



Inspection of Highway Shipments of LNG

National Academy of Sciences (NAS)
Transportation of Liquefied Natural Gas
(Cryogenic liquid) by Highway

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Commercial Vehicle Safety Alliance

The Commercial Vehicle Safety Alliance (CVSA) is a nonprofit association comprised of local, state, provincial, territorial and federal commercial motor vehicle safety officials and industry representatives. The Alliance aims to achieve uniformity, compatibility and reciprocity of commercial motor vehicle inspections and enforcement by certified inspectors dedicated to driver and vehicle safety.

Mission

Our mission is to improve commercial motor vehicle safety and uniformity throughout Canada, Mexico and the United States by providing guidance and education to enforcement, industry and policy makers.

Membership Classes

- Class I Members – State/provincial agencies
- Class II Local Members – Local agencies
- Class III Associate Members – Our associate members are companies, organizations, trade associations, trucking and bus companies, industry suppliers and vendors, training institutions, consultants, insurance companies, state or provincial trucking associations, and large and small fleet owners or owner operators
- Class IV Federal Members – Our Class IV members are federal government agency representatives

LNG Inspection



- 8 Levels of Inspection
- CVSA North American Standard Out-of-Service Criteria
- 10 Committees
- 11 Programs



LNG Inspection



- Level I – North American Standard Inspection
- Level II – Walk-Around Driver/Vehicle Inspection
- Level III – Driver/Credential/Administrative Inspection
- Level IV – Special Inspections
- Level V – Vehicle-Only Inspection
- Level VI – North American Standard Inspection for Transuranic Waste and Highway Route Controlled Quantities (HRCQ) of Radioactive Material
- Level VII – Jurisdictional Mandated Commercial Vehicle Inspection
- Level VIII – North American Standard Electronic Inspection

CVSA North American Standard Out-of-Service Criteria

- The North American Standard Out-of-Service Criteria is the pass-fail criteria for inspections.
- The purpose of the criteria is to identify critical violations.
- Those violations render the driver, vehicle and/or cargo out of service until the condition(s) or defect(s) can be corrected or fixed.

- The North American Standard Out-of-Service Criteria identifies critical vehicle inspection items and details the criteria that can prohibit a motor carrier or driver from operating a commercial motor vehicle for a specified period of time or until the condition is corrected.

Committees

- Crash Data and Investigation Standards
- Driver-Traffic Enforcement
- Enforcement and Industry Modernization
- Hazardous Materials
- Information Systems

- Passenger Carrier
- Policy and Regulatory Affairs
- Size and Weight
- Training
- Vehicle

Programs

- North American Standard Level VI Inspection Program
- Human Trafficking Enforcement
- International Roadcheck
- Operation Airbrake
- Operation Safe driver

- International Driver Excellence Awards (IDEA)
- College Scholarship Award
- Cooperative Hazardous Materials Enforcement Development (COHMED)
- North American Cargo Securement Harmonization
- North American Inspector Championship (NAIC)

Inspector Training

- Part A (Driver)
- Part B (Vehicle)
- General Hazardous Materials Inspection
- Cargo Tank Inspection
- Other Bulk Packaging Inspection

- Cargo Tank inspection course covers the inspection of MC 338 cargo tanks

LNG Inspection



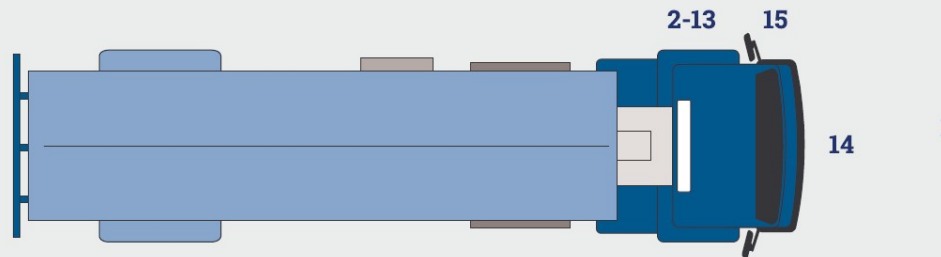
- Level I inspection is a 37-step inspection process that covers the driver and vehicle



Inspection Procedure

North American Standard Level I

For more detailed information, see the procedures contained in the CVSA Operations Manual.



1 Choose the Inspection Site

- Select a safe location. It should be paved, level, away from yet visible to traffic and able to support the weight of the vehicle.
- Avoid hills, curves, soft shoulders and construction sites.

- Collect driver's license or commercial driver's license (CDL) and record of duty status.
- Collect shipping papers.
- Collect periodic inspection certificates, commercial vehicle inspection program (CVIP).

10 Check Record of Duty Status

- Verify hours of service.
- If driver claims to be exempt, check that driver meets all criteria for said exemption(s).
- Check accuracy of record.

LNG Inspection

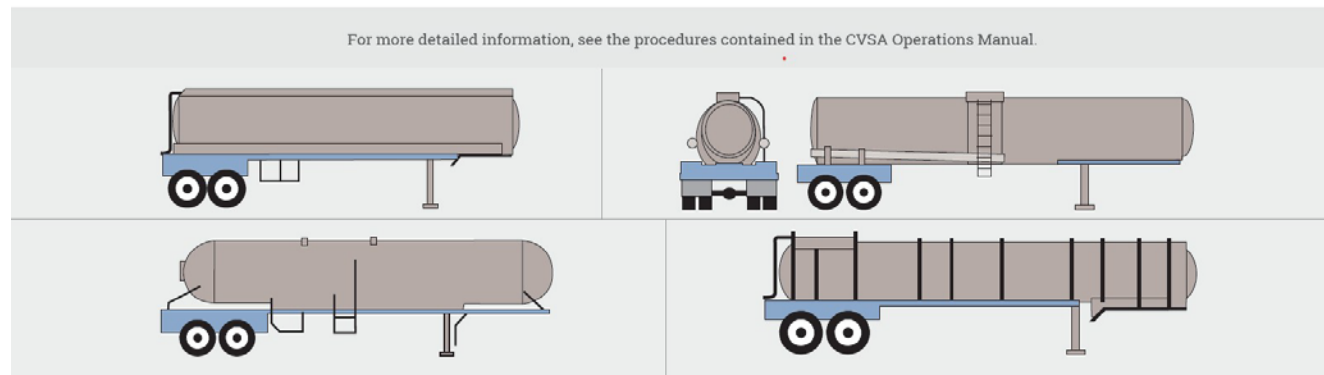


- Cargo tanks have a 10-step inspection process in addition to the inspection items checked on every inspection



Inspection Procedure

North American Standard Cargo Tank and Other Bulk Packagings



For more detailed information, see the procedures contained in the CVSA Operations Manual.

1 Initiate the Inspection

- As the vehicle is approached for inspection, follow all safety precautions.
- Check 172.101, Appendix B, to see if the material is a marine pollutant. Only bulk packages containing marine pollutants are subject to the regulations when
- Verify that the words "24 hour number" or an abbreviation of those words, followed by the phone number, are entered on the shipping paper in the proper manner.

- Non-bulk packages are covered in the General HM inspection course, which is a 7-step inspection process



Inspection Procedure

North American Standard Hazardous Materials/Dangerous Goods

For more detailed information, see the procedures contained in the CVSA Operations Manual.

1 Initiate the Inspection

- As the vehicle is approached for inspection, follow all safety precautions.
- Do a complete walk-around of the vehicle and check for placards, leaks and general vehicle condition.
- Shipping papers and emergency response information must be within the driver's immediate reach when restrained by the lap belt and visible to the person entering the vehicle, or in a holder mounted on the inside of the driver's door.

2 Check the Shipping Paper(s) for Compliance

- The presence of hazardous materials/dangerous goods (HM/DG) on the shipping paper that also contains non-hazardous

name and subsidiary hazards in parentheses.

- Verify that the identification (ID) number and packing group entered on the shipping paper correspond with the proper shipping name.
- Verify that the total quantity and unit of measure is entered on the shipping paper.
- Verify that the number and type of packages are entered on the shipping paper.
- Verify that the HM/DG basic description appears on the shipping paper in the proper sequence:
 - ID number
 - Proper shipping name
 - Hazard class/division
 - Packing group, if applicable

- Placarding of Table 2 materials is required for 1,001 lbs. (454 kg.) or more.

- When HM/DG is offered for transportation in bulk packaging/large means of containment, appropriate placards must be displayed, unless specific conditions have been met.
- Verify the proper display of any required subsidiary hazard placards.
- Verify that placards meet general specifications.
- Verify the required placards are displayed and meet visibility requirements on a transport vehicle.

4 Check Marking Compliance

- Use the shipping papers to determine the HM/DG being transported and the quantity

North American Standard Out-of-Service Criteria

- At the end of the inspection the inspector checks the violations discovered against the out-of-service criteria
- If any out-of-service violations were discovered appropriate action will be taken

LNG Inspection



Post-Crash Inspections

- Inspection completed after a crash occurs
- Inspector looks for vehicle defects that may have caused or contributed to the crash
- Crash Data and Inspection Standards Committee is working on a standard procedure for post crash inspections and investigations

LNG Fueled Vehicles

- Alternate fuel source for commercial vehicles
- These systems are addressed in our out-of-service criteria
- The out of service criteria contains an occupational safety note.

OCCUPATIONAL SAFETY NOTE: LNG is a cryogenic material and presents a potential safety hazard due both to the extremely cold temperature of its liquid and the flammability of its vapor. Personnel inspecting such systems should exercise utmost caution, including wearing proper eye protection, gloves and clothing.

Summary

- CVSA certified roadside inspectors are trained to inspect bulk packages of hazardous materials including LNG
- CVSA has multiple committees and programs where the members address current and emerging issues
- CVSA uses SMEs to help address critical safety issues
- CVSA inspectors use a standardized inspection process

- CVSA certified inspectors use the North American Standard Out-of-Service Criteria to identify critical violations, including leaking hazardous materials

Questions

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The background image is a blue-tinted photograph. On the left, the front of a large concrete mixer truck is visible, with the name 'HEIL' on the top of the hood. To the right of the truck, two police officers in dark uniforms are standing on a paved surface. The officer closer to the truck is looking towards the right, while the other officer is further back, looking down at something in his hands. The CVSA logo is centered over the image in white.

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