (Daytime)

During **daylight hours**, use these signals to control traffic with the STOP/SLOW Paddle.



To STOP traffic

Face traffic and hold the STOP paddle upright and away from your body. Extend your free hand above your head with your palm toward the approaching traffic, and then point to the spot where you want the vehicle to stop. Repeat this motion as necessary.



To direct traffic to PROCEED

Face traffic with the SLOW paddle held upright and away from your body. With your free hand, motion for traffic to proceed by moving your hand from left to right.



To ALERT or SLOW traffic

Face traffic with the SLOW sign paddle held upright and away from your body. Motion up and down with your free hand, palm down, indicating that the vehicle should slow down. When you're acting as a flagger, your job is to reduce confusion for road users by using dramatic, decisive motions.

Signaling with a Flashlight (Nighttime)

During **nighttime hours**, especially in non-illuminated areas, a flagger should use a flashlight with a red glow cone to supplement (not replace) the STOP/SLOW paddle or flag.



To STOP traffic

Hold the flashlight in your left hand with your arm extended and pointed down toward the ground, then slowly move the flashlight in front of your body in a slow arc from left to right. End by pointing at the place where you would like traffic to stop.



To direct traffic to PROCEED

Point the flashlight at the vehicle's bumper, slowly aim the flashlight toward the open lane, then hold the flashlight in that position. Do not wave the flashlight.



To ALERT or SLOW traffic

Point the flashlight toward the oncoming traffic and quickly wave the flashlight in a figure-eight motion.

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CHAPTER 8

Emergencies

This chapter describes general best practices for emergencies.

Your team should plan for breakdowns or accidents in your pre-trip meeting (see Section 4.2). Make sure to discuss any special risks presented along your route.

In this chapter you'll learn about ...

- P/EVO responsibilities in emergencies
- Notifying law enforcement and helping the injured
- Positioning of P/EVOs and warning devices
- Emergencies at railroad crossings

Remember that human life is always more important than property!

8.1 // P/EVO Responsibilities in Emergencies

P/EVOs should respond to accidents in the same manner as a commercial carrier by following these steps:

- Stop immediately and park safely with your emergency flashers on
- Notify law enforcement
- Help the injured
- Work to prevent another accident by positioning yourself correctly, setting up warning devices, and flagging if necessary
- Document the incident
- Report to your company



Unless you are injured, never abandon the load.

8.2 // Notifying Law Enforcement and Helping the Injured

In the event the Oversize Load breaks down or is involved in an accident, the P/EVO's response should be to notify the State Patrol immediately. Do this either by calling 911 or using emergency channel 9 on a C/B radio. In your pre-trip meeting, your team should discuss who is responsible for this.

Share or broadcast the following information:

- Where: exact location, highway, milepost number, street address, intersecting road/street, and any landmarks
- What: description of the emergency and whether there are injuries
- Who: description of the vehicles involved (make, model, color, license numbers)

Many states have implemented a "Good Samaritan" law, removing liability from a person who renders first aid in good faith and not for compensation (meaning you must not accept any money for your services). For the text of the Washington law, see the Appendix.

If someone is injured, don't move them unless they are in a dangerous location (for instance, near a vehicle that smells like gasoline or in a roadway). Keep them as calm and still as possible. If a medically qualified person is at the scene, stay out of the way unless you are asked to assist.

Contact emergency services and family members. During your pre-trip planning, you should get a list of emergency contacts for each person on your team (see Section 4.2).

Reporting

Follow your company's and/or the carrier's procedures for reporting, especially if you are involved in an accident. Bridge hits are especially important to report, as a bridge hit can dangerously weaken the structure.

THINK ABOUT IT

How would you report a bridge hit if you were involved?

8.3 // Positioning of P/EVOs and Warning Devices

If you must stop along a roadway as a result of an accident, you must set up emergency warning devices within 10 minutes.

If there is only one P/E vehicle, follow the directions for rear P/E vehicles as described here, regardless of whether the P/EVO is operating as lead or rear. In an emergency, the P/EVO's first job is to protect the load from approaching traffic in their own lane (traffic approaching from behind).

Pay attention to the terrain when you are positioning your vehicle(s), warning devices, and your flagging station. If the emergency location is at the crest of a hill or on a curve that impedes visibility, you will need to locate your vehicle(s), warning devices, and/or flagging station so that oncoming traffic can see you from at least 500 feet away. Remember to have a route of escape and position yourself as described in Section 7.4.

Do not remain in your P/E vehicle if you are stopped for an emergency. Always wear your safety vest and hard hat when operating in an emergency situation.

One-Way, Multilane, or Divided Roads

If you are on a one-way, multilane, or divided road, both P/E vehicles should park behind the load on the same side of the road, 300 feet apart.

- Place warning devices 10 feet, 100 feet, and 200 feet from the load and from the rear of each vehicle.
- Do not remain in your vehicle. Put on the appropriate safety garments and wait in a safe place outside.
- You do not need to perform flagging procedures unless the load is impeding traffic.



Two-Lane Roads

If the Oversize Load can stop completely clear of the road, both P/EVOs also stay on the same side of the road, in their original positions.

- Position each of the P/E vehicles about 300 feet in front of (lead P/E) and behind (rear P/E) the parked load.
- Place reflective triangles or fusees in a taper formation 10, 100, and 200 feet behind each P/E vehicle.
- Place additional reflective triangles or fusees 10, 100, and 200 feet behind the parked load.
- If there is no lead P/EVO, place at least one additional triangle 100 feet in front of the load.
- Do not remain in your vehicle. Put on the appropriate safety garments and wait in a safe place outside. You do not need to perform flagging duties.



If the Oversize Load encroaches on the roadway, P/EVOs should position themselves on opposite sides of the road and undertake flagging operations as described in Section 7.5.



- Position the lead P/E vehicle about 200 feet in front of the parked load, on the opposite side of the road from the load. The vehicle should be turned to park in the direction of traffic.
- Position the rear P/E vehicle about 300 feet behind the parked load, on the same side of the road as the load.
- Make sure each vehicle's emergency flashers are on.
- Place reflective triangles or fusees 10, 100, and 200 feet from each P/E vehicle in the direction of traffic.
- Place additional reflective triangles or fusees 10 and 100 feet behind the parked load and 100 feet in front of it.
- Position your flagger station 50–100 feet behind your vehicle. Use flagging techniques to safely stop or slow traffic.



THINK ABOUT IT

How do you estimate 10, 100, or 200 feet when you are setting up emergency devices?

8.4 // Emergencies at Railroad Crossings

Railroads are, for the most part, privately owned. In some cases, the railroad must be notified if a permitted load will be going over a crossing. In all cases, railroad tracks should be crossed with care and planning. See section 6.10.

By the time a train engineer sees you, it is already too late for them to stop.

If the load gets stuck at a crossing:

- Get out of the vehicle and off the tracks immediately. Move as far away as possible from the tracks (to one side or the other), and as far as possible in the direction of an oncoming train. Debris from a crash will move in the direction that the train is traveling.
- Call for help using the railroad's emergency number (often posted near the crossing, but you should also have noted it during your pre-planning), 911, or the local police. It helps to have the DOT crossing number, which should be posted on site. See the Resources section for a link to emergency numbers for railroads.
- If you haven't already, call 911 and describe the situation and exact location. If you have not contacted the railroad, ask them to do so.
- P/EVOs should be willing to help control traffic until the issue is resolved.



You should discuss railroad emergencies at your pre-trip meeting. Discuss roles and responsibilities and make sure you have the proper emergency contact information on hand.

CHAPTER 9

Route Survey

A P/EVO may be asked to conduct a route survey as part of the initial permitting process. This means driving a prospective route exactly as you would if you were piloting the load and checking for any hazards, obstructions, or other things that would prevent the load from moving along the designated route.

In this chapter you'll learn about ...

- Route survey protocol
- Surveying railroad crossings
- Surveying overhead obstructions with a high pole
9.1 // Route Survey Protocol

Before surveying the route, make sure you know the dimensions and specs of the load, including weight. If the move is long-distance, ask the carrier about distance between fuel stops and layovers.

If the load is overheight, make sure to also follow the high pole instructions in Section 4.4.

Use online tools, maps, and/or reference books to double-check clearances and restrictions on your route. Map out your entire route clearly on paper so that you can easily refer to it. Have a way to make additional notes, or use a voice recorder.



Do not activate your amber light(s) or have your Oversize Load sign displayed. Otherwise, motorists may think there is a load following you. However, you should turn on your warning lights when you are stopped or slowing down to measure an obstruction.

Survey every turn, intersection, and roadway for obstructions or other hazards. For each road, note the shoulder width, curves, and number of lanes. Also note rest and fuel stops and their entrances and exits. You may want to use your dashcam, camera, or smartphone for this.

Any notes should include exact locations such as mile markers, distance from a turn or intersection, or prominent landmarks.

Try to conduct the route survey at the same time of day as the proposed move.

9.2 // Surveying Railroad Crossings

Railroad crossings are some of the most dangerous points on any route. If you are routed across railroad tracks, including urban light rail crossings, your team will need to assess them and plan ahead in order to stay safe.

As part of your contact list, you should have numbers for emergency railroad notification, as well as any instructions provided by the railroad. In some cases, railroads must be notified in advance if a permitted load will be going over a crossing. Violations at railroad crossings are subject to fines and driver disqualifications.



Know the load's ground-level clearance before surveying a railroad crossing. Be especially cautious if the trailer is a lowboy or has dolly legs, which can easily get hung up at crossings.

See Sections 6.10 and 8.4 for information on maneuvering the load through a railroad crossing and instructions about what to do in an emergency.

On a route survey, assess all railroad crossings for:

- Amount of rail traffic
- Whether it is a "passive" or "active" crossing (does it have traffic control devices, such as gates or overhead signals?)
- Number of tracks
- Ground clearance and ascending/ descending slope
- Overhead clearance
- Road configuration on approach and retreat (straight, turn, curve)

9.3 // Surveying Overhead Obstructions with a High Pole

Conduct a route survey as described in section 9.1, with the following additions:

- First, know the load configurations and measurements, and properly set and check your high pole.
- Approach overhead obstructions slowly. If your pole hits, stop and measure the obstruction. Make sure to measure it at its highest and lowest points, and note any girders or other pieces that might differ in height.
- If the obstruction is "rampable," note the exit number and configuration of the ramp (is it straight? zig zag? cloverleaf?).
- Take plenty of notes. Some P/EVOs like to also take pictures or videos. Note mile markers and exact distances.

If your high pole cannot clear an obstruction and it cannot be raised or moved, you will need to request an alternate route.

Utility Lines

- Note the type of utility line (electrical, communication, traffic signal, etc.).
- Never touch a wire with your high pole or anything else. Treat all power lines as "hot."
- Remember that weather—especially rain and fog can cause trees and wires to sag.
- You must notify the utility company if you are not sure of the clearances or need assistance in maintaining the clearances.

Only a utility company may lift wires, and this should be part of your pre-trip planning if needed.

When running with a high pole, always approach low obstructions slowly to prevent damage to your pole or the obstruction. Note that stoplights can be fragile and should be measured from the side rather than touched with the high pole.





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Glossary

ANSI: American National Standards Institute. This organization creates standards for a wide range of sectors in the United States. P/EVOs need high visibility clothing that conforms to ANSI standards.

Curfew: Times of the day that an Oversize Load may not travel on particular roads.

Daylight hours: In Washington State, these are defined as one half hour before sunrise until one half hour after sunset.

Deflection: The change in height of the tip of the high pole when the pole bends due to the wind resistance at different speeds.

Divided/undivided highway: A divided highway is one where the lanes going in opposite directions are divided by a barrier (usually either a concrete barrier or a median strip). An undivided highway is one without such a barrier, where opposing lanes are divided only by a double yellow line.

Divisible load: A load that can be divided into smaller sections that can be and transported separately from each other.

Extra-legal vehicle: Any vehicle that exceeds legal dimensions and/or weights (an Oversize Load is an extra-legal vehicle).

FMCSA: Federal Motor Carrier Safety Administration. See the Resources section for regulations that govern Oversize Loads.

Fog line: A solid white line that divides the road from the shoulder.

Gore strip: The area dividing two merging lanes.

Height: The total vertical dimension of a vehicle above the ground surface (including any load or accessories).

Leapfrogging: When, on hilly or curvy terrain, the load must be stopped and traffic control measures put in place before proceeding.

Length: Trailer length is measured from the front of the cargo-carrying unit to its rear, exclusive of all overhangs from safety or energy efficiency devices. The length of a loaded trailer must include any overhangs of load.

Longer combination vehicle: A combination of truck tractor, semi-trailer, and trailer that exceeds legal length dimensions and operates on highways by permit for transporting reducible loads.

Lowboy: A type of trailer with low clearance that can accommodate taller loads. The term "lowboy" may be used to refer to a drop deck and/or Removable Goose Neck (RGN) trailer.

Multilane highway: A highway with two or more lanes of traffic going in each direction.

MUTCD: The Manual on Uniform Traffic Control Devices, published by the Federal Highway Administration. This manual defines the national standards for traffic control devices.

Nighttime hours: In Washington State, these are defined as one half hour after sunset to one half hour before sunrise.

Non-divisible load: Any load or vehicle exceeding applicable length or weight limits that, if separated into smaller loads or vehicles, would either compromise the intended use of the vehicle, destroy the value of the load or vehicle, or require more than eight work hours to dismantle using appropriate equipment.



Non-permitted: A vehicle that does not require a permit to operate.

OSHA: Occupational Safety and Health Administration. The division of the U.S. government that regulates safety and health in workplaces.

Pilot/Escort or P/E vehicle: A motor vehicle used for the express purpose of acting as a warning and guide vehicle for extra-legal vehicles.

Rear overhang: The distance from the center of the last axle to the end of the load or vehicle (whichever is longer).

Regional permit: A permit issued for interstate movement of certain Oversize Loads on highways designated by the jurisdictions participating in the Western Regional Agreement for the Issuance of Permits for Overweight and/ or Oversize Vehicles and/or Loads Involved in Interstate Travel.

Retroreflective: A type of material designed to reflect light directly back toward its source. This material is much more readily visible and is required when you are performing flagging duties.

Safe haven: An area specifically approved by federal, state, or local authorities for the parking of unattended vehicles containing hazardous materials.

Single axle: An assembly of two or more wheels on one axle.

Single unit: A motor vehicle with no attached trailer (such as a truck, bus, or truck-tractor).

Superload: Any load that would require special analysis and approval by one or more state permit offices because of its extreme dimensions or weight. Criteria for Superloads in Washington State can be found in the Appendix.

Tandem axle: Two axles placed one directly behind the other.

Tillerman or steerman: An individual who operates the steering of the trailer or trailing unit of the transport vehicle, separately from the load driver.

Traffic Control Plan (TCP): Depicts the route and specific procedures to be followed to provide safe movement along the route, including lane restrictions, use of flaggers, etc. A TCP is typically needed for Superloads. However, local jurisdictions might also require them for other loads.

Temporary Traffic Control (TTC):

Planning, equipment, and actions that provide for the safe movement of road users during times when normal use of the roadway is suspended (for instance, while maneuvering an Oversize Load).

Truck tractor: A motor vehicle used primarily for pulling other vehicles (usually trailers).

TWIC card: Transportation Workers Identification Credential. This has been required since 2009 for anyone entering a secured area of a maritime port. See Maritime Transportation Security Regulations, 46 CFR .10.203.

Two-lane highway: A highway with only one lane in each direction.

Resources

Federal Regulations

Regulations governing the driving of Commercial Motor Vehicles can be found in the Electronic Code of Federal Regulations, Title 49, Subtitle B (volume 5), Ch. III (B), Part 392 and Title 23, Ch. I (G), Part 658. See also Federal Motor Carriers Safety Association (a division of the USDOT), Title 49.

The Federal Highway Administration Freight Management and Operations "Oversize/Overweight Load Permits" section has regulations governing extra-legal permits issued by states.

The Federal Highway Administration publishes the Manual on Uniform Traffic Control Devices (MUTCD), which contains regulations for flagging and traffic control. Chapter 6, section E is especially relevant for P/EVOs.

The FMCSA also has a list of emergency telephone numbers for railroad companies.

State Regulations

The Revised Code of Washington (RCW) is a compilation of permanent Washington state laws now in force, arranged by topic. Title 46, Chapter 44 covers Oversize Loads.

The Washington Administrative Code (WAC) contains regulations of executive branch agencies. Title 468, Chapter 38 covers Oversize Loads, and P/EVO regulations can be found in Section 100 of this chapter.

Planning Tools

Search www.wsdot.wa.gov for the following planning documents and tools:

- Vertical Clearance Map
- Bridge List
- Oversize Load Restrictions Map

- Weight Restrictions List
- Traffic Alerts
- Milepost Map

NOTES —

Appendix

Required Number of Pilot/Escort Vehicles for Oversize Loads

Washington State Requirements (other states and local jurisdictions may vary)	Type of Road	Lead P/E	Rear P/E
Vehicle(s) or load exceeds 11 feet wide	two-lane highway	\checkmark	\checkmark
Vehicle(s) or load exceeds 14 feet wide	multi-lane highway		\checkmark
Vehicle(s) or load exceeds 20 feet wide	multi-lane undivided highway	\checkmark	\checkmark
Length of trailer, including load, of a tractor/trailer combination exceeds 105 feet	two-lane highway		\checkmark
Rear overhang of the load (measured from the center of the rear axle on a tractor/trailer combination) exceeds 1/3 of the total length	two-lane highway		\checkmark
Length of trailer, including load, of a tractor/trailer combination exceeds 125 feet	multi-lane highway		\checkmark
The front overhang of a load measured from the center of the front steer axle exceeds 20 feet	two-lane highway	\checkmark	
Rear overhang on a single unit vehicle, measured from the center of the rear axle, exceeds 20 feet	two-lane highway		\checkmark
Loads in excess of 14 feet 6 inches high—pilot car must have a high pole	all highways	\checkmark	
Vehicle(s) or load exceeds 12 feet wide AND requires a P/E vehicle for overheight	multi-lane highway	\checkmark	\checkmark
Operator cannot see 200 feet to the rear of the vehicle/load using rearview mirrors	all highways		\checkmark
Manufactured homes that exceed 15 feet in height—pilot car must have a high pole	all highways	\checkmark	

Planning Checklists

Vehicle Inspection Checklist

It is recommended that you always conduct inspections in the same order. Use this checklist or one like it.

Check that all required accessories and equipment are stocked and in place
Tires, wheels, and rims (including the spare)
Check for fluid leaks under the vehicle
Hoses, oil, brake fluid, coolant, power steering
Fuel levels
Check that signs, lights, and flags are clean and secure
Verify that your high pole, if in use, is still at the right height
Look, listen, smell, and feel of the vehicle when turned on
Brakes and steering: leaking fluids, functionality, parking brake
Headlights, hi-beams, blinkers, brake lights
Gauges and dashboard lights, including speedometer
Horn, windshield, wipers, mirrors

Pre-Trip Meeting Checklist

Make sure you and your team communicate about the following before every move:

Contact information for the team and any agencies involved
Check licenses, certifications, and insurance
Team roles
Permit: make sure you have a copy and double-check its accuracy
Vehicle and load configuration and measurements
Comms: preferences, channels
Route
Breaks
Emergencies
Special conditions (pick up on the move, curfew , weather)

Legal Definitions and Regulations

Legal Weight Maximums

Gross Vehicle Weight	105,500 pounds
Single Axle	20,000 pounds
Tandem Axle	34,000 pounds
Two Tire Axle	500 pounds per inch width, *except**
Steer Axle	600 pounds per inch width

*As marked by the manufacturer on the sidewall. Metric conversion to inches: divide metric size by 25.4 (i.e., 285 \div 25.4 = 11.22 in).

** Fixed steer axles, driver operated, equipped with single tire lines are limited to 600 pounds per inch width. Other than the steer axle, axles carrying more than 10,000 pounds and equipped with single tires are limited to 500 pounds per inch width. For other exceptions refer to RCW 46.44.042 Maximum Gross Weights—Axle and Tire Factors

Superloads

The following are the requirements for Washington State

(https://www.wsdot.wa.gov/CommercialVehicle/superload.htm).

A superload is a vehicle or combination with a non-divisible load exceeding sixteen feet wide, sixteen feet high, 125 feet of load length, or 200,000 pounds.

Follow these steps to receive a permit for a superload:

- 1. Applications for loads over 200,000 pounds must be submitted in writing and received at least 30 days before the proposed date of movement (RCW 46.44.091)(5)). Applications for loads over sixteen feet wide or sixteen feet high must be submitted in writing at least seven (7) calendar days before the proposed date of movement. A request for Approval of Oversize/Overweight Movement (Form 560-022) may be requested from Commercial Vehicle Services.
- 2. The motor carrier or shipper must provide the following information to Commercial Vehicle Services (WAC 468-38-405 Superload Movement Criteria):
 - Evidence describing the purpose of the movement and whether the move is necessary (and in the public interest). Written certification by military officials or officials of public or private power facilities that the movement is necessary must also be included when appropriate;
 - The item being transported must be clearly shown to be non divisible. A sketch or photograph of the item with an explanation of why it cannot be shipped in parts must be provided;
 - A sketch of the transporting laden vehicle showing axle loadings, axle spacings, tire sizes, tires per axle, width, and height;
 - If the load can be barged or shipped by rail for all or part of the route, the shipper must review those alternatives. If he wants to show that "it is not reasonable for economic or operational considerations" to ship it by water or rail, the applicant must present whatever data is needed to support that judgment;
 - The applicant must propose a route that they know is adequate to accommodate the width and height of the laden vehicle, and appears adequate to support the weight of the vehicle and load. This information is usually requested from pilot car operators who specialize in over dimensional movements. If the route includes the use of county roads or city streets, the applicant must show that permits from each of those jurisdictions will be issued. The written request will describe at what point county roads or city streets will be utilized, the name or number of the road or street, and the county or city official who has approved the proposed move using its roads or streets; and
 - A traffic control plan depicting the route and specific procedures that will be followed to control traffic flow along the route, including estimated traffic delays, lane restriction, use of escort vehicles and flag

persons, movement of overhead obstacles, railroad schedules* for crossings, and provisions for emergency vehicles to navigate around the load.

*Note: Physical examination of all railroad crossings by the carrier or designee is critical. A lack of sufficient ground clearance can be fatal

- If the department determines the movement is necessary, an analysis of bridges and pavements will be initiated. If the analysis requires significant expenditure of time by the DOT staff, the applicant may be asked to share in those costs.
- ► If the structures, clearances, and pavements are judged adequate, the permit will be issued or will be further negotiated to define its terms (escort requirements, hours of movement, etc.).

Required Garments for Flagging

Washington State code (WAC 468-38-100(10)(d)) tells operators to follow the state flagging and signaling requirements (WAC 296-155-305) which are as follows:

High-visibility garments for flaggers.

(a) While flagging during daylight hours, a flagger must at least wear, as an outer garment:

- A high-visibility safety garment designed according to Class 2 specifications in ANSI/ISEA 107-1999, American National Standard for High-Visibility Safety Apparel,
 - consisting of at least 775 square inches of background material that are fluorescent yellow-green, fluorescent orange-red or fluorescent red in color; and
 - 201 square inches of retroreflective material that encircles the torso and is placed to provide 360 degrees visibility around the flagger.
- A high visibility hard hat that is white, yellow, yellow-green, orange or red in color.

Note:

A high-visibility garment meets Class 2 specifications if the garment:

- Meets the requirements above; or
- Has an ANSI "Class 2" label.

Definition:

Hours of darkness: 1/2 hour before sunset to one-half hour after sunrise.

(b) While flagging during hours of darkness, a flagger must at least wear, as an outer garment:

- A high-visibility safety garment designed according to Class 2 specifications in ANSI/ISEA 107-1999.
 - Consisting of at least 775 square inches of background material that are fluorescent yellow-green, fluorescent or ange-red or fluorescent red in color; and
 - 201 square inches of retroreflective material that encircles the torso and is placed to provide 360 degrees visibility around the flagger.
- White coveralls, or other coveralls or trousers that have retroreflective banding on the legs designed according to ANSI/ISEA 107-1999 standards.
- When snow or fog limit visibility, pants, coveralls, or rain gear, meeting these additional requirements must be worn:
 - ► In a highly visible color;
 - With retroreflective banding on the legs;
 - ▶ Designed according to ANSI/ISEA 107-1999.
- A high-visibility hard hat:
 - Marked with at least 12 square inches of retroreflective material applied to provide 360 degrees of visibility.

Placement of Warning Devices

According to 7.4.1 FMC Subpart C—Stopped Vehicles:

ß398.4 (p) Unattended vehicles; precautions

No motor vehicle shall be left unattended by the driver until the parking brake has been securely set, the wheels chocked, and all reasonable precautions have been taken to prevent the movement of such vehicle.

ß392.22 Emergency signals; stopped commercial motor vehicles

- (b) Hazard warning signal flashers. Whenever a commercial motor vehicle is stopped upon the traveled portion of a highway or the shoulder of a highway for any cause other than necessary traffic stops, the driver of the stopped commercial motor vehicle shall immediately activate the vehicular hazard warning signal flashers and continue the flashing until the driver places the warning devices required by paragraph (b) of this section. The flashing signals shall be used during the time the warning devices are picked up for storage before movement of the commercial motor vehicle. The flashing lights may be used at other times while a commercial motor vehicle is stopped in addition to, but not in lieu of, the warning devices required by paragraph (b) of this section.
- (b) Placement of warning devices
 - (1) General rule. Except as provided in paragraph (b)(2) of this section, whenever a commercial motor vehicle is stopped on the traveled portion of a highway or the shoulder of a highway for any cause other thanv necessary traffic stops, the driver shall as soon as possible, but in any event within 10 minutes, place the warning devices with which the commercial motor vehicle is equipped in conformance with the requirements of ß393.95 of this subchapter, in the following manner:
 - (i) One at the traffic side of the stopped commercial motor vehicle, within 10 feet of the front or rear of the commercial motor vehicle;
 - (ii) One at a distance of approximately 100 feet from the stopped commercial motor vehicle in the center of the traffic lane or shoulder occupied by the commercial motor vehicle and in a direction toward traffic approaching in that lane; and
 - (iii) One at a distance of approximately 100 feet from the stopped commercial motor vehicle in the opposite direction from those placed in accordance with paragraphs (b) (i) and (ii) of this section, in the center of the traffic lane or shoulder occupied by the commercial motor vehicle.
 - (iv) The same type of required emergency warning device [see ß393.95(f)(1) and (2)] shall be placed at each of the three locations specified in paragraph (b)(1)(i) through (iii) of this section.
 - (v) If supplemental warning devices are also used [see ß393.95 (f) (3)], a device of the same type shall be placed at each of those locations.

(2) Special Rules

- (i) Fusees and liquid-burning flares. The driver of a commercial motor vehicle equipped with only fusees or liquid-burning flares shall place a lighted fusee or liquid-burning flare at each of the locations specified in paragraph (b)(1) of this section. There shall be at least one lighted fusee or liquid-burning flare at each of the prescribed locations, as long as the commercial motor vehicle is stopped. Before the stopped commercial motor vehicle is moved, the driver shall extinguish and remove each fusee or liquid-burning flare.
- (ii) Daylight hours. Except as provided in paragraph (b)(2)(iii) of this section, during the period lighted lamps are not required, three bi-directional reflective triangles or three lighted fusees shall be placed as specified in paragraph (b) (1) of this section within a time of 10 minutes. In the event the driver elects to use only fusees or liquid-burning flares in lieu of bi-directional reflective triangles or red flags, the driver must ensure that at least one fusee or liquid-burning flare remains lighted at each of the prescribed locations as long as the commercial motor vehicle is stopped or parked.
- (iii) Business or residential districts. The placement of warning devices is not required within the business or residential district of a municipality except during the time lighted lamps are required and when street or highway lighting is insufficient to make a commercial motor vehicle clearly discernible at a distance of 500 feet to persons on the highway.

- (iv) Hills, curves, and obstructions. If a commercial motor vehicle is stopped within 500 feet of a curve, crest of a hill, or other obstruction to view, the driver shall place the warning signal required by paragraph
- (b) (1) of this section in the direction of the obstruction to view a distance of 100 feet to 500 feet from the stopped commercial motor vehicle so as to afford ample warning to other users of the highway.
- (v) Divided or one-way roads. If a commercial motor vehicle is stopped upon the traveled portion or the shoulder of a divided or one-way highway, the driver shall place the warning devices required by paragraph (b) (1) of this section, one warning device at a distance of 200 feet and one warning device at a distance of 100 feet in a direction toward approaching traffic in the center of the lane or shoulder occupied by the commercial motor vehicle. He/she shall place one warning device at the traffic side of the commercial motor vehicle within 10 feet of the rear of the commercial motor vehicle.
- (vi) Leaking flammable material. If gasoline or any other flammable liquid or combustible liquid or gas seeps or leaks from a fuel container or a commercial motor vehicle stopped upon a highway, no emergency warning signal producing a flame shall be lighted or placed except at such a distance from any such liquid or gas as will assure the prevention of a fire or explosion.

ß392.24 Emergency signals; flame-producing

No driver shall attach or permit any person to attach a lighted fusee or other flame-producing emergency signal to any part of a commercial motor vehicle.

ß392.25 Emergency signals; dangerous cargoes

No driver shall use or permit the use of any flame-producing emergency signal for protecting any commercial motor vehicle transporting Division 1.1, Division 1.2, or Division 1.3 explosives; any cargo tank motor vehicle used for the transportation of any Class 3 or Division 2.1, whether loaded or empty; or any commercial motor vehicle using compressed gas as a motor fuel. In lieu thereof, emergency reflective triangles, red electric lanterns, or red emergency reflectors shall be used, the placement of which shall be in the same manner as prescribed in ß392.22 (b).

ß393.95f Reflective Warning Devices

Three bi-directional emergency reflective triangles that conform to the requirements of Federal Motor Vehicle Safety Standard No. 125, ß571.125 of this title; or at least 6 fusees or 3 liquid-burning flares.

The vehicle must have as many additional fusees or liquid-burning flares as are necessary to satisfy the requirements of ß392.22.

- (3) Supplemental warning devices. Other warning devices may be used in addition to, but not in lieu of, the required warning devices, provided those warning devices do not decrease the effectiveness of the required warning devices.
 - (g) Restrictions on the use of flame-producing devices. Liquid-burning flares, fusees, oil lanterns, or any signal produced by a flame shall not be carried on any commercial motor vehicle transporting Division 2.2, 1.2, 1.3 (explosives) hazardous materials; any cargo tank motor vehicle used for the transportation of Division 2.1 (flammable gas) or Class 3 (flammable liquid) hazardous materials whether loaded or empty; or any commercial motor vehicle using compressed gas as a motor fuel.
 - (h) Requirements for emergency reflective triangles manufactured after January 1, 1974. Each reflector shall be a collapsible equilateral triangle, with legs not less than 17 inches long and not less than 2 inches wide. The front and back of the exposed leg surfaces shall be covered with red reflective material not less than one-half inch in width. The reflective surface, front and back, shall be approximately parallel. When placed in position, one point of the triangle shall be upward. The area within the sides of the triangle shall be open.

Good Samaritan Statute

The Good Samaritan Statute for Washington State (RCW 4.24.300) reads as follows:

"Any person who in good faith and not for compensation renders emergency care at the scene of an emergency or who participates in transporting, not for compensation, therefrom an injured person or persons for emergency medical treatment shall not be liable for civil damages resulting from any act of omission in the rendering of such emergency care or in transporting such persons, other than acts or omissions constituting gross negligence or willful or wanton misconduct."