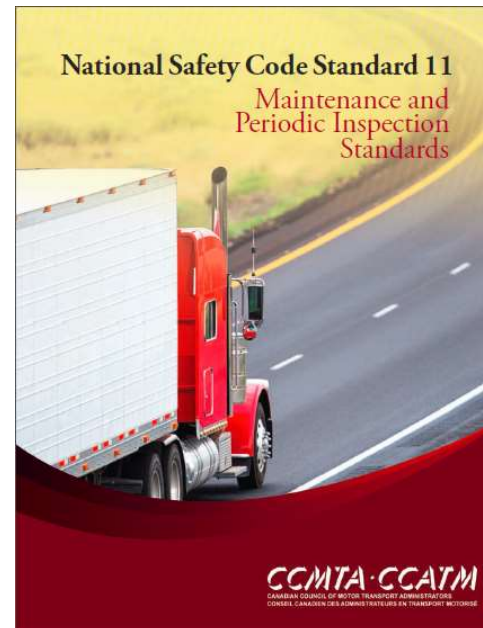
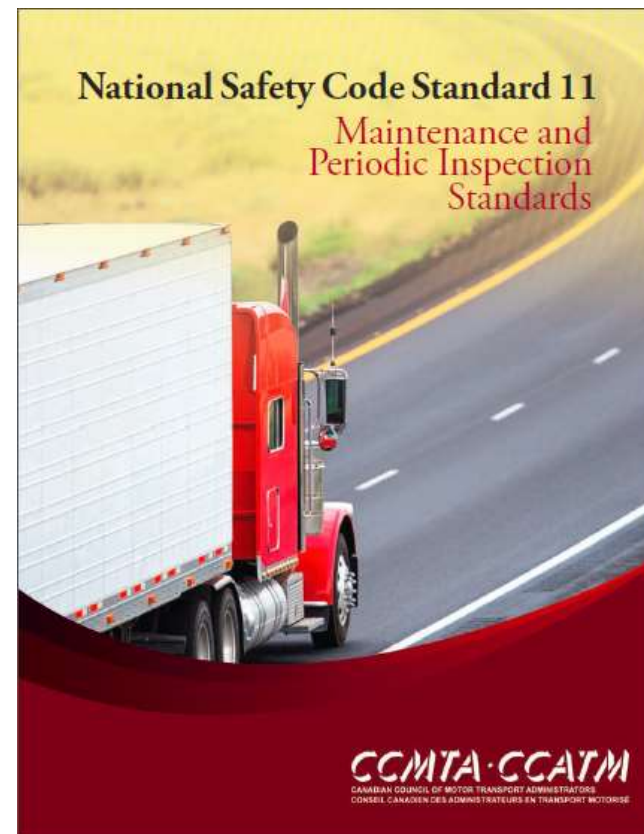

National Safety Code
Standard 11 Part B
“Periodic Motor Vehicle Inspections”



Robert Monster
Carrier Safety Enforcement Branch
Ministry of Transportation
January 2016

Outline of National Standard NSC 11 - 2014

- Establishes mechanical vehicle inspection criteria for trucks, trailers, buses accessible and school purposes vehicles.
- NSC 11 has two parts, A and B.
- Ontario only uses part B which starts on page 46.
- NSC 11B is used across Canada.
- Established by the Canadian Council of Motor Transport Administrators



NSC 11

- MVIS Resources including the NSC 11 standard available on-line (only)

- www.ontario.ca/mvis

What is Changing

- Criteria for safety inspections has changed
 - Safety Standards Certificates (SSC),
 - annual and semi-annual inspections for trucks, trailers, buses, accessible and school purposes vehicles
 - National Safety Code Standard 11B 2014 PMVI (NSC 11B).
- NSC 11B adopted and modified by HTA Reg. 611 “Safety Inspections”.
- Complementary amendments have been made to HTA Reg 601 “Motor Vehicle Inspection Stations”.

What is Not Changing

- Vehicles that have required inspections in the past will still require inspections.
 - Annual, semi-annual and SSC.
- Inspection criteria for small vehicles, motorcycles, motor tricycles and salvage vehicles have not changed.
- Frequency of inspection of vehicles has not changed.
 - Every 12 months a full inspection for trucks, trailers, buses, accessible vehicles and school purposes vehicles and
 - Every six months an inspection without internal brake inspection for buses, accessible and school purposes vehicles.
- Current on-road performance standard has not changed (for now)
 - Reg 199/07 section 14 – includes HTA Reg. 611 schedules 1 & 2
 - On July 1, 2016 will change to Schedule 7 of Regulation 199/07

Regulation 611 to NSC 11B

- Significant:
 - Inspection items paired with specific reject criteria.
 - record of inspection outlining defaults, repairs and brake measurements to be provided to the vehicle owner.
- Better represents current vehicle technology; i.e. ABS and air bags.
- More precise and explicit as to what needs to be inspected
- Clearly defines what the technician is responsible for when the vehicle is certified.
- Introduces definitions for common terms.
- Clarification of which items are a visual inspection only and which involve additional procedures.

Contents of NSC 11B

- **Introduction**
- **Section 1** **Power Train**
- **Section 2** **Suspension**
- **Section 3** **Brake Systems**
- **Section 3H** **Hydraulic Brakes**
- **Section 3A** **Air Brakes**
- **Section 4** **Steering**
- **Section 5** **Instruments & Auxiliary Equipment**
- **Section 6** **Lamps**
- **Section 7** **Electrical System**
- **Section 8** **Body**
- **Section 9** **Tire and Wheel**
- **Section 10** **Coupling Devices**

Format of NSC 11B 2014 --

- Single document that identifies which inspection criteria applies to which vehicle, underlines defined words and indicates if additional procedures beyond a visual check is required.

Section 1 – Power Train	
ITEM AND METHOD OF INSPECTION:	REJECT IF:
<u>1. Accelerator Pedal/Throttle Actuator</u> <i>Additional Inspection Procedure(s):</i> With engine running, press and release the accelerator pedal. Check engine response.	<u>Truck ✓ Trailer Bus ✓ </u>
a) pedal/actuator	a) binding, <u>inoperative</u> , <u>missing</u> , or engine <u>fails to respond normally</u> - modified, or repaired by welding
b) anti-slip feature	b) ineffective, <u>loose</u> or <u>missing</u>
c) throttle position sensor and connections	c) corroded, <u>inoperative</u> , <u>insecure</u> or improperly connected

Instructions and Notes

Note:

i) exhaust system and pipe termination

Note:

Also applies to the exhaust system of any auxiliary equipment.

i) exhaust gases are expelled into cab, passenger compartment, and/or sleeper

exhaust gases are expelled within the perimeter of the cab, passenger compartment, and/or sleeper

Bottom of every page:

Note: All inspection procedures are visual unless additional inspection procedures are indicated.
Conditions shown *in this manner* are defined conditions. The definitions can be found in the introduction section.

Definitions

- abnormally worn
- applicable requirements
- damaged
- industry standard
- inoperative
- insecure
- loose
- missing
- manufacturer
- OEM
- OEM standard

Appear in standard as:

e) broken, *insecure* or *loose*, or *missing*

deficient part is used that does not meet *OEM standard*

f) a required heat shield is broken, *insecure* or *loose*, or *missing*

Definitions

“abnormally worn”

– means unusual, excessive or exceptional wear of a vehicle component, indicative of the presence of some deterioration or defect in that component, or in a related part of a vehicle.

This term

is used selectively in this standard for a component or system where some wear is normal, and does not directly have any effect on vehicle safety. It is expected that the inspector knows the amount of wear, and the type of wear, that is typical (normal) based on the age and operation of a vehicle.

Definitions

“applicable requirements”

– means the applicable requirements of the relevant jurisdiction, (i.e.: province or territory).

This phrase

is used in situations where one or more provinces, or territories, have a different standard, requirement or criteria. It is expected that the inspecting technician will know what the requirements are in the jurisdiction where they perform inspections.

Definition

“insecure”

– means that an item is beginning to become detached due to deterioration of the means of mounting. This can also mean that a method of attachment has been used that is in itself unsafe by being unable to withstand normal vehicle operation, or is not at least equivalent to the OEM standard method of attachment.

“loose”

- means that an item is detached, or no longer fully attached, due to failure or deterioration of one or more means of attachment.




Other Additional Guidance

- Categorization of fluid leaks
 - Level 1, 2, and 3

- Measurements and Tolerances
 - e.g. 0.125 inch is not the same as 1/8 inch

- Identification of defective conditions of types of hose, tubing and lines

Identification of Defective Conditions of the Types of Hose, Tubing and Lines used on Vehicles

	Characteristics	Defective Condition
 <p>1 Rigid or Flexible Tubing Single layer of Metal or Plastic</p>	Type 1 – Copper, Steel or plastic tubing used for liquid or vapour. Made of a single layer of material.	Damage is visible on the outside that is reducing the wall thickness.
 <p>2 Inner Core (Tube) Outer Cover (Tube)</p>	Type 2 – Plastic (usually Nylon) tubing commonly used in air brake systems. <u>No reinforcement ply.</u> Inner core and outer cover are usually different color.	Inner core becomes visible from the outside, as shown by color change.
 <p>3 Inner Core (Tube) Outer Cover (Tube) Reinforcement Ply</p>	Type 3 – Plastic (usually Nylon) tubing commonly used in air brake systems. <u>With reinforcement ply.</u> Inner and outer core are different color. (Note: Type 2 and 3 may appear identical externally.)	Reinforcement ply or inner core is visible from the outside, as shown by color change.

Inspection of Internal Brake Components

- The number one question is

Do I have to remove the wheels and drums when inspecting the brakes???

Brake Systems

- Brake section is in three parts:
 1. 3 – Introduction, provides clarity of when a wheel needs to be removed.
 2. 3H – Hydraulic and other non-air brake systems.
 3. 3A – Air brake systems.

- Five types of brake inspections:
 - Drum Brakes
 - A. Full inspection with drums removed.
 - B. Wheel-on full inspection.
 - C. Limited inspection of drum brakes.
 - Disc Brakes
 - D. Full inspection with wheels removed.
 - E. Limited inspection of disc brakes.

Limited Brake Inspection (LBI)

- What is it?
 - LBI does not require removal of a wheel or drum and allows for a more cursory inspection of non exposed brake components and limits required measurements.
- When can it be used?
 - When previously a full inspection was completed and documented.
 - Previous full inspection was completed within a specific time frame.
 - Can only be applied to trucks and trailers in Ontario. (not bus)
- Why
 - Intent of LBI is to reduce inspection time and unnecessary removal of wheels and drums where it is safe to do so.

Drum Brakes --

Three types of inspection for drum brakes:

- A. Full inspection with drum removed,**
this is a detailed inspection of all internal components. Measurements of drum diameter and brake lining thickness must be taken and recorded on the Inspection Report.
- B. Wheel-on full inspection,**
this is an inspection of the internal brake components and is only available for cam-type drum brakes with removable dust shields. Measurements of drum diameter and brake lining thickness must be taken and recorded on the Inspection Report.
- C. Limited Brake Inspection of drum brake,**
this is an inspection through inspection holes and is only available with the proper and valid documentation (see Proof of Brake Inspection). Measurements of brake lining thickness of one brake shoe must be taken and recorded on the Inspection Report.

Disk Brakes --

Two types of inspection for disc brakes:

- D. Full inspection with wheel(s) removed,**
this is a detailed inspection of all internal components. Measurements of rotor thickness and pad friction material thickness must be taken and recorded on the Inspection Report.

- E. Limited Brake Inspection of disc brakes,**
this is an inspection of visual accessible components only available with the proper and valid documentation (see Proof of Brake Inspection). Measurements of one brake pad must be taken and recorded on the Inspection Report.

When to Remove Wheels and Drums

- Wheel or drum do not have to be removed;
 - ❑ Wheel-on full inspection (Type B) and
 - ❑ Both Limited Brake Inspections (LBI) (Types C and E).

- Wheel and or drum have to be removed every time;
 - ❑ Full Inspection on drum brakes with solid backing plates (Type A)
 - ❑ Full Inspection on any disc type brakes (Type D)

- During wheel-on inspections; the wheel and drum need to be removed if:
 - ❑ Any of the required measurements cannot be taken with the wheel and drum in place.
 - ❑ Any defect is found on a brake, the wheel and drum must be removed for a full inspection in every case. (see Defective Conditions).

Defect Conditions --

Full inspection with either drum or wheel removal is required when any defect is suspected or found during an inspection including:

- Abnormal wear of friction material, brake drum or rotor.
- Signs of overheating.
- Negative effects of corrosion – i.e. rust jacking.
- Abnormal appearance, glazing, discolouration or contamination of brake friction material.
- Damage, distortion or shifting out of place of any brake component.
- Abnormal noise or response upon application or release of the brakes.
- Age of the brake components, or the previous measurements of wear compared to current measurements, indicate that a drum, rotor, or friction material, is likely to be worn beyond the allowable limit.

Note: a complete list is available in Section 3.A.2 of NSC 11B

Limited Brake Inspection cont...

- Trucks and trailers with disc brakes can use LBI with Proof of Brake Inspection Report completed by a qualified technician at a Motor Vehicle Inspection Station (MVIS) within the previous seven months.
- Trucks and trailers with drum brakes can use LBI with Proof of Brake Inspection Report completed by a qualified technician at a MVIS within the previous 19 months.

	INSPECTION INTERVAL		VALIDITY OF PRIOR INSPECTION	
	DISC	DRUM	DISC	DRUM
TRUCK/ TRAILER	12	12	7	19

NOTE: 19 months is used to accommodate jurisdictions that require an inspection every 6 months for trucks. Ontario requires trucks to be inspected every 12 months.

Proof of Brake Inspection Report

- A LBI can only be used if the operator provides a complete and valid Proof of Brake Inspection Report indicating a full inspection with drum and wheel removed (inspection types A or D).
- The LBI can also apply with proper and valid documentation for a brake overhaul or any type of work where the wheel is removed.
- To qualify, the inspections must have been conducted by a qualified technician at a MVIS and all the required information is included in the Proof of Brake Inspection Report.
- The report can cover one, several or all of the brakes on a vehicle.
- A report is valid for 19 months for a drum brake and 7 months for a disc brake.

Proof of Brake Inspection --

- MVIS locations can make their own and can accept any Proof of Brake Inspection Report as long as the following information is include:
 - *Date*
 - *Odometer*
 - *VIN*
 - *Technician name/ number & signature*
 - *MVIS Inspection station name/number*
 - *Brake measurements*
 - *Declaration that the wheels/drum were removed*

- Brake measurements must include:
 - Drum Brakes*
 - *Drum diameter*
 - *Thickness of brake shoe lining*
 - Disc Brakes*
 - *Thickness of the rotor*
 - *Thickness of brake pad lining*

- Ontario requires the inspection to be conducted at a licensed MVIS.

Ontario

Modifications to NSC 11B 2014

Modification – External Sun Visors

NSC 11B Requirement

- Sun visor cannot be more than 150 mm below upper edge of windshield and overlap the swept portion of the windshield.

Modification

- All vehicles are exempt from this requirement in Ontario.

Modification – Add-on Window Tint

NSC 11B Requirement

- No aftermarket tint on a windshield and no less than 70% light transmittance on side windows.

Modification

- Apply limitations in NSC 11B only to vehicles manufactured on or after July 1, 2011.

Modification – ABS

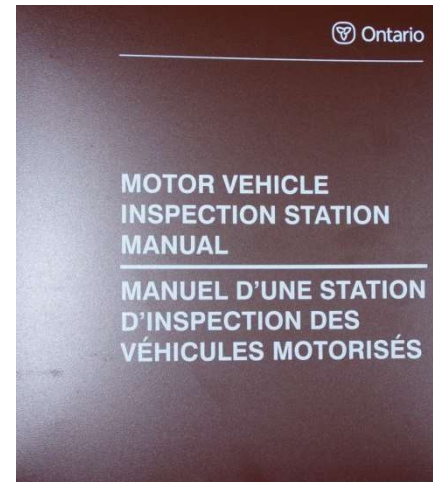
NSC 11B Requirement

- Vehicles manufactured on or after April 1, 2000 must have functioning ABS.
- Vehicles manufactured before April 1, 2000 equipped with ABS must have the system in good working order.

Modification

- Exempt any requirement regarding ABS for vehicles manufactured prior to April 1, 2000.

Record Keeping and Administration



Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Fév	Mar	Avr	Mai	Juin	Jui	Août	Sept	Oct	Nov	Déc	
Ministry of Transportation / Ministère des Transports											12
Annual Inspection/Inspection Annuelle											13
Vehicle Type/ Type de véhicule Without a semi-annual inspection sticker expires at the end of the 6th month after inspection, with a semi-annual inspection sticker expires at the end of the 12th month after inspection.											14
<input type="radio"/> Bus/Accessible School Purposes/Bus accessible à vocation scolaire Sans inspection semestrielle la vignette expire à la fin du 6 ^e mois suivant l'inspection, en cas d'inspection semestrielle, la vignette expire à la fin du 12 ^e mois suivant l'inspection.											15
<input type="radio"/> Commercial / Trailer/Commercial/remorque Expires at the end of the 12th month after inspection Expire à la fin du 12e mois suivant l'inspection											16
											17
											18
											19
H 0000000											

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Ministry of Transportation / Ministère des Transports

Safety Standards Certificate - Form 5
 Issued pursuant to the Highway Traffic Act and Regulations
Certificat de normes de sécurité - Formule 5
 Délivré conformément au Code de la route et à ses règlements

For Ministry Use Only
 Réservé au ministère
 Agent No. / Date d'inspection / Month / Day

Please Print/Écrire en lettres moulées

Motor Vehicle Inspection Station/Centre d'inspection des véhicules automobiles
 Licensee Number / Name of Licensee/Nom du titulaire
 City, Town or Village / Cité, Ville ou village

Inspecting Mechanic / Mécanicien ayant effectué l'inspection
 Trade Code / Nom commercial
 Certificate No. / Numéro du certificat
 Name of Mechanic/Nom du mécanicien

Vehicle/Véhicule
 Make of Vehicle / Marque du véhicule
 Year/Année
 Type of Body / Type de carrosserie
 Mileage / Kilométrage au compteur à la date de l'inspection

Indicate manufacturer's Gross Vehicle Weight Rating / Inscrire le poids brut du véhicule donné par le constructeur
 4500 Kg or under / 4500 kg ou moins
 Over 4500 kg / Plus de 4500 kg

Date of Inspection / Date de l'inspection
 Year / Année
 Month / Mois
 Day / Jour

This Certificate expires 36 days from this date
 Ce certificat expire 36 jours à compter de cette date

We hereby certify that the above described motor vehicle has been inspected in accordance with the provisions of Sections 88 to 100 of the Highway Traffic Act and Regulations issued thereunder, and that the items inspected met the prescribed standards on the Date of Inspection.
 Nous certifions par la présente que le véhicule automobile décrit ci-dessus a été inspecté conformément aux dispositions des articles 88 à 100 du Code de la route et de ses règlements et que les articles inspectés sont conformes aux normes en vigueur à la date de l'inspection.

Signature of Inspecting Mechanic / Signature du mécanicien ayant effectué l'inspection
 Signature of Licensee/Agent / Signature de détenteur du permis ou de son agent

MINISTRY OF TRANSPORTATION COPY / COPIE DU MINISTÈRE DES TRANSPORTS

SR 8-014 93-01

- Present this copy for transfer or registration purposes
- This certificate indicates that the items on the reverse side met the required standards on the date of inspection and is not a warranty on the condition of the vehicle.
- Présentez cette copie aux fins de transfert ou d'immatriculation
- Ce certificat indique que les articles ou pièces mentionnés au verso sont conformes aux normes requises à la date de l'inspection mais ne constitue pas une garantie de l'état du véhicule.

Record Keeping Requirements

- All public MVIS locations must display the green “Motor Vehicle Inspection Station” sign.
- All MVIS locations must display the MVIS licence.
- Motor Vehicle Inspection Station manual must be kept up to date including:
 - Current copy of the HTA Sections 85 – 100, Regulation 611 “Safety Standards” and Regulation 601 “Motor Vehicle Inspection Stations”. Copies can be downloaded from www.e-Laws.com,
 - Current version of MVIS Circulars, and
 - Registered mechanics and signing authorities.
- Record of all stock including all copies of issued inspection certificates and all unused certificates and stickers.
- MVIS must provide MTO with an up to date record of all active corporate directors and officers.
- All records are to be kept for one year from the date of issue.


Definitions – Certificates and Stickers

- **Annual Inspection Certificate** – means a vehicle inspection record evidencing compliance with the inspection requirements and performance standards set out in NSC Standard 11B as modified by sections 1 and 2 of Schedule 3;
- **Annual Inspection Report** – means, in relation to a vehicle inspection that results in the issuance of an annual inspection sticker, a report containing the information required by clause 10 (1) (d) of Regulation 601, Motor Vehicle Inspection Stations;
- **Annual Inspection Sticker** – means a vehicle inspection sticker evidencing compliance with the inspection requirements and performance standards set out in NSC Standard 11B as modified by sections 1 and 2 of Schedule 3;

Inspection Certificates

Annual and semi-annual inspection certificate:

- Three copies – the yellow copy stays with the inspection station and the two white copies go to the operator, (**vehicle** and file).
- All records must be kept for one year.

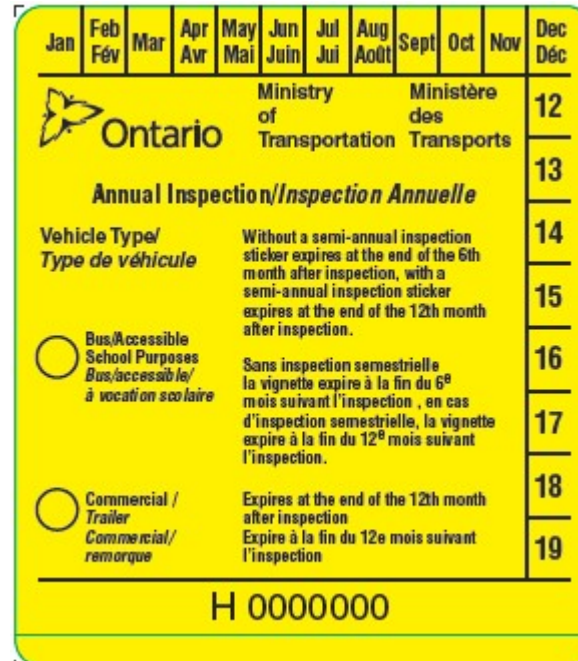
 Ontario		Ministry of Transportation	Ministère des Transports	Annual Inspection Certificate Certificat d'inspection annuelle
				H 0000000
Make/Marque	Model/Modèle	VIN/VIN		Issued/Usé
License Plate No./N ^o de plaque d'immatriculation	Vehicle Owner/Propriétaire/Exploitant(e) du véhicule			
Odometer/Compteur kilométrique	Street No. & Name/Rue et n ^o			
City, Town/Ville	Province/State/Province/État		Postal Code/Code postal	
Vehicle Type/Type de véhicule				
<input type="radio"/> Bus/Accessible/School Purpose/Bus accessible à vocation scolaire		<input type="radio"/> Commercial/Trailer/Trailer/Commercial		

Inspection Reports

Annual and semi-annual inspection report - Reg 601 - 10 (1) (e)

- Must be completed for each vehicle and include:
 - ❑ Date of inspection,
 - ❑ VIN,
 - ❑ Inspection sticker number,
 - ❑ Brake drum diameter, rotor thickness, lining thickness, pushrod stroke, tire pressure and tread depth measurements recorded,
 - ❑ List of defects,
 - ❑ Recommended and actual repairs,
 - ❑ Signed by the mechanic and licensee, and
 - ❑ One copy is to kept by the licensee and one provided to the carrier.
- MVIS must keep all records for one year and all CVOR holders must keep all records for two years.

Annual Inspection Sticker



Trucks and Trailers

- Valid until the end of the 12th month after inspection.

Bus, school purposes or accessible vehicle

- Valid until the end of 12th month after inspection **if** vehicle displays a valid semi-annual sticker, otherwise valid for six months.

Record Keeping for Truck and Trailer

- Annual inspection - as per the requirements in NSC 11B.
- At the time a vehicle passes the inspection with all criteria met/passed a yellow annual inspection sticker is applied indicating the month and year the inspection was completed:
 - Truck – lower left hand side of the windshield or conspicuous position on the left side of the truck cab.
 - Trailer – outer surface, on the left side and as close as practicable to the front.
- All other Ontario inspection stickers are covered or removed.
- The annual inspection certificate and report are completed and signed.
- The inspection is valid for 12 months.
- MVIS licensee must provide the owner operator with a copy of the annual inspection certificate and the annual inspection report.

Resources

- www.Ontario.ca/MVIS
- This includes:
 - Commercial Vehicle Operators' Safety manual
 - NEW Motor Vehicle Inspection Station webpage, which includes links to:
 - Required forms,
 - Order stickers and certificates,
 - NSC 11
 - Light Duty Standard (effective July 1, 2016)
 - HTA and related regulations, and
 - Updated circulars.

January 13, 2016

END