



**Transportation and
Infrastructure Renewal**

Long Combination Vehicle Program

Program Guidelines

Nova Scotia Department of Transportation and Infrastructure Renewal

January 31, 2012

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www.gov.ns.ca/trans

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Long Combination Vehicle Program

The Department of Transportation and Infrastructure Renewal is accepting applications for its Long Combination Vehicle (LCV) program on four lane, divided highways in Nova Scotia. In order to be considered for this program, a carrier must submit an application and conform to the requirements set forth in this document.

Submission of application

The application must be submitted electronically in PDF format and can be emailed to balsommg@gov.ns.ca. If emailed, please follow up to verify receipt by calling 902-424-0070.

Alternatively, a CD or USB thumb drive may be mailed to.

*Vehicle Weights and Dimensions Policy Program
Highway Engineering Services Division
Nova Scotia Department of Transportation and Infrastructure Renewal
P.O. Box 186
Halifax, Nova Scotia, B3J 2N2*

Annual Permit

The annual permit fee for the Long Combination Vehicle (LCV) Pilot Project can be found on the Service Nova Scotia and Municipal Relations website. A permit is required for each tractor . The fee is to be made payable to the Nova Scotia Minister of Finance upon approval of the application.

Application Contents

A list of contents required for the application is provided in Appendix 1. All information in this list must be provided in an application for participation in the LCV Pilot Project.

Permissible LCV configurations and operating routes

Long Combination Vehicle (LCV) units with a tractor and two trailers with lengths of 48 ft or 53 ft will be permitted to operate over specific pre-approved routes under permit. If the lead trailer is a 48 ft unit and the rear a 53 ft unit, then the rear trailer must have a weight equal to or less than the lead 48 ft trailer.

Applications for A-trains and B-trains will be accepted, and must conform to the specifications in appendix A.

Applications for container chassis configuration will be considered, provided they meet all other specifications.

Applications for routes will be accepted for any four-lane divided highway route in Nova Scotia, to be proposed by the applicant. However, approval of these routes is subject to evaluation by Department staff.

Travel on municipal roads will only be permitted if approval is granted by both the appropriate municipality and the Nova Scotia Department of Transportation and Infrastructure Renewal (NSTIR).

General Conditions

- Permits will be valid for one year. (Note: Service Nova Scotia and Municipal Relations (SNSMR) may cancel a permit at any time for permit violations by the carrier or for safety reasons).
- The operating permit will be valid for the specific operation of an LCV unit configured as an A-Train or B-Train comprised of either two- 53ft trailers and a tractor or two- 48ft trailers and a tractor. A 53ft trailer and a 48ft trailer can be combined. If the lead trailer is a 48ft unit and the rear 53ft unit, then the rear trailer must have a weight equal to or less than the lead 48ft trailer (Appendix 2).
- The carrier will be required to provide specific information, as listed in Appendix 1, regarding each tractor at the time of permit application.

- The total length of an LCV must not exceed 40 metres and the gross vehicle weight must not exceed 62,500kg.
- Dollies will be permitted to be moved to staging areas/terminals provided the dolly does not increase the length of the LCV beyond the maximum length of 40 m. The dolly must be equipped with all required lights and markings. A trailer converter dolly, which is not equipped with an anti-lock braking system (ABS) when being operated on a highway without carrying a trailer may have its service brake system disabled to prevent wheel lock-up.
- Carriers must supply detailed information on all routes from origin to destination including staging areas. Plan surveys with vehicle turning templates will be required for each interchange/intersection where the LCV configuration could off-track from its proper lane of travel. Permission for limited travel into areas under municipal jurisdictions will require the approval of the municipal jurisdiction and NSTIR.

Operational Conditions

- Maximum speed of a LCV configuration will be 90 km/h.
- The LCV configuration must not exit from the specified route except for emergencies.
- The LCV configuration must travel in the right lane only except for emergencies.
- The lead trailer must always be loaded equal to or heavier than the rear trailer.
- If a trailer is not fully loaded, it must be loaded such that the front of the trailer is heavier.
- Time of day restrictions for travel in and near urban areas will be set relative to morning and evening peak hour traffic flows.
- The LCV configuration may travel with both trailers empty or with the rear trailer empty and the front trailer partially or fully loaded, provided heavy cross winds are not part of weather conditions along the route during the particular trip.
- When speed of the LCV configuration travelling on the arterial network drops to 70 km/h or less the driver must manually turn on 4-way flashing lights.

(Carriers should plan to have their new power units incorporate automatic speed related flasher units).

- LCV's must not run in a convoy mode, that is, less than 500 m apart.

Equipment Conditions

- The tractors used to move LCV trailers must have a minimum horsepower of 460 hp and must develop a minimum torque of 1650 ft-lb.
- The tractor engine must comply with EPA '07 reduced emission standards.
- A speed recording device must be in operation on the tractor used in LCV configurations. The device must provide a continuous recording of the vehicle speed on the highways.
- A reflectorized placard as specified below must be attached to the rear trailer of each LCV such that it does not cover reflectorized markings or lights.

ROAD TRAIN ROUTIER placard specifications (Acceptable in NB & NS)

- Colour: White level II reflectance and stop sign red (# 712 3M or equivalent)
- Lettering: 20 cm high, series E, white
- Material: The sign panel must be fabricated of retro reflective material
- Position: At the rear of the last semi-trailer mounted so that it is clearly visible by following drivers, and must not obstruct lights or other safety devices. The sign must be removed when not in use.
- Sign size: 30 cm by 230-245 cm



LCV Pictorial image placard specifications (Acceptable in QC, NB, NS, ON)

- Colour: Orange # 3931 3M or equivalent level II reflectance

- black Lettering: 10 cm high, series E black 3M 990-05 black silk screen 3M 7725-12 black vinyl
- Material: The sign panel must be fabricated of retro reflective material
- Position: At the rear of the last semi-trailer mounted so that it is clearly visible by following drivers, and must not obstruct lights or other safety devices. The sign must be removed when not in use.
- Sign size: 30 cm by 230-245 cm



- Retro-reflective tape must meet Transport Canada standard CMVSS 108.
- Enhanced intensity lighting must be present at the rear and along the sides of all trailers and power units. The lighting must meet or exceed Transport Canada standard CMVSS 108.
- Anti-sail (rigid) mud flaps/splash guards must be placed on the rear axle of the tractor and all axle groups of the trailers and convertor dollies. They must remain in a rigid downward position at all times.
- All conspicuity devices must be kept clean at all times.
- The trailers in an A-train LCV configuration must be coupled by means of no-slack pintle hook(s), equipped with an air or hydraulic ram. The no-slack ram is to be incorporated in either the pintle hook or the pintle hook eye of the coupling apparatus.
 - Note: See Appendix 2 for schematics of vehicle configurations

Driver Qualifications

The carrier is responsible to issue an annual LCV Driver's Certificate to all drivers operating LCV configurations. The Driver's Certificate is to be valid for a period of 12 months after the date of issue and must be in the possession of the driver at all times when operating an LCV.

The Driver's Certificate will be issued by the carrier after confirmation has been received that the driver has:

- A valid class 1 driver's license or equivalent with air brake endorsement and the license has no restrictions other than for corrective lenses.
- A minimum of five (5) years and 150,000 km of driving experience on articulated vehicles. (Experience on multi-trailer units would be an asset).
- Completed and passed within every 48 month period a Professional Drivers Improvement Course.
- Passed the Canadian Trucking Alliance's Longer Combination Vehicles Driver Training Course.
- A driver's abstract dated not more than one month prior to the issue date of the Drivers Certificate that shows no driving related criminal code convictions in the prior 36 months, no more than 2 moving violations in the prior 12 months, and no more than 3 moving violations in the past 36 months.

Notes:

- The driver instructor must be certified as a Driver Trainer and be qualified to instruct the CTA Longer Combination Vehicle Driver Training Course.
- The date of conviction and the current date will be the dates used to determine time periods.
- The carrier is to keep a list of all drivers holding valid LCV Driving Certificates and must make it available to NSTIR when requested.
- Upon request the carrier must be able to produce and give to NSTIR all documents to support driver's qualifications.
- A driver-in-training who meets the driver's license requirements, driving experience, and abstract requirements may operate an LCV vehicle while accompanied by a driver who holds a valid LCV Driver's Certificate.
- Note: See Appendix 3 for example of LCV Driver's Certificate

Weather conditions

The current road report for the Province should be noted, but final operational decisions should not be based entirely on that report. It will be necessary for carriers to provide their drivers with specific weather restriction data.

In general the LCV configurations should not operate when weather conditions include:

- a) freezing rain, sleet, hail, fog;
- b) heavy snowfall accumulations resulting over short time periods
- c) highway surface is snow covered ;
- d) visibility is less than 300 m (due to blowing snow, rain, or other conditions);
- e) blizzard like conditions exist;
- f) slippery road conditions exist such as ice or snow covered;
- g) heavy cross winds are present throughout the haul route or at specific sections of the haul route. (This factor is especially important if empty trailers form part of the LCV configuration).

LCV configurations must not be dispatched when adverse weather conditions are expected or known to be present on the route during the hours of travel. The carrier, at time of application for the permit, is to provide NSTIR with a copy of its instructions to drivers relative to weather conditions and vehicle operations.

NOTE:

In cases where a driver commences a run under acceptable weather conditions and encounters inclement weather, the unit should exit the highway at the first designated refuge area. It may be necessary for the driver to reduce speed to the nearest refuge area. (List of refuge areas are presented in Appendix 4).

Freight conditions

- The carrier should indicate on the permit application the freight to be transported.

- No dangerous goods as regulated by the Dangerous Goods Transportation Act and regulations are to be included in LCV loads.
- Livestock must not be transported in LCV combinations.
- Where product is subject to movement anti-skid mats may be required.
- The load on the LCV should be assembled to prevent cargo movement. All goods transported by an LCV are to be secured according to the Securing of Loads on Vehicles Regulations.

The LCV Driver's Certificate

The LCV Driver's Certificate is to be issued by the carrier and will be carrier-specific. If a driver holding a LCV Driver's Certificate issued by a carrier ceases to be employed by that carrier, the carrier shall inform the NSTIR to ensure that the driver's name be removed from the list of current LCV drivers. The LCV Driver's Certificate must show the following information:

- Driver's name;
- Company's name;
- Date of issue and expiry date;
- Signature and printed name of the person issuing certificate.

An example of a Driver's Certificate is presented in Appendix 3.

Collision reporting procedures

NSTIR will use the information provided on Service Nova Scotia collision reporting form as completed by the appropriate police officer. However, to complete a full analysis of a LCV collision, additional data must be provided to the Vehicle Weights and Dimensions Policy Branch of the NSTIR by the carrier within 48 hours of the incident. This information will be subject to the same confidentiality agreements as the form completed by the police. The data to be provided include:

1. Description of LCV unit (e.g. A-train configuration)
2. GVW of unit at time of collision
3. Cargo type
4. Description of load and placement of load on each trailer of the LCV unit

5. Copy of on-board speed record at time of accident
6. Copy of LCV Driver's Certificate
7. Description of vehicle trip (e.g. origin and time of trip start, route to destination)
8. Copy of driver's log book for this trip
9. Tractor and trailers registration numbers
10. Driver's description of weather along route and at collision site
11. Driver experience on LCV's. Estimate number of trips and total distance driven on LCV's

Appendix 1: Information requirement to support application

The following information must be included in the application for a LCV operating permit.

Operation details

- Registered owner of the tractor(s) and trailers
- Carrier name
- Contact person
- Telephone
- Fax
- E-Mail Address
- Street Address
- City
- Postal Code
- Province or State
- Insurance Company
- Policy Number

Vehicle data

Vehicles (Number of vehicle type to register)
Power Units (Tractors)
Trailers (A-train configuration)

Tractor details (Include information for each tractor to register)

Power Unit (#) of (#)
Year
Make
License Plate Number
Province or State
Full Serial Number
Horsepower
Torque
Speed recording device
Vehicle Length (ft or m)

General route details

Details
Origin
Destination
One-way or return trip
Highway numbers of desired routing
Highway Exit number (leaving from origin)
Highway Exit number (arriving at destination)
Frequency (Daily, weekly, etc)
Number of LCV's on route
Arrival and departure times (Approx)

Specific operating details

1 Origin terminal

- Describe route from origin terminal to entrance ramp of four-lane divided highway
 - Include street names and intersections.
 - If travelling within a municipality, evidence of municipal approval of the route must be provided.
- Each turning movement required for LCV operation must be fully described in the permit application and include turning templates.
 - Any modifications required to accommodate LCV operation at intersections are the responsibility of applicant carriers, including arranging permissions from local authorities. Evidence of these endorsements must be provided at time of application.

2 Destination terminal

- Describe route from exit ramp of four-lane divided highway to destination terminal
 - Include street names and intersections.
 - If travelling within a municipality, a letter of municipal approval of the route must be provided.
- Each turning movement required for LCV operation must be fully described in the permit application and include turning templates.
 - Any modifications required to accommodate LCV operation at intersections are the responsibility of applicant carriers, including arranging permissions from local authorities. Evidence of this agreement must be provided at time of application.

Note: These details must also be provided for the route from origin to destination for the return trip.

3 Driver Information (Include information for each driver to be registered)

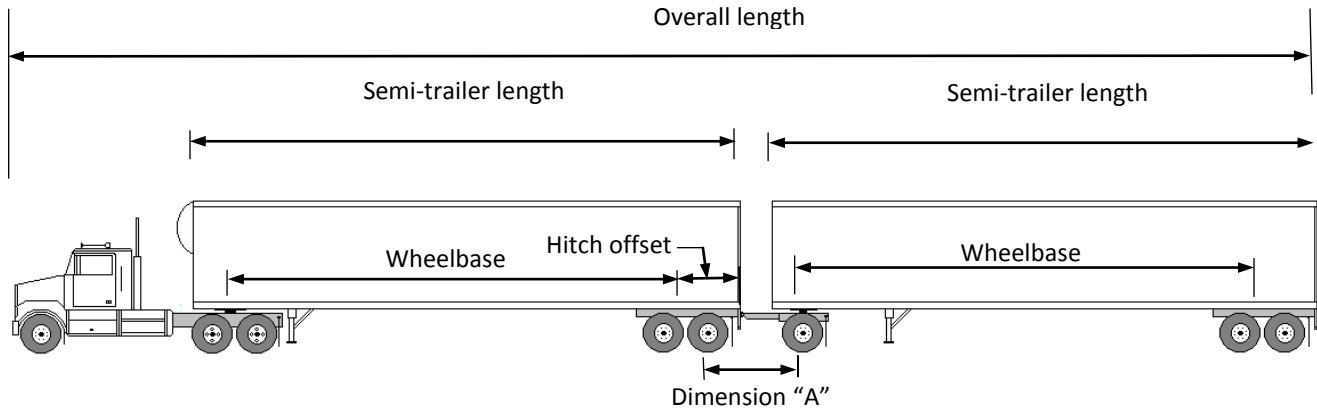
Information
Name
Driver's License Number
Class of License
Endorsements
Restrictions
Driving experience on articulated vehicles (years & km)
Completion date of Professional Drivers Improvement Course (M,D,Y)
Completion date of Longer Combination Vehicles Driver Training Course(M,D,Y)

5 Weather Conditions

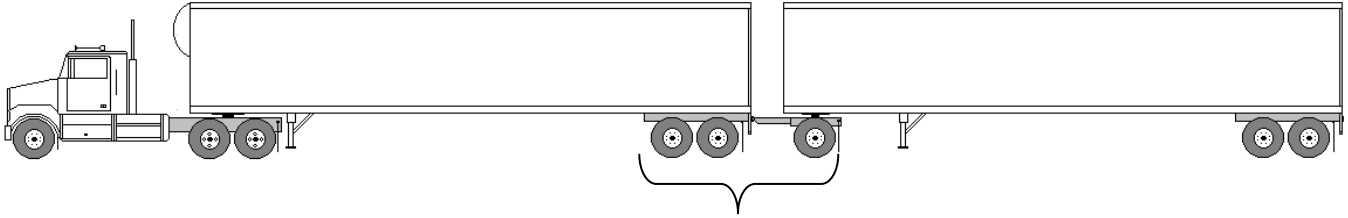
- A copy of instructions to drivers relative to weather conditions and vehicle operations

Appendix 2: Vehicle configurations

A-Train Configuration



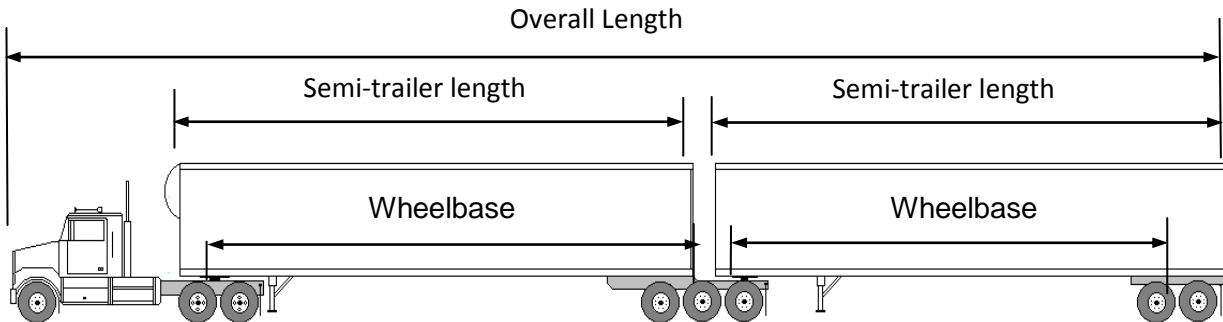
DIMENSION PARAMETERS	A Train
<i>Overall Length</i>	Maximum 40 m
<i>Lead Semi-trailer</i>	
Length	Min 14.6 m, Max 16.2 m
Wheelbase	Min 9.5 m, Max 14.0 m
Hitch Offset	Max 2.8 m
<i>Converter Dolly</i>	
Drawbar Length	Not controlled
Max No of Axles	Not controlled
Second Semi-trailer or Full Trailer	
Length	Min 14.6 m, Max 16.2 m
Wheelbase	Min 9.5 m, Max 12.5 m
Interaxle Spacing	Max 12.5 m
Dimension "A"	See next page
Notes:	
	<ul style="list-style-type: none"> An empty converter dolly may be towed behind the combination so long as the overall length does not exceed 40 m and the dolly is equipped with all legally required lights and equipment.



Weight Limitation 1

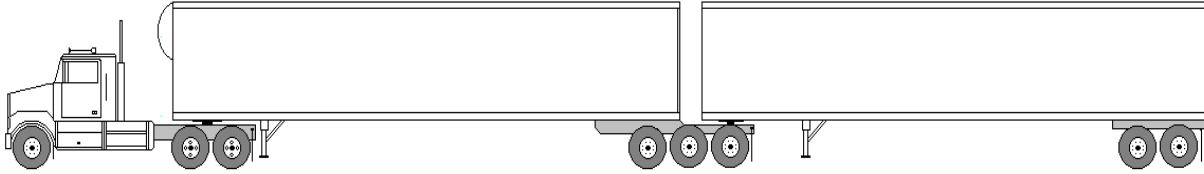
WEIGHT PARAMETERS	A Train
<i>Axle Weight Limits</i>	
<i>Steering Axle</i>	Max 5,500 kg
<i>Single Axle</i>	Max 9,100 kg
<i>Tandem Axle</i>	
Axle spread less than 1.2 m	Max 9,100 kg
Axle spread 1.2 m – 1.85 m	Max 18,000 kg
<i>Tridem Axle</i>	
Axle Spread less than 2.4 m	Max 18,000 kg
Axle Spread 2.4 to less than 3.0 m	Max 21,000 kg
Axle Spread 3.0 to 3.1 m	Max 24,000 kg
Weight Limitation 1 (2 or 3 axles) (If Dimension “A” is less than 3 m) Sum of axle weights of lead semi-trailer plus weight of converter dolly axles	2-axle group: Maximum 18,000 kg 3-axle group: Maximum 24,000 kg
Weight Limitation 1 (4 axles, tandem - tandem) (If Dimension “A” is less than 5 m) Sum of axle weights of lead semi-trailer plus weight of converter dolly axles	Maximum 36,000 kg, less 1,000 kg for every 0.5 m or portion of 0.5 m that Dimension “A” is less than 5 m
<i>Maximum Gross Vehicle Weight</i>	
5 Axle	41,900 kg
6 Axle	49,800 kg
7 Axle	57,700 kg
8 or more Axles	62,500 kg
Notes:	
<ul style="list-style-type: none"> In all cases, the lead semi-trailer of the configuration must be heavier than the second trailer or semi-trailer. 	

B-train configuration



DIMENSION PARAMETERS	B Train*
<i>Overall</i>	
Length of combination and load	Maximum 40 m
Width of vehicle and load	Maximum 2.6 m
Height of Vehicle and Load	Maximum 4.15 m
<i>Tractor</i>	
Interaxle Spacing	Minimum 3.0 m
Tandem Axle Spread	1.2 to 1.85 m
Wheelbase	Maximum 6.2 m
<i>Lead Semi-trailer</i>	
Length	Minimum 14.6 m, Maximum 16.2 m
Wheelbase	Maximum 14.0 m
Tridem Spread	2.4 to 3.7 m
Track Width	2.5 to 2.6 m
Center of fifth wheel assembly	Maximum 0.3 m rearward of the center of the rearmost axle on the semi-trailer
Second Semi-trailer	
Length	Min 14.6 m, Max 16.2 m
Wheelbase	Max 12.5 m
Tandem Spread	1.2 to 1.85 m
Tridem Spread	2.4 to 3.7 m
Effective Rear Overhang	Max 35% of Wheelbase
Track Width	2.5 to 2.6 m

*measurements exclude aerodynamic devices at rear of trailers



MASS PARAMETERS	B Train
<i>Axle Mass Limits</i>	
<i>Steering Axle</i>	Max 5,500 kg
<i>Single Axle</i>	Max 9,100 kg
<i>Tandem Axle</i>	
Axle Spread less than 1.2 m	Max 9,100 kg
Axle Spread 1.2 m – 1.85 m	Max 18,000 kg
Tridem Axle	
Axle Spread less than 2.4 m	Max 18,000 kg
Axle Spread 2.4 to less than 3.0 m	Max 21,000 kg
Axle Spread 3.0 to 3.1 m	Max 24,000 kg
LCV number of axles	LCV Maximum Gross Vehicle Weight
<i>5 Axle</i>	41,700 kg
<i>6 Axle</i>	50,600 kg
<i>7 Axle</i>	59,500 kg
<i>8 or more Axles</i>	62,500 kg
Notes:	
<ul style="list-style-type: none"> • This configuration may include a tridem axle group on the second semi-trailer • In all cases, the lead semi-trailer of the configuration must be equal to or heavier than the second trailer or semi-trailer. 	

Appendix 3: Example of LCV Driver's Certificate

ABC TRANSPORT	
LCV Driver Certificate	
Employee Name _____ is authorized to operate an LCV under permit	
Date of issue	_____
Expiry date	_____
Signature _____	Name Company Official _____

Appendix 4: List of LCV refuge areas

Note: WB = Westbound, EB = Eastbound,

NB = Northbound, SB = Southbound

Highway 104			
Exit	Location	WB Refuge (To NB)	EB Refuge (To Truro)
13	Debert	On ramp	No
10	Station Road	On ramp	On ramp
	Toll Plaza	Yes	Yes
7	Thompson Station	No	On ramp
6	Oxford	On ramp	No
4	So. Albion Street	On ramp	No
	Amherst Compliance Station	Yes	Yes

Highway 102			
Exit	Location	NB Refuge (To Truro)	SB Refuge (To HRM)
6	HI Airport	On ramp	No
7	Enfield Compliance Station	NA	Yes
8	Elmsdale	No	On ramp
10	Shubenacadie	On ramp	No
11	Stewiacke	No	On ramp
	Kelly Lake Compliance Station	Yes	NA