

Escort Vehicle Operator's Handbook



Version 2.1

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The Escort Vehicle Operator's Handbook

Acknowledgements

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This Handbook is dedicated to all Escort Vehicle Operators whose work mandate supports the safe travel of all vehicles on Alberta's highways.

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Section 1: Introduction

1.1 Purpose of This Handbook

This Handbook has been developed for Escort Vehicle Operators and Carriers in support of the safe movement of overdimension / overweight Loads on Alberta's highways.

The minimum standards for escort vehicles, operators and their equipment are found in the Traffic Safety Act (TSA) and Regulations under the Act. The intent of this Handbook is to discuss the applicable sections of the TSA, Regulations and Permit Conditions as well as clarify how they apply to overdimension / overweight vehicle moves.

The traffic control procedures described and illustrated in this Handbook are generally the minimum required. No one combination and/or sequence of traffic control devices, traffic control person positions and/or escort vehicle positions can apply to all situations that are encountered during overdimension / overweight vehicle moves. Attending a training course to learn escort vehicle operations is recommended. Permit Conditions may also specify requirements outside this handbook. It is critical that Escort Vehicle Operators obtain and understand all Permit Conditions prior to the move.

1.2 Definitions

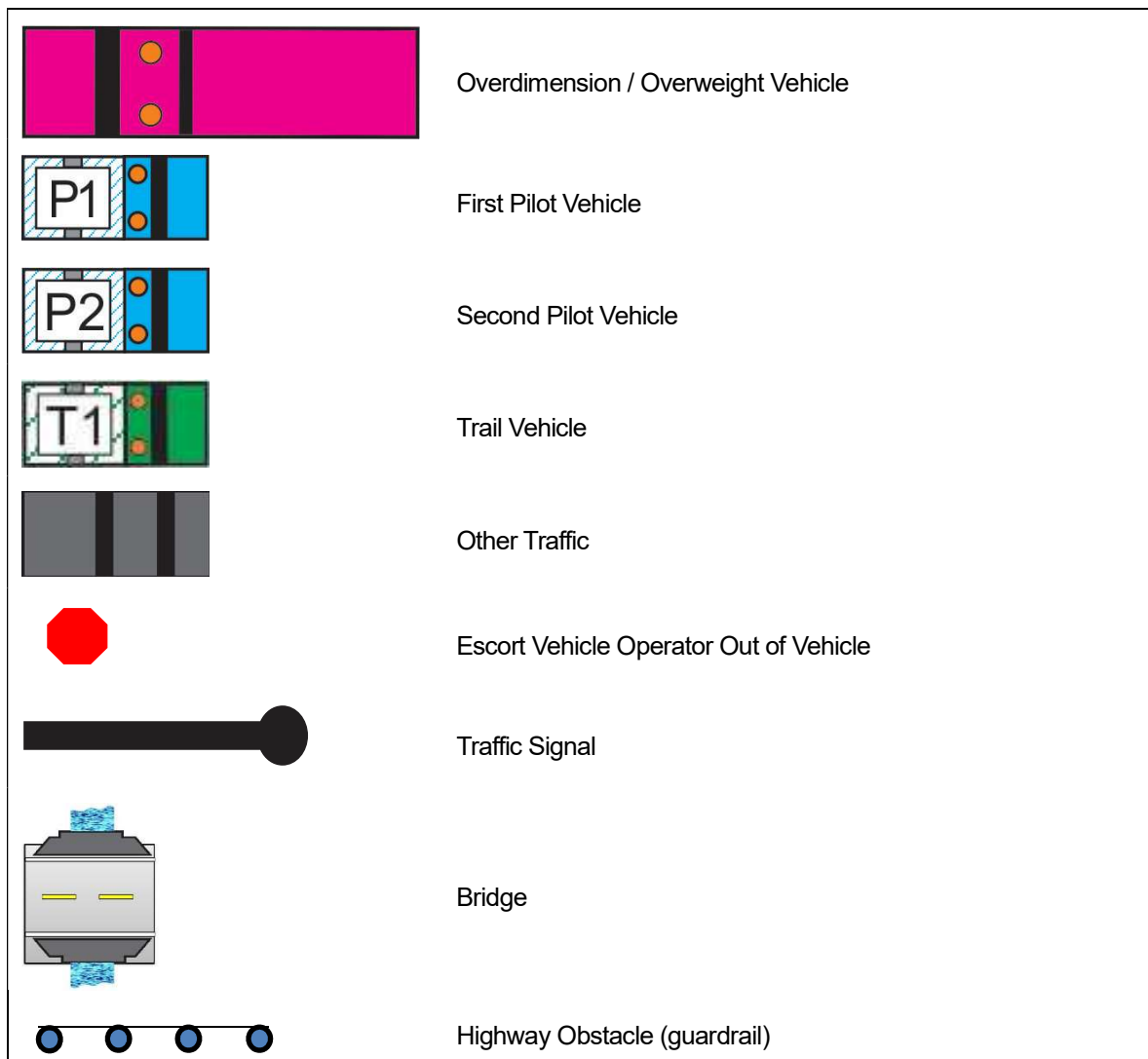
Carrier:	An owner of a commercial vehicle as defined in the <i>TSA</i> section 130(1)(b).
Escort Vehicle:	An escort vehicle is a commercial vehicle as defined in the <i>TSA</i> subsection 1(1)(h) that complies with the requirements of section 16 of the Commercial Vehicle Dimension and Weight Regulation (CVDWR).
Escort Vehicle Operator:	For the purposes of this Handbook, an Escort Vehicle Operator is a person who is engaged in traffic control operations in support of a Load move.
First Pilot Vehicle:	The First Pilot Vehicle is an escort vehicle and also a pilot vehicle as defined in subsection 16(2) of the CVDWR.
First Trail Vehicle:	The First Trail Vehicle is an escort vehicle and also a trail vehicle as defined in subsection 16(3) of the CVDWR.
Load:	For the purposes of this Handbook, is an alternate term for an overdimension / overweight vehicle (with or without carried goods).
Load Driver:	For the purposes of this Handbook, is an alternate term for the operator of an overdimension / overweight vehicle.
Permit (including conditions):	A permit issued in accordance with section 62 of the <i>TSA</i> .
Traffic Control:	The activity of a person in or out of a vehicle for the purpose of warning, slowing, stopping or directing traffic in accordance with section 60 of the <i>The Use of Highways and Rules of the Road Regulation (UHRRR)</i> .
Transportation Safety Plan:	A document submitted by the Carrier for approval by Alberta Transportation that describes the labour, equipment, vehicle, Load, schedule, authorizations, processes and safety considerations involved in an overdimension / overweight Load move.
Second Pilot Vehicle:	The Second Pilot Vehicle is an escort vehicle that accompanies an overdimension/ overweight vehicle, that, when present, is positioned at a safe distance in front of the the First Pilot Vehicle.

1.3 Legend

This Handbook has been developed for Escort Vehicle Operators and Carriers in support of the safe movement of overdimension / overweight Loads on Alberta's highways.

The naming convention for the First Pilot, Second Pilot and First Trail Vehicles is based on the escort vehicle definitions (Section 1.2).

Figure 1.1 Legend Used for Sections 5 – 9, inclusive



Figures used in this handbook are for illustration purposes only and are not drawn to scale.

1.4 The Importance of Escort Vehicles

The Commercial Vehicle Dimension and Weight Regulation (CVDWR) under the TSA specifies the dimension and weight limits for commercial vehicles. If a commercial vehicle and/or its goods is unable to meet the dimension and weight limit(s) shown in the Regulation, the Carrier must submit an application to Alberta Transportation to obtain an overdimension and/or overweight Permit.

Alberta Transportation may, upon receiving an application, issue a permit in accordance with section 62 of the TSA that authorizes a commercial vehicle and/or its goods to operate on Alberta's highways and set out any term or condition to which the permit is subject. The Carrier, Load Driver and Load must comply with the Regulations, the Permit and attached conditions.

Load Drivers may encounter operational and/or routing challenges with the Load that need to be resolved before they can travel. Alberta Transportation recognizes the operational and/or routing challenges and the risks to both the infrastructure and to other road users. To reduce these risks, Alberta Transportation may attach a condition(s) that requires the Carrier to use an escort vehicle(s) to assist or "escort" the Load in a move.

(A reference to the TSA and The Commercial Dimension and Weight Regulation can be found in Section 2.2).

Several duties of an escort vehicle operation during a move are:

- Checking the route during travel;
- Protecting the Load from other road users, Loads, obstacles and hazards;
- Ensuring the Load successfully navigates through the highway infrastructure on the route, and;
- Enabling other road users to safely travel around the Load with minimal delays.

Section 2: General Escort Vehicle Requirements

2.1 Escort Vehicle Requirements

Minimum escort vehicle requirements are found in sections 15 and 16 of the CVDWR. There may be additional requirements included in the Permit Conditions.

Depending on the size of the Load, a Transportation Safety Plan may be required by the Carrier as part of the Permit application process. The Transportation Safety Plan is discussed in Section 3.4.

The Central Permit Office issues Permits, approves Transportation Safety Plans and can provide contact information for municipalities that are not part of the province's Transportation Routing and Vehicle Information System-Multi-Jurisdiction (TRAVIS-MJ) program. The Central Permit Office can be contacted by:

- Phone: 1-800-662-7138,
- Email: central.permits@gov.ab.ca,
- Website: www.alberta.ca/oversize-and-overweight-permits.aspx.

Municipalities that are not participants in the TRAVIS-MJ program will need to be individually contacted to determine if they have additional requirements for escort vehicles. Information on these road authorities is discussed in Section 3.3.

For more information on TRAVIS and TRAVIS-MJ, please contact the Central Permit Office.

Please check the website (noted above) for Central Permit Office operating hours.

2.2 Where to Find Related Acts, Regulations and Conditions

The Acts and Regulations affecting escort vehicles, operations, and equipment can be found in:

- [T-06 Traffic Safety Act \(TSA\)](#)
- [AR 315/2002 Commercial Vehicle Dimension and Weight Regulation \(CVDWR\)](#)
- [AR 122/2009 Vehicle Equipment Regulation \(VER\)](#),
- [AR 121/2009 Commercial Vehicle Safety Regulation \(CVSR\)](#); and
- [AR 304/2002 The Use of Highways and Rules of the Road Regulation \(UHRRR\)](#)

2.3 Required Certifications for Escort Vehicle Operators

Currently, mandatory certification for Escort Vehicle Operators and persons who control traffic during escort vehicle operations is not required in Alberta. It is highly recommended that every Escort Vehicle Operator complete a Flag Person training course and be trained and observed by an experienced operator prior to taking on a solo move.

Section 3: Load Movement Planning

3.1 Obtaining a Permit

The Carrier is responsible for obtaining the Permit and complying with both the CVDWR and the Permit Conditions (which may include obtaining Escort Vehicle Operators) for a Load move.

It is the Carrier's responsibility to verify the axle weights, gross vehicle weight and dimensions of the Load prior to applying for a permit.

3.2 Permit Types

Single trip permits for Loads include an approved highway route from origin to destination. The approved highway route must be followed exactly, unless a peace officer directs otherwise.

Annual (multi-trip) permits for Loads do not specify the route.

3.3 Development of a Route Survey: Items to Consider

The Carrier may require the Escort Vehicle Operator to assist in the development of a route survey.

Permit Conditions and Attachments

The single trip or annual permits may include a condition(s) that will affect route planning, including, but not limited to:

- notifying 511 Alberta;
- bridge crossing weight / height restrictions;
- obtaining railway crossing escort;
- utility approvals, and/or
- construction zone restrictions.

Bridge/construction zone restrictions also apply to annual (multi-trip) permits.

Road Restrictions, Road Bans and Seasonal Weights

Alberta Transportation maintains a current list of highway restrictions that may include but is not limited to lane restrictions, restricted bridges, municipal restricted bridges, vertical bridge clearances, road bans and seasonal weights for highways in Alberta at www.transportation.alberta.ca/522.htm.

The 511 Alberta website www.511.alberta.ca shows current information on active construction activities, incidents, weather, and highway closures.

These restrictions and clearances should be checked on the specified highways within the planned route for each and every trip. Any conflicts identified should be verified with the Central Permit Office.

The High Load Corridor

The High Load Corridor consists of a series of designated highways that accommodate overheight vehicles up to 9.0 metres high. There may be traffic control devices with rotatable bases or signs in removable pockets located on these routes. Information about and a map of the High Load Corridor is available at: www.transportation.alberta.ca/3192.htm.

Traffic Control Devices with Rotatable Bases - Provincial Highways

The local Maintenance Contractor Inspector (MCI) with Alberta Transportation should be notified prior to the move. List of MCI's is on Alberta Transportation website at www.transportation.alberta.ca/Content/docType34/Production/MCI-Listing.pdf.

Traffic control devices located within or near the High Load Corridor are generally equipped with rotatable bases, which may be unlocked and pinned in place. The Carrier is responsible for any damages to the traffic signals, poles, road surfaces, other structures and other road users that may occur as a result of improper pivoting operations.

A Permit Condition may require Carriers to consult the Alberta Recommended Practices for the Pivoting of Traffic Signal Structures Equipped with Rotatable Bases prior to conducting pole rotation operations:

www.transportation.alberta.ca/Content/docType233/Production/87ProceduresForSignalsWithRotatableBases.pdf

For more information, contact the Central Permit Office.

Traffic Control Devices with Rotatable Bases - Municipal Highways

For municipal highways, the Carrier must notify the affected municipality to rotate any traffic control devices with rotatable bases. Municipalities typically assign in-house staff to rotate traffic signal structures. Early notification to the municipal authorities is recommended prior to a Load move.

For information on how to contact these authorities, contact the Central Permit Office.

Other Load Moves

Information on other Loads that may be travelling on the same route may be listed on the 511 Alberta website at www.511.alberta.ca.

Construction Activities

Information on current construction activities on Alberta's highways is on the 511 Alberta website at www.511.alberta.ca.

Non-Provincial Highway Authorities

Travel on a highway under the direction, control and management of a municipality, Parks Canada, or a License of Occupation (lease sites) as part of a Load move is subject to approval and/or permit by the respective road authority.

Their operational and/or routing requirements may impose additional requirements on the move such as specified routes or time of day restrictions.

Most municipalities in Alberta participate in the Transportation Routing and Vehicle Information System – Multi-Jurisdictional (TRAVIS-MJ) program. Their respective Permit Conditions are included on the Permit issued by the Province.

For municipalities who are not participating in the TRAVIS-MJ program, the Carrier will need to contact them directly to obtain a separate permit as well as any relevant information from their local permit office.

For more information on how to contact these authorities, contact the Central Permit Office.

Other On-Highway Concerns to be Considered and Noted

- Vehicle and Load dimensions and weight
- Conflicts with highway and infrastructure geometries/dimensions
- Rural versus urban area consideration
- Traffic volume count and traffic vehicle types for the highways on the route
- Areas along the route requiring special attention may include, but are not limited to, railway crossings/ overhead structures
- Narrow and/or highways without shoulders
- Location of safety rest areas, roadside turnouts and/or other stopping points along the route
- Passing lanes, truck climbing lanes and wide turn lanes
- Utility line crossings. Do the utility companies need to be contacted?
- Construction activities on the route. Will they be able to accommodate the Load? Are there any time restrictions?
- Vehicle Inspection Stations
- Traffic control devices that need to be turned
- Roadway accessories that need to be removed and reinstated such as signs, light poles, concrete barriers and clearing height of guardrails or bridge railings for extremely wide loads.
- Fueling Requirements

Use of Dimension Measuring Tools in Route Surveys

A hand-held insulated dimension measuring pole (or hand-held laser dimension measuring device) may be used as part of a Route Survey to measure the dimensions of physical structures on the route and/or to verify the dimensions shown in the list of Road Restrictions.

A hand-held insulated measuring pole shall not be used to measure elevations of any utility lines during any route survey. Height measurement of any utility lines is the responsibility of the utility company that owns the lines.

Contact utility companies if height of Load exceeds limits (see 5.2).

Railway Crossings

There are several railway crossings over highways equipped with rotatable bases. Railway authorities typically assign in-house staff to rotate railway signal structures. Early notification of the railway authorities is recommended prior to a Load move.

For information on how to contact these authorities, contact the Central Permit Office.

3.4 The Transportation Safety Plan

For some Loads, a Transportation Safety Plan may be required from the Carrier to be included with a Permit application. A Transportation Safety Plan is a summary of what's involved in a Load move and gives the Central Permit Office an opportunity to provide feedback and additional guidance in the planning process. When the Transportation Safety Plan is acceptable to the Central Permit Office, it becomes a Condition of the Permit.

A review of the Transportation Safety Plan may result in the requirement to use extra escorts which will be added as a condition of the permit.

A basic outline of a typical Transportation Safety Plan includes:

- brief description of the company, the assigned Carrier, and the escort vehicle company (if applicable);
- details of the vehicle/Load, axle and gross weights and dimensions;
- approvals/agreements from other authorities;
- permissions from utility companies and utility accommodation plans;
- safety plan for the Load, the escort vehicles, other contractors, and the travelling public;
- pre-trip meeting;
- detailed route survey;
- route travel plan and schedule;
- traffic accommodation strategy, including emergency vehicle accommodations;
- infrastructure obstruction accommodation plan (lateral and vertical);
- railway crossing plan (if required);
- contingency plan in case of an unexpected emergency or situation.

Contact the Central Permit Office to obtain applicable forms and assistance in developing a Transportation Safety Plan.

3.5 The Job Hazard Safety Analysis

A Job Hazard Safety Analysis is completed by the Carrier but may not be required to be submitted as part of a Permit application. The Job Hazard Safety Analysis typically discusses the Load, including:

- Vehicle and Load Dimensions and Limitations:
 - Load configurations (weight/Load shift potential);
 - Height and high center of gravity issues;
 - Protruding components (module legs, chains, extended beams);
 - Trailer and extended Load low ground clearances;
 - Maneuverability limitations and accommodations.
- Load-Specific Risks:
 - Fire;
 - Explosive potential;
 - Dangerous goods;
 - Fragile or collapsible Loads;
 - Environmentally sensitive Loads.
- Emergency procedures and contingency plans:
 - Procedures to delay or abort the move prior to leaving the origin site;
 - Contact information to emergency providers along the route;
 - Communications protocols during emergencies;
 - Stopping sites for reviewing Load security concerns;
 - Load vehicle breakdowns.
- Ensure appropriate emergency equipment is on hand and all team members know how to use it.

The Escort Vehicle Operator should discuss with the Carrier any issues from the Job Hazard Safety Analysis that may affect escort vehicle operations.

3.6 The Pre-Trip Meeting

A safe move requires planning and teamwork. Before beginning a Load move, all persons required to assist in the move should be clearly identified with contact information. Details of the move should be planned and discussed with the Load Driver and Escort Vehicle Operators or teams involved.

Prior to the start of a Load move, a pre-trip or “tailgate” team coordination meeting is recommended.

The pre-trip meeting should include everyone involved with the move:

- Escort Vehicle Operators;
- Load drivers;
- Traffic control device rotators;
- Peace Officers;
- Utility line lifters / movers;
- Anyone else that may be involved at any time during the move.

The pre-trip meetings should be held:

- On the day of the move;
- On subsequent days at fixed times if the move takes place over several days;
- On an interim basis when significant obstacles or changes are expected to occur.

The pre-trip meetings should include discussion and verification of:

- Roles, responsibilities and positions of the move’s escort vehicle team;
- Communications to be used during the move, working two-way radios (and frequencies), cell phone maps and backups;
- Vehicle and Load dimensions as per the Permit;
- Route plan as per the Permit;

- Anticipated route hazards, including but not limited to bridge and overpass clearances, signs, wires, concrete barrier, and shoulder width issues;
- Active construction areas requiring special accommodations;
- All permits must be available to be shown to officials when required;
- Any permit restrictions, including the times when the move may take place;
- Any attached Conditions shown on the Permit for bridge crossings or other similar narrow route locations that have overdimension and/or overweight restrictions;
- Location of the mobile and stationary traffic control zones (including detours) located on the route and any traffic accommodation strategies that are required;
- Any features of the Load securement that Escort Vehicle Operators might help monitor, if required;
- Locations where the Load will stop (including roadside turnouts and other planned stops to allow other road users to pass if required);
- The Transportation Safety Plan if applicable;
- The Job Hazard Safety Analysis if applicable.

3.7 Expect the Unexpected (Contingency Planning)

It is recommended a contingency plan be developed and reviewed in advance of the move during the pre-trip meeting. The contingency plan should consider but is not limited to:

- Sudden weather changes;
- Sudden road condition changes;
- Emergency vehicles that need to pass;
- Scheduled vehicles (school buses and funeral processions) that need to pass;
- Accidental contact to obstruction(s) and property damage;
- Communications in the event of two-way radio and/or cell phone failures.

3.8 Final Checks Prior to Moving the Load

Before the move, complete a final check to the escort vehicles to ensure:

- They are equipped with proper signage, communication and safety equipment;
- All lights on the escort vehicle are operating/functioning properly including those on the roof mounted dimension sign;
- All radios are checked for functionality and everyone is on the same channel;
- The permit is valid.

Section 4: Equipment and Communications

4.1 Escort Vehicle

A recommended vehicle used for escort vehicle operations should be of similar size to a light pickup or a sport utility vehicle (SUV). The vehicle design should provide:

- A large area on the vehicle cab (or truck box) to provide for secure mounting of the dimensional sign;
- Clear visibility of the mounted dimensional sign by other road users from both the front and rear of the vehicle;
- Better visibility for the Escort Vehicle Operator;
- Better stability control with a securely mounted dimensional sign during travel;
- Sufficient cargo capacity for equipment related to the move that does not obscure any lights or signs mounted on the vehicle.

See section 16 of the CVDWR for more requirements.

4.2 Escort Vehicle and Driver Equipment

Dimensional Sign and Operation Requirements

An escort vehicle must be equipped with a dimensional sign as regulated under section 16 of the CVDWR.

A permit is available through the Central Permit Office that allows for signs, lights and equipment that can be used as an alternative to those specified in the CVDWR.

A dimensional sign must be:

- Kept in good repair
- Kept clean and legible at all times;
- Covered, folded, or removed when not required to be displayed.

When a dimensional sign is equipped with two sets of lights (inboard and outboard):

- Only the outboard lights must be used under normal weather and highway conditions, and
- The inboard lights must be used only
 - Under adverse weather or highway conditions;
 - When turning or flagging, or
 - During a mechanical breakdown.

When a dimensional sign is equipped with a single set of lights:

- The lights must be used at all times during which the vehicle is accompanying an overdimension vehicle.

House Move Sign (Optional)

For building moves only, pilot vehicles may be equipped with a SLOW DOWN - HOUSE MOVING sign showing black lettering on a yellow background that is displayed on the front of the vehicle in addition to the required dimensional sign. The specifications for this sign and placement are described in the Permit Conditions for the Movement of Buildings.

Contact the Central Permit Office for more information.

Vehicle Mounted Stop Signs

Vehicle mounted Stop/Slow signs are prohibited in Alberta.

Dynamic Message Signs

Vehicle mounted dynamic message signs are prohibited in Alberta.

Mounted Height Poles on Escort Vehicles

Vehicle mounted height pole(s) are prohibited in Alberta.

Towing and Cargo Restrictions

A vehicle, while engaged as an escort vehicle, must not:

- Tow any trailer or other vehicle; or
- Carry any Load that, in any manner, obscures mandatory lights or signs on the escort vehicle.

Carried Equipment Requirements for Escort Vehicles

As a minimum, Escort Vehicle Operators must carry, use and maintain the following equipment:

- Three (3) approved advanced warning triangles;
- Three (3) warning flags for traffic marking;
- One (1) warning flag per crew member for traffic control;
- One (1) reflective vest per crew member;
- One (1) flashlight, equipped with a signal tube, per crew member.

The following equipment is recommended to be carried per Escort Vehicle Operator:

- One (1) Stop/Slow traffic control sign that conforms with specifications shown in the more recent version of the Traffic Accommodation in Work Zones Manual (TAWZ) TCS-B-4.2;
- The one (1) flashlight should be fitted with a red signalling tube or be an illuminated baton with a light that appears red;
- One (1) Safety vest which meets the Class 3 requirements of the Canadian Standards Association (CSA) Z96-02, High Visibility Safety Apparel. The vest should be kept in good condition and have a permanent label affixed certifying compliance with Class 3 of the CSA Z96-02 requirements;
- Five (5) TAWZ approved channelizing devices;
- Appropriate clothing for applicable weather conditions;
- A two-way hand-held VHF radio to maintain communication with the Load and other escort vehicles.
- Personal items: drinking water, food, weather appropriate clothing and blanket.

The following equipment is recommended to be carried in each escort vehicle:

- First aid kit (Alberta #2 or equivalent);
- Fire extinguisher (10 pound ABC type with vehicle mounting bracket);
- Tape measure or other measuring equipment (minimum 8 metres / 25 feet);

- General automotive tool kit that may include but is not limited to pliers, wrenches, screwdrivers, duct tape;
- Jumper cables with appropriate capacity (at least 650 Amperes);
- Automotive fluids, including but not limited to motor oil, coolant, windshield fluid;
- Spare parts for dimensional signs;
- A spare safety vest which meets the Class 3 requirements of the Canadian Standards Association (CSA) Z96-02, High Visibility Safety Apparel. The vest should be kept in good condition and have a permanent label affixed certifying compliance with Class 3 of the CSA Z96-02 requirements.

4.3 Communications During the Move

Often, a Load Driver's sightlines are reduced / limited and reaction times are increased during a Load move. The Escort Vehicle Operator(s) assists the Load Driver by constantly monitoring the area around the Load and regularly communicating what they see to the Load Driver (and other Escort Vehicle Operators) so the Load Driver can make timely operational decisions during the Load move.

It is important that the Load Driver be aware of the location of all escort vehicles at all times.

Pilot Vehicles communicate to the team about obstacles ahead and other oncoming vehicles (including other Loads).

Trail Vehicles advise the Load Driver about vehicles that may be approaching to pass from behind the Load and identify cargo securement and/or other Load security issues.

It is recommended that a specific/dedicated channel be used and each member of a Load team be identified by their name during communications. The communications should be brief, concise and professional.

4.4 Radio Equipment and Frequencies

Section 16 of the CVDWR requires that two-way communications be maintained between each of the escort vehicles at all times during the move. Section 115.1 (3) of the *TSA* permits the use of two-way communication devices when escorting a Load.

Both a Citizen's Band (CB) radio and Very High Frequency (VHF) radios are recommended. A hand-held VHF radio (with extra batteries) is also recommended for communication while outside of the escort vehicle and as a spare.

Load vehicles shall be equipped with two-way radio communication devices and used as directed by their employer. Load vehicles are recommended to have similar CB and VHF radios to communicate with escort vehicles.

It is recommended that information about available frequencies for the travelled area and routes be carried in all vehicles during a move.

Section 115.1(2) of the *TSA* permits the use of "Hands-Free" cell phones which may be useful as a backup in the event of a two-way radio communication breakdown during escort vehicle operations.

Radio Licensing Requirements

Operators using VHF radios must have a current radio station licence issued by Innovation, Science and Economic Development Canada (ISED), formerly Industry Canada, Spectrum Management). Citizens Band (CB) radio and low power Family Radio Service (FRS) operators do not require a station licence.

For either radio type, operators must ensure their radio equipment meets Canadian regulations and standards (it should have an ISED approval sticker), and that it is operated in a legal manner (includes, but is not limited to, no profanity or transmitting of sensitive material). Information about application for radio licensing can be found on their website: www.ic.gc.ca/eic/site/smt-gst.nsf/eng/home.

Radio Channels for VHF Radios

If the Carrier is licensed by ISED to operate under its own assigned frequency, it is preferable to use the Carrier frequency instead of the Logging Administration (LADD) or other open channels, which can be fairly congested.

It is possible to use either a Carrier or another company's assigned frequency if:

- The frequency is valid in the area;
- The ISED licence to include the authorized frequency is valid;
- The frequency holder provides written permission for use of the frequency.

Pilot car operators wishing to use a Carrier's authorized radio frequency must first obtain written authorization of the Carrier, have the frequency added to their ISED radio license and carry a copy of the written approval.

For information about available radio channels, contact the Spectrum Management and Telecommunication branch at ISED. A listing of local offices and contact information may be found at: www.ic.gc.ca/eic/site/smt-gst.nsf/eng/home.

Radio Use on Licence of Occupation Roads

When operating on Licence of Occupation (LOC) roads, use of VHF radios tuned to the specific LOC road channel is required. It is very important that users know and use the correct road channel assignments for the LOC road. Channel signs are posted at the entrances of every LOC road.

The First or Second Pilot Vehicle operator typically uses the two-way VHF radio to announce:

- The Load's whereabouts as they enter, start, stop on or leave a LOC road;
- Travel status as directed by road-side signs;
- When the Escort Vehicle Operator announces the position of the Load, the announcement should include:
 - Road name,
 - Kilometre marker;
 - Vehicle direction and status (empty or loaded), (up/down), (in/out);
 - Total number of vehicles (including escort vehicles) in the group.

Best Practices for Speaking into a Two-Way Radio

Radios are used to improve safety. It's important that the messages you transmit are clearly heard and understood.

- Hold the microphone directly and 25 millimetres to 50 millimetres from the front of your mouth, to minimize surrounding noise;
- Shield the microphone from surrounding noises;
- Position radios and microphones away from car radios or other noisy equipment;

- Speak directly into the microphone, rather than across it. Radios are designed to be spoken directly into.
- Speak clearly and at a normal pace; neither too fast nor too slow;
- Ask for a repeat statement if someone on the other end is hard to understand.

In heavy traffic areas, it is especially important to use proper radio calling procedures and receive confirmation/understanding from the rest of the team before continuing operations.

Section 5: Traffic Control Operations

5.1 The Traffic Control Authority of an Escort Vehicle Operator

In Alberta, Escort Vehicle Operators are persons who may give directions for the purpose of directing traffic with respect to the operation of an over-dimension vehicle on a highway provided they do so in accordance with section 60(b) of the [Use of Highway and Rules of the Road Regulation](#) (UHRRR).

The Escort Vehicle Operator is a person who may park an escort vehicle on a highway while performing the duties of a flagperson regulated under section 43(6)(c) of the UHRRR.

The Escort Vehicle Operator may be exempt from the requirement to wear a seat belt described in section 82 (2) (a) of the VER while performing the duties of a pilot or trail vehicle in an urban area where the posted speed limit is 60 kilometres per hour or less if the seatbelt exemption condition is included on the Permit.

Traffic control involving prolonged counterflow activities may be done under the supervision of a Peace Officer as regulated under Section 61 of the UHRRR.

Carrier must obtain pre-approval prior to performing any counterflow, u-turn or loading/offloading activities on a highway.

Estimating Oncoming Vehicle Stopping Sight Distances

An Escort Vehicle Operator must consider their visibility by oncoming traffic. The distance required for an approaching vehicle to stop increases with driver perception/reaction time, vehicle approach speed, highway conditions, and/or terrain type (downgrades). An Escort Vehicle Operator must be positioned so drivers have enough space to see the Escort Vehicle Operator, react to their sign, and come to a stop at the location where indicated by the signalling person.

Table 5.1 shows stopping sight distances for passenger vehicles on wet, flat pavements and can be used as a guide to assess stopping sight distances for an approaching vehicle. It is important for the Escort Vehicle Operator to plan for issues that may increase the estimated stopping distance of an approaching vehicle.

Table 5.1: Stopping Sight Distance for Passenger Vehicles on Wet Flat Pavements

Running Speed (km/hr)	Minimum Stopping Sight Distance (m)
40	45
50	65
60	85
70	110
80	140
90	170
100	200
110	240
120	285
130	340

Note 1: Larger or Heavier Commercial vehicles may need additional stopping distance. Refer to the Alberta Highway Geometric Design Guide Section B.2.2 Table B.2.3 at <http://www.transportation.alberta.ca/951.htm>

Positioning Escort Vehicles at Night during Flagging Operations

When standing near the escort vehicle, the headlights and other accessory lights can draw attention away from the Escort Vehicle Operator and obscure their visibility by oncoming drivers. The escort vehicle should therefore be oriented so headlights are not pointed in the direction of approaching vehicles making it difficult for approaching drivers to see the Escort Vehicle Operator. In this situation, the headlights on the escort vehicle should be switched to parking lights so that the escort vehicle itself is still visible, but does not obscure the Escort Vehicle Operator.

It is recommended that a person flagging or directing traffic should position themselves at least 15 cm from the vehicle to ensure a safe unobstructed escape route.

Overview of Traffic Control Operations on Two-Lane Highways

When an Escort Vehicle Operator is located outside the cab of a vehicle when engaged in an activity with respect to the operation or movement of an oversized vehicle, the Escort Vehicle Operator shall wear a reflective vest and make use of warning flags, flashlights or the stop/slow paddle as may be necessary to warn or give directions to traffic on a highway.

When an oversized Load must navigate an obstacle, the Escort Vehicle Operator must:

- Advance to a point where two-way traffic is possible;
- Park the vehicle in a safe location and exit the vehicle;
- Position in a safe location for temporary traffic shutdown;
- Use proper flagging procedures.

The traffic control procedures on two-lane highways as part of escort vehicle operations is summarized as follows:

- Stand far enough ahead of the site area to give approaching traffic enough distance to observe, react, slow down and come to a stop at a location designated by the person conducting traffic control operations (minimum 125 meters is recommended);
- Stand facing oncoming traffic where you can see and be seen;
- When showing the STOP signal on the paddle to other drivers, the signal should be clear, distinct and verified by the driver being signalled for their understanding;

- After the first vehicle has been stopped, move to a location so the person conducting traffic control operations can be seen by the traffic (at least 15 meters from the vehicle and preferable on the shoulder);
- If time permits, inform drivers of the reason for the delay. Be courteous and brief;
- Once the Load is clear of the obstruction or crossing, release the traffic.

Basic Duties of Escort Vehicle Operators Performing Traffic Control Operations

The basic duties of Escort Vehicle Operators performing traffic control operations during a move are:

- Temporarily stop traffic outside of established temporary traffic control areas that may include but are not limited to crossings or turns that allow a Load to pass through; or
- Manage traffic around stopped Loads during moving operations.

Additional details on how Escort Vehicle Operators perform traffic control operations during Load moves are in Sections 6.0 to 10, inclusive.

Very Short Duration Traffic Control Operations

For very short duration (stationary) traffic control operations, may include but is not limited to, bridge crossings, intersection turns and narrow roads. Escort Vehicle Operators outfitted with personal protection equipment (PPE) and properly equipped escort vehicles (Section 4) shall establish and manage a temporary traffic control zone as required for an escorted Load to pass.

Short Duration Traffic Control Operations

Upon the need for short duration (stationary) traffic control operations that may include but is not limited to a Load breakdown, the Escort Vehicle Operator shall:

- Deploy escort vehicles and Escort Vehicle Operators to set up and manage an appropriate temporary traffic control zone;
- Maintain continuous traffic management operations around the Load:
 - During on-site repair of Load that may include but is not limited to tractor, equipment and/or trailer change operations;
 - Until the Load can resume move operations, or;

- Until the Load is removed from the highway.

A Load shall not be left unattended at any time.

The Load Driver shall advise the Central Permit Office if the Load is expected to be at the same location for more than 72 hours.

For other requirements for the Load during Short Duration Traffic Control Operations, refer to sections 76 and 77 of the *TSA*.

5.2 Different Load Characteristics and Escort Vehicle Operations

Overview of Overdimension / Overweight Load Characteristics

Each Load is different. A Load may be overwidth, overheight, overlength, and/or overweight, and those characteristics help establish what the Escort Vehicle Operator needs to be aware of during the move.

The Escort Vehicle Operator needs to continuously think about how the Load will affect the highway and infrastructure with respect to changing terrain, geometries, structures, obstructions, natural hazards and other road users. The Escort Vehicle Operator needs to respond appropriately and advise the Load Driver and other Escort Vehicle Operators to these changing conditions.

If it is necessary to take actions that will affect the movement of other traffic around the Load, those actions must be performed by an Escort Vehicle Operator or a Peace Officer.

Escort Requirements for Overwidth Loads

In addition to driving a vehicle that is equipped to warn other drivers about an overwidth Load that may be entering into their lane, Escort Vehicle Operators should watch for areas where the road narrows, and shoulder signs or other obstructions on the shoulder, that may put the overwidth vehicle, it's Load, and other road users at risk.

Table 5.2 shows the basic safety requirements (including escort vehicle requirements) for overwidth vehicles and their Loads.

Table 5.2 Overview of Overdimension Safety and Escort Vehicle Requirements for Overwidth Vehicles

Overdimension Vehicle/Load Width (metres)	Overwide Vehicle and Load Equipment Requirements	Escort Vehicle Requirements
Over 2.60 m wide	Warning Flags (daytime) / Warning Lights (night time) (displayed on each side at widest part of the vehicle or Load)	None
Over 3.05 m wide	Warning Flags (daytime) / Warning Flags (night time) (displayed on each side at widest part of the vehicle or Load) Two (2) Schedule 2, 3, 3.1, 3.2 or 3.3 dimensional signs mounted per Regulations	None
Over 3.35 m wide	Warning Flags (daytime) / Warning Lights (night time) (displayed on each side at widest part of the vehicle or Load) Two (2) Schedule 2 or 3 dimensional signs mounted per Regulations One (1) or more flashing lamps	None
Over 3.85 m wide	Warning Flags (daytime) / Warning Lights (nighttime) (displayed on each side at widest part of the vehicle or Load) Two (2) Schedule 2 or 3 dimensional signs mounted per regulations One (1) or more flashing lamps No movement after 3:00pm until midnight on any day before a weekend or statutory holiday. No movement on a Sunday or statutory holiday	On a 2-lane highway: One (1) Pilot Vehicle only if vehicle/Load is not more than 4.45 metres wide On a Multi-lane highway: One (1) Trail Vehicle only if vehicle/Load is not more than 5.49 metres wide
Over 4.45 m wide	Warning Flags (daytime) / Warning Lights (nighttime) (displayed on each side at widest part of the vehicle or Load) Two (2) Schedule 2 or 3 dimensional signs mounted per regulations One (1) or more flashing lamps No movement after 3:00pm until midnight on any day before a weekend or statutory holiday. No movement on a Sunday or statutory holiday. Move only during daytime unless authorized by a Permit from the Central Permit Office.	On a 2-lane highway: One (1) Pilot & One (1) Trail Vehicle if the vehicle / Load is more than 4.45 metres wide On a Multi-lane highway: One (1) Trail Vehicle if vehicle / Load is up to 5.49 metres wide One (1) Pilot and One (1) Trail vehicle if vehicle / Load is more than 5.49 metres wide
Over 5.50 m wide	Same as the 4.45 m wide case PLUS: Stopping on Provincial Highways only permitted at designated truck turn outs.	On a 2-lane highway: Same escort vehicle requirements as 4.45 metres wide; On a Multi-lane highway: Same escort vehicle requirements as 4.45 metres wide.

Bridge edges, guard rails, curbs, or concrete barriers may require extra caution to either safely go around, remove and reinstate, or adjustment of Load height before transit to ensure safe clearance.

The Escort Vehicle Operator(s) must inform the Load Driver of obstacles such as cyclists or stopped vehicles that may be ahead on the highway or shoulder.

There may be additional requirements on permits with respect to the number and positioning of escort vehicles with respect to overdimension Loads.

Contact the Central Permit Office for additional information prior to moving an overwidth vehicle.

Escort Requirements for Overheight Loads

The maximum height of a Load must be lower than the maximum clearance of any infrastructure encountered on the permitted route, or as indicated on the Permit, whichever is less.

Bridge overpasses/underpasses, utility lines and other overhead obstacles are to be seen, communicated, and “pre-cleared” by the Escort Vehicle Operators to the Load Driver well in advance of the Load arriving at the obstacle. The Load Driver should be warned by the Escort Vehicle Operators as early as possible so as to take action to avoid or to request permission from Alberta Transportation to detour around the obstacle.

Power/utility lines frequently cross over highways. Only qualified professionals from utility companies or their authorized contractors can handle (lift or move) electrical (or utility) distribution lines.

Table 5.3 Select Overhead Power Line Clearance Requirements in Alberta¹

Location of Overhead Power Line	Minimum Height (m)
Urban area	4.15
Areas where agricultural equipment is normally used	4.2
Lanes, alleys, or entrances to industrial or commercial premises	4.8
Roads and Highways	5.3

Note 1: Alberta Occupational Health and Safety Code 2009, Section 226, excerpt from Table 17.2.

Note 2: Power line elevation requirements may vary in License of Occupation areas.

Note 3: If within an urban area, which may include but is not limited to, a city, town, or hamlet, contact municipality.

Part 40 of the WorkAlberta Occupational Health and Safety Regulation provides information about maintaining a safe distance from any utility lines.

When the overall height of a Load exceeds 4.15 metres:

- An overdimension permit will be required, and;

When the overall height of the vehicle and/or Load exceeds 5.3 metres:

- Loads can only travel during daytime hours,
- The Carrier must obtain clearance from the following Utilities: Power, Telephone, Rail and Traffic Light Authorities prior to the move;
- Except for emergency situations and power line lifting, stopping on provincial highways is permitted only at designated roadside turnouts.

The Carrier may require Escort Vehicle Operators to control traffic during a Load move if line lifts are required.

If the route includes travel on the High Load Corridor, refer to Section 3.3.

Contact the Central Permit Office for additional information prior to moving an overheight vehicle.

Escort Requirements for Overlength Loads

Highway curves and turns at intersection are key maneuvers for overlength Loads. The Load Driver may need to swing the Load wide in order to safely make the turn without posing any danger to pedestrians, cyclists and/or highway infrastructure located within the inside corner of the turn.

When negotiating tight curves, the Load may encroach adjacent lane(s). The tail swing needs to be carefully monitored by both the Load Driver and the Escort Vehicle Operator(s).

It may take extra time for an overlength Load to clear an intersection or rail crossing. If an overlength vehicle has low ground clearance, the Load Driver should be aware of and proceed carefully to clear the rails while crossing railways.

In Alberta, escort requirements for overlength Loads are dependent on:

- if the vehicle is empty or loaded;
- the overall length of the vehicle and Load;
- the effective rear overhang of the Load;
- If the vehicle and Load are being transported on a two-lane or multi-lane highway.

For two-lane highways (loaded), if:

- the overall length is greater than 34.0 metres, a First Trail Vehicle is required;
- the overall length is greater than 38.0 metres, a First Pilot and a First Trail Vehicle is required;
- the overall length is greater than 42.0 metres, a First Pilot and a First Trail Vehicle is required; and the Load must only travel during daytime hours unless authorized by a Permit;
- the effective rear overhang is greater than 6.5 metres, a First Trail Vehicle is required;
- the effective rear overhang is greater than 9.0 metres, a First Pilot and a First Trail Vehicle is required and the Load must only travel during daytime hours unless authorized by a Permit.

For two-lane highways (empty) if:

- the overall length is greater than 38.0 metres and up to 52.0 metres, a First Trail Vehicle is required;
- the overall length exceeds 52.0 metres:
 - First Pilot Vehicle and a First Trail Vehicle are required, and;
 - travel is restricted to daylight hours unless authorized by a Permit.

For multi-lane highways (loaded and empty) if:

- the overall length exceeding 52.0 metres, a First Trail Vehicle is required;
- the route includes a two-lane highway, the requirements for overlength vehicles travelling on a two lane highway governs the turning movement.

Municipalities may require the use of more escort vehicles for travel on local roads.

Permit Conditions will specify the number of escort vehicles required.

Contact the Central Permit Office for additional information prior to moving an overlength vehicle.

Escort Requirements for Overweight Loads

Many permits for overweight Loads have specific conditions for crossing bridges along the route. It's important to know the locations of the bridges in advance and confirm with the Carrier the exact Permit Conditions which are to be followed for the crossing. Common conditions include:

- Before crossing the structure, required to provide scaled weights;
- Before crossing the structure, remove push truck;
- When crossing the structure, set the maximum vehicle speed to 10 kilometres per hour;
- When crossing the structure, cross at the centre of the bridge and must be the only vehicle on the bridge

The Permit Conditions will specify bridge crossing conditions for particular structures.

Often bridge crossing conditions make it necessary for the Carrier to require Escort Vehicle Operators to stop traffic in one or both directions while the Load crosses. The Escort Vehicle Operator must envision the amount of space required on either side of the bridge to allow an overweight vehicle to leave, cross the bridge then return to its travel lane. The Escort Vehicle Operator must be positioned to be able to stop traffic out of this area when the Load is crossing the bridge.

Refer to www.transportation.alberta.ca/522.htm for a current list of the bridge weight restrictions and road bans.

Contact the Central Permit Office for additional information prior to moving an overweight vehicle.

5.3 Basic Positioning and Duties for Escort Vehicles

Basic Positioning Requirements of Escort Vehicles

Regulations, Permit Conditions and the type of Load will dictate the number and type of escort vehicles required; pilot vehicles versus trail vehicles.

More than three escort vehicles are typically required for complex or specialized moves.

The requirements and typical positioning of the escort vehicles may vary depending on the locations and situations encountered along the route.

Basic Duties of Pilot and Trail Escort Vehicles

The basic duties of an Escort Vehicle Operator in the pilot position is to watch the highway ahead of the Load and communicate to the Load Driver any potential obstacles, hazards, oncoming traffic as well as coordinate the safe passing of oncoming traffic and other Loads. **These duties are to be performed in accordance with the TSA and regulations and any additional Permit Conditions.**

The basic duties of an Escort Vehicle Operator in the trail position is to watch the highway behind and around the Load and communicate with the Load Driver about traffic approaching from behind the Load, obstacles on the highway and condition of the Load as well as coordinate the safe passing by traffic approaching from the rear of the Load. **These duties are to be performed in accordance with the TSA and regulations and any additional Permit Conditions.**

Section 6: Escort Vehicle and Load Movement Layouts - Highways

6.1 Basic Two-Lane Highway Positioning - Two Escort Vehicles

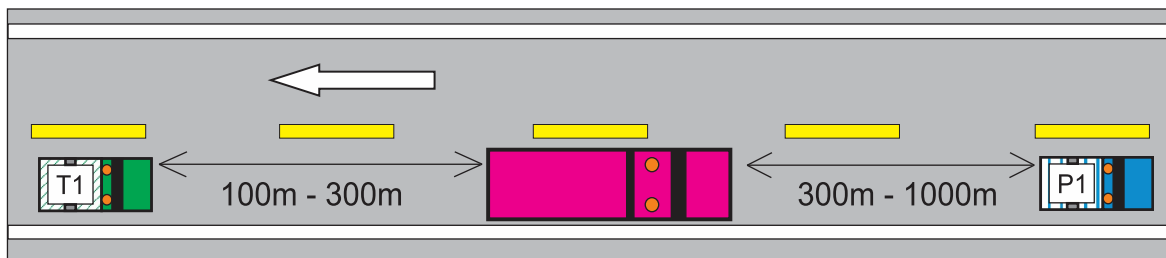
The basic escort vehicle positioning for the First Pilot Vehicle and First Trail Vehicle is set out in the CVDWR, or for more complex moves, in the Permit and accompanying documents.

The position of an escort vehicle may be temporarily reassigned if highway conditions result in the escort vehicle being more effective in another position, provided regulatory requirements are met. These conditions may include posted speed changes, presence of obstructions, changes in highway geometry, intersection turns, and/or other highway users.

When escorting a Load, the escort vehicle shall have its dimensional sign displayed. Headlights and applicable amber lights should also be on, as discussed in Section 4.2.

The basic positions of a First Pilot Vehicle and First Trail Vehicle is shown in Figure 6.1.

Figure 6.1: First Pilot Vehicle and First Trail Vehicle Positioning (not to scale)



6.2 Simplified Multi-Lane Highway Passing – One or Two Escort Vehicles

Although it is rare for a Load Driver to overtake a slower moving vehicle, it may occur, for instance when the right lane is temporarily closed. Escort Vehicle Operators must be cautious and aware of how much time the Load will be in the passing (inside) lane. A decision to pass will be made by the Load Driver, and the escort vehicles will keep the Load Driver informed of their respective movements and movements of other traffic in the area.

If there is a First Pilot Vehicle, one of the roles of the operator is to inform the other Escort Vehicle Operators of oncoming traffic, in case the Load needs to move to the right for safety. The Load may block the forward vision of the First Trail Vehicle; therefore, the First Trail vehicle will be relying on the First Pilot Vehicle operator for advice on when it is safe to move back to the travel (outside) lane.

If there is a First Trail Vehicle, upon being advised by the Load Driver and confirmed by the First Pilot Vehicle operator that the slower moving vehicle is to be passed, the First Trail Vehicle's role is to initiate the passing activity for the group by moving from the travel (outside) lane to the passing (inside) lane, thereby blocking the other oncoming vehicles positioned behind the First Trail Vehicle from passing the Load.

The First Trail Vehicle then informs both the Load Driver and the First Pilot Vehicle when it is clear for the Load and the First Pilot Vehicle to each move to the passing (inside) lane.

The First Pilot Vehicle, Load and First Trail Vehicles then pass the slow-moving vehicle. At no time, shall the vehicles exceed the posted speed limits.

When the First Trail Vehicle is at a safe distance in the passing (inside) lane relative to and ahead of the slower moving vehicle in the travel (outside) lane, then the First Trail Vehicle will notify the Load Driver and the First Pilot Vehicle that it is safe for all to begin moving back to the travel (outside) lane.

An overview of the procedure for passing a slow-moving vehicle with two escort vehicles and a Load on a multi-lane undivided highway is illustrated in Figures 6.2 to 6.4.

Figure 6.2: The First Pilot and First Trail Vehicle Approaches the Slow Moving Vehicle (not to scale)

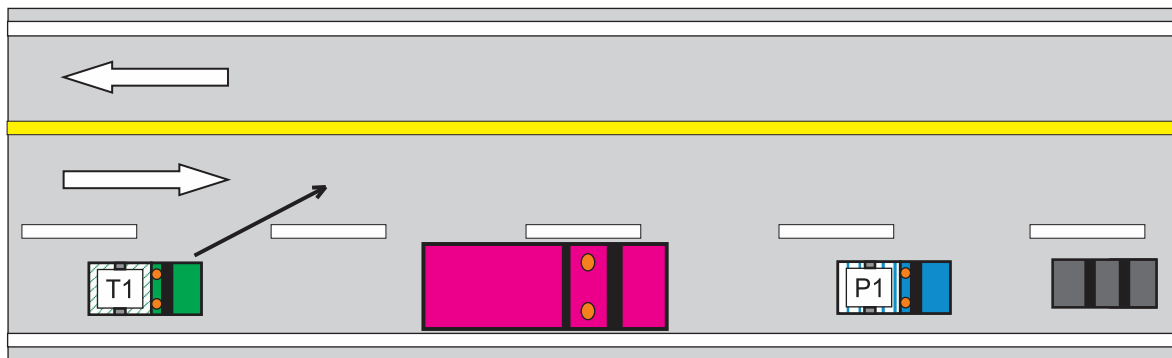


Figure 6.3: The First Trail Vehicle Initiates the Move to the Left (not to scale)

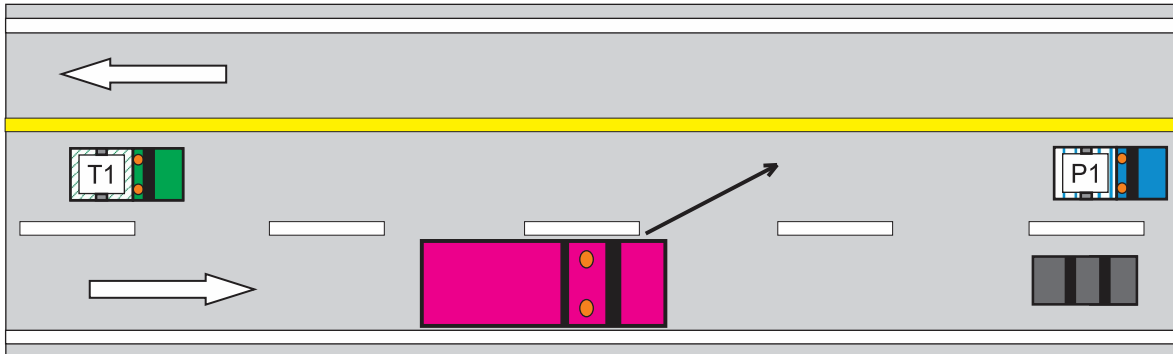
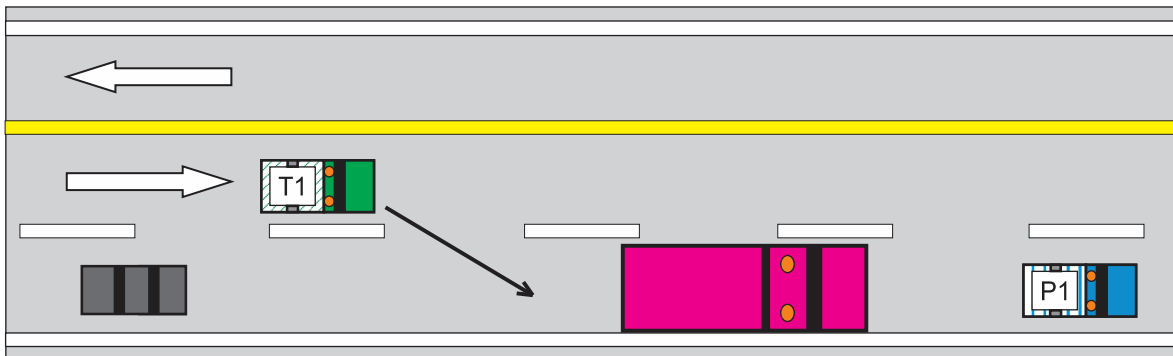


Figure 6.4: Returning to the Travel (Outside) Lane (not to scale).



Note: These examples are simplified explanations of what is required for both positioning and passing activities for Escort Vehicle Operators

6.3 Simplified Two-Lane Highway Positioning - One or Two Escort Vehicles

On two-lane highways where only one escort vehicle is used, it typically occupies the First Pilot Vehicle position. Permit Conditions (usually for overlength vehicles) may require only a First Trail Vehicle to escort the Load. When two escort vehicles are required by Permit, they occupy the First Pilot Vehicle and First Trail Vehicle positions.

The First Pilot Vehicle is watching for any hazards or obstacles ahead (including overhead restrictions), that are communicated to the Load Driver in addition to warning oncoming traffic to be aware of the approaching Load.

The First Trail Vehicle communicates to the First Pilot Vehicle and/or Load Driver about traffic that is approaching from behind the Load, the condition of the Load itself, and the status of any lane shifts completed by the Load.

If the Load is only being escorted by a First Trail Vehicle, the Load Driver is responsible for advising what is ahead.

The Load travels as far to the right as possible given the road geometry and obstacles. Refer to Figure 6.5 for default positioning of escort vehicles and Load.

6.4 Simplified Three-Lane Highway Positioning - One or Two Escort Vehicles

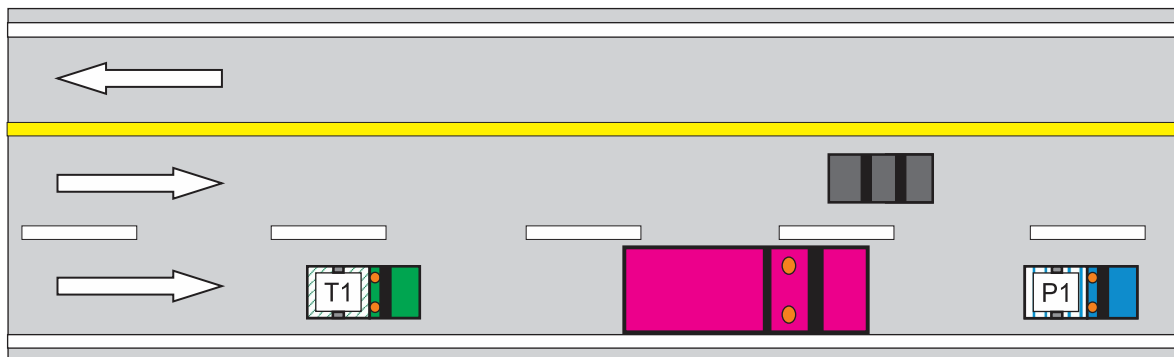
The First Pilot Vehicle watches for hazards and other obstacles and overhead obstructions that are ahead of the Load that should be communicated to the Load Driver. The First Pilot Vehicle is also warning oncoming traffic about the approaching Load.

The positioning of the First Trail Vehicle changes depending on whether travelling uphill or downhill, the number of lanes in its direction of travel, and the position of the Load.

Simplified Three Lane Positioning - Two Lanes in Direction of Travel

With two lanes in the Load's direction of travel, possibly on an uphill slope, the escort vehicles are positioned as shown in Figure 6.5:

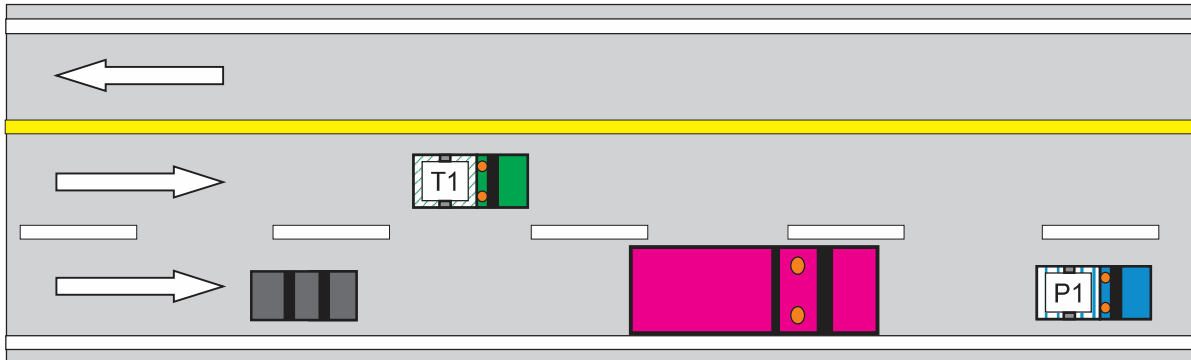
Figure 6.5: Two Lane Highway with a Passing / Truck climbing Lane (not to scale)



If the First Trail Vehicle determines that it is unsafe for vehicles that are behind the Load to pass, the First Trail Vehicle positions itself in the passing (inside) lane to the left of the Load, and blocks traffic from passing as shown in Figure 6.6.

If conditions change and it becomes safe for vehicles to pass the Load, the First Trail Vehicle will move back to the travel (outside) lane. Refer to Figure 6.6.

Figure 6.6: Two-Lane Highway with a Passing / Truck climbing Lane (not to scale)



Simplified Three Lane Positioning - One Lane in Direction of Travel

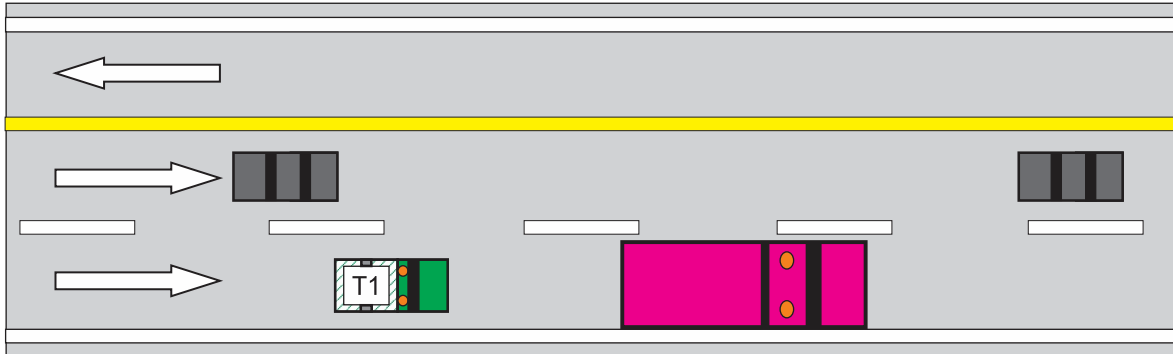
With one lane in the Load's direction of travel, possibly on a downhill slope, the First Pilot Vehicle travels ahead of the Load and the First Trail Vehicle travels behind the Load similar to what is shown in Figure 6.5.

Typically, the Load travels as far to the right as possible given the road geometry and obstacles.

6.5 Simplified Multi-Lane Highway Positioning— One or Two Escort Vehicles

For multi-lane divided or undivided highways that require one escort vehicle, the escort vehicle is positioned in the First Trail Vehicle position. The purpose of the First Trail Vehicle is to alert drivers approaching the Load from behind and the Load Driver of any Load securement issues. Refer to Figure 6.7.

Figure 6.7 Multi-lane Undivided Highway – First Trail Vehicle Only (not to scale)

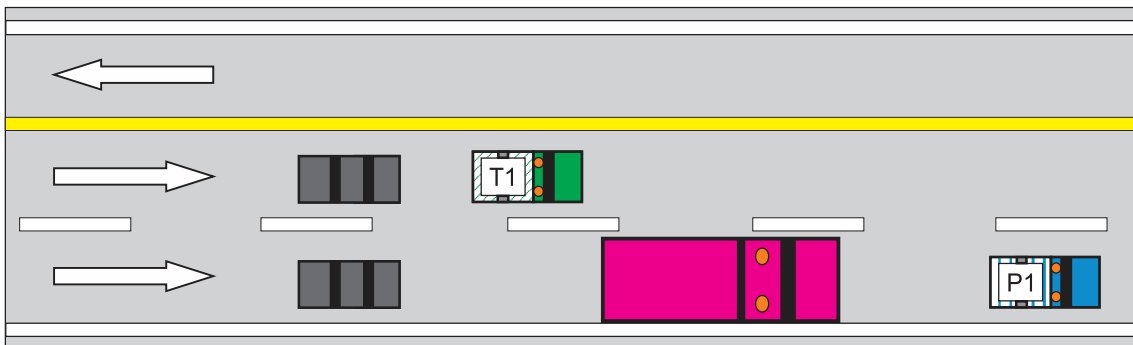


If two escort vehicles are required, the First Pilot Vehicle travels ahead and the First Trail Vehicle travels behind the Load in the same lane.

The First Pilot Vehicle is positioned ahead of the Load watching for hazards, including any potential obstacles that may include overhead restrictions to advise the Load about and warn oncoming traffic to be aware of the approaching Load.

The First Trail Vehicle should drive in the travel (outside) lane without crossing the line separating the travel (outside) lane from the passing (inside) lane. If it is necessary to protect the Load from vehicles approaching from behind, the First Trail Vehicle will position itself behind the Load as needed to prevent vehicles from passing. Refer to Figure 6.8.

Figure 6.8 Multi-lane Undivided Highway – Aligning to the Left of The Load (not to scale)



Typically, the Load will travel as far right as possible given the highway geometry and obstacles.

If the First Trail Vehicle determines that there is not enough space between the Load and the centreline for vehicles approaching from behind to safely pass, the escort vehicles and the Load will organize to make periodic stops at safe locations or predetermined sites to allow traffic queues that are gathered behind the Load to pass.

If the Load is travelling more than 10 kilometer below the posted speed limit, vehicles should not be queued for more than 10 minutes.

If the Load is travelling 10 kilometer or less than the posted speed limit, vehicles should not be queued for more than 30 minutes.

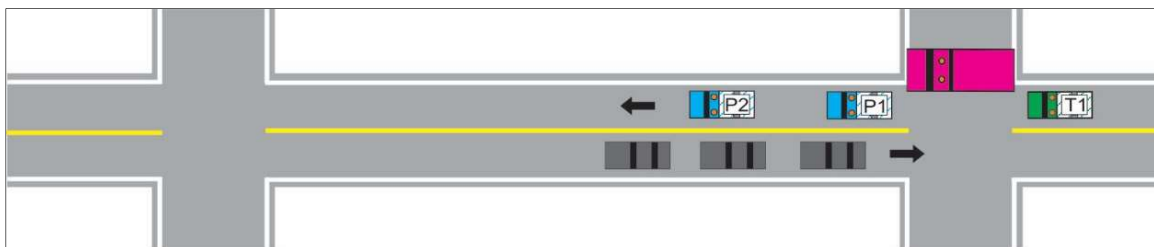
Note: These examples are simplified explanations of what's required for both positioning and passing activities for Escort Vehicle Operators.

6.6 Simplified Two-Lane Highway Positioning – Three Escort Vehicles

Where the clearance between the Load and the edge of the pavement is less than 3.05 metres (10 feet), resulting in insufficient roadway width to accommodate oncoming traffic, the road must be temporarily closed. Controlling traffic during the temporary closure requires three escort vehicles, First and Second Pilot Vehicles and First Trail Vehicle. The First Pilot Vehicle maintains the normal position (300 metres to 1,000 metres) in front of the Load.

If a two-lane highway is too narrow for two-way traffic, the wide load parks at a pullout allowing other traffic to pass. Second Pilot Vehicle proceeds to next available pullout. Refer to Figure 6.9.

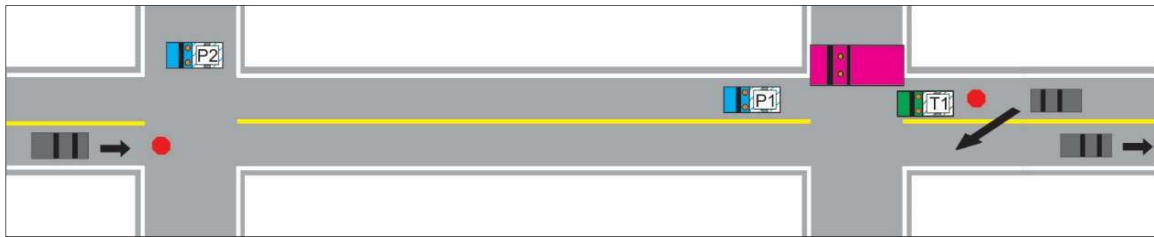
Figure 6.9 Two-lane Undivided Highway – Three Escort Vehicles - step 1 (not to scale)



Second Pilot Vehicle and First Trail Vehicle Operator will exit and begin traffic control operations to stop all oncoming traffic and allow traffic behind First Trail Vehicle to pass.

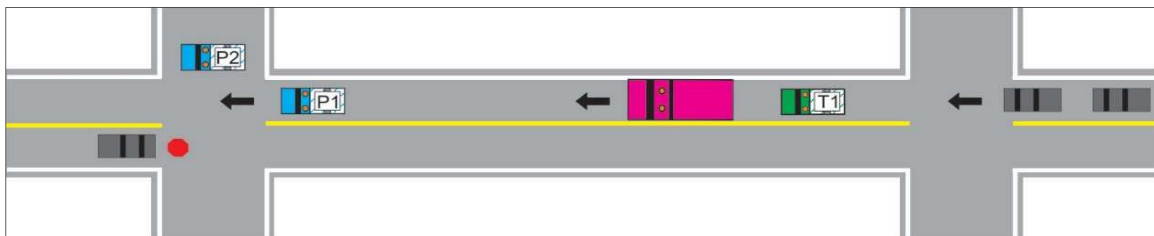
Once the Second Pilot Vehicle operator has the oncoming traffic stopped, the Second Pilot Vehicle operator communicates this to the First Trail Vehicle, the Load and the First Pilot Vehicle and provides a description of the last oncoming vehicle to pass. The First Trail Vehicle, after being advised by the Second Pilot Vehicle that the oncoming traffic has been stopped, will then stop traffic that is moving in the same direction as the Load. Refer to Figure 6.10.

Figure 6.10 step 2 (not to scale)



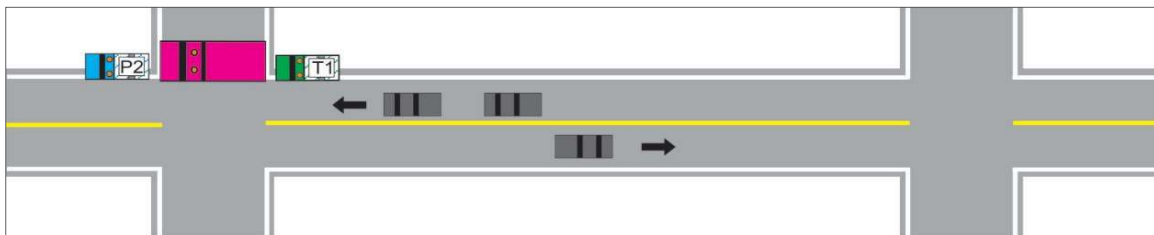
First Pilot Vehicle and First Trail Vehicle escort Load to next pullout. First Pilot Vehicle “leapfrogs” around Second Pilot Vehicle and advances to next pullout while Second Pilot Vehicle and First Trail Vehicle escort Load into pullout. Refer to Figure 6.11.

Figure 6.11 step 3 (not to scale)



First Pilot Vehicle and First Trail Vehicle allow queued rear and oncoming traffic to clear. Second Pilot Vehicle is in transit to next pullout. When traffic control is complete, return to step 1. Refer to Figure 6.12

Figure 6.12 step 4 (not to scale)



Section 7: Escort Vehicle and Load Movement Layouts - Crossings

7.1 Bridge Crossings

Bridge Crossing Considerations

There are three common reasons to temporarily stop traffic for a Load to cross a bridge:

- The Load is too wide for its travel lane;
- Permit Condition states the Load is too heavy to travel with other traffic on the bridge, requires third party supervision;
- Permit Condition states the Load must travel down center of bridge.

Permit Conditions will specify the bridge crossing requirements. In some situations other traffic is permitted on the bridge with the Load while in other situations no traffic is allowed when the Load crosses a bridge. Escort Vehicle Operator must ensure Permit Conditions are understood and followed.

The Escort Vehicle Operator must consider the highway approach length required on both ends of the bridge when determining the best location to position to stop traffic. The Load should be able to:

- Start from its travel lane to position itself as required before crossing the bridge;
- Cross over the bridge (straddling the centreline if required by the Permit), and;
- Completely return to its position on travel lane after crossing the bridge.

For bridge crossings, the Trail Vehicle's traffic control activities may include either slowing, blocking, stopping or releasing traffic as required.

The Pilot Vehicle's traffic control activities include either stopping or releasing traffic as required.

Simplified Two-Lane Bridges with Two-Way Traffic – Two Escort Vehicles

The First Pilot Vehicle may need to position itself far ahead of the Load as the team approaches a bridge.

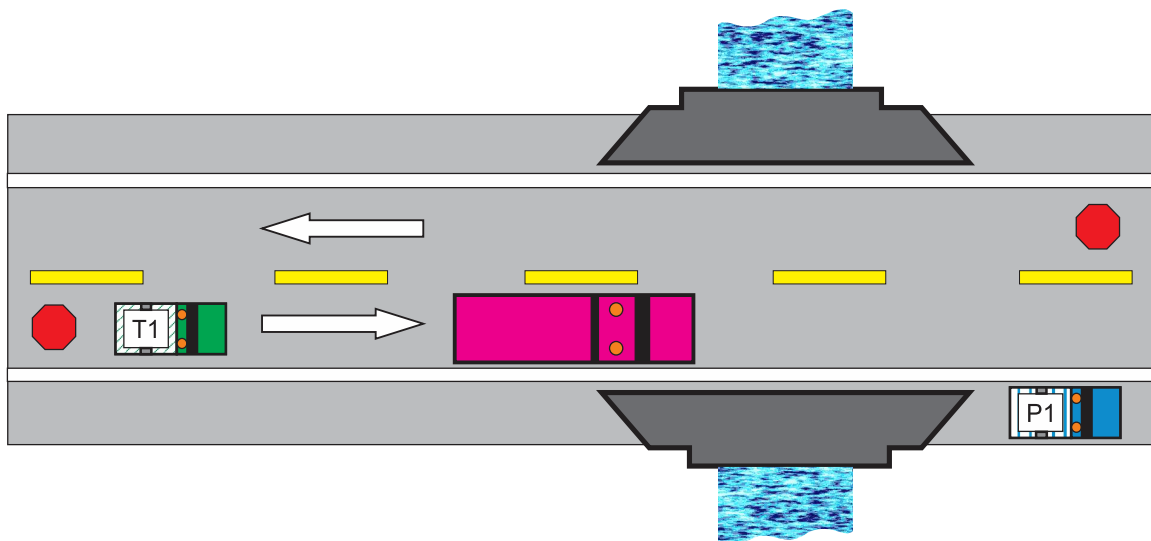
The First Pilot Vehicle will cross the bridge then stop at a safe location past the bridge that has appropriate sight lines for approaching traffic and has sufficient room between the First Pilot Vehicle and the bridge so that the Load will be able to cross the bridge and completely return to the travel lane on the other side of the bridge before oncoming traffic is released.

The First Pilot Vehicle will rely on communications from the Load Driver to know when the Load is approaching the bridge. If it is necessary for the First Pilot Vehicle to wait before starting traffic control operations, the First Pilot Vehicle should park on the shoulder.

When the Load is approaching the bridge, the First Pilot Vehicle will exit the vehicle and begin flagging to stop oncoming traffic. Once the First Pilot Vehicle has the oncoming traffic stopped, the First Pilot Vehicle operator communicates this to the First Trail Vehicle and the Load Driver and provides a description of the last oncoming vehicle to cross over the bridge.

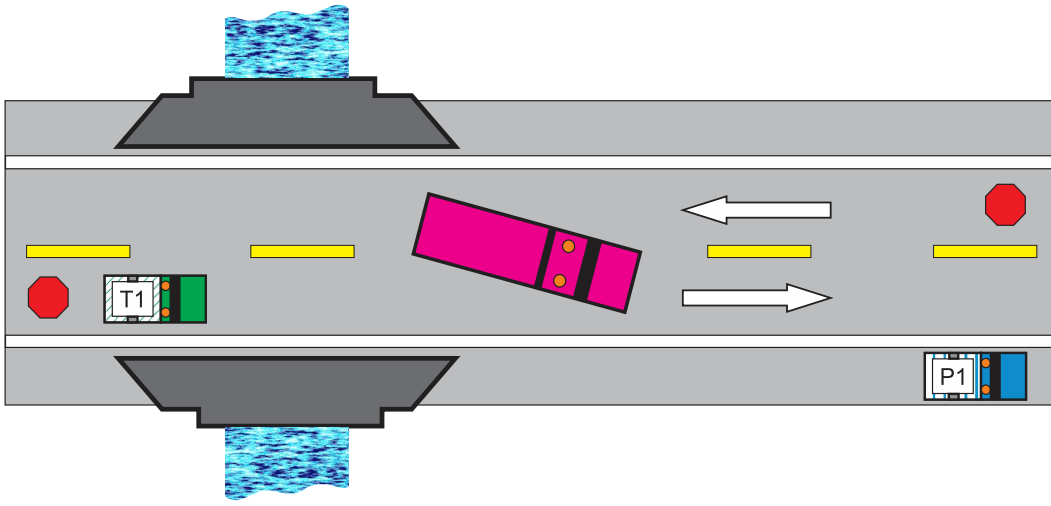
The First Trail Vehicle, after being advised by the First Pilot Vehicle that the oncoming traffic has been stopped, will then stop traffic that is moving in the same direction as the Load. The Escort Vehicle Operator will have to position himself to ensure traffic does not attempt to pass the Load or travel on the bridge with the Load if required by Permit Conditions. When the last oncoming vehicle has passed the Load, the First Trail Vehicle advises the Load Driver that it is clear to cross the bridge. Refer to Figure 7.1.

Figure 7.1 Two-Lane bridge with Two-Way traffic – Load Waiting to Cross (not to scale)



The Load follows the procedure to cross the bridge alone (in this case straddling the centreline) as described in Section 7.1. As soon as the Load clears the bridge and returns to its travel lane, the First Pilot Vehicle communicates that traffic in the oncoming lane is released. Refer to Figure 7.2.

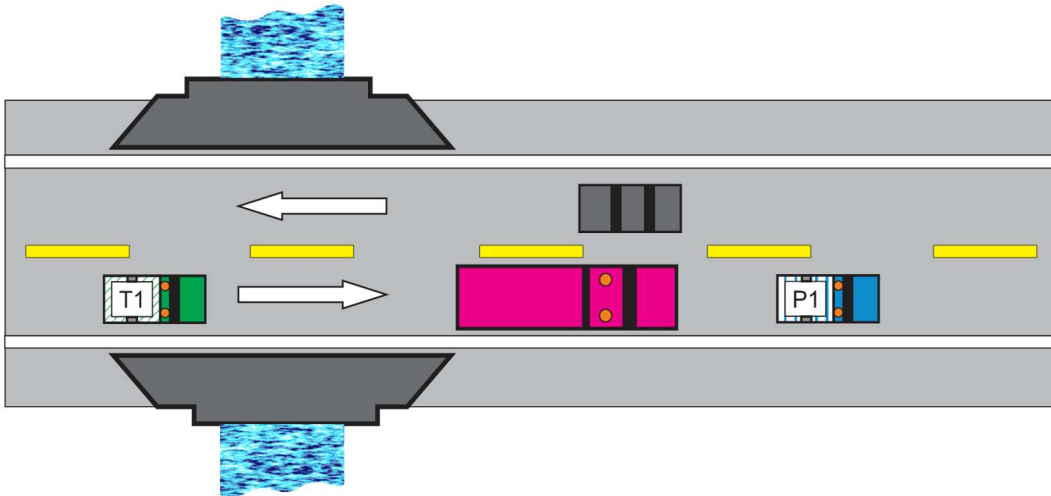
Figure 7.2 Two-Lane Bridge with Two-Way Traffic – Load Crossing Bridge (not to scale)



The First Pilot Vehicle then returns to its normal travel position

The First Trail Vehicle maintains its position behind the Load and in front of any queued vehicles. Refer to Figure 7.3.

Figure 7.3 Two-Lane Bridge with Two-Way Traffic – Load Crossed Bridge & Traffic Released (not to scale)



The vehicles that are queued behind the First Trail Vehicle will eventually pass the Load on their own or when the Load pulls over to allow the vehicles to pass.

Simplified Two-Lane Bridges with Two-Way Traffic – Three Escort Vehicles

When the Permit requires three escort vehicles, First and Second Pilot Vehicles and First Trail Vehicle. The Second Pilot Vehicle is positioned well ahead of the First Pilot, Load, and First Trail Vehicle. The First Pilot Vehicle maintains the normal position (300m – 1000m) in front of the Load.

The Second Pilot Vehicle crosses the bridge then stops at a safe location past the bridge that has appropriate sight lines for approaching traffic and has sufficient room between the Second Pilot Vehicle and the bridge, so the First Pilot Vehicle and the Load will be able to cross the bridge and return to the travel lane on the other end of the bridge before oncoming traffic is released.

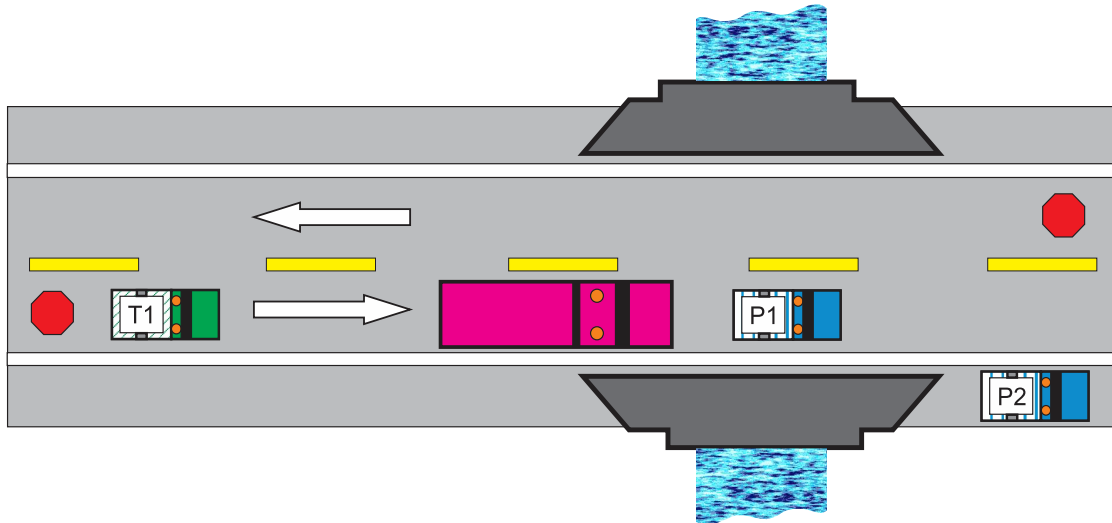
The Second Pilot Vehicle will rely on communications from the First Pilot Vehicle to know when the Load is approaching the bridge. If it is necessary for the Second Pilot Vehicle to wait before starting traffic control operations, the Second Pilot Vehicle should park on the shoulder.

When it is confirmed that the Load is approaching the bridge, the Second Pilot Vehicle operator will exit the vehicle and begin traffic control operations to stop oncoming traffic. Once the Second Pilot Vehicle operator has the oncoming traffic stopped, the Second Pilot Vehicle operator communicates this to the First Trail Vehicle, the Load and the First Pilot Vehicle and provides a description of the last oncoming vehicle to cross the bridge.

The First Trail Vehicle, after being advised by the Second Pilot Vehicle that the oncoming traffic has been stopped, will then stop traffic that is moving in the same direction as the Load. When the last oncoming vehicle has passed the Load, the First Trail Vehicle advises the First Pilot Vehicle and the Load that is clear to cross the bridge. Refer to Figure 7.1.

The First Pilot Vehicle then crosses the bridge and “leapfrogs” around the Second Pilot Vehicle and continues. Refer to Figure 7.4 for an example of the leapfrog manoeuvre. Alternatively, the First Pilot Vehicle could “bump” the Second Pilot Vehicle forward.

Figure 7.4: Two Lane Bridge With Two-Way Traffic–The First Pilot Safely leapfrogs around Second Pilot (not to scale)



The Load Driver follows the procedure to cross the bridge (in this case straddling the centreline) as described in Section 7.1 and shown in Figure 7.2. As soon as the Load clears the bridge and returns to its travel lane, the First Pilot Vehicle communicates that traffic in the oncoming lane can be released. The First Pilot Vehicle may assume the Second Pilot Vehicle role / position.

The First Trail Vehicle maintains its position behind the Load and in front of any queued vehicles. Refer to Section 7.2 and Figure 7.3. The vehicles that are queued behind the First Trail Vehicle will eventually pass the Load on their own or when the Load pulls over to allow the vehicles to pass.

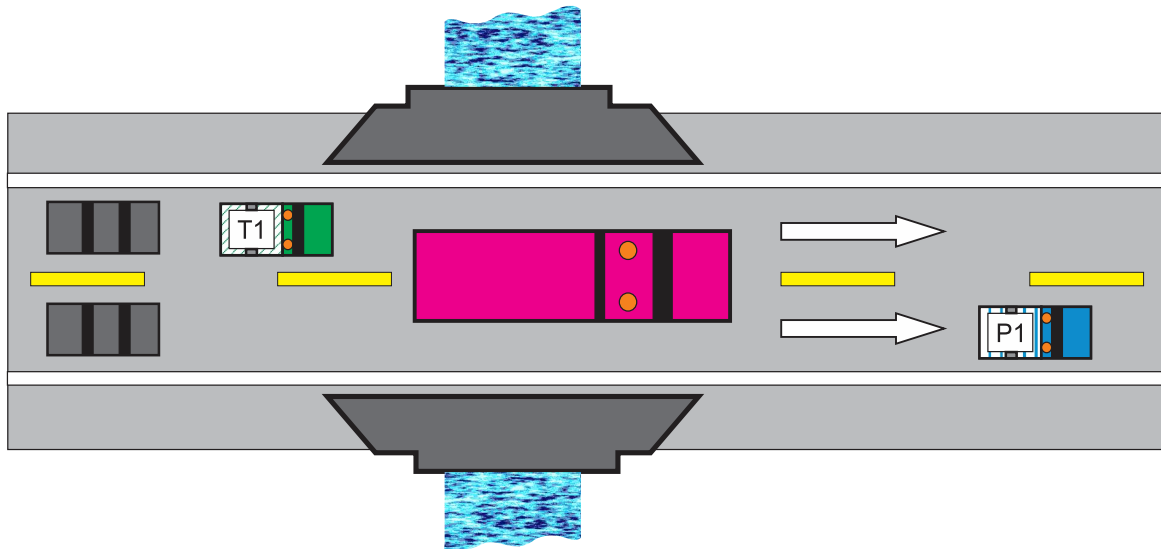
Simplified Multi-Lane Bridges with One Way Traffic - Two Escort Vehicles

If two escort vehicles are required for the move, the First Pilot Vehicle should notify the Load Driver as far in advance as possible of any approaching obstructions.

If the Load must cross and straddle two lanes (or travel down the centreline) of the bridge, the First Trail Vehicle will move left to the inside (passing) lane and block other vehicles from passing. The First Trail Vehicle then informs the Load Driver when it is in the inside (passing) lane.

The Load will then move left to the centre of the bridge (if required in the Permit) and cross the bridge. As soon as the Load and First Trail Vehicle have crossed the bridge, the First Trail Vehicle operator notifies the Load by radio that it is safe to move right back to the outside (travel) lane. Refer to Figure 7.5.

Figure 7.5 Multi-Lane Bridges, One Way Traffic Crossing (not to scale)



After the Load has returned to the outside (travel) lane, the First Trail Vehicle then moves back to the travel (outside) lane behind the Load and releases the traffic.

The First Pilot Vehicle stays ahead of the Load and does not change lanes during this manoeuvre.

7.2 Restricted Sight Two-Lane Highways

Restricted Sight Two-Lane Highway Considerations

Controlling traffic to move Loads through highway segments where sight distances are limited is a challenging process for escort vehicles. Approaching motorists have little advance knowledge or warning that a Load is nearby and where it is located. Traffic control may be required especially if the Load needs to encroach into an oncoming traffic lane to allow it to manoeuvre through these highway segments.

Advantages of Using Three Escort Vehicles for Restricted Sight Escorting Operations

In situations where the sight distance is reduced, including a Second Pilot Vehicle in the escort vehicle group is beneficial. The Second Pilot Vehicle can travel further ahead and provide advance notification to the Load Driver and other escort vehicles of constraints as well as assisting to establish traffic control. The Second Pilot Vehicle can also assume traffic control and some of the communication duties of the First Pilot Vehicle as described below.

At any location where the Load is expected to encroach into an oncoming lane of traffic and traffic control is required to temporarily stop traffic in one or both directions to allow the Load to pass, the Second Pilot Vehicle can assist in finding locations with good lines of sight so that the escort vehicle operator can be seen by approaching traffic.

Simplified Restricted Sight Two-Lane Highways with Two-Way Traffic – Two Escort Vehicles

If a Second Pilot Vehicle is not present, the First Pilot Vehicle should travel well ahead of the Load and communicate with the Load Driver about any restricted sight distance areas, and any approaching traffic in addition to finding safe and visible locations to perform traffic control duties while considering Load manoeuvres.

The Load Driver will rely on communications from the First Pilot Vehicle to know when the Load is approaching a restricted sight distance area. If it is necessary for the First Pilot Vehicle to wait for the Load to arrive before commencing to temporarily close the highway to traffic, it should be done on the shoulder.

Once the First Pilot Vehicle operator has traffic stopped, the First Pilot Vehicle operator will relay information to the rest of the team that may include, but is not limited to, a description of the last vehicle on its way to the Load along with instructions to the First Trail Vehicle if the traffic behind the Load needs to be slowed down or stopped. Refer to Figure 7.6.

Figure 7.6: Restricted Sight - Stopping Traffic For Load Manoeuvring (not to scale)

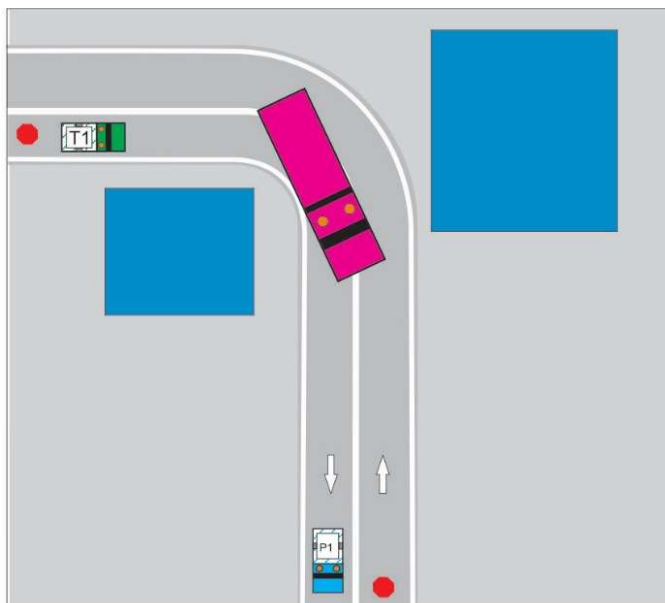
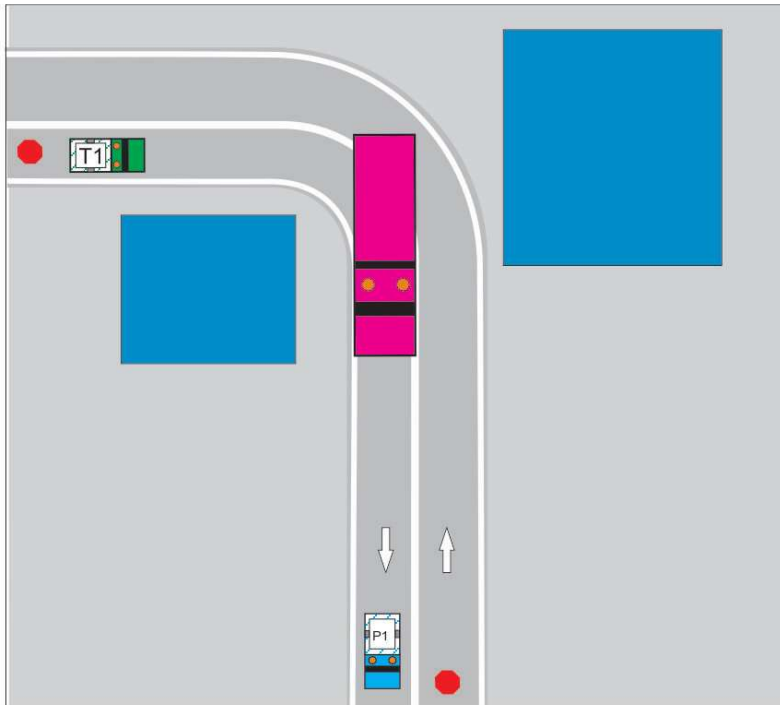
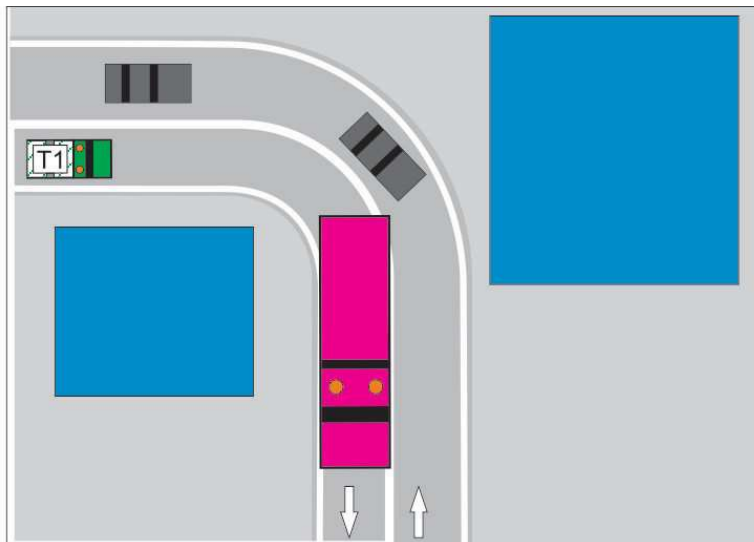


Figure 7.7: Restricted Sight - The Load Proceeds (not to scale)



As soon as the Load clears the restricted sight location, the First Trail Vehicle radios the First Pilot Vehicle. The First Pilot Vehicle verifies if there is sufficient clearance in the oncoming lane for vehicles to pass, then releases traffic. Refer to Figure 7.8.

Figure 7.8: Restricted Sight - Load Returns to Travel Lane and Traffic is Released (not to scale)



Multiple S-Curves and other Compound Restricted Sight Distance Routes

On very curvy stretches of highway, it may be necessary to divide the highway into sections, then perform the traffic control method previously described for each separate section.

In this case, a Second Pilot Vehicle is highly recommended to be on the escort vehicle team, particularly if there are other access points to the highway between the First Pilot Vehicle and the Load. The First Trail Vehicle stops / slows with the Load in addition to assisting the Load in safely moving through each partitioned section.

7.3 Railway Crossings

Railway Crossing Considerations

Any Load must be evaluated for its ability to manoeuvre an at-grade railway crossing to ensure it does not:

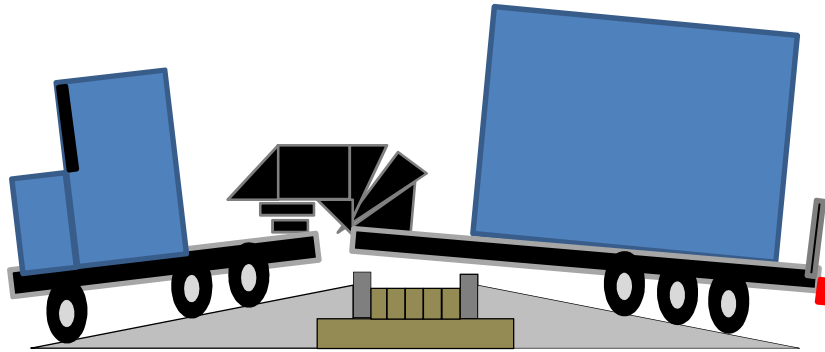
- Become 'high centered', as shown in Figure 7.9;
- Encounter problems resulting from the time it may take for a long Load to clear a railway crossing, particularly near intersections or other restricting highway features.

The approach slope grades are different at each railway crossing. The railway approach slopes should be assessed to ensure the Load can cross them easily, especially if low vertical clearance trailers (lowboys) are being used in a move. These assessments should be completed during a Route Survey.

Common considerations for at-grade railway crossings:

- the Load must be the only vehicle crossing the tracks;
- the maximum Load vehicle speed should be 10 kilometres per hour;
- cross at the centreline of the highway and straddle the axle so that the wheels are at an equal distance from each side of the centerline.

Figure 7.9 Truck and Trailer Crossing Tracks Showing Limited Vertical Clearance Between Trailer and Track



Mandatory Railway Notifications

In Alberta, the Carrier shall notify the Railway Authority to request assistance:

- When it is necessary for railway personnel to temporarily remove, pivot, swing, or realign crossing signs or automatic warning devices;
- When it is necessary for railway personnel to temporarily lift overhead lines;
- When large and/or long Loads cannot make it across the tracks before the signal arms proceed to move downwards.
- When the estimated time for a Load to cross the tracks exceeds seven seconds;
- When the Load may have difficulty in maneuvering or approaching, and/or crossing the track;
- When the Load causes any rail damage.

The Carrier should consult with Railway Authorities to determine if there are any additional crossing requirements prior to crossing any railway tracks.

Railway Warning Devices

Generally, railways install warning signals and lights if:

- The sightlines to approaching trains are obstructed;
- High traffic volume at the crossing location at a given time, or
- If there are other safety or operational concerns.

When no automatic railway warning signals are present, the following table can be used as a guide to determine how much distance the train can travel in 10 seconds at various speeds at the point when highway vehicles (travelling up to 80 kilometers per hour (km/hr.) are crossing the tracks.

Table 7.1: Train Speed vs. Distance Travelled on Flat Railway Grades

Load Highway Speed of 80 km/hr. or Less at the Railway Crossing	Train Speed (km/hr)								
	30	50	60	80	100	110	130	140	160
Distance (m) Travelled by Train in 10 seconds	85	140	170	225	280	310	365	390	445

Note: Excerpt from Alberta Infrastructure Highway Design Guide Figure C-9.2.4.

Trains do NOT stop for any highway vehicles at railway crossings.

Simplified Railway Crossings over Two-Lane Highways with Two-Way Traffic – Two Escort Vehicles

The procedure for crossing an at-grade railway crossing is similar to that for a two-lane two-way bridge crossing discussed in Section 7.1. In the event that the Load is required to wait before crossing, the traffic shall be managed per Short Duration Traffic Control requirements discussed in Section 5.

Simplified Railway Crossings over Multi-Lane Highways with One-Way Traffic – Two Escort Vehicles

The procedure for crossing an at-grade railway is similar to that for a multi-lane (one-way) bridge crossing discussed in Section 7.1. In the event that the Load is required to wait before crossing, the traffic shall be managed per Short Duration Traffic Control requirements discussed in Section 5.

Note: These examples are simplified explanations of what's required of Escort Vehicle Operators.

Section 8: Escort Vehicle and Load Movement Layouts – Intersections

8.1 Driving in Urban Conditions

Intersection Maneuvering Considerations

Movement through an urban area requires additional care and constant communication within the move team. Some additional issues to be considered include:

- An increase in the number and density of height clearance restrictions, such as low wires and signs;
- Pedestrians and cyclists, which may be difficult for the Load Driver to see;
- An increase in activity, including the number of other drivers, private accesses, unexpected obstacles;
- Raised channelization that may include but is not limited to pedestrian islands and landscape treatments;
- Increased traffic volumes building up behind the Load, which may need traffic control management;
- Limited sightlines due to buildings and other structures.

Some urban obstacles may require that the Load be moved temporarily into adjacent lanes or lanes designated for opposing traffic that requires traffic control. Appropriate approvals from the urban municipalities must be in place.

The Load Driver is responsible to ensure the Loads will be able to maneuver intersections without damaging any traffic poles, mast-arms, street lights or highway accessories.

The Permit will specify how many escort vehicles are required in urban areas. The Permit may also require a peace officer to be present for any Load being moved in an urban area.

Obeying Traffic Signs and Signals during Vehicle Escort Operations

Traffic signals must be obeyed by Escort Vehicle Operators when escorting a Load on a route that is controlled by traffic signals.

Stopping for signals may cause the escort vehicles and Loads to become separated for short durations. Escort vehicles and the Load should remain in communication and reduce speed or wait for each other, as necessary, in order to resume normal operations.

If the First and/or Second Pilot Vehicle pass through the intersection, but the Load is required to stop, the First and/or Second Pilot Vehicle that passed the intersection should pull over as soon as possible then resume travel when the Load approaches.

When the First Trail Vehicle is stopped by a red traffic signal light which has been already passed by the Load (when traffic signal light was green), the Load (and First / Second Pilot Vehicle) should proceed at a reduced speed until the First Trail Vehicle has caught up to the group.

The escort vehicle drivers must be alert and advise each other and the Load Driver to drive in such a way to avoid sudden stops at traffic signals.

8.2 Simplified Intersection Crossings

Simplified Intersection Crossings – Three Escort Vehicles

The Load and the Trail Vehicle stop in the travel lane just before the intersection.

The First Pilot Vehicle positions itself in the travel lane past the intersection at a sufficient distance that allows the Load to cross the intersection and completely return to the travel lane.

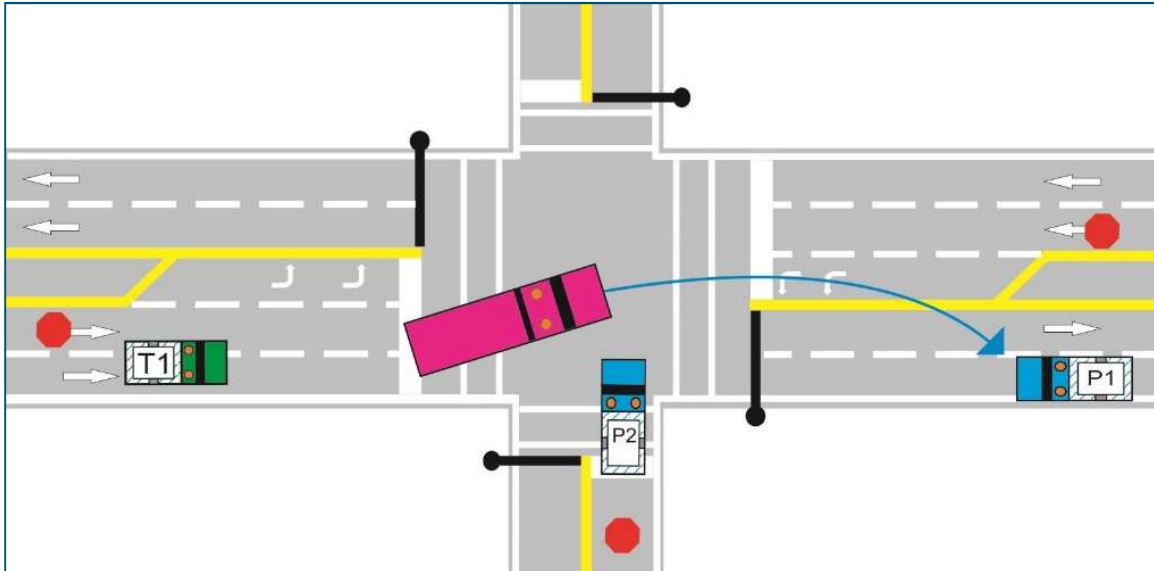
The Second Pilot Vehicle positions to stop traffic from entering the intersection within the inside turn of the Load.

The First Trail Vehicle stays in position and stops traffic from passing the Load from behind.

After the escort vehicles are positioned, the First Pilot Vehicle operator exits the vehicle and stops traffic (flagging) that is approaching from the oncoming lane.

The traffic must be stopped at all entry points to the intersection before the Load can cross. Refer to Figure 8.1.

Figure 8.1 Intersection Pass Through or “Zig-Zag” Crossing with Three Escort Vehicles (not to scale)



The Load crosses when the traffic light is green, goes around the traffic signal lights and fully returns to the travel lane on the other side of the intersection.

The First Pilot Vehicle operator releases the oncoming traffic and returns to the vehicle. The Second Pilot Vehicle releases traffic and positions itself in front of the Load. The First Trail Vehicle waits for the signal to turn green, follows the Load and all proceed to the next intersection.

8.3 Simplified Intersection Left Turns with Limited Visibility

Simplified Intersection Left Turns with Limited Visibility - Three Escort Vehicles

The Load and the Trail Vehicle stop on the travel lane just before the intersection.

The Second Pilot Vehicle positions itself at a location at the end of the Load's turn at a sufficient distance that allows the Load to turn, pass through the oncoming lane to avoid the traffic signal mast arm, and completely return to the travel lane at the endpoint of the left turn. The Second Pilot Vehicle operator exits the vehicle and begins to stop traffic in the oncoming lane at that position.

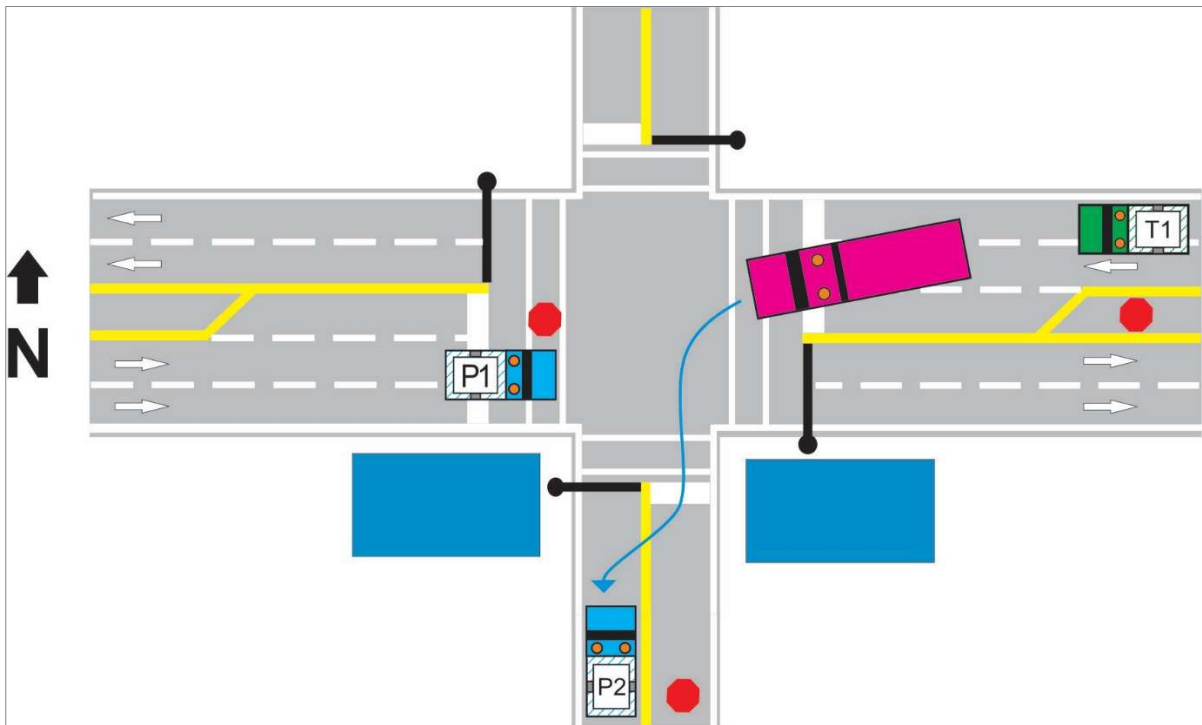
The First Pilot Vehicle crosses the intersection, and completes a U-Turn where it is safe to do so and positions itself in the oncoming lane at the intersection and begins to stop traffic.

The First Trail Vehicle continues to stop traffic from passing the Load from behind.

After the escort vehicles are positioned and are stopping traffic, the First Pilot Vehicle operator exits the vehicle and stops traffic (flagging) that is approaching from the west while leaving the First Pilot Vehicle to act as a traffic control device to continue stopping traffic.

The traffic must be stopped at all entry points to the intersection before the Load can cross. Refer to Figure 8.2.

Figure 8.2: Left Turn with Limited Visibility at an Intersection (not to scale)



The Load turns when the traffic light is green, enters the oncoming lane in the turn then fully positions itself behind the Second Pilot Vehicle in the travel lane at the end of the turn.

The First Pilot Vehicle operator releases the oncoming traffic and returns to the vehicle. The Second Pilot Vehicle releases traffic and positions itself in front of the Load. The First Trail Vehicle waits for the signal to turn green, follows the Load and all proceed to the next intersection.

8.4 Simplified Intersection Right Turns

Right Tail Swing Considerations

When a Load needs to make a right turn, it may need to make a wide turning arc to ensure the trailer does not run over the corner of the intersection. The Load begins the turn by veering to the left (sometimes crossing over either an inside passing lane, a dedicated left turn lane, an oncoming lane) then turns right (with the trailer following) to enter the highway to the right. Other vehicles behind the Load mistake this turning intent and start to move into the outside (travel) lane. The First Trail Vehicle should therefore be positioned just outside the projected area under the turning arc to prevent traffic from doing this.

Furthermore, a Load with a larger rear overhang may swing out further than the forward movement of the Load, and overhang may project into oncoming lanes towards the end of the turn. In congested areas, the Load's tail swing may need traffic control to protect surrounding traffic and roadside infrastructure such as trees and signs. Escort Vehicle Operators need to anticipate the need to protect the Load, surrounding street fixtures and other traffic, and adjust their positions accordingly.

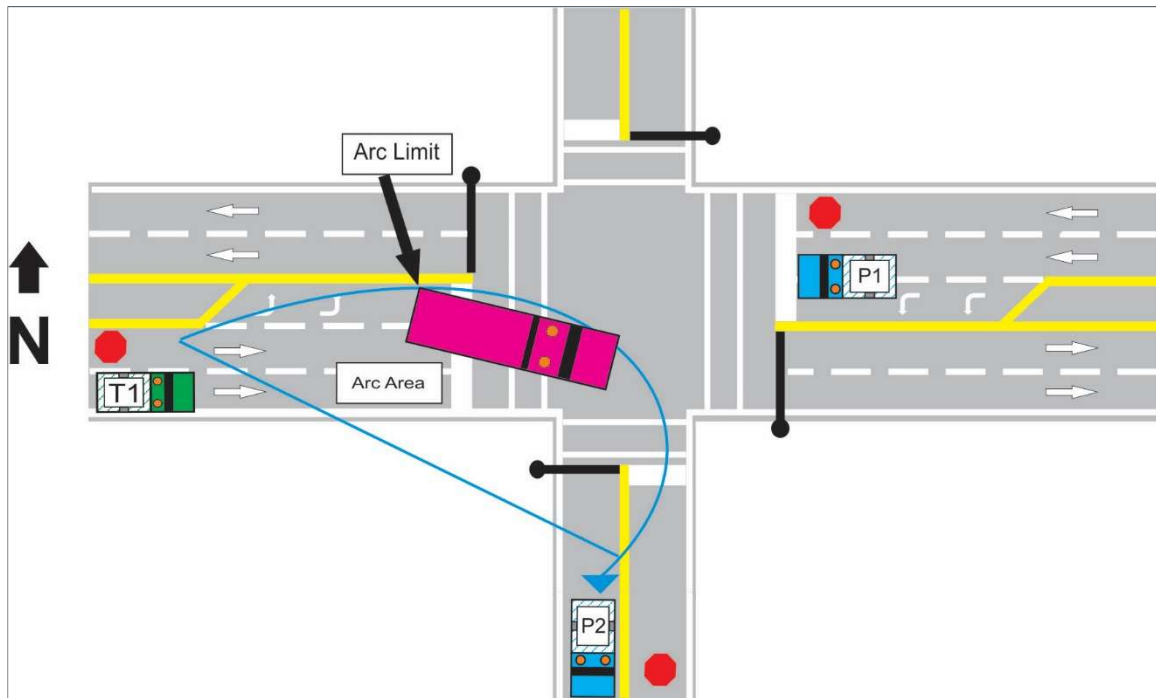
If only one escort vehicle is used, where it positions itself in advance of an intersection depends on the Load characteristics. Typically the escort vehicle will be in the First Pilot Vehicle position ahead of the Load unless the Load is very long and not very wide, in which case the escort vehicle will likely be in the First Trail Vehicle position.

Permit Condition or regulatory requirement states position and how many escort vehicles are required. A minimum of two escort vehicles (the First Pilot Vehicle and First Trail Vehicle) is usually required to assist the Load in manoeuvring intersection turns.

Simplified Intersection Right Turns – Three Escort Vehicles

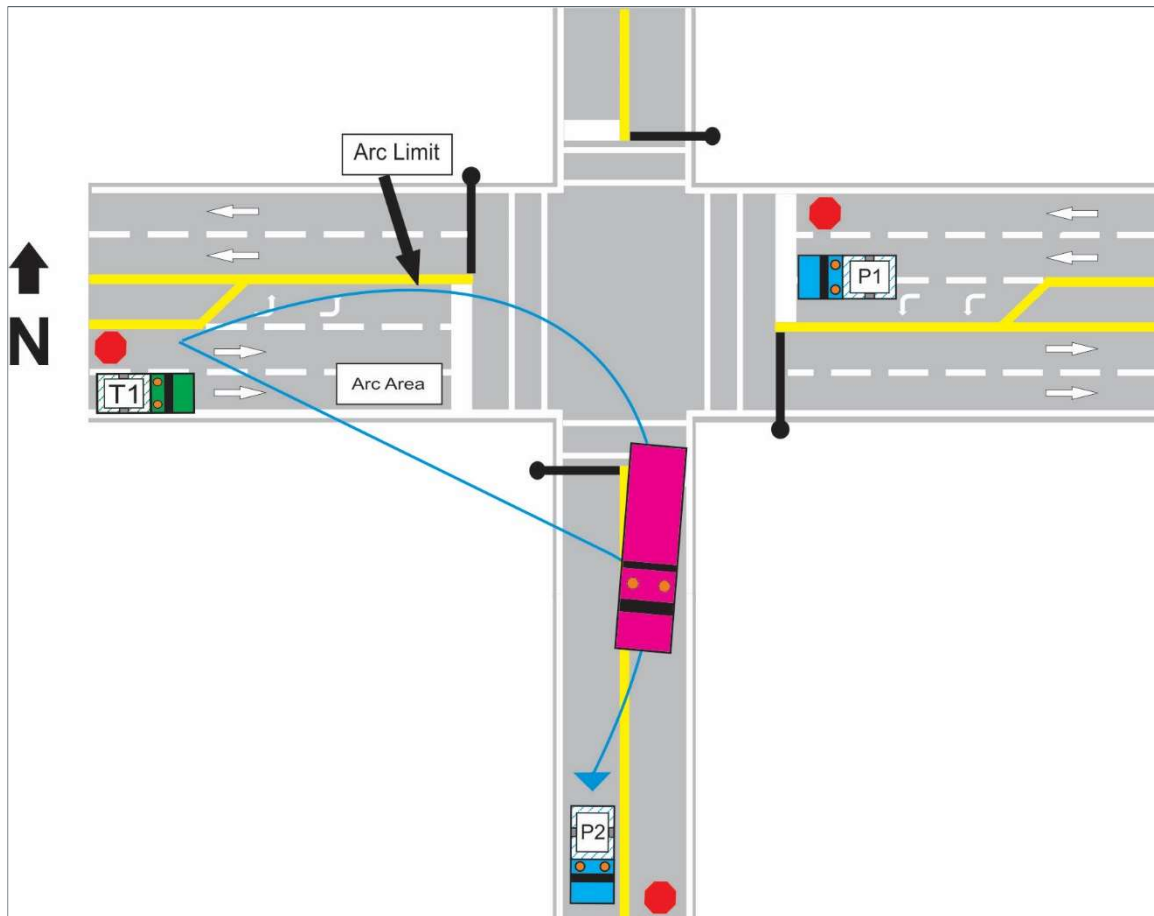
When a Load is ready to turn right the First Trail Vehicle stays in the travel (outside) lane and then stops traffic approaching from behind the Load. The First Pilot Vehicle then stops traffic approaching from two legs of the intersection above the turning arc. The Second Pilot Vehicle also stops traffic at a location where the Load can complete its turn and fully position itself in the appropriate travel lane. All three escort vehicles wait for traffic to clear the intersection before signalling the Load to proceed with the turn. Refer to Figure 8.3.

Figure 8.3: Right Turn Showing Arc Area and Arc Limit – Three Escort Vehicles (not to scale)



When the Load begins to swing wide to begin its turn, the First Trail Vehicle continues to keep traffic from moving too close to the corner. Once the Load is into the turn to the right, the First Trail Vehicle watches to the left, visually following the outer rear corner of the Load, and it's tailswinging through the turn, and bringing attention to the Load, other escort vehicles and surrounding traffic to any encroachment(s) into oncoming traffic lanes or possible impacts to any obstacles. Refer to Figure 8.4.

Figure 8.4: Clearing Intersection with Second Pilot Making Final Adjustments (Not to scale)



Once the Load has completed its turn and is fully positioned into the travel lane of the highway where it has turned, the traffic is released by all three escort vehicles.

8.5 Simplified Intersection Left Turns

Left Tail Swing Considerations

In the left turn case, the turning arc is smaller. The arc area is also smaller but there is still a concern about trapping vehicles within it.

Simplified Intersection Left Turns – Three Escort Vehicles

For a left turn of the Load, the First Trail Vehicle starts in the travel (outside) lane by stopping oncoming traffic approaching from behind at a reasonable distance behind the Load.

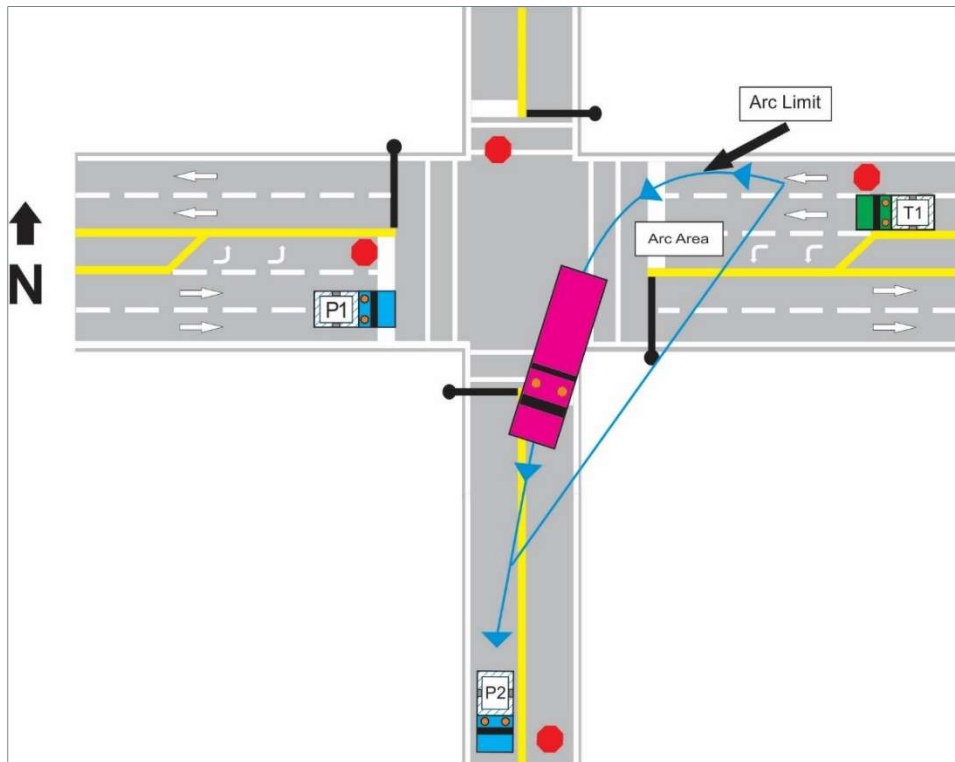
The First Pilot Vehicle then stops traffic from two legs of the intersection above the Load's arc.

The Second Pilot Vehicle also stops traffic at a location where the Load can complete its turn and position itself in the travel lane. All three escort vehicles wait for traffic to clear the intersection before signalling the Load to proceed with the turn.

When the Load begins to veer leftwards to begin its turn and the rear overhang swings wide in its arc during the turn, the First Trail Vehicle keeps the other traffic from moving in too close within the arc area created by the Load.

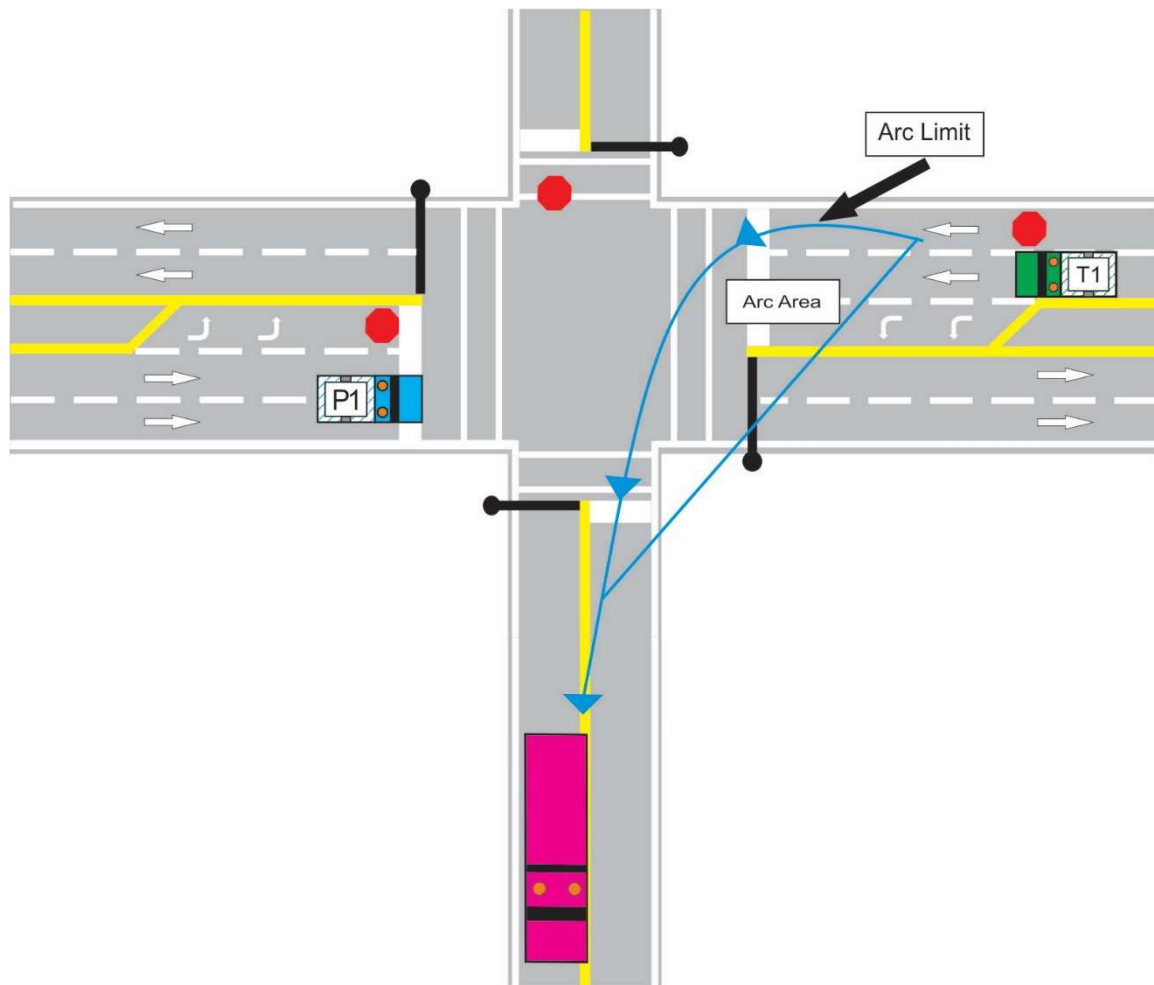
Once the Load is into the turn towards the left, the First Trail Vehicle watches to the right, visually following the outer rear corner of the Load and its tailswing through the turn and bringing attention to the Load, other escort vehicles and surrounding traffic to any encroachment(s) into oncoming traffic lanes or possible impacts to any obstacles. Refer to Figure 8.5.

Figure 8.5: Midpoint of the Left Turn Showing Smaller Arc (not to scale)



Once the Load has completed its turn and is fully positioned into the travel lane of the highway where it has turned, the traffic is released by all three escort vehicles. Refer to Figure 8.6.

Figure 8.6: Clearing Intersection Just Before All Traffic is Released (not to scale)



8.6 Simplified Roundabout Maneuvers

Roundabout Turn Considerations

Alberta Transportation has designed roundabouts located on numbered highways to accommodate the same design vehicles as used for the design of any other intersections used on Alberta's highways. When Loads are required to travel through roundabouts, these Loads may be required to straddle both lanes of the roundabout, including travelling on the truck apron, if needed.

If the Carrier moving the Load on this route has concerns that the Load may have difficulty maneuvering through the roundabout, they can provide a schematic of the Loaded vehicle configuration to the Central Permit Office with a request to check the vehicle configuration with that of the roundabout's design, to be sure the Load will fit. In the unlikely occurrence the Load will not be able to manoeuvre through the round-about, an alternate route will have to be proposed by the Carrier for approval by the Central Permit Office.

All Alberta Transportation roundabouts are designed with a truck apron, which is a marked and raised section of pavement around the central island that acts as extra space where a large vehicle trailer can "track." The back wheels of the overdimension / overweight Load's trailer can ride up on the truck apron so the Load can easily complete the turn. This section of the roundabout is specifically for the use of loaded trailers and is deliberately raised as part of the design as a means to discourage its use by regulated vehicles.

In Alberta, most numbered highway roundabouts will have a minimum two lanes (per direction) on the highway legs of the roundabout. Therefore, at these multilane roundabouts, Loads may occupy the entire circular highway to travel through the roundabouts. Loads should straddle both lanes prior to entering the roundabout, to clearly show the Load will need all lanes to travel through the roundabout.

Simplified Roundabout Maneuvers – Three Escort Vehicles

A Load is being escorted through a single lane roundabout by a First Pilot Vehicle, A Second Pilot Vehicle, and a Trail Vehicle.

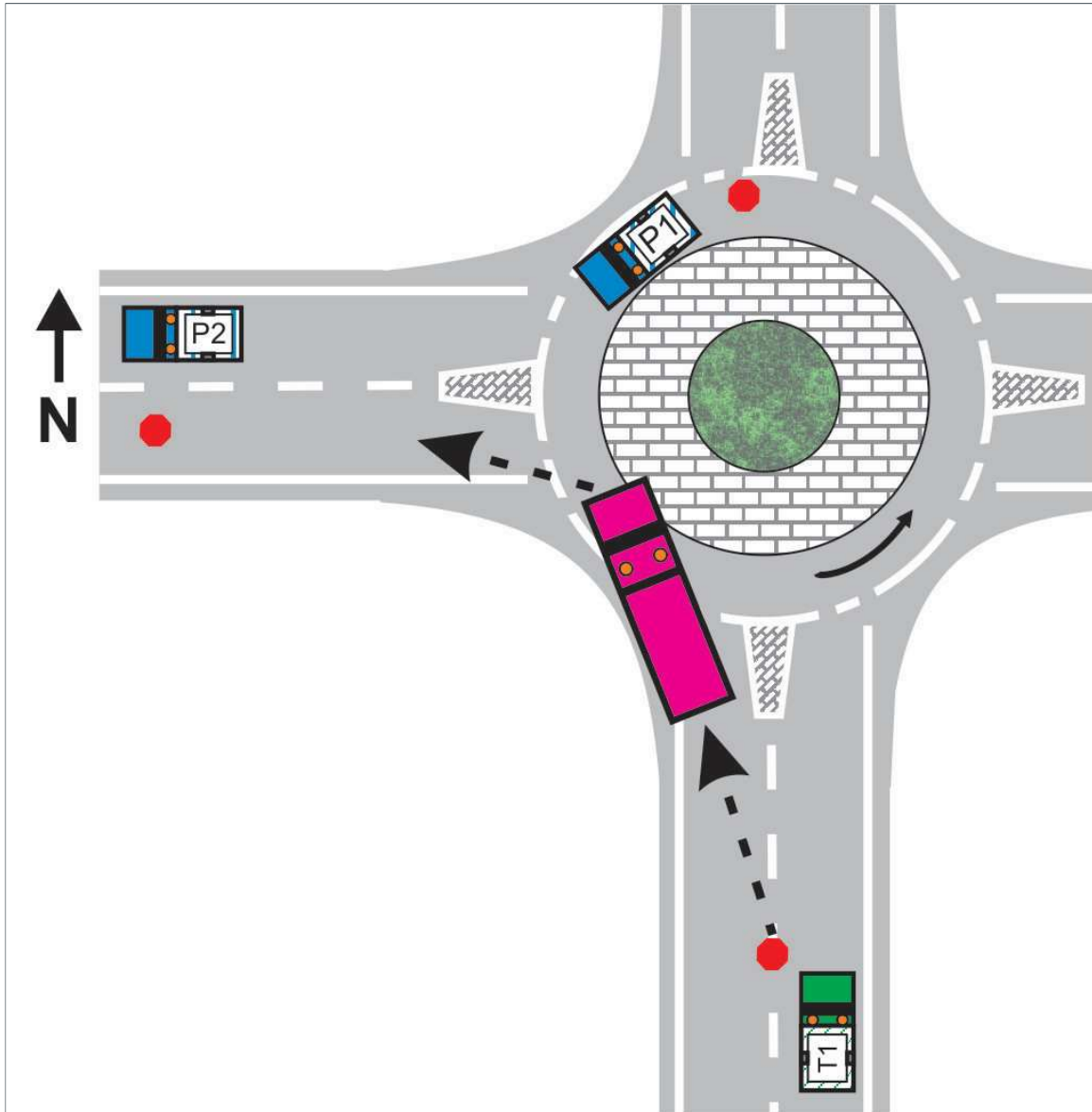
The Second Pilot Vehicle is ahead of the First Pilot Vehicle and stops traffic at a position at the end of the turn so that the Load can fully return to the travel lane after counterflowing through the roundabout.

The First Pilot Vehicle drives around the roundabout to the northern entrance, then stops traffic entering the roundabout from the north and from the east.

The First Trail Vehicle continues to stop traffic at the southern entrance from entering the roundabout until the Load is fully in the west travel lane.

Refer to Figure 8.7

Figure 8.7: Urban Roundabout Cleared then Closed – Counterflow in the Roundabout (not to scale)



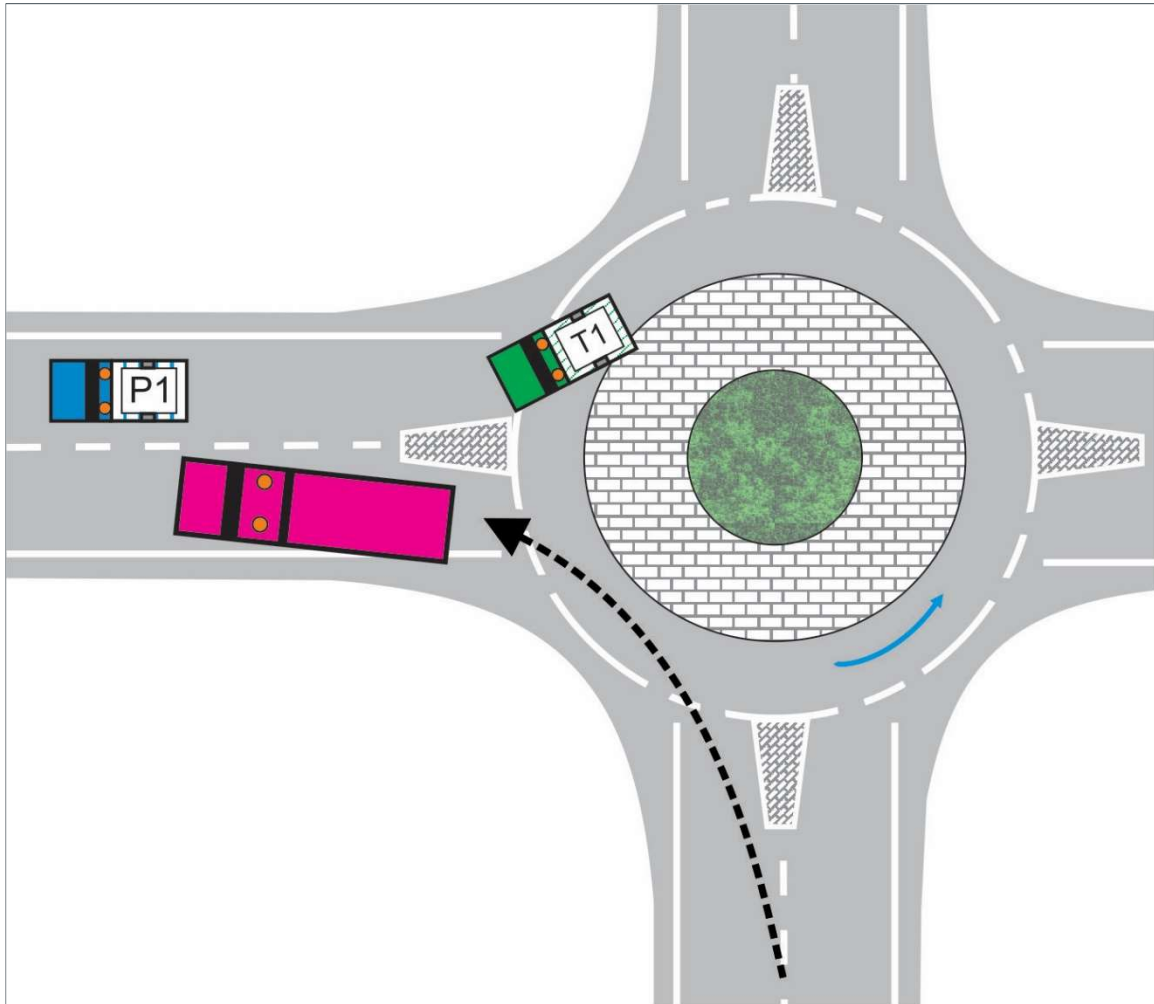
The Second Pilot Vehicle has gone ahead.

The First Pilot Vehicle is beginning to move ahead of the Load as the Load completes its turn.

The First Trail Vehicle has moved around the roundabout and is beginning to position itself behind the Load.

Refer to Figure 8.8.

Figure 8.8: Exiting the Roundabout Trail (not to scale)



The Second Pilot Vehicle is ahead of the First Pilot Vehicle.

8.6 Simplified Interchange Maneuvers

Cloverleaf Turn and Merge Considerations

When approaching an interchange on-ramp, it is important the move team check the ramp geometry in advance and is familiar enough with the interchange on-ramp to decide where to position the escort vehicle(s). In most cases, the escort vehicle(s) will protect the rear of the Load as it moves onto the highway it is joining.

In some cases it may be useful to have the First Pilot Vehicle, Second Pilot Vehicle and First Trail Vehicle escort the Load through the interchange so the First Pilot Vehicle can provide advance warning of the approaching Load. Good communication within the move team is essential.

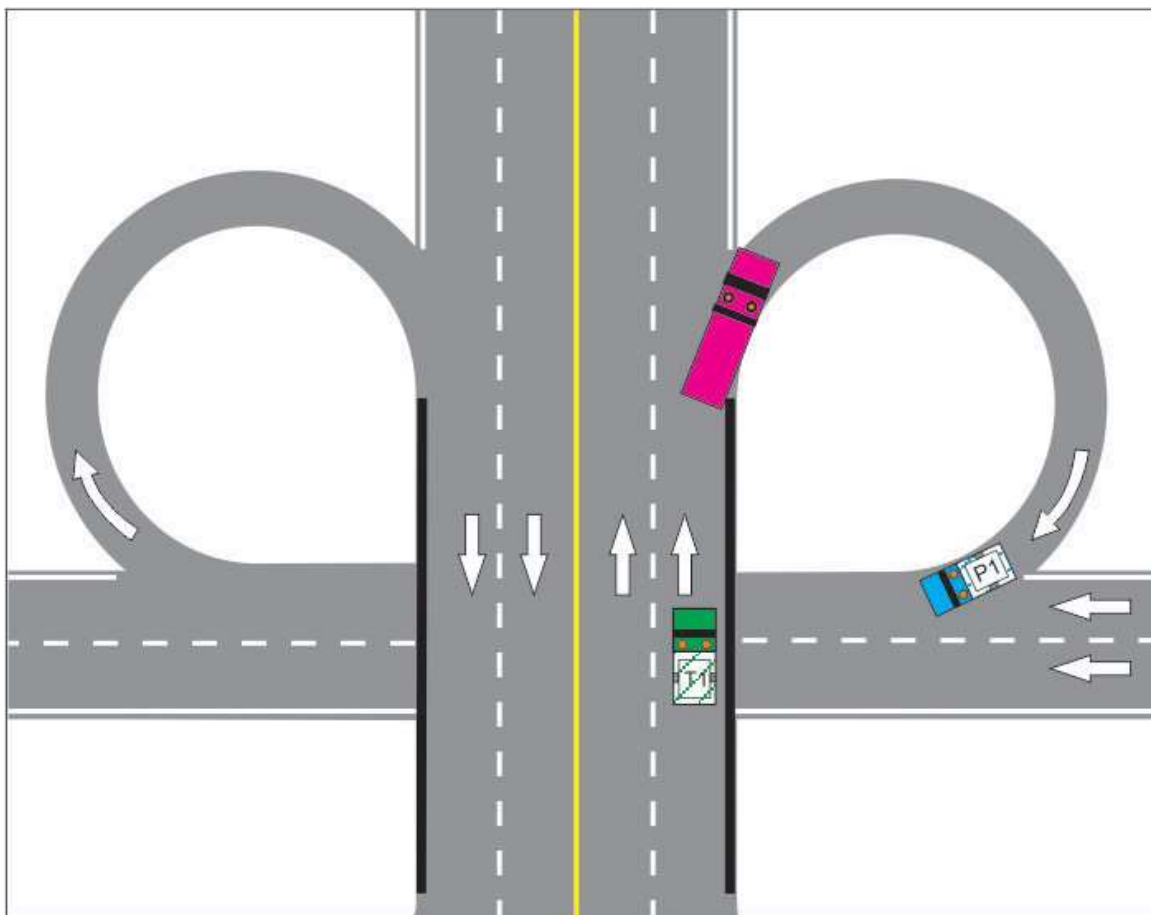
Quite often, cloverleaf interchange ramps are constructed with compound curves (arc curves changing sizes during the turn) due to space limitations, meaning the tightness of the arc and elevation of the curve varies as the Load moves through it.

The Load dimensions should be checked against the geometry of the on-ramp during the route survey.

Simplified Cloverleaf Turns and Merges - Two Escort Vehicles

A two vehicle team escorting a Load into a cloverleaf is shown in Figure 8.9.

Figure 8.9: Cloverleaf Style Interchange – The Load Enters the On-Ramp (not to scale)

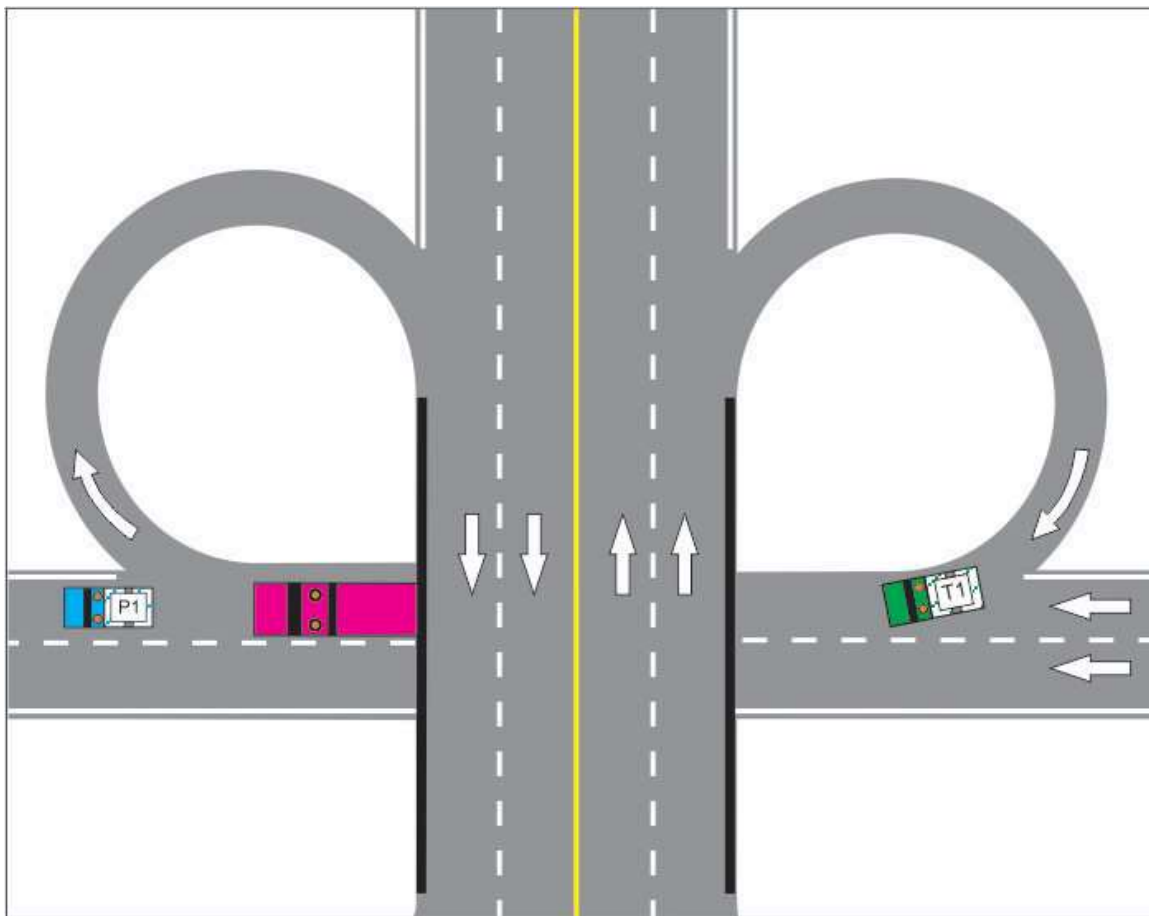


In a large cloverleaf interchange, it is also common to find one stream of traffic merging in while another stream of traffic is merging out, known as merge/diverge lanes or “weaving” lanes.

For Loads, extra caution is required from the escort vehicles when protecting the Load as it is enters the merge/diverge lane from the on-ramp from other vehicles also entering the merge/diverge lane from the travel lane of the highway.

When merging into a travel (outside) lane from a weaving lane, the First Pilot Vehicle enters the travel (outside) lane and moves ahead, the Load enters into the weaving lane and waits for the First Trail Vehicle to first block the traffic in the travel (outside) lane before entering. Refer to Figure 8.10.

Figure 8.10: The Load Enters the Weaving Lane (not to scale)



Note: These examples are simplified explanations of what’s required of Escort Vehicle Operators.

Section 9: Escort Vehicle and Load Movement Layouts – Constrictions

9.1 Constriction Point Considerations

Vertical Height and Side Clearance Considerations

Clearances can vary under a structure. Use caution when approaching an overpass, underpass or any other type of structure extending over the highway. Communicate clearly with the Load Driver to ensure the Load is positioned in the correct lane.

For Loads with heights that are close to the height clearance of the bridge overpass/underpass or other infrastructure clearance restrictions along the route, checking clearance heights with a laser measure or other device may need to be considered. Checking clearance heights is particularly important at bridges, overpasses, underpasses, or utility lines that have variable height clearances depending on the lane selected and direction of travel.

Highway accessories that may need to be checked along the route for clearances, both vertical and horizontal, include, but are not limited to signs, light poles, power poles, wires, barriers and any device(s) that are added to the highway infrastructure as part of maintenance and construction.

Construction zones may also have temporary low clearance heights, narrow lanes, detour alignments and other conditions that need to be considered when moving a Load. This information is available through 511 Alberta.

Travelling Under Utility Lines

Utility lines can be especially hazardous as many of the lines that cross highways are high voltage systems.

The handling of telephone, cable or power lines must be left to the utility companies. When measuring, never make physical contact with any overhead utility lines. Escort Vehicle Operators should coordinate with utility companies to control traffic when lifting or moving lines is necessary.

The Carrier is responsible for contacting the affected utility company for all Loads exceeding the heights listed in Section 6.

All moves in this category must be done in accordance with the direction given by the utility company.

For the protection of all users of the highway system including those involved in the move, the following precautions are recommended:

- Notify utility companies when working near lines when clearances are not known or where clearances need to be adjusted to get the Load through;
- Treat all wires and electrical equipment that are encountered during the move to be energized. Always check with the utility company involved regarding the status of the system (de-energized or not, etc.).

Positioning of the Load to Maximize Vertical and Side Clearances

The Escort Vehicle Operators should communicate clearly with the Load Driver to ensure that the Load is positioned in the lane at a location that has the maximum vertical clearance above and maximum horizontal clearances on each side of the Load.

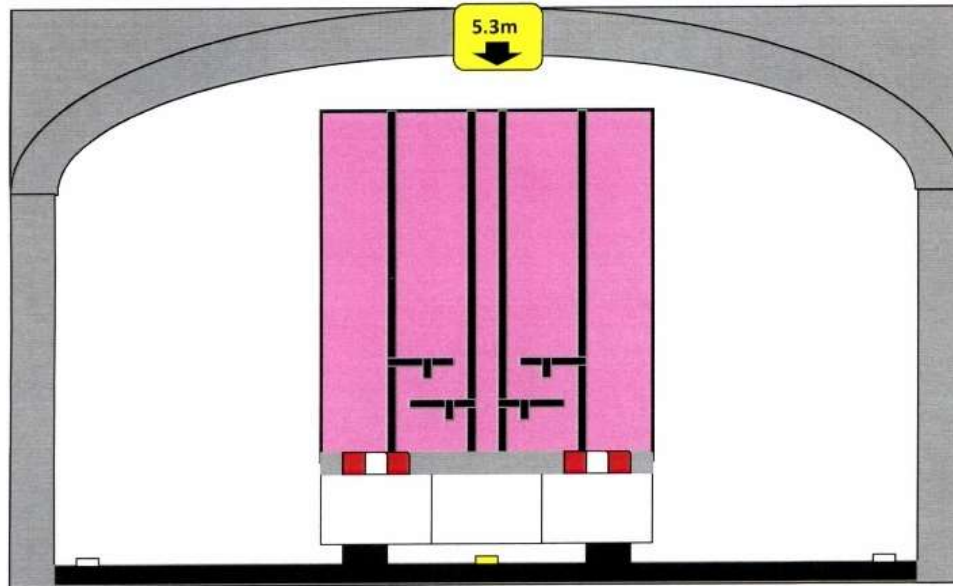
The Escort Vehicle Operator must consider the time and distance required prior to reaching the bridge underpass / overpass in order to position the Load to pass or manoeuvre around any obstructions. The Load should:

- start from travel lane, move to position so overhead structure will be cleared;
- travel under the structure, and;
- return to travel lane of the highway.

The Escort Vehicle Operators would use a similar approach to traffic control to that of crossing a two-lane two-direction highway bridge described in Section 7.1.

To avoid the bridge structure in the underpass, the Load moves to the middle of the highway to travel under the overpass / underpass where there is the maximum amount of vertical clearance. Refer to Figure 9.1.

Figure 9.1: Load Moving to Adjust to Variable Bridge Clearance Heights (not to scale)



9.2 Simplified Maneuvering for Shoulder Obstacles – Two Lane Highways

Obstacle Maneuvering Considerations

Sometimes shoulder space is limited by structures including supports for railway overpasses, bridge railings, and signs. In some locations, it's possible to encounter natural constriction points such as rock outcroppings or steep grades. Shoulder areas may be narrow, and when a vehicle, pedestrian, cyclist or other obstruction is occupying the right shoulder, a Load may need to move to the left to avoid the obstacle, vehicle or pedestrian.

One very important role of the First Pilot Vehicle is to communicate to the Load Driver and First Trail Vehicle about upcoming obstacles, vehicles or pedestrians, so that the Load and the First Trail Vehicle can react by adjusting speed and positioning as necessary. The Escort Vehicle Operators must be clear and descriptive about the situation to be encountered.

In some cases, it may be necessary to stop the Load and begin flagging operations to allow the Load to pass through.

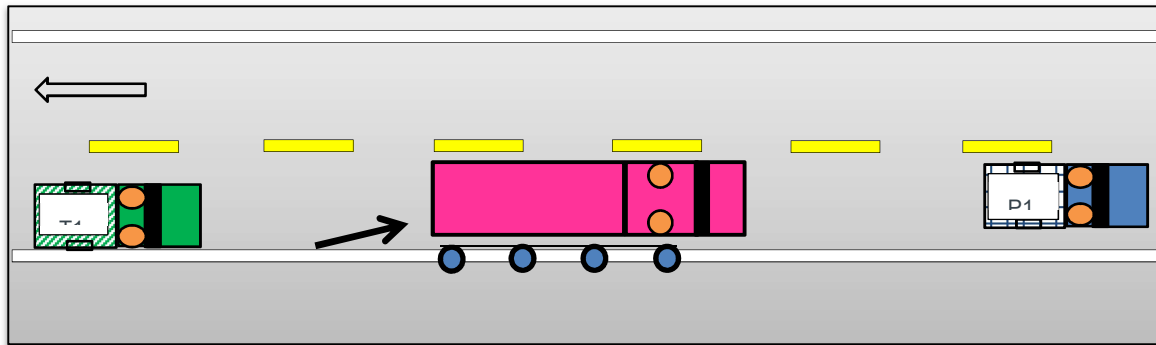
Simplified Two-Lane Highway Obstacle Passing – Two Escort Vehicles

Typically, the Load travels as far to the right as possible while occasionally correcting for the highway geometries and obstacles.

When a roadside hazard or obstacle is observed, the First Pilot Vehicle advises the Load Driver when the Load can safely move around the obstacle without crossing over the centreline of the highway.

The Load moves to the left as needed to avoid the the hazard or obstacle. The First Trail Vehicle positions to see around the right side of the Load and advises the Load Driver when the object is cleared. Once an obstacle is cleared, the escort vehicles and the Load return to their travel positions. Refer to Figure 9.2.

Figure 9.2: Highway Obstacle (Guardrail) Correction Positioning (not to scale)



Simplified Two-Lane Highway Obstacle Passing Using Oncoming Lane – Two Escort Vehicles

Should crossing into the oncoming traffic lane be required by the Load to pass the obstacle:

- The First Pilot Vehicle will proceed past the obstacle and stop at a location that has:
 - Clear sightlines for traffic to see the flagperson (in both directions);
 - Sufficient distance in the oncoming lane for the Load to manoeuvre around the obstacle;
 - Sufficient distance for the Load (after passing obstacle) to re-position itself into the travel lane.

- At that location, the First Pilot Vehicle operator exits the vehicle and undertakes traffic control duties to stop oncoming traffic;
- The First Trail Vehicle stops traffic approaching the rear of the Load from passing the Load;
- The Load:
 - Enters the oncoming lane from its travel lane;
 - Goes around the obstacle, and;
 - Returns and repositions itself in its travel lane.
- Once the Load has repositioned itself in its travel lane, the First Pilot operator releases traffic;
- The First Trail Vehicle catches up with the Load (with traffic behind) and everyone proceeds.
- Traffic queued behind Load is to be cleared as outlined in Section 6.3.

9.3 Simplified Maneuvering for Shoulder Obstacles – Multi-Lane Highways

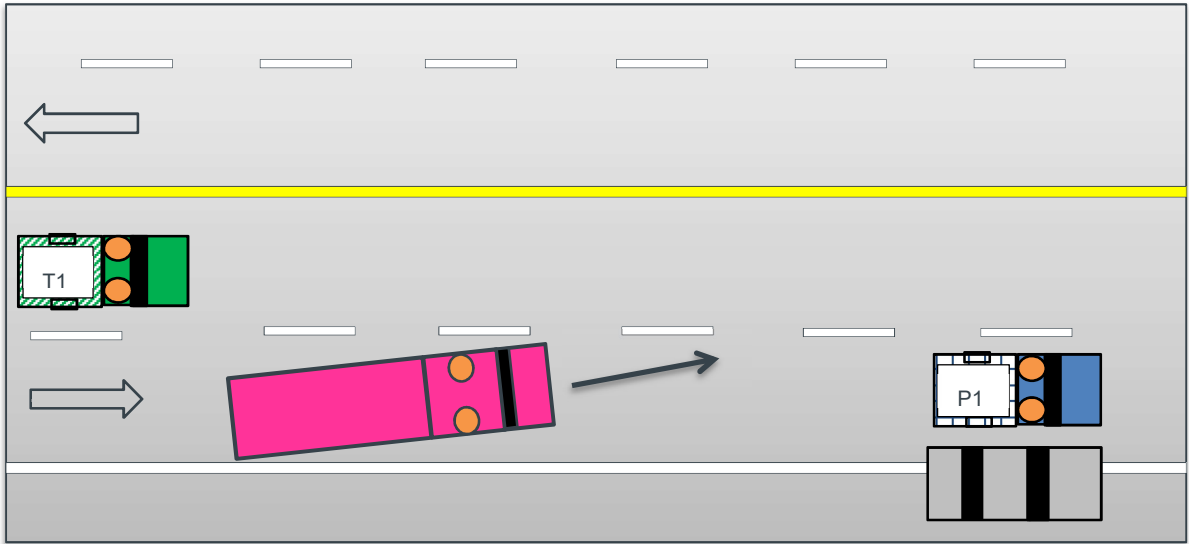
Simplified Multi-Lane Highway Obstacle Passing – Two Escort Vehicles

When the First Pilot and First Trail Vehicles are escorting a Load on a multi-lane highway, the First Pilot Vehicle communicates to the Load Driver and the First Trail vehicle that an obstacle has been located on the shoulder and is being approached by the Load.

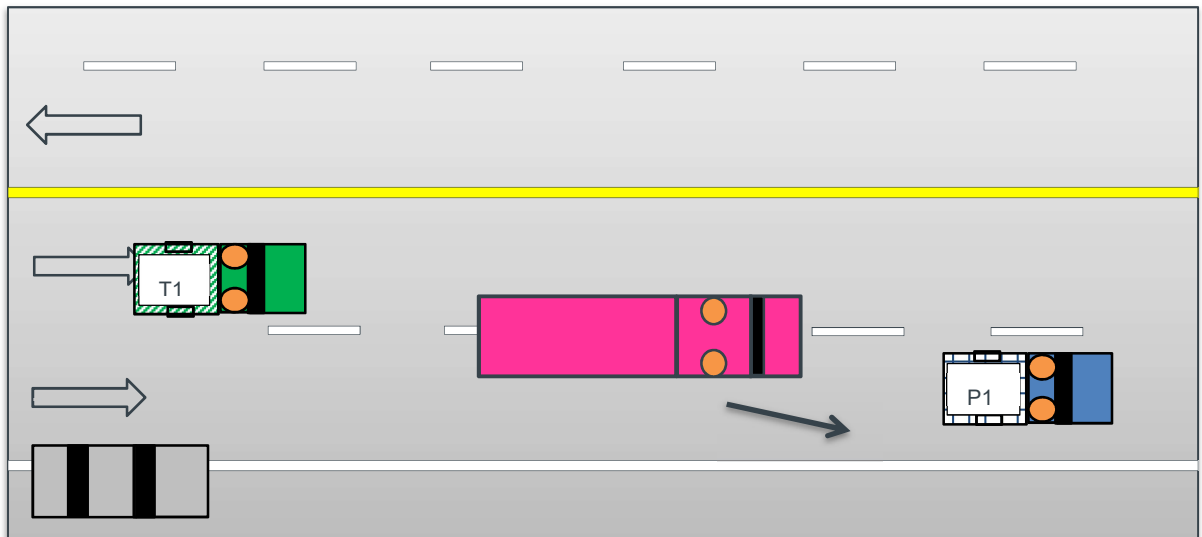
The First Trail Vehicle initially moves left to the inside (passing) lane to block traffic, then the Load moves left into the passing (inside) lane as far as required (without crossing the centerline) to avoid the obstacle and the First Pilot Vehicle stays in the travel (outside) lane. Refer to Figure 9.3.

When the Load passes the obstacle, it returns to the outside (travel) lane after being advised by the First Trail Vehicle that is safe to do so. The First Trail Vehicle then returns to the travel (outside) lane. Refer to Figure 9.4.

Figure 9.3: Obstacles on The Shoulder – First Trail Vehicle Stopping Traffic (not to scale)



9.4: Obstacles on The Shoulder – Load Returning to the Travel Lane (not to scale)



9.4 Vehicle Inspection Stations

Vehicle Inspection Station Maneuver Considerations

Vehicle Inspection Stations are located throughout the province; some are staffed by Transport Officers, others are not.

If a Vehicle Inspection Station's lights are flashing, all commercial vehicles weighing over 4,500 kilograms must report to the Vehicle Inspection Station to be weighed. A Permit Condition may also require the Load to be weighed at a certified Vehicle Inspection Station and be reported to the Central Permit Office prior to crossing any bridges.

If there are any questions, please contact the Central Permit Office for information.

The Loads may be axle weighed and/or required to be parked on-site for inspection. Follow the directions shown on the scale traffic control sign or as directed by an Officer.

Escort vehicles should accompany the Load they are escorting through the Vehicle Inspection Station and re-enter the highway together in the appropriate positioning.

When two escort vehicles are escorting the Load, the First Pilot Vehicle advises the group that a Vehicle Inspection Station is being approached. The First Trail Vehicle will begin the exit process by slowing down the traffic behind the Load in the travel (outside) lane to allow the Load and the First Pilot Vehicle to slow down and begin exiting the highway.

The First Pilot Vehicle, the Load and the First Trail Vehicle proceed off the highway on the access road that leads to the Vehicle Inspection Station. The First Pilot Vehicle will precede the load and wait for the Load to complete weighing/inspection. The First Trail Vehicle will use the bypass lane and wait for the Load to be weighed. The First Trail Vehicle stops traffic behind the Load until the Load is finished being weighed.

After the Load is weighed, the First Pilot Vehicle, the Load, and the First Trail Vehicle leave the Vehicle Inspection Station and proceed to the acceleration lane to return to the highway. The merging process of the First Pilot Vehicle, Load, and First Trail Vehicle is similar to what is shown in Figure 8.10.

There are several different configurations of Vehicle Inspection Stations in Alberta. They should be investigated as part of the Route Planning to ensure the Load can pass through.

Note: These examples are simplified explanations of what is required of Escort Vehicle Operators.

Section 10: Resources

10.1 Acts and Regulations

- The Alberta TSA
www.qp.alberta.ca/documents/Acts/T06.pdf
- Alberta TSA Regulation 315/2002 (Commercial Vehicle Dimension and Weight)
www.qp.alberta.ca/documents/Regs/2002_315.pdf
- Alberta TSA Regulation 304/2002 (Use of Highway and Rules of the Road)
www.qp.alberta.ca/documents/Regs/2002_304.pdf
- Alberta TSA Regulation 122/2009 (Vehicle Equipment)
www.qp.alberta.ca/documents/Regs/2009_122.pdf
- Alberta TSA Regulation 254/2004 (Traffic Control Device)
www.qp.alberta.ca/documents/Regs/2004_254.pdf
- Alberta TSA Regulation 121/2009 (Commercial Vehicle Safety)
www.qp.alberta.ca/documents/Regs/2009_121.pdf
- Alberta Occupational Health and Safety Code Part 40
www.work.alberta.ca/documents/WHS-LEG_ohsc_2009.pdf

10.2 Forms and Registries

- Permits and Conditions
www.transportation.alberta.ca/2737.htm
- Road Ban Registry, Road Restrictions, Road Bans and Vertical Clearances
www.transportation.alberta.ca/522.htm

10.3 Manuals and Guidelines

- Traffic Accommodation in Work Zones Alberta Transportation
www.transportation.alberta.ca/597.htm
- Alberta Highway Geometric Design Guide
www.transportation.alberta.ca/951.htm
- Alberta Highway Design Guide and Supplementals (Rev July 2013) Alberta Transportation
www.transportation.alberta.ca/3451.htm
- ISED-ISDE2366: Mobile Radio Station Licence Application
www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf06052.html

- Alberta Guide for Regulated Weights and Dimensions of Common Vehicles and Equipment
www.transportation.alberta.ca/4777.htm
- Alberta Guide on How to Turn Structures Equipped with Rotatable Bases
www.transportation.alberta.ca/Content/docType233/Production/87ProceduresForSignalsWithRotatableBases.pdf
- Alberta Guide to the High Load Corridor
www.transportation.alberta.ca/3192.htm
- Alberta Guide to the Extended Vehicle (Long Combination Vehicle) Corridor
www.transportation.alberta.ca/3191.htm
- Canada Guide to resource road channel assignments
www.ic.gc.ca/eic/site/smt-gst.nsf/eng/home
- Guide for Canadian Standards for Safety Apparel & Their Applicability
www.ccohs.ca/oshanswers/prevention/ppe/high_visibility.html
- Spectrum Management and Telecommunication branch at ISED
www.ic.gc.ca/eic/site/smt-gst.nsf/eng/home

10.4 Contacts

- Alberta Justice and Solicitor General-Commercial Vehicle Enforcement
www.solqps.alberta.ca/programs_and_services/public_security/Pages/CommercialVehicleEnforcement.aspx
- 511 Alberta
www.511.alberta.ca
- Central Permit Office at
www.transportation.alberta.ca/2737.htm
- Construction Safety Association
www.youracsa.ca
- Transportation Association of Canada
www.tac-atc.ca
- Canadian Standards Association
www.csagroup.org