

### HUMAN PERFORMANCE FACTORS GROUP CHAIRMAN'S FACTUAL REPORT

Attachment 7: Certified Pilot/Escort Vehicle Operator Handbook

Bridge Collapse Mount Vernon, Washington: 05/23/2013

> HWY-13-MH-012 (69 pages)



### Name

**Date of Attendance** 

**Instructor's Name** 

P/E Vehicle Operator Card Number

**Card Expiration Date (3 years)** 

This handbook designed and produced by the

# **Evergreen Safety Council**

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SAFETY COUNCIL



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# To get the most from this training session you should:

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- Be responsible for your learning
- Think of how you can apply the materials provided
- Share your experiences
- Expect the best

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|   | Poor   | Fair                             | Good  | Excellent                   |
| 3. Overall rating of the course and instruction   |  |                                  |   |                             |
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Pilot/Escort Training

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Evergreen Safety Council 401 Pontius Avenue N. Seattle, WA 98109

# Certified Pilot/Escort Vehicle Operator Handbook

This handbook is an exclusive product of the Evergreen Safety Council. It may be purchased by organizations or individuals as a reference source or training guide.

Information about the training program materials and instructor certification can be obtained by contacting:

Evergreen Safety Council 401 Pontius Avenue North Seattle, WA 98109 206-382-4090 1-800-521-0778 Fax: 206-382-0878 Email: esc@esc.org Web: www.esc.org

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The Western Association of State Highway and Transportation Officials (WASHTO) is instrumental in efforts to standardize and simplify regulations applicable to the federal and state roadways and transportation systems. WASHTO has established a model for the certification of "Pilot Escort Vehicle Operators" that provide guidelines for the development of this training program. The Evergreen Safety Council has incorporated flagging procedures from the Manual on Uniform Traffic Control Devices (MUTCD), as well as defensive driving techniques to enhance driver/operator safety.

A training advisory committee was convened consisting of State agencies, P/E vehicle operators, trucking associations and other transportation-related organizations. These organizations' representatives were instrumental in the selection of topics needed for course content and subsequent certification.

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# INTRODUCTION

Throughout the United States, Oversize Loads are being moved over the interstate highway system. With an increasing number of Oversize Loads comes an increased requirement for skilled Pilot/Escort (P/E) Vehicle Operators who are knowledgeable of the highway system, its hazards and its restrictions. These P/E Vehicle Operators (P/EVO) are the eyes of the permitted vehicle drivers that must maneuver the Oversize Loads in a safe manner. The P/EVO also serves to protect the motoring public and give adequate warning when the Oversize Load may be obstructing their lane of travel.

As a certified P/E Vehicle Operator you can take pride in the knowledge that you are one of the few in the United States with formal training certified to guide Oversize Loads over our highways. Your training, effort and skill will protect the lives and property of the people traveling our highways.

As a P/EVO supporting Oversize Load management, you will ensure products of great value are moved safely and without damage, reducing injuries to the public. Using your knowledge you will escort loads through cities, towns and open highways, avoiding low clearances, navigating roads without shoulders, and crossing bridges with limited clearances.

When you complete this training course satisfactorily, you will receive a wallet-size certification card stating that you have been trained and are qualified in the duties of a P/EVO. The card must be carried on your person at all times while performing P/E operations. This certification should be a reminder that you are a trained professional the public can rely on for the skills and competence to make the right choices for everyone's safety.

This handbook was prepared primarily on Washington State codes and standards for P/E Vehicle Operators. The information generally applies to all other western states but must be compared with the specific state's regulations to be effectively applied. All P/E vehicle operators escorting oversize loads into adjoining states must read and be familiar with that state's oversize vehicle escorting requirements before entering that state.

The information and recommendations contained in this participant guide have been compiled from sources believed to be reliable and to represent the best current opinion on the subject. No warranty, guarantee, or representation is made by the Evergreen Safety Council as to the absolute correctness or sufficiency of any representation contained in this publication. The Evergreen Safety Council assumes no responsibility in connection therewith; or can it be assumed that all acceptable safety measures are contained in the publication, or that other or additional measures may not be required under particular or exceptional conditions or circumstances.



# **ABOUT THIS HANDBOOK**

This handbook has been prepared as a text for the Pilot/Escort Vehicle Operator Training Course by the Evergreen Safety Council. The purpose of this handbook and the related training is to provide a safer environment for the motoring public on federal, state, county and city thoroughfares by providing consistent and verifiable training. This handbook emphasizes Pilot/Escort (P/E) Vehicle Operator compliance with the traffic laws and support activities required for the safe movement of Oversize Loads over federal and state highways.





# **1.1 P/E VEHICLE REQUIREMENTS & RESTRICTIONS**

Many State Departments of Transportation (DOT) require Oversize Loads and Overweight Loads to be escorted when they 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. P/E vehicles are necessary to protect the traveling public for any over-dimensional and/or overweight move either across, upon or along a highway. The number of P/E vehicles required is determined by a state DOT, normally using the following criteria:

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| Washington State Requirements<br>(other States may vary)   | Front<br>PEVO | Rear<br>PEVO |
|--|---------------|--------------|
| Vehicle(s) or load over 11 feet wide, two-lane highway   | х             | ×            |
| Vehicle(s) or load over 14 feet wide, multi-lane highways  |               | X            |
| Vehicle(s) or load is over 20 feet wide, multi-lane undivided highways   | x             | х            |
| Overall length of load exceeds 105 feet, two-lane highway  |               | х            |
| Rear overhang of the load (measured from the last axle) exceeds 1/3 of the total length, two-lane highway        |               | x            |
| Overall length of the load exceeds 125 feet, multi-lane highway  |               | x            |
| The front overhang of a load measured from the center of the front steer axle exceeds 20 feet, two-lane highways | x             |              |
| Loads in excess of 14 feet 6 inches high shall be escorted by a pilot car with height pole                       | x             |              |
| Manufactured homes that exceed 15 feet in height shall be accompanied by a P/E vehicle, with a height pole       | x             |              |



# **1.2 MOVEMENT RESTRICTIONS**

Vehicles or combinations operating under special motor vehicle permits that are overweight and/or over-dimensional may be permitted to move at night on state highways during normal conditions. Night means one-half hour after sunset to one-half hour before sunrise. Oversize Loads may not be moved when visibility is reduced to less than 1,000 feet or when roadway conditions are unsafe due to ice or snow.

# **1.3 COUNTY ROADS AND CITY STREETS**

The use of county roads or city streets is subject to approval by the jurisdictions maintaining those roadways. A permit from a state in no way authorizes the use of roadways under local jurisdiction.

# 1.4 SPEED LIMITS

Unless otherwise stated, maximum speeds for vehicles, combination of vehicles, or vehicles and loads being operated under permit shall be as posted for trucks, or as stated in permit. When travel on the roadway shoulder is required on a two-lane highway to allow overtaking traffic to pass, the speed will not exceed 25 miles per hour.

The speed limit contained in a permit is listed as one of the conditions upon which the permit has been issued. This stated speed limit shall not be exceeded, but if a lower limit is posted on any highway, it shall take precedence. Violation of the speed limit contained in the permit will render the permit null and void.

# 1.5 DEFINITIONS

# 1.5.1 Maximums for Special Permits (Non-divisible)

The following regulations are for Washington State. *Check with local Department of Transportation (DOT) or with the DOT in the State you are entering.* 

**Overwidth:** 14 feet on any two-lane highway; 20 feet on any multiple-lane highway where a physical barrier serving as a median divider separates the oncoming and opposing traffic lanes; 32 feet on any multiple-lane undivided highway.

**Overheight:** A load over 14 feet high must be moved by permit, but the permittee is to be governed by the clearance of overhead obstructions such as bridges, underpasses, wires, overhead signs and other objects.

**NOTE:** County or city road detours for this purpose require authorization from respective jurisdictions.

**Overlength:** The permit will allow movement on routes on which the permittee can negotiate curves, interchanges, entrance and exit roadways and other obstacles. In all instances the general safety of the public is considered paramount.



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Overweight: 22,000 pounds on a single axle; 43,000 pounds on tandem axles.

### Superload

A Superload is any non-divisible load exceeding 200,000 pounds gross weight, and/or loads with outside dimensions exceeding either 16 feet in height or 16 feet in width or that has a trailing unit(s) plus load in excess of 125 feet in length.

Loads exceeding the 200,000 pounds gross weight must submit a written application for a special permit at least 30 days in advance of the proposed move.

An application for a special permit to move a load in excess of 16 feet high or 16 feet wide must be submitted in writing at least seven calendar days before the proposed move.

As part of the superload application the applicant must submit the following information:

- Documentation that the move is in the public interest and that alternative methods of transport are not feasible.
- A schematic or photograph of the item with an explanation of why it cannot be transported in smaller pieces.
- A schematic of the transporting laden vehicle(s) including axle loadings, axle spacings (measured from hub centers), tire sizes, number of tires per axle, and combination vehicle/load height, length and width.
- 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 restrictions, use of P/E vehicles and flag persons, movement of overhead obstacles, railroad schedules for crossings, and provisions for emergency vehicles to navigate around the load.
  - Identified locations where anticipated traffic delays will occur and where the delays can be allowed to clear;
  - Description of any lane restrictions;
  - Description of how pilot/escort vehicles and flag persons will be used;
  - Arrangements for the movement of overhead obstacles;
  - Identification of railroad crossings and contact information, including a pre-trip analysis of each crossing to assure vehicle(s) will clear the grade;
  - Provisions for emergency vehicles to navigate around the configuration; and
  - Contact information for on-call services in case of mechanical failure (i.e., need to replace tow vehicle during movement).

# 1.5.2 Maximums for Special Permits (Non-divisible)

Overlength: Permit limitations for divisible loads are set by each state's DOT.

Measurement for a single trailer will be from the front of the trailer or load to the rear of the trailer or load.



Measurement for double trailers will be from the front of the trailer or load to the rear of the second trailer or load.

Overlength measurements are the responsibility of the load driver.

# **1.6 OVERSIZE LOAD HAZARDS**

Each permitted load has its own inherent hazards, depending on whether it is overwidth, overheight, overlength or overweight. In all cases the permitted load exceeds the optimum design limits of the highway system. It is the responsibility of each P/E vehicle operator (P/EVO) to know the dimensions of the permitted load in order to avoid endangering the public and the permitted load. Additionally, the P/EVO must know the limitations of the highway(s) on the route selected for transporting the load.

### 1.6.1 Overwide Load Hazards

Overwide loads are of particular hazard to the motoring public since these loads generally impact the adjacent lanes and roadway shoulders. When escorting an overwide load, the escorting driver(s) must be acutely aware of road width and any obstructions, such as narrow bridges and narrow or nonexistent shoulders.

Frequently, the motoring public does not pay much attention to oncoming traffic until it presents an immediate threat. Drivers do not give up what they consider "their lane" very easily. It is the duty of the escorting operator to warn the motoring public that part of "their lane" is being used by an overwide load.

Weather, and in particular rain, may soften roadway shoulders to the extent that they are not usable by an overwide load, in which case the permitted load is forced to take up and use more of the adjacent oncoming lane. Areas of roadway that frequently "give way" can be noted by the P/EVO when large patches of asphalt are observed in road bed fill areas.

Each state produces a handy tool for the P/EVO, simply titled "Bridge List." This publication will note areas where the roadway is <20 feet (less than 20 feet) and bridge vertical clearances for the lanes of traffic. This publication can be consulted prior to departure on a P/E trip. Be aware that the publication's published dimensions may have changed due to maintenance or resurfacing of the roadway. The publication should be considered a guide only. *If the P/EVO is not familiar with the permitted route, the operator should drive the route and verify road conditions prior to escorting the load*.

# 1.6.2 Overheight Load Hazards

Loads that are overheight *must be verified by the P/EVO prior to departure*. *Operators should determine actual load dimensions*. This is particularly true for overheight loads that could impact bridge or overpass structures that have a variable clearance, depending on the lane selected.



**Warning:** signs, lights, repaving, reconstruction, added wires and even misprints of information may cause inaccurate clearances.



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FIG. 1.6.2-1 BRIDGE OVERPASS CLEARANCES

# Note: Climbing the Oversize Load

*P/EVOs should not climb on an Oversize Load either to gain exact measurements or to clear overhead obstructions. The true measurement of the load is the responsibility of the permitted load driver. However, the P/EVO should verify the load dimensions with the indicated by the load dimensions with the permitted load driver.* 

their height pole and/or tape measure before departure.

# 1.6.3 Overlength Load Hazards

Overlength loads are limited to roadways where the load can negotiate curves, interchanges, entrances and exits to roadways. Overlength loads must also be evaluated for railroad crossings to make sure that long loads do not get high centered. In all cases, it is the safety of the public that determines whether or not a permit is granted by the DOT.

# 1.6.4 Overweight Load Hazards

Overweight loads represent a traffic hazard due to their 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 to the side of roadway, to a safe pull out, and allow the traffic to pass.

# 1.6.5 Railroad Crossings

Carriers of Oversize Loads must identify the locations where the load is routed across railroad tracks. In some states railroads must be notified prior to escorting a load over a crossing.



### 1.6.6 Utility Lines Can Be Hazardous

**P/EVOs do not lift utility lines over the Oversize Load.** The handling of telephone, cable TV or power lines must be left to the professionals from the utility organizations. For your protection use these precautions:

1. Keep your distance. Surrounding every live power line is an area referred to as the clearance limit of approach. It is strictly forbidden to move any crane

boom, load line or load into this area unless the power line has been grounded, covered or has been taken care of by the power company. **There are no exceptions!** 

- 2. Notify the utility company when working near power lines, and you are not sure of the clearances or need assistance in maintaining the clearances.
- 3. **Treat all wires/electrical equipment as HOT** until you have reliable information, from a qualified utility worker, that the system has been properly de-energized.



Up to 50,000 volts

FIG. 1.6.6-1 POWER LINES CLEARANCE LIMITS





# 2.1 **RESPONSIBILITIES**

It is the primary responsibility of the Pilot/Escort (P/E) vehicle and its operator to warn approaching traffic (front or rear) that an Oversize Load is being transported on the road ahead and motorists must exercise caution. This is done through the use of lights and signs. It is also the P/E vehicle operator's (P/EVO) responsibility to notify the permitted vehicle driver of any hazards that may affect the safety of the Oversize Load or the motoring public.

- **NOTE:** Permits may be purchased at any authorized Department of Transportation
- (DOT) office or agency Monday through Friday during normal business hours.

Vehicles entering the state must have their permits prior to crossing the border.

# 2.2 TRUCKING ORGANIZATIONS SHALL:

- Submit their request for an Oversize Load permit to the DOT.
- Provide actual load measurements to the DOT and the P/EVO.
- Be routed or provide the DOT with a proposed route for the oversize load, depending on state.
- Coordinate the load movement with the P/EVO.
- Provide the P/EVO with a copy of the approved permit.

# 2.3 PERMITTED LOAD DRIVER

It is the responsibility of the permitted load driver to check the proposed route and detour when necessary. An issued permit does not insure the selected route is free of low overhead structures.

They must also:

- Maintain permitted speeds to minimize the impact on traffic.
- Maintain radio contact with the P/EVO.
- Participate in a pre-trip briefing prior to departure.



# 2.4 TRAINING COURSE PROVIDER SHALL:

- Provide training and course materials to the P/EVOs based on state codes and Training Advisory criteria.
- Maintain course records in support of the DOT certification program.
- Issue state certification cards to students who pass the course's final exam with a score of 80% or better.

# 2.5 STATE PATROL SHALL:

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

# 2.6 UNIFORMED LAW ENFORCEMENT OFFICERS

When uniformed law enforcement officers act as escorts using official police vehicles or motorcycles, the P/E vehicles and permitted load shall follow the officers' directions.

**NOTE:** If the officer is directing the load through an unknown route a P/EVO and load driver should pre-drive and review the new route before taking the load.

# 2.7 P/E VEHICLE OPERATORS (P/EVO)

Certain states require P/EVOs to be certified and to carry a valid certification card whenever performing P/E duties in that state. It is the intention of the certification program to ensure

that P/EVOs are knowledgeable of a state's rules and regulations governing the movement of Oversize Loads on public highways.

Each PEVO is responsible for their vehicle which includes properly loading and securing all items. To insure the P/E vehicle is in safe working condition, it is recommended that the operator conduct a walk around circle check prior to escorting an oversized load.

### The PEVO shall:

- Obey all traffic laws (federal/state/local)
- Not follow the Oversized Load in such a manner that the permitted load driver cannot see the entire P/E vehicle.

On Appendix page A-3 of this handbook is "Suggested P/EVO Checklist" and Chapter 3 of this handbook covers pre-trip planning and other best practices.







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# 2.7.1 P/EVO Qualifications

All states have laws regarding P/E vehicle requirements, with some requiring certification cards. The following qualifications are general requirements for P/E vehicle operators:

- Operators must have in their possession a valid certification card if required for the state in which they are operating, whenever escorting an Oversize Load.
- Operators must be at least 18 years of age.
- Operators must be in possession of a valid driver's license.
- Operators should be able to follow written and verbal instructions.
- If corrective lenses are necessary, the operators must have the lenses with them while performing P/E duties.
- Operators must be able to perform emergency flagging duties and traffic control.
- Operators must be drug and alcohol free when performing P/E vehicle duties.
- Operators must carry minimum liability insurance. In Washington State the exceptions are: Pilot Cars accompanying a Mobile Home Transporter: \$100,000 each person; \$300,000 per accident; \$50,000 property damage.

# 2.7.2 Notifying Motorists

Motorists must be notified in the following manner whenever an Oversize Load is on a public thoroughfare.

Signs must be displayed on a P/E vehicle whenever escorting an Oversize Load. The signs shall be mounted on the roof of the escorting vehicle(s) and must be visible from both the front and back.

Depending on state regulations, wording and dimension requirements on signs may vary. As an example, in Washington State the dimensions of the Oversize Load sign(s) on the P/E vehicle shall be as follows:

### Minimum

Sign Width5 feetSign Height10-12 inches (states vary)Lettering Width1 inchLettering Height8 inches

Signs shall be a yellow background with black lettering.



FIG. 2.7.2-1 OVERSIZE LOAD SIGN

P/E vehicle headlights shall be "on" at all times when escorting a permitted load.





FIG. 2.7.2-2 LIGHTING SYSTEM

Each P/E vehicle shall have a minimum of two (2) roof-mounted flashing or rotating amber lights when escorting an Oversize Load. These lights must be visible to approaching traffic from front and back for a minimum of 500 feet.

The lighting system shall 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 a permitted load, the Oversize Load sign shall be obscured from view and the amber warning lights shall be deactivated. Signs may be covered, removed or placed horizontal to prevent being seen by the public.

When it becomes necessary to obstruct and infringe upon traffic in an opposing lane, a flagger may be used to warn traffic. The flagger shall use a red flag at least 12 to 18 inches square (check individual state requirements) mounted on a staff or an 18 inch Stop/Slow paddle. This method of warning traffic may be used at danger points such as bridges, tunnels and sharp curves.

# 2.7.3 P/E Vehicle/Permitted Load Communications

The P/EVO and the permitted load driver must have <u>two-way radio</u> communications. Radio communications shall be used to warn one another of potential hazards due to clearances, traffic obstructions, safety problems or problems that may impact the safe movement of the permitted load.

Prior to P/E vehicle and permitted load departure, the P/EVO and load driver shall verify that the two-way radios are functional and shall agree on the preferred channel. Traffic on north and south highways usually use channel 17; traffic on east and west highways usually use channel 19. The operator and load driver shall also designate an alternate channel in the event that radio traffic becomes congested or an accident occurs. The CB emergency channel is nine (9).

WARNING: FRS (Family Radio Service) or GMRS (General Mobile Radio Service) radios are <u>not authorized</u> by the FCC for commercial use, licensed or not.



### Communicate, Communicate, Communicate

The (P/EVO) is the eyes for the permitted load driver. What you see must be communicated over the radio to prevent accidents or damage to the load. The P/EVO must tell when trucks/cars are passing that may hinder the load movement, how the load tie-downs are, what obstacles may be in the way of a turn and how the merger is proceeding onto the freeway. Your communications with the permitted load driver will give them a much-desired confidence in a turn. Keep the driver informed of your location, particularly when the Oversize Load is to be maneuvered through curves, turns, bridges and lane changes. Never hesitate to tell a driver to move one way or another to avoid an obstacle.

When using radio communications you must remember that there will be areas that you may not be able to use a radio system due to interference from other radio traffic or from the geographical area you are in. PEVOs should make plans for what to do if radio communications is not available.

### Recommendations

- P/EVOs should carry at least one extra two-way radio in case a radio in the P/E vehicle(s) or permitted load should fail.
- Select quality 40-channel, 4-watt radios, antenna(s), speakers and noise-canceling microphones, and have them installed by a qualified technician.
- Select radios that do not require drivers to be distracted from the road when operating. Voice activated or other "hands free" equipment is suggested.

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- Drivers should carry a cellular phone. Prior to departure on the job, phone numbers should be exchanged for use in an emergency when radios cannot be used.
- Radios are for business use only, so minimize conversation.
- P/EVOs should verify the Oversize Load dimensions before leaving.
- Carry extra batteries for handheld CB units.
  - If you or the company you work for can transition to commercial band radios it is strongly recommended.
  - CAUTION: Some of the Canadian frequencies are usable in the U.S., but require a commercial service radio license.

# 2.7.4 Observing the Load, the Rear Escort

As a rear P/E there are several things to watch for, both before the load moves and during transit. Keep an eye on binders/tie-downs that may become loose, flat tires, load shifting, etc. Some loads have booms that may shift. Notify the driver immediately if they do. Watch for anything that may fall off the load or the trailer. If you notice anything coming loose or about to fall off, notify the driver and he will make a decision as to what he wants to do about it. Do not expect him to stop immediately and do not stop where you cannot get off the road safely. If in doubt, communicate with the driver. It is always better to err on the side of safety.



### 2.7.5 Advance Warning Vehicle

When an Oversize Load presents an extreme hazard to the motoring public, a third P/E vehicle may be employed to give advance warning. Use of a third vehicle will be determined by the DOT and will be noted on the permit to move the Oversize Load. The advance warning P/E vehicle will precede the lead P/E vehicle and the permitted load. The advance warning P/E vehicle shall make every effort to alert oncoming traffic to the following Oversize Load. This will include motioning traffic to the side of the road and stopping traffic when necessary if the Oversize Load and traffic cannot pass without endangering the motorists.

# 2.8 SAFE DRIVING PRACTICES

Safe driving rules become more important when escorting an Oversize Load that may be subject to rollover or jackknife due to sudden brake application or change of direction. Below are some safe practices that P/E vehicle operators should implement:

- Look far ahead. Scan the roadway and its intersections for hazards. Look far ahead so that you can notify the permitted vehicle driver to slow down or change lanes gradually when necessary. At highway speeds, look up to 1/4 mile ahead.
- Manage the space between the escorting vehicle(s) and the permitted load.
- The rear P/E vehicle should not leave the permitted load driver's vision by getting too close or into a "blind spot."
- The lead P/EVO should not exceed a 1/2 mile ahead of the permitted vehicle or be closer than four (4) seconds. Allow one (1) second lead for each 10 feet of the permitted load and an additional one (1) second for 40 mph and above.
- Whenever adverse weather conditions exist such as rain, snow, ice or fog, allow at least one (1) additional second of separation between the permitted vehicle and the lead P/E vehicle.

**NOTE:** Oversize Loads may not be allowed to be moved on snow, ice or during foggy conditions. Law enforcement officers may require Oversize Loads to pull off the road to a safe place when road conditions are determined to be hazardous.

- No passengers (human or animal) shall be carried in a P/E vehicle when escorting a permitted load. The only permitted exception allows the carrying of certified persons in training or a person necessary to perform flagging duties.
- The P/E vehicle shall not be loaded in such a manner that would prevent it from being recognized as a P/E vehicle.
- The load shall not overhang the vehicle.
- Lights and signs shall not be obscured.
- The load shall not impair the operator's P/E duties or vision.
- Do not stay behind an obstacle that impairs your visibility ahead (lead vehicle or load).



**NOTE:** It is recommended that rear P/E operators maintain at least three (3) or four (4) seconds distance between the P/E vehicle and the permitted load, as traffic conditions allow. In some states, such as Washington, the lead P/E shall not lead the permitted load by more than 1/2 mile.

**NOTE:** It is recommended that the lead P/E vehicle manage the spacing between the permitted vehicle and the P/E vehicle based on the "one plus one second rule." Allow one second lead space for every 10 feet and increment thereof of the permitted vehicle's length, and add one second when exceeding 40 mph. Never allow less than a four-second lead. A longer lead is recommended when the width of the load exceeds the lane of travel.

Add one second separation for each adverse condition (rain, fog, ice/snow, gravel).



FIG. 2.8-1 ONE PLUS ONE SECOND RULE

*Example:* An Oversize Load that is 56 feet in length is traveling down the interstate highway at 45 mph. Spacing should be as follows:

| 56 feet Oversize Load |   | 6 seconds           |
|-----------------------|---|---------------------|
| 45 mph                | = | 1 second            |
| Total                 | = | 7 second separation |

### 2.9 ROAD CONDITIONS/STOPPING DISTANCE

Stopping distances vary according to road and weather conditions. On an icy road, for example, a vehicle may need four times the stopping distance as required on dry pavement. The P/E vehicle operator leading the Oversize Load should advise the Oversize Load driver when road conditions change and may affect stopping distance.

Factors that influence your stopping distance are as follows:

- weight
- road conditions
- vehicle condition

- load
- reaction time
- weather conditions
- type of vehicle
- type/condition of the road

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• tires





FIG. 2.9-1 STOPPING DISTANCE BASED ON ROAD CONDITIONS

There are two measurable elements that determine stopping distance:

- 1. Reaction time
  - For the average driver, in good physical and mental condition, it is three quarters of a second.
- 2. Actual braking distance
  - The number of feet your vehicle will travel from the time you recognize a hazard and get your foot OVER the brake pedal.





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# 3.1 PILOT/ESCORT VEHICLE OPERATOR PRE-TRIP PLANNING

This chapter is from the **Pilot Car Escort – Best Practices Guideline** that was developed by the Specialized Carriers and Rigging Association (SCRA). These "Best Practices" were developed as a result of extensive research and analysis of existing Pilot/Escort Vehicle Training and the review of Federal and State Regulations. The grant that provided the funding for this SCRA project was provided by the Federal Highway Administration (FHWA), Office of Freight Management and Operations and in cooperation with the Commercial Vehicle Safety Alliance (CVSA).

# **3.2 CHECK P/E VEHICLE OPERATOR**

The following items should be reviewed prior to each trip:

- 1. Comply with state escort age requirements
- 2. Verify required driver's license is current
- 3. Verify required training has been completed
- 4. Review escort job-readiness
  - Driver is healthy and free of fatigue
  - Escort must not display badge, shield, emblem or uniform of color or design that may be mistaken for law enforcement badge, emblem or uniform

# **3.3 PREPARE CONTINGENCY PLANS**

- 1. Review contingency plans with the carrier and enroute transfer escorts a. Plan for vehicle breakdowns
  - b. Plan for emergencies (escort vehicle must not be operated as a law enforcement or emergency vehicle)
    - Contact with overhead obstruction
    - Railroad crossing issues
    - · Accidents and property damage



- c. Plan for enroute transfer of escort responsibilities
  - Assess the feasibility for overlapping escort services in the event a non-stationary transfer of escort services is necessary
  - Coordinate minimal safety procedures to be completed by two-way electronic communication until a safe stop can be made
  - Identify the first available/authorized safe area to stop following any non-stationary transfer of escort responsibilities
  - Identify and coordinate plan with other responsible entities (law enforcement agencies, utility companies, railroads, etc.)
- d. Coordinate and record emergency numbers with carrier

# **3.4 PRE-TRIP MEETING**

A team coordination meeting at the point of origin or at a transfer site.

The dispatcher shall provide the proposed/authorized route of load movement and the actual size (true measurements) of the permitted load. The P/E vehicle operator (P/EVO) should verify the Oversize Load dimensions (especially height) before leaving.

The P/EVO shall review the route plan and verify the route hazards (bridge or overpass heights and widths, wires, signs and shoulders).

The P/EVO and permitted load driver shall have a pre-trip discussion to establish a clear understanding of the route hazards, communications (radio channel), and safety precautions.

### 3.4.1 Identify Team Members

- · Discuss roles and responsibilities of individual team members
- Review load driver and law enforcement escort's expectations of the pilot car driver

# 3.4.2 Complete a Job Hazard/Safety Analysis

- 1. Identify load specific risks
  - a. Fire risks
  - b. Explosive potential
  - c. Hazardous material
    - i. Notify the Environmental Protection Agency and state agencies as necessary
    - ii. Identify railroad crossing and tunnel restrictions and corresponding notification requirements
  - d. Load configuration
    - i. Protruding components
    - ii. Weight shift potential
  - e. Collapsible or fragile loads
  - f. Time-sensitive or perishable materials
- 2. Ensure appropriate emergency equipment is on hand and available to all team members
- 3. Review emergency procedures with team



- a. Review procedures for communicating emergency situations
- b. Review procedures to abort the transport
- 4. Review load limitations
  - a. Ground clearance
  - b. Load height
  - c. Maneuverability and turning limitations
- 5. Review contingency plans for emergencies, enroute transfer of escort responsibilities and vehicle breakdowns
  - a. Identify point of transfer for an enroute transfer of escort responsibilities
  - b. Identify the first available safe stopping site for an enroute transfer of escort responsibilities

# 3.4.3 Review permits

- 1. Confirm accuracy of travel dates, travel times, point of origin, destination, truck identification and license number, trailer number, route and load dimensions
  - a. Measure load to validate permit specifications
- 2. Determine if a route survey was completed
  - a. Review for changes by permit agency
- b. Review for previously unidentified route obstructions and potential hazards or safety issues
- 3. Complete route sheets for permit designated route if not done as part of pre-trip planning a. Review and ensure distribution of route survey to team
  - b. Cross reference route to maps or electronic medium
- 4. Determine if advance notifications are designated for law enforcement, railroads, toll road stations and utilities
  - a. Confirm the indicated advance notifications have been completed

# 3.4.4. Communications review

- 1. Ensure all members of the team are equipped with a two-way radio
- 2. Identify two-way radio channel
- 3. Run a test on communications equipment and designated channel
- 4. Familiarize yourself with each team member's voice

# 3.4.5. Prepare for load movement

- 1. Check and mount Oversize Load signs, flags and pilot car lights in accordance with regulations
- 2. Determine the placement of the team vehicles during transport
- 3. Set vertical clearance measuring device, "height pole," as necessary
  - a. Set height consistent with state regulations and in cooperation with the load driver
  - b. Daily verify accuracy of height pole setting by visually comparing the pole setting to the highest point of the load when the escort vehicle is parked parallel to the load (ensure the load and the escort vehicles are on level surfaces when measuring)

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### **3.5 MODIFIED PRE-TRIP MEETING**

Team coordination for enroute non-stationary transfer of escort responsibilities - "pick-up on the move."

Frequently, Oversize Loads do not need a P/E on interstate highways, but will require P/E services when they exit onto a two-lane state road. Request for a P/E may be short notice, one to two hours, from an out-of-state trucker. Consequently, a meeting point, time and radio channel will be agreed upon by the P/E dispatcher. The trucker will call the P/EVO as they approach the designated meeting point and request the escort(s) to "fall in" with the Oversize Load as it comes to the meeting junction. The whole exercise is done "on the move" without benefit of pre-trip meetings, load measurement or checklist completion. The P/EVO will stay with the Oversize Load for the agreed upon duration. It may be through to delivery or only until the Oversize Load rejoins an interstate highway.

### 3.5.1. Review Pre-Trip Planning contingency plan for enroute transfer of escort responsibilities

- An enroute non-stationary transfer should be the exception
- Overlapping escort services is the preferred method for transferring escort responsibilities when an enroute transfer is necessary

# 3.5.2. Complete minimum safety procedures by two-way communication

- Identify team members
- · Test communication equipment
- · Identify load specific risks and risk control measures
- · Identify emergency situations or previously unidentified risks surfaced to date
- · Verify the existence of the permit and applicable permit restrictions
- · Verify the route sheet matches the designated permit route
- Review vehicle positioning
- Identify the next available safe area to stop

### 3.5.3 Stop at the next available safe pull-off area

- Complete the remainder of tasks listed for the Pre-trip Meeting for a point of origin or stationary transfer
- · Review any unforeseen emergencies surfaced to date





# 4.1 MANEUVERING THE OVERSIZE LOAD

# 4.2 OVERLENGTH LOAD WITH TAIL SWING

There are many obstacles you must watch for when you are moving an Oversize Load with a rear overhang. Mailboxes, trees, telephone poles and road signs are only a few of the obstacles that must be cleared when turning corners. Depending on the length of the overhang, the swing will travel three to four times faster than the truck pulling the load.

**Lead P/E Vehicle:** The lead P/E vehicle operator (P/EVO) should inform the driver of the Oversize Load and the rear P/EVO of any obstacles to watch for while the Oversize Load is turning the corner. The lead P/E vehicle will precede the Oversize Load and take a position to warn oncoming traffic that the load will need part of their lane to complete the turn. The lead P/E vehicle will hold its position while watching the load to ensure clearance. When the tractor cab approaches, the lead P/E vehicle shall resume its lead position.

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**Rear P/E Vehicle:** The rear P/E vehicle must control traffic behind the load while the Oversize Load is positioning for a turn. Once the rear P/EVO has control of the traffic, the rear overhang must be watched closely. While the Oversize Load is making the turn, the rear car should follow the tail swing to ensure clearance from oncoming traffic or someone that may try to pass from behind and go into the travel of the swing. If the rear overhang comes close to an obstacle, the rear P/EVO must notify the permitted load driver to stop immediately.

**Oversize Load:** The driver of the Oversize Load should rely on the lead and rear P/EVOs to assist with tail swing when maneuvering around corners.





FIG. 4.2-1 TAIL SWING HAZARDS

### **4.3 POSITIONING FOR SAFETY ON THE HIGHWAY**

### 4.3.1 Multi Lane-One Car Escort

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**Lead P/E Vehicle:** The P/E vehicle shall have its sign displayed, headlights on and amber flashing lights on. The P/E vehicle is positioned to warn oncoming traffic that an Oversize Load is following, and the load may take part of "their lane." When the Oversize Load is overheight, the lead vehicle will be required to verify clearances on bridges, overpasses, wires and signal lights. This vehicle should not exceed a 1/2 mile in front of the Oversize Load (and should drive on the right side of the highway except where necessary to clear obstacles and to avoid breaking the height pole.)



FIG. 4.3.1-1 ONE P/E VEHICLE - Not to exceed 1/2 mile lead, warns oncoming traffic

When only one P/E vehicle is being used it may be required to change locations from lead to rear and rear to lead depending on the road conditions. The permitted driver may request the P/E to move to the rear and inspect the load and to coach him through curves, bridges or narrow streets.

# 4.3.2 Multi Lane - Two Car Escort

Lead P/E Vehicle: Same as one car position.

Rear P/E Vehicle: The rear P/EVO is to advise the load driver by radio whenever there may be



a problem with the load. The rear P/EVO is to constantly monitor the load to make sure that it is secure. In good weather, on good roads, the rear P/E vehicle should maintain a three (3) to four (4) second separation and drive on the left side of the right lane of the highway. The left side of the rear P/E vehicle should parallel the left side of the Oversize Load. Inform the permitted load driver of road conditions and load clearances.

Never get in the load driver's blind spot without communicating with the driver. The rear P/EVO must also notify the load driver if any vehicles may be passing.



FIG. 4.3.2-1 TWO P/E VEHICLES– Inform the permitted load driver of road conditions and load clearance

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**Oversize Load:** The oversize load will drive to the right aligning its right front fender with the "fog line" (white line) unless there are obstacles that may extend onto the shoulder of the highway (mailboxes, stalled vehicles).

### 4.3.3 Two Lane Road Positioning

Positioning of the P/E vehicles in relation to the Oversize Load should be to give the motoring public maximum warning and to provide the permitted load driver enough information to safely maneuver the Oversize Load.



FIG. 4.3.3-1 ROADWAY NARROWS – P/Es ensure clearances

**Rear P/E Vehicle:** This vehicle stays in the lane immediately behind the permitted load at a three to four second interval for spacing. The rear vehicle should drive so that the left side of the P/E vehicle matches or parallels the side of the Oversize Load. This positioning should indicate to



the motorists the width of the load ahead and provide both the P/EVO and permitted load driver visibility of each other.

**Oversize Load:** The Oversize Load should be driven as far to the right of the lane as road conditions allow. This will vary depending on shoulder conditions and obstructions such as signs, mailboxes and wires.

### 4.3.4 Two and Three Lane Highway Positioning



FIG. 4.3.4-1 THREE LANES DOWNHILL - P/Es warn approaching traffic



FIG. 4.3.4-2 THREE LANE UPHILL & NO SHOULDER - P/Es positioned to warn oncoming traffic, guide, and protect the Oversize Load.

Lead P/E Vehicle: Whether on a two-lane or multiple lane highway, the lead vehicle must warn the oncoming traffic and inform the permitted load driver and rear P/E of changes in highway conditions, lack of shoulders, road construction or traffic hazards.

### **Rear P/E Vehicle:**

**Uphill:** This vehicle stays in the left lane and positions itself so that the right side of the P/E Vehicle is parallel to the left side of the load. This will limit the ability for someone to pass the oversize load.

**Downhill:** This vehicle stays in the lane immediately behind the permitted load at a three to four second interval for spacing. The rear vehicle should drive so that the left side of the P/E vehicle matches or parallels the side of the Oversize Load. This position should indicate to the motorist the width of the load ahead and provide both the P/EVO and permitted load driver visibility of each other.

**Oversize Load:** The Oversize Load should be driven as far to the right of the lane as road conditions allow. This will vary depending on shoulder conditions and obstructions such as signs, mailboxes and wires.



### 4.4 PASSING A SLOWER VEHICLE

Leading an Oversize Load around a slower moving vehicle must be done with forethought and care. It should be the permitted load driver that initiates the maneuver with the coordination of the lead P/E vehicle.

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**NOTE:** Do not allow your forward vision to be obscured by a slow moving vehicle.

**Lead P/E Vehicle:** The lead P/EVO must gauge speed and clearances to make sure that the permitted load can clear the slower moving vehicle without trapping it between the permitted load and a P/E vehicle. Inform the following vehicles by radio of your intentions to pass the slow moving vehicle.

**Rear P/E Vehicle:** Upon determination that the load is going to pass a slow moving vehicle, and after determining there is sufficient clearance, the rear P/E vehicle will move left preventing traffic from passing and allowing the Oversize Load to move into the passing lane. The rear P/EVO shall radio the permitted load driver, "You are clear one lane left." Give the permitted driver specific directions stating the number of lanes clear and the direction right or left. When the permitted load has cleared the passed vehicle, the rear P/EVO should radio, "Clear, back right."

**Oversize Load:** The permitted load driver shall move left only after receiving assurance from the rear P/EVO by radio that it is safe to move into the passing lane. The permitted load driver will not move into the right lane until assurance has been given by the rear P/EVO, by radio, that they have successfully passed the slower vehicle.



FIG. 4.4-1 STEP 1 – Permitted load driver radios rear P/E of intentions to pass a slow moving vehicle.



FIG. 4.4-2 STEP 2 – Rear P/E radios the permitted load driver "clear to move left one lane."





FIG. 4.4-3 STEP 3 – Rear P/E radios the permitted load driver "move back right one lane."

# **4.5 PASSING AN OBSTRUCTION ON THE SHOULDER**

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When an obstruction on the shoulder of the highway, such as a parked vehicle, road sign or mailbox, might impact the Oversize Load, the permitted load should be moved left to clear the obstruction.

**Lead P/E Vehicle:** The lead P/EVO should notify the permitted load driver and the rear P/EVO by radio if an obstruction by the side of the road could impact the permitted load. When passing the obstruction, the lead P/EVO should move left far enough to clear the obstruction and notify the team of the obstruction in feet, i.e., "There is a car on the shoulder, 1 foot off the fog line. Move one lane left". The lead P/E vehicle should maintain that position until the Oversize Load has safely cleared the obstruction.

**Rear P/E Vehicle:** When the rear P/EVO is notified of the obstruction by the lead P/E vehicle, the rear P/E vehicle will move left one lane. 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, "Move right, clear."

**NOTE:** It will help the Oversize Load driver if the rear P/E vehicle operator radios the description (color and make/model) of the last vehicle in the left lane. Example: "You are clear after the red car."

**Oversize Load:** The permitted load driver will move left and pass when the rear P/E vehicle is in place and the radio direction has been received. The permitted load driver will not move right until given a "clear, move right" call from the rear P/EVO.



FIG. 4.5-1 STEP 1 – Lead P/E operator informs the permitted load driver and rear P/E of shoulder obstruction





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FIG. 4.5-2 STEP 2 - Rear P/E radios the permitted load driver "move left one lane."



FIG. 4.5-3 STEP 3 - Rear P/E radios the permitted load driver "move right one lane, clear."

# 4.6 WINDING ROADS WITH BLIND CURVES, HILLS AND NO SHOULDERS

NOTE: This Is Hazardous & Extreme Caution Must Be Exercised.

**Lead P/E Vehicle:** When the terrain prevents good visibility, the lead Pilot/Escort Vehicle Operator (P/EVO) should be one corner/curve or one hill ahead of the Oversize Load. The P/EVO should keep in radio contact with the driver of the permitted vehicle whenever potentially dangerous traffic is in the blind spots. Every effort should be made through the use of your lights and sign to warn oncoming traffic of the approaching Oversize Load.

When two-way traffic becomes impossible due to natural ground effects and the safety of the oncoming traffic will be compromised, the Oversize Load must be stopped. The lead P/EVO must proceed ahead to a point where traffic can be safely restricted. A line-of-sight of 500 feet or more is needed to safely stop traffic. Once you have the traffic safely stopped, you should radio to the driver of the permitted vehicle that they can proceed after the last vehicle is between the lead P/EVO and the Oversize Load. You must be able to tell the driver the color or make/model of the last vehicle that is between you and the Oversize Load. While oncoming traffic is withheld, the Oversize Load can transit the blind, narrow corners and hills to the next safe parking zone. This "leap frog" approach should be accomplished as a last resort and should be done in short increments to impede the flow of traffic as little as possible.

If the roadway is restricted in any manner, warning devices should be deployed, such as red flags for temporary slowdowns or the placement of reflective triangles for stops of 10 minutes or more. Often in these kinds of dangerous areas you may be required to use two lead P/E vehicles in front of the Oversize Load. In extreme cases you may have to travel out of radio range to find a safe wide parking area for the Oversize Load. If this is the case, two P/EVOs must be used in front of the Oversize Load, and you should pass a red flag or ribbon from the advanced P/EVO to the last



car you let through the narrow area and ask them to give it to the lead P/EVO. Once the flag has been passed from the last car to the lead P/EVO, he/she knows it is clear to proceed. With the second lead car in front of the Oversize Load, the P/E vehicles will be able to control any subsequent traffic which may come off a logging road or out of a driveway.

**Rear P/E Vehicle**: When it is determined the Oversize Load must be parked by the side of the road, the rear P/EVO must take up a defensive position to protect the motoring public from striking the load. When it becomes necessary to "leap frog" the Oversize Load to the next safe parking zone, the rear P/EVO will be required to control traffic as the Oversize Load is moved on and off the highway. Traffic should be held behind the Oversize Load to prevent a rear end collision with the lead P/E vehicle.

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.

Care must be taken by the rear P/EVO not to park in a blind spot so the approaching traffic can see the P/E vehicle with ample time to safely react to any obstruction that may impede their lane of travel.

**Oversize Load:** When the Oversize Load is required to park alongside the road, warning devices (reflective triangles, fusees or flares) shall be deployed to warn approaching traffic when delayed for 10 minutes or more. The Oversize Load should not be moved onto the roadway until directed by the P/EVOs.

**NOTE:** When exiting the P/E vehicle to flag, (All required safety clothing on – ANSI Class 2 vest and hardhat) the flagging location should be at least 50 feet to the rear from the stationary P/E vehicle with the highest visibility to the motoring public.





FIG. 4.6-1 WINDING ROADS WITH BLIND CORNERS AND NO SHOULDERS



# 4.7 TWO-LANE BRIDGE – TWO-WAY TRAFFIC

### NOTE: This Is Hazardous & Extreme Caution Must Be Exercised.

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When a two-lane bridge with two-way traffic must be crossed, traffic must be stopped to allow the Oversize Load to cross. Traffic must be controlled by both the front and rear P/E operators.

**Lead P/E Vehicle:** The lead P/EVO must proceed across the bridge 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 parallel along the right side of the centerline in the direction of travel with your STOP sign displayed out of your window. With your vehicle parallel to the road centerline you can drop the sign and pull your arm in and escape the oncoming traffic if it appears they are not going to stop. This is one of the most dangerous situations you will encounter as a P/EVO. You must ensure your own safety as well as the safety of the traffic you must stop. When you have the oncoming traffic controlled, you should notify the Oversize Load driver that it is all clear to proceed after the last car is clear. Make sure to radio the color and make/model of the last vehicle across the bridge to the rear P/EVO and Oversize Load driver.

### NOTE: Helpful Hints

- Use your C/B radio to notify oncoming truckers of your intentions to shut down the bridge.
- Use your four-way emergency flashers in addition to the lights and sign to warn the traveling public of the obstruction.
- Flash your high beam headlights on and off repeatedly to warn/get the attention of distant motorists.
- If the oncoming traffic does not appear it is going to stop, pull your P/E vehicle out of the way, blow on your horn, and alert the driver of the Oversize Load of the situation.
- If there is a long line of traffic that will be stopping before the Oversize Load clears the bridge, ask the first car in line to wait there until the load clears before they proceed. The lead P/E vehicle should slowly proceed forward with the STOP sign displayed out of its window to prevent an accident at the end of the line of stopped traffic. (Only in extreme circumstances, when traveling at slow speeds should a PEVO flag be displayed from a moving vehicle.)
- Mobile homes and manufactured housing usually travel with two separate halves. Since this is one of the most dangerous situations for both the lead P/E vehicle and the traffic that must be stopped, 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 the bridge is cleared for the first unit. After both halves clear the bridge, they must reassume their half-mile separation between the units.



**Rear P/E Vehicle:** When the lead P/EVO radios it is clear to proceed, and the last car has cleared the bridge, the rear P/EVO will talk the Oversize Load across the bridge. 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 to ensure clearance on both sides of the load. If the bridge is covered and the load is also overheight, the rear P/EVO must also watch the overhead clearance.

Traffic should be held behind the Oversize Load while the lead P/EVO is stopping traffic on the other side of the bridge to prevent a rear end collision with the lead P/E vehicle. If any unauthorized traffic comes from behind the rear P/EVO during this maneuver, you must notify the lead P/EVO and the driver of the Oversize Load immediately. The traffic that has been held up behind the Oversize Load should be cleared as soon as possible after the Oversize Load has safely crossed the bridge.

**Oversize Load:** The permitted load driver will move to the center of the roadway and cross the bridge once the lead P/EVO has cleared traffic and the rear P/EVO has notified them that they are all clear in the rear. When traffic is cleared, the Oversize Load may continue across the bridge.

### 4.8 MULTIPLE-LANE BRIDGES – ONE-WAY TRAFFIC

On multiple-lane bridges the Oversize Load may proceed as on a normal highway.

**Lead P/E Vehicle:** The lead P/E vehicle will notify the team of the obstruction and request the Oversize Load to move left to avoid the obstruction.

**Rear P/E Vehicle:** The rear P/E vehicle will move into the left lane to prevent traffic from passing the Oversize Load. When in position, the permitted vehicle driver will be notified "clear to move left" to avoid the bridge structure. When the Oversize Load straddles the dividing line, the rear P/E vehicle will move right and communicate by radio when the Oversize Load has cleared the bridge.



FIG. 4.8-1 STEP 1 – Lead P/E operator stops traffic



FIG. 4.8-2 STEP 2 – Rear P/E operator ensures clearance



**Oversize Load:** The permitted load driver will move to the center of the roadway once the lead P/E has cleared traffic and the rear P/E vehicle has notified them that they are in position blocking traffic. When traffic is cleared, the Oversize Load may continue across the bridge directed by the rear P/EVO and shall return to the right hand lane when clear of the obstruction.



FIG. 4.8.1-1 STEP 1 – Lead P/E requests Oversize Load move left one lane.



FIG. 4.8.1-2 STEP 2 – Rear P/E clears the permitted load one lane left and ensures its clearance.



FIG. 4.8.1-3 STEP 3 – Rear P/E clears the permitted load back, one lane right.



### **4.9 INTERSTATE INTERCHANGES AND CLOVER LEAFS**

When an Oversize Load must move through an interchange, it is the responsibility of the P/E vehicles to guide the permitted load driver from both the front and rear to avoid damage to the Oversize Load, or collision with merging traffic.

Lead P/E Vehicle: The lead P/E vehicle must enter the clover leaf/interchange at a low speed and in close proximity to the permitted load so that the driver can be talked through the maneuver. When the lead P/E vehicle gets to the new roadway, it must pull onto the new roadway in such a manner as to warn any traffic of the Oversize Load. The P/E vehicle(s) should make every effort to merge with traffic at prevailing speeds and with caution.

**Rear P/E Vehicle:** The rear P/E vehicle must monitor the "swing" of the Oversize Load as it moves through the clover leaf/interchange. The rear P/EVO must keep the permitted load driver informed of how close the Oversize Load is to any roadside structure. As the Oversize Load approaches the new roadway, the rear P/E vehicle should take the first lane out and notify the drivers that they are clear to move left one lane.

**Oversize Load:** The driver of the Oversize Load must rely on the lead and rear P/EVOs to guide the Oversize Load through the interchange and assist with merging traffic.



FIG. 4.9-1 STEP 1 – Stay in close proximity to the Oversize Load.



FIG. 4.9-2 STEP 2 – Rear P/E monitors clearances.





FIG. 4.9-3 STEP 3 – Rear P/E talks the Oversize Load through the traffic merger.

Merging onto the interstate or any highway requires coordination between the P/E vehicles and the driver of the permitted load.

**Lead P/E Vehicle:** The lead P/E vehicle will move onto the interstate highway to warn oncoming motorists that the Oversize Load is approaching. The P/EVO must notify the permitted load driver of any potential hazards due to merging traffic or obstructions on the shoulder just past the interchange. Once the Oversize Load has safely entered the new highway, the lead P/E vehicle will resume its position, in front of the permitted load.

**Rear P/E Vehicle:** As the Oversize Load approaches the highway, the rear P/E vehicle must proceed onto the highway in such a manner as to warn traffic that the Oversize Load is merging and to prevent traffic from coming between the Oversize Load and the P/E vehicle. Once on the highway, the P/E vehicle should assume a position approximately three seconds behind the permitted load.

**Oversize Load:** The Oversize Load must proceed onto the highway with caution to prevent contact with motorists that may go around the rear P/E vehicle. The Oversize Load must get up to the prevailing speeds as quickly as possible to merge with the interstate traffic.



FIG. 4.9.1-1 STEP 1 – The lead P/E moves onto the highway to warn oncoming traffic.









FIG. 4.9.1-3 STEP 3 – The Oversize Load enters the highway with caution after rear P/E takes a position.

## **4.10 RIGHT TURNS AT INTERSECTIONS**

Oversize Loads take up additional space when making turns at intersections. It is up to the P/EVO to protect motorists that frequently don't understand the needs of an Oversize Load. Motorists will often try to take an inside lane when the permitted load has swung left in preparation for a right turn. If this happens, the Oversize Load driver must be stopped until the motorist has cleared the intersection.

**Lead P/E Vehicle:** The lead P/E vehicle will turn right and take up a position to warn oncoming traffic that the Oversize Load will need part of "their lane" to accomplish the right turn. The P/E vehicle will hold its position while watching the right inside of the load to make sure that it does not impact curbing signs, wires, mailboxes or motorists that may try to cut inside the turning load. Only when the tractor cab approaches the P/E vehicle should the P/E resume its lead position.

**Rear P/E Vehicle:** As the Oversize Load approaches an intersection and swings left for a right turn, the rear P/E vehicle functions to prevent motorists from coming between the Oversize Load and the curb or structures that may catch the motorist in a crushing movement. At the same time the P/E vehicle will have its right turn signal on and a 12 inch by 12 inch red flag (other states have different size requirements) displayed out the left window. The rear P/E vehicle should be watching the clearance on the right side of the Oversize Load. If there is a rear overhang you must also watch the tail swing to ensure it does not hit anything. If a motorist comes between the Oversize Load and the P/E vehicle, stop the permitted load driver immediately and allow the motorist to clear the intersection.



**Oversize Load:** As the Oversize Load approaches an intersection for a right turn, it may be necessary to enter the left lane. Watch for motorists that will attempt to take the lane between the P/E vehicles and the Oversize Load. The Oversize Load right turn signal should be activated.



FIG. 4.10(A)-1 STEP 1 – The lead P/E proceeds through the turn to warn of wide turns.



FIG. 4.10(A)-2 STEP 2 – The Oversize Load swings wide while the rear P/E observes the swing.



FIG. 4.10(A)-3 STEP 3 – The lead P/E moves to the right lane as the Oversize Load clears the intersection.



FIG. 4.10(B)-1 STEP 1 – The lead P/E proceeds through the turn to warn of wide turns.



FIG. 4.10(B)-2 STEP 2 – The Oversize Load swings wide while the rear P/E observes the swing.



FIG. 4.10(B)-3 STEP 3 – The lead P/E moves to the right lane as the Oversize Load clears the intersection.



### 4.11 DRIVING THROUGH TOWNS AND CITY STREETS

You will be exposed to many more hazards while moving an Oversize Load through towns and on city streets. When the load is overheight, the P/EVOs and the driver of the Oversize Load must be aware of low wires, low lights at intersections and low signs hanging across the street. Other potential hazards include pedestrians, car doors being opened into traffic and often motorists trying to beat the Oversize Load through the intersection or trying to pass the load at inappropriate locations.



FIG. 4.11-1 MORE HAZARDS PER MILE IN TOWNS AND ON CITY STREETS

The public frequently does not consider that it may be necessary for a high load to "zigzag" around lights at an intersection or that wide turns are necessary while maneuvering around a corner. There are times when an Oversize Load must drive on the wrong side of the road to safely pass under a wire or to get around a low hanging tree or other hazard.

**Lead P/E Vehicle:** As the permitted load proceeds through towns and on city streets, the lead P/EVO must be looking for overhead obstacles when escorting an overheight load. Leading a high load through towns and cities will depend on many different factors such as: Is the peak of the load on the right side, left side, middle, or is it high all of the way across the top? The lead P/EVO should, whenever possible, run the height pole in the same location as the peak of the overheight load. Some loads will be able to split between the signal lights, and other loads may need to "zigzag" through the intersection to miss all of the lights completely. If this is necessary, the lead P/EVO must stop the oncoming traffic back from the signal to enable the Oversize Load to go around all of the lights at an intersection. In many cases going under the highest side of a wire will allow the Oversize Load to avoid the obstacle completely.

Every attempt should be made to adjust the speed to be synchronized with the street signal lights. If the Oversize Load driver does not make it through a street signal (red light), the lead P/E vehicle should pull to the right side if possible and wait for the signal to change. Do not leave the load so far behind that the Oversize Load does not know what obstacles they need to avoid.



### NOTE: Helpful hints

Estimate the height of a wire where it is attached to the pole. If it appears to be low, you should run the height pole under the lowest part of the wire to ensure clearance for the Oversize Load.

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

**Rear P/E Vehicle:** The rear P/EVO has many added responsibilities when driving through towns and city streets. In addition to ensuring clearance while turning corners and watching tail swing, the rear P/EVO is also responsible for managing lanes, controlling traffic behind the load, and watching overhead obstructions that the Oversize Load will need to maneuver around. If it becomes necessary for the Oversize Load to "zigzag" around lights or go into the oncoming lane to miss a wire, traffic must be held behind the load until the driver of the Oversize Load can return safely to the right side of the street. In addition, the rear P/EVO should not let traffic pass the Oversize Load while it is maneuvering around low obstacles. If anything falls from overhead, you do not want anyone getting hit from falling objects or wires.

When the permitted vehicle is maneuvering around low wires or through intersections, the rear P/EVO must be in a position to see the overhead clearance and immediately direct the driver of the Oversize Load to stop before any contact is made. The best place to be is usually on the rear corner of the Oversize Load on the side that has the highest part. The rear P/EVO needs to have a clear vision of the street signals to be able to direct the driver of the Oversize Load to move right or left to avoid contact when maneuvering around traffic signal lights. This positioning will also allow the rear P/EVO to see if the signal changes.

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Every attempt should be made to obey the traffic signals. If the rear P/EVO is stopped by a light, the driver should immediately notify the lead P/EVO and the driver of the permitted vehicle.

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 they make a dangerous move to get around the Oversize Load.

**Oversize Load:** When the permitted vehicle enters a town or city, the Oversize Load should be driven astride the lane divider line. This will reduce the possibility of motorists attempting to pass the Oversize Load and will reduce the possibility of contacting parked cars. When moving an overheight load, the driver of the permitted vehicle should be watching the height pole on the lead P/E vehicle to see if it makes contact with any overhead objects. The driver of the permitted vehicle should also notify the lead P/EVO if any traffic pulls out between the Oversize Load and the lead P/E vehicle. The lead P/EVO will be concentrating on the wires and low obstacles ahead and may not see a vehicle approaching from the rear.



If a traffic signal stops the rear P/E vehicle from getting through an intersection, the permitted load driver should make every attempt to slow down and wait for the rear P/EVO to catch up as soon as possible to protect and watch the back of the Oversize Load.

# 4.12 WEIGH STATIONS AND PORTS OF ENTRY

P/E vehicles are required to enter weigh stations and ports of entry for inspection when providing escort for an Oversize Load. 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/E Vehicle Operator's certification card, safety equipment and records of inspection.

**Lead P/E Vehicle:** The lead P/E vehicle will enter ports of entry and weigh stations in close proximity to the Oversize Load. As the team approaches the scale house, the lead P/E vehicle 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 front P/E vehicle should proceed across the scales (not around the building) directly before the Oversize Load. As the load moves across the scales, the lead P/E vehicle should be in a position to ensure clearance for the Oversize Load. This position will vary depending on the extra legal dimensions of the load and the obstacles at the weigh stations. 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 before the Oversize Load arrives at the entrance to the port of entry/scale house.

**Rear P/E Vehicle:** The rear P/E vehicle shall proceed across the scales (not around the building) directly after the Oversize Load. The rear P/EVO should also be in a position to ensure clearance on both sides of the permitted vehicle. As the Oversize Load approaches the scale house, the rear P/EVO may need to traverse back and forth behind the load so he/she may direct the driver of the permitted vehicle around any obstacles.



FIG. 4.12-1 P/E VEHICLE PRECEEDS OVERSIZE LOAD ACROSS THE SCALE

**Oversize Load:** 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 as they proceed across the scales. 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. When the permitted vehicle and the P/E vehicles have been cleared by the weigh station personnel, the team should merge back onto the highway using the procedures described in Section 4.8.

Reentering highway traffic flow after a weigh station inspection is extremely hazardous. The P/E vehicle(s) will resume their designated positions as they merge onto the highway.



FIG. 4.12-2 REENTERING HIGHWAY TRAFFIC IS HAZARDOUS

- NOTE: Port of entry/scale house personnel may monitor the C/B radio on Ch-17 or
- Ch-19. If you must bypass a port of entry, it is recommended to use a cellular phone
- for this communication.

# 4.13 HEIGHT POLES FOR OVERHEAD MEASUREMENTS

The height pole is an important tool for the P/EVO when leading an overheight load. The height pole, when mounted on the lead P/E vehicle will determine the load clearance capability when passing under wires, signal lights or overpasses, and when passing over bridges. The height pole, when mounted on the vehicle, should not be less than three inches above the permitted load height or greater than six inches above the maximum height of the permitted load.

# 4.13.1 Height Pole Construction

Although height poles are commercially available, it is more cost effective for the P/EVO to construct their own height pole and to mount it on their P/E vehicle.

Height poles must be <u>nonconductive</u> to prevent stray electrical currents from entering the P/E vehicle if contact is made with power lines.

Height poles must be adjustable to allow for various overheight loads and to allow for vehicle motion while traveling at freeway speeds.



Height poles must be <u>nondestructive</u> so that they do not damage overhead wires or signals if they come in contact with them. In the same manner, the height pole should not break if it hits an overpass or bridge structure. Some P/E vehicle operators use spring mounted CB radio antennas with the wires removed. This allows the height pole to flex and return to the proper height if it contacts an overhead structure.

Storage of a height pole when not in use is a design factor that must be considered. Usually height poles are made in sections that will slide into one another and allow for height adjustments for various height loads. Height poles must be lowered and stored when not escorting an overheight load, unless the operator is pre-running a route to determine obstructions.

### 4.13.2 Mounting the Height Pole on the P/E Vehicle

Mounting the height pole on the P/E vehicle requires that mounts absorb the stress imposed from constant wind load and possible overhead impact. The mountings must also be rigid enough to prevent any changes to the height pole elevation or attitude.

**NOTE:** It is recommended that the height pole be mounted on the left side of the P/E vehicle to provide the operator visual alignment with the overhead obstruction.

### 4.13.3 Using the Height Pole

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**NOTE:** Never take someone's word for the measurements of an overheight load. Measure the load yourself before departure. (In Washington State, set the high pole 3 to 6 inches above the load height.)

The P/EVO leading an overheight load must be far enough ahead of the load to take critical measurements of overpasses, wires, power lines, etc. and to radio the permitted load driver of any problems

or special instructions. Never assume that the permitted load driver can see the height pole. Always give the driver time to stop, change lanes or maneuver through a potentially hazardous clearance condition.

Observe the following guidelines:

- Measure bridge lanes from their midpoint.
- Measure overhead wires and lines at their lowest point.
- Measure traffic signals to the side and avoid direct contact with them. They are fragile and expensive to repair.









# **5.1 EMERGENCY EQUIPMENT USE & MAINTENANCE**

# **5.2 P/E VEHICLE EQUIPMENT**

A P/E vehicle should carry the following items of equipment at all times when escorting a permitted vehicle. (Check requirements for each state in which you operate):

- Standard 18 inch STOP/SLOW paddle sign.
- Three bi-directional emergency reflective triangles.
- A minimum of one 5-pound B, C fire extinguisher.
- A retroreflectorized high visibility ANSI Class 2 garment.
- Highly visible colored hard hat.
- A height measuring device which is nonconductive and nondestructive to overhead clearances, when required by the terms of the permit or regulations.
- First-aid supplies.
- A flashlight in working order with red nose cone.

# 5.3 STOP/SLOW PADDLES

Flagging shall be accomplished with a standard STOP/SLOW paddle.

The STOP/SLOW paddle is a standardized device specified in the Manual on Uniform Traffic Control Devices (MUTCD). Hand-signaling devices, such as STOP/SLOW paddles, are used to control traffic through temporary traffic control zones. The STOP/SLOW paddle, which gives drivers more positive guidance than red flags, should be the primary hand-signaling device.

The standard STOP/SLOW paddle shall be 18 inches wide and octagonal in shape with letters at least 6 inches high. A rigid handle should be provided. This combination sign should be fabricated from light semi-rigid material. The background of the STOP face shall be red with white letters and border.

To improve conspicuity, the STOP/SLOW paddle may be modified to incorporate on the STOP face, one or two symmetrically positioned flashing white light(s) on either the side of, or above and below the STOP legend. The light(s) may be activated by an on/off switch. The background of the



SLOW face shall be orange with black letters and border. (When used at night, the STOP/SLOW paddle shall be retroreflectorized in the same manner as other traffic control signs.)



FIG. 5.3–1 STOP/SLOW PADDLE

### **5.4 REFLECTIVE TRIANGLES**

In the event the permitted vehicle or P/E vehicles must stop on the roadway in such a manner that traffic is impeded, warning devices such as reflective triangles must be placed in locations visible to the motoring public.

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



FIG. 5.4–1 REFLECTIVE TRIANGLE

the triangle shall be upward. The area within the sides of the triangle shall be open. The reflective triangles shall be deployed within 10 minutes of stopping as described in "Emergency Warning Device Setup" in the Motor Carrier Safety Regulation.

### 5.5 FIRE EXTINGUISHERS

Fire extinguishers are designed with contents formulated to suppress certain burning materials as indicated below:

**Class A Fires.** Fires in ordinary combustible materials, such as wood, cloth, paper, rubber and many plastics.

**Class B Fires.** Fires in flammable liquids, combustible liquids, petroleum greases, tars, oils, oilbased paints, solvents, lacquers, alcohol and flammable gases.



**Class C Fires.** Fires that involve energized electrical equipment where the electrical non-conductivity of the extinguishing media is of importance. (When electrical equipment is de-energized, fire extinguishers for Class A or Class B fires can be used safely.)

It is recommended that a combination type B, C extinguisher with a metal head (required in Washington and many other states) be maintained in the vehicle. Experience shows that extinguishers with plastic heads lose pressure more readily than those with metal fittings. It is also recommended that the operator mount the extinguisher where it is readily available for use and inspection.

# **5.5.1 Inspection and Maintenance**

To insure that your fire extinguisher will be ready when needed:

- Read and follow all instructions on label and in owner's manual.
- Inspect the extinguisher AT LEAST once a month or more frequently if exposed to weather or possible tampering. (Keep a written record of the inspections.)
- Check that extinguisher is charged. Pointer on pressure indicator MUST be in green section. If pointer is in red or white section, extinguisher is NOT ready for use.
- Be sure the seal and lock pin is firmly in place.
- Keep the extinguisher clean and in good condition. Check for dents, scratches, corrosion or other damage.
- Check the discharge nozzle. Make sure it is clean and free of obstructions.
- Shake dry chemical extinguishers at least once a month to loosen and circulate compacted powder.

NOTE: Do not test by partially discharging. Loss of pressure will occur.

# 5.5.2 Using the Fire Extinguisher







After the fire is out, clean up ABC dry chemical powder immediately to avoid corrosion.

**CAUTION:** Under certain fire and heat conditions, the dry chemical powder in ABC extinguisher (and similar units) will cause damage or prove extremely difficult to remove.

**CAUTION:** Avoid inhaling the dry chemical agent. The agent contained in the extinguisher may not be toxic, but may cause skin irritation. In case of contact, flush affected area with clean, cool water. If irritation persists, contact a physician immediately. Chemical name of agent is printed on extinguisher label.

# 5.6 HIGH VISIBILITY CLOTHING

High visibility clothing and hard had shall be worn by P/E vehicle operators when directing traffic.

- A retroreflective high visibility ANSI Class 2 safety garment is to be worn when performing pilot/escort duties outside of the vehicle. The acceptable high visibility colors are fluorescent yellow-green, fluorescent orange-red or fluorescent red.
- A highly visible colored hard hat is to be worn when performing pilot/escort duties outside of the vehicle. Colors include: white, yellow, yellow-green, orange or red. During hours of darkness, the high-visibility hard had must be marked with at least 12 square inches of retroreflective material applied to provide 360 degrees of visibility.

# **5.7 FIRST AID REQUIREMENTS**

Some states require a portable first aid kit and at least one worker trained in first aid and CPR at all work sites. It is recommended that the pilot car contain a first aid kit and that the pilot car operator should be trained in first aid and CPR. The contents of first aid kits are no longer specified by state and federal codes but must contain items required to treat potential injuries likely to be encountered at the specific worksite. The list below suggests items for a vehicle first aid kit. The first aid kit should be in an easily accessible location and in a container that protects from dirt and moisture. The kit should be inspected at least monthly and the inspection should be documented. First aid and CPR training is required to be updated regularly.

### Suggested contents for a vehicle first aid kit:

| Antibiotic Ointment | 1 tube  | Safety Pins        | 5 each |
|---------------------|---------|--------------------|--------|
| Band Aids 1" x 3"   | 15 each | Triangular Bandage | 4 each |
| Gauze Pads          |         | Scissors           | 1 each |
| 4" x 4"             | 6 each  | Tweezers           | 1 each |
| 2" x 2"             | 6 each  | Latex Gloves       | 6 pair |
| Roller Bandage 3"   | 2 each  | Microshield        | 1 each |
| Trauma Pad 2" x 3"  | 2 each  | Tape 2"            | 1 roll |

Many commercially available kits contain similar components and will be sufficient.



## **5.8 "GOOD SAMARITAN" STATUTE**

Many states have implemented the "Good Samaritan" law removing liability from a person who renders first aid in good faith and not for compensation. It 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, there from 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.

# **5.9 FLASHLIGHT WITH RED NOSE CONE**

When selecting a flashlight with red nose cone for a P/E vehicle, select a unit that will withstand high impact. As with other required safety equipment, it is recommended that the flashlight be kept in a readily accessible location for use and inspection. Also carry a spare set of batteries and bulb.

# 5.10 RECOMMENDED VEHICLE MAINTENANCE EQUIPMENT

Due to the potential of breakdown or over the road emergencies the following items are suggested: (*These items are not required, just best practice recommendations.*)

| Emergency repair supplies, such as:  |   |                                 |
|--|---|---------------------------------|
| Electrical or duct tape  | <ul> <li>Extra headlight and tailight bulbs</li> </ul>                          | • Flat tire inflator            |
| Fan belt   | • 28" orange traffic cones  | <ul> <li>Work gloves</li> </ul> |
| Motor oil  | • Tarp  | Spare tire                      |
| Antifreeze   | <ul> <li>Jumper cables</li> </ul>   | • Rope                          |
| Windshield washer fluid  | Automotive fuses  |                                 |
| <ul> <li>Tool box with basic tools<br/>(wrenches, pliers, screwdrivers,<br/>etc.)</li> </ul> | <ul> <li>Reflective or retroreflective<br/>collars for traffic cones</li> </ul> |                                 |
| Other emergency supplies/equipment:  |   |                                 |
| CB Radio and antenna   | <ul> <li>Emergency supply of food</li> </ul>                                    | Emergency blanket               |
| <ul> <li>Emergency supply of drinking<br/>water</li> </ul>                                   | Cold weather clothing   |                                 |

Elements of this list were derived from the Washington Administrative Code (WAC 468-38-100); Pilot Car Escort Best Practices (a product of Federal Motor Carriers Safety Administration, Specialized Carriers & Rigging Association, and Commercial Vehicle Safety Alliance - 2004).





# 6.1 RESPONSE TO VEHICLE BREAKDOWN OR ACCIDENT

P/E vehicle operators (P/EVO) shall respond to accidents in the same manner as a commercial carrier. P/E vehicles shall be parked in such a manner as not to obscure the permitted vehicle warning devices or to impede the flow of traffic.

P/EVOs shall place their reflective warning devices in addition to those placed by the permitted vehicle driver. At all times when a P/E vehicle is stopped with a disabled vehicle, the P/E vehicle shall have its four-way emergency flashers and roof-mounted amber lights activated.

# 6.2 OPERATOR'S RESPONSE TO AN ACCIDENT

- Stop immediately
- Prevent another accident
- Help the injured
- Notify law enforcement agency
- Document the incident
- Report to your company

# 6.3 EMERGENCY WARNING DEVICE SETUP

Activate the vehicle's four-way flashers immediately. When stopping along a roadway as a result of an accident, emergency warning devices must be set up within 10 minutes (Motor Carrier Safety Regulations) using:

- Three (3) bi-directional emergency reflective devices, or
- Six (6) fusees capable of burning for 30 minutes

Locate the warning devices as follows:

- For accidents or breakdown on two-lane roads: (See Figure 6.3-1)
  - On the traffic side of the stopped rig 10 feet from front or rear, depending on traffic direction of



facing oncoming traffic, 100 feet from the stopped rig, in the center of the lane 100 feet from the stopped vehicle in the opposite direction from the second device.





- For accident or breakdown on divided highways or one-way roads: (See Figure 6.3-2)
  - Place all devices on the traffic side of the rig facing oncoming traffic.
  - Place devices at 10 feet, 100 feet, and 200 feet from the rear of the vehicle.



FIG. 6.3-2 MULTI-LANE HIGHWAY ONE-WAY TRAFFIC WARNING DEVICE PLACEMENT AND FLAGGER LOCATIONS

- For accidents occurring within 500 feet of a curve or crest of a hill: (See Figure 6.3-3).
  - Place the first two devices as described above.
  - Place one of the devices between 100 and 500 feet from the stopped rig in the direction of the curve or hill to give motorists ample time to react.



• For accident or breakdown on highways where no shoulders exist and the permitted and P/E vehicles are blocking a lane of traffic, reflective triangles should be deployed in a taper from the edge of the highway to the left rear of the permitted vehicle. If the escorting vehicle is blocking a traffic lane, the vehicles' reflective triangles must be deployed on a taper also. On occasions as described above, the P/E driver then must become a flagger positioned at the backside of the last reflective triangle. This is particularly critical on hills and curves, to give traffic maximum notice.





### **6.4 EMERGENCY RESPONSE**

In the event an emergency occurs that impedes the orderly flow of traffic and the permitted load or the P/E vehicles cannot be stopped off the highway, the driver of the permitted load and P/E vehicles shall immediately activate their vehicles' hazard warning signals until traffic warning devices



are deployed. Within 10 minutes of stopping, drivers must place traffic warning devices near their vehicles as described in the Federal Motor Carrier (FMC) Safety Regulations Handbook, paragraphs 392.20 through 393.95 (h) as extracted below:

# 6.4.1 FMC Subpart C-Stopped Vehicles

### **B392.20** Unattended commercial motor vehicles; precautions

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

### **ß392.22 Emergency signals; stopped commercial motor vehicles**

(a) 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 than 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  $\beta$ 393.95 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  $\beta$ 393.95(f)(1) and (2)] shall be placed at each of the three locations specified in paragraph (b)(1)(i) through (iii) of this section. If supplemental warning devices are also used [see  $\beta$ 393.95 (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.

### **B392.24 Emergency signals; flame-producing**

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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.

### **B392.25 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  $\beta$ 392.22 (b).

### **B393.95 Reflective Warning Devices**

Three bi-directional emergency reflective triangles that conform to the requirements of Federal Motor Vehicle Safety Standard No. 125,  $\beta$ 571.125 of this title; or at least 6 fusees or 3 liquidburning flares. The vehicle must have as many additional fusees or liquid-burning flares as are necessary to satisfy the requirements of  $\beta$ 392.22.

(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 before 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.

# **6.5 FLAGGING RESPONSIBILITIES**

In the event that a permitted vehicle becomes disabled, interferes with the free flow of traffic, or motorists' safety is jeopardized, the P/E vehicle operator(s) must guide traffic through the hazard zone using flagger techniques described in the Manual on Uniform Traffic Control Devices (MUTCD, paragraph 6E) and as extracted in the following paragraphs.

Unless a certified flagger, P/EVOs can only flag due to an emergency situation, such as a breakdown. If flagging will be necessary for an extended period of time, then certified flaggers must be obtained.

# **6.5.1 Equipment Recommendations**

Prepare an equipment bag for your safety and comfort in the event you must flag for a period of time. Some basic supplies are:

- STOP/SLOW paddle (must be at least 18 inches wide with 6-inch letters)
- Food and drinking water (1 quart/hour)
- Whistle



- Rain gear
  - Extra jacket
  - Orange gloves (mittens for cold weather)
  - Extra socks (wool)
  - · Safety glasses or non-reflective sunglasses
  - First aid kit (10 package kit minimum)
  - Sunscreen lotion (24 SPF)
  - · Pencil and note pad for records
  - ANSI class 2 retroreflective vest and hard hat (ANSI class 2 vest is visible for 1000 feet during hours of darkness)

### 6.5.2 Additional Equipment Needed for Night Time Use or Flagging Should Include:

- · Flashlight with red nose cone
- Extra batteries and bulbs
- · Retroreflectorized gloves, vest and hard hat

*IMPORTANT:* Make sure your STOP/SLOW paddle is in good condition. Carry your *P/E Vehicle Operator Certification Card with you*.

# 6.5.3 Hot Weather Tips

Allow for adjustable comfort with layered clothing. Use sunscreen to protect yourself from sunburn. Drink plenty of water. Cool yourself by applying water to your skin and clothing.

# 6.5.4 Cold Weather Tips

Use a hard hat liner to reduce heat loss. Allow for adjustable comfort with layered clothing. Wear wool clothing to retain body heat even when wet. Wear cotton socks over wool socks. Drink warm beverages.

**Rainy Weather Tips:** When purchasing rain gear, select high visibility colors for slickers and rain pants.

# 6.5.5 POSITIONING FOR SAFETY

### 1) Face the Traffic

Make yourself visible to traffic. The distance between the flagging station and the permitted vehicle should never be less than 50 feet. Approaching traffic must be able to see the flagger from at least 500 feet away.



### 2) Visibility Guidelines

- Stand in a conspicuous place on the shoulder of the road. Never step into the traffic lane.
- Stand where there is a sharp color contrast between you, the background and the equipment. If possible, never stand in the shade.
- Never flag from inside a vehicle. Do not lean, sit or lie on a vehicle. Park your own vehicle at least 50 feet from the flagging station.
- Keep your flagging zone uncluttered. Eliminate distractions like chairs, books or entertaiment radios. Leave your lunch, jacket or other personal items in the P/E vehicle so they will not distract drivers or block your escape route.
- Stand alone. Discourage other workers, motorists or pedestrians from gathering around you.
- Stand in a manner and location that allows traffic and the permitted load vehicle to be observed.
- Remain at your position until you are relieved, or the load is ready to proceed.
- When two vehicle drivers 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.
- Make sure your STOP/SLOW paddle and other equipment are clean and in good condition.

# 6.5.6 Develop an Emergency Escape Plan

When setting up the flagging station, plan for an emergency. Allow yourself enough space to escape in the event that a vehicle fails to stop in the designated zone.

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

### Using the Emergency Whistle

Use a whistle to warn others in the area of a potential hazard. An emergency signal should be a series of short blasts on your whistle.

### 6.5.7 Be Alert at All Times

Anticipate every reasonable hazard that could happen in this 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. Practice the following safety guidelines until they become second nature to you.

### 6.5.8 Safety Guidelines

### 1) Be Visible

- Stand in a conspicuous position where you will be easy to see.
- Wear a retroreflectorized garment of proper color and hard hat at all times.

### 2) Expect the Unexpected

• Always have an escape route in mind.



- Devise an audible signal (such as a whistle or horn, or yell the word "traffic") which can be heard in the event a motorist loses control or fails to respond to your directions.
- If a car overshoots the flagging station before coming to a stop, never walk behind the car because the driver may back up. Instead, walk to the front of the vehicle before crossing to the driver's side of the lane.
- If a motorist fails to stop or slow down as directed, note the license number, the description of the vehicle, and whether the driver was male or female so you may report it later.

### 3) Stay Alert

• Keep your mind on your job at all times. Daydreaming could endanger your life and the lives of motorists and other Oversize Load personnel.

### 4) Carry Emergency Equipment

- Have flares to warn of accidents.
- Carry spare batteries.
- Have spare parts for your equipment.

### 5) Identify Potential Problems

- Familiarize yourself with the conditions around your flagging area.
- Plan sufficient reaction time for drivers based on weather and road conditions.

# 6.5.9 Flagging Signals

### **Hand-Signaling Devices**

Using the STOP/SLOW paddle, there are three ways to control traffic as follows:

### 1) To STOP Traffic:

The flagger shall face traffic and extend the STOP sign paddle in a stationary position with the arm extended horizontally away from the body. The free arm should be raised with the palm toward approaching traffic. It is recommended that the hand be extended above the head, followed with a point to the spot where you want the vehicle to stop.

### 2) To direct traffic to PROCEED:

The flagger shall face traffic with the SLOW paddle held in a stationary position with the arm extended horizontally away from the body. The flagger should motion with the free hand for traffic to proceed.

### 3) To ALERT or SLOW Traffic:

The flagger shall face traffic with the SLOW sign paddle held in a stationary position with the arm extended horizontally away from the body. The flagger may motion up and down with the free hand, palm down, indicating that the vehicle should slow down.









# 6.6 EMERGENCY COMMUNICATIONS

In the event the Oversize Load breaks down and impedes the flow of traffic, or is involved in an accident, the Pilot/Escort vehicle operator's response should be to notify the State Patrol either by cellular phone (call 911) or using the CB radio – switch to emergency channel 9 and broadcast the essential information:

**Who** – description of the vehicles involved, make, model, color, license numbers and if there are injuries.

**Where** – exact location, highway, milepost number, street address, intersecting road/street and any landmarks.





# 7.1 INDUSTRY UNIQUE REQUIREMENTS

As an example this section is Washington State specific.

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# 7.2 FARM IMPLEMENTS (WAC 468-38-290)

# 7.2.1 Movements of Oversize Farm Implements Are Subject to the Following Regulations:

An unescorted farm implement shall travel at least 500 feet behind other vehicles so as to allow other drivers to pass.

If five or more vehicles line up behind a farm implement, the operator of the farm implement shall pull off the road at the first point wide enough to allow traffic to pass safely.

Oversize farm implements may be moved only during daylight hours. The DOT may permit movements outside daylight hours during an emergent harvest season to a company or farmer who requests and receives permission in writing. P/E vehicles are required for such movements as described below.

Convoying with P/E vehicles may be used to move farm implements. Two-way radio equipment shall be provided to the P/E vehicles.

Lights: Requirements for hazard warning lights visible from 1,000 feet, clearance lights, reflectors, and other lights shall be as prescribed in RCW 46.37.160.

In the interest of safety, farm owners escorting their equipment must have two flashing or rotating lights when on public rights of way, county or state roads.

**Flags:** If the farm implement is over 10 feet wide, it must display red flags at least 12 inches square so as to wave freely on all four corners of the vehicle and at the extreme ends of all protrusions, projections or overhangs.

**Signs:** If the farm implement is over 10 feet wide, Oversize Load signs, visible to oncoming and overtaking traffic, must be displayed. A farm implement preceded and followed by P/E vehicles is not required to display such signs.



**P/E vehicles:** On two-lane state highways, P/E vehicles must precede and follow if the farm implement is over 12 feet 6 inches wide. Vehicles or loads whose width is between 10 and 12 feet 6 inches are exempt from having P/E vehicles.

- On multiple-lane state highways, one P/E vehicle in the rear is required if vehicle or load is more than 14 feet wide.
- A flagger, instead of a P/EVO, may be used for moves of less than 500 yards. This allowance must be stated in the DOT permit.
- Posting a route may be used in lieu of P/E vehicles if the route to be traveled is less than 2 miles. A diamond shaped (square on point) sign reading "Oversize Vehicle moving Ahead" shall be placed at least 3 feet on each side of the farm implement entry and exit point, and at any point of entry for traffic along the planned route.

### Revise per 468-38-290 (9)

### 7.2.2 Farm Owners Exception (i.e., Washington State)

Farmers/ranchers operating their own equipment between their own fields are exempt from vehicle size restrictions, passenger limitations, height pole usage and certification requirements.

Farm implements may be moved in convoy over public highways when traveling under permit authority.

# 7.3 MANUFACTURED HOUSING

The lead P/E vehicle shall not be required to use a height pole until the overall height of the manufactured housing unit being escorted exceeds 15 feet, when measured from the road surface.

Manufactured housing is required to travel in the right lane except when passing or avoiding an obstacle.

When traveling on rural roads, manufactured housing units must maintain a separation of 1/2 mile.

When following a truck, the truck/tractor towing a manufactured housing unit, shall maintain a space of 400 to 500 feet to avoid impairing visibility of an overtaking vehicle.



# APPENDIX

## ESSENTIAL JOB FUNCTIONS PILOT/ESCORT VEHICLE OPERATOR (PEVO)

This statement of functions is provided as a guide for organizations desiring to establish a job description. It does not necessarily create the minimum or maximum functions that may be defined for such a job or position.

### Administrative Requirements:

- I. **Hours -** 4 to 14 hours a day with infrequent breaks and meals frequently eaten while on the job. The work shift may vary from day to day depending on the contract, weather, road conditions and load restrictions.
- II. Nature and Scope of Work Duties Must have in their possession a valid Pilot/Escort Vehicle Operator (P/EVO) certification card issued by the Department of Transportation as required by a specific state. Work may be on interstate highways, rural roads and city streets. A P/EVO is responsible for warning the motoring public of hazards imposed by Oversize Loads being transported on the state infrastructure. A P/EVO is responsible for protecting high-value equipment from impacting narrow bridges and low overhead structures that may damage Oversize Loads in the process of moving.

III. Work Location - May extend throughout in the continental United States.

IV. **Productivity Standard -** Must be able to stay with the Oversize Load and perform all necessary observation, voice and hand signals, and other functions necessary for safety until released by the contracting agency or load driver.

### V. Tasks and Responsibilities:

- 1. Drive in a safe manner, warning the motoring public of the Oversize Load.
- 2. Able to read and comprehend written instructions.
- 3. Able to understand and follow verbal instructions.
- 4. Read road maps and escort the Oversize Load safely to the destination.
- 5. Use a radio and communicate effectively with other members of the load management team.
- 6. Determine the ability of an Oversize Load to cross narrow bridges and avoid low structures.
- 7. Respond to emergencies by using traffic control techniques.
- 8. Assist the permitted load driver in maneuvering the Oversize Load from one lane to another, across bridges, through curves and on city streets.
- 9. All other tasks that may from time to time be necessary for safe load movement while not unnecessarily endangering the P/EVO.

### VI. Tools and Equipment:

The following tools and equipment are typical for the P/EVO (see the attached checklist):



- 1. P/E vehicle in good running order to either lead or follow an Oversize Load.
- 2. Road maps and other information materials as appropriate to the route.
- 3. Emergency equipment for personal and transportation safety.

### VII. Physical Requirements:

- 1. Must be 18 years of age.
- 2. Have the ability to sit in a vehicle for extended periods of time, with few breaks.
- 3. Be able to drive a P/E vehicle safely under adverse weather conditions.
- 4. Must be able to communicate with other members of the load hauling team, including radio communications.
- 5. Ability to hear and understand warnings.
- 6. Ability to stand along the roadside and direct traffic for extended periods of time.
- 7. Able to read a measuring pole or tape to determine height or width of the Oversize Load.

### **VIII. Mental Requirements:**

- 1. Must be able to recognize a hazardous condition.
- 2. Must be able to maintain focus on the job and under hazardous conditions.
- 3. Must be able to follow directions and make necessary decisions relating to the safe movement of the Oversize Load.

### IX. Valid Driver's License Required



# **SUGGESTED P/EVO CHECKLIST**

# **To Be Completed Prior to P/E Activity**

| Driver's Name          | Driver's License Number | State of License              |
|------------------------|-------------------------|-------------------------------|
| Vehicle License Number | State of License Plate  | Exp. Date of License Plate    |
| Company Name           | Company Address         | Driver's Certification Number |

### Check Each Item Below. List Discrepancies in the Comment Block

| Driver<br>18 years or older<br>Certified P/E Exp.<br>Other Approved State<br>Certification State<br>Date of Exp  | Warning Lights         □ Two Flashing or Rotating         Amber Lights (minimum)         Radios         □ Two-Way Radio, or         □ 4 Watt CB Radio   | Equipment         18" STOP/SLOW Paddle         3 Reflective Triangles         28" Orange Cones (optional)         Flashlight with Red Nose         Cone         Extra Batteries   |  |  |  |
|--|---|---|--|--|--|
| Certification card Vehicle Car or Two-Axle Truck   | <ul> <li>Cellular phone</li> <li>Oversize Sign</li> <li>"Oversize Load"</li> </ul>  | <ul> <li>Flashlight</li> <li>Radio</li> <li>Phone</li> <li>3 Flares (or approved alt.)</li> </ul>   |  |  |  |
| <ul> <li>14,000 Max G.V.W.</li> <li>Headlights         <ul> <li>High Beam</li> <li>Low Beam</li> </ul> </li> <li>Turn Signals</li> <li>Emergency Flashers</li> <li>Brake Lights</li> <li>Windshield (cracks, chips)</li> </ul> | <ul> <li>Sign Covers</li> <li>"Slow Vehicle" if Required</li> <li>Yellow Background</li> <li>8"x1" Black Lettering<br/>(minimum)</li> <li>Clearly Visible</li> </ul>  | <ul> <li>Extra "Oversize Load" sign</li> <li>High Visibility Hard Hat</li> <li>Retroreflective Vest /Jacket</li> <li>Fire Extinguisher (#5 B,C)</li> <li>First Aid Supplies</li> <li>Duct Tape</li> <li>Non-Conductive Height Pole</li> <li>25' Tape Measure</li> </ul> |  |  |  |
| <ul> <li>Washer Fluid</li> <li>Oil Level</li> <li>Rear View Mirrors<br/>(inside and outside)</li> <li>Tires (include spare)</li> <li> inflation</li> <li> tread</li> <li>Jack and Lug Wrench</li> <li>Coolant</li> </ul>       | <ul> <li>Personal items</li> <li>Business License</li> <li>Lunch</li> <li>DrinkingWater</li> <li>Cash/Credit Card</li> <li>Maps Local/ State</li> <li>Extra Clothing and Toiletries<br/>(for long trips)</li> <li>Medications</li> <li>Rain Gear</li> </ul> | Recommended         Equipment         Tool Kit         Shovel         Extra Clothing         Blanket  |  |  |  |
|  | Single Trip Only  |   |  |  |  |
| Driver Signature   | Date  | Time (use military)   |  |  |  |
| Comments/Discrepancies/Action  | ı Taken   |   |  |  |  |

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