TEXAS LP-GAS STUDY GUIDE CFR SUPPLEMENT

Bobtail Driver

RAILROAD COMMISSION OF TEXAS

September 2012

TITLE 49, *CODE OF FEDERAL REGULATIONS* (CFR)
KEY SECTIONS FOR LP-GAS BOBTAIL DRIVERS

NOTE: This summary is intended solely to help applicants for Railroad Commission employee-level bobtail driver certification prepare for their qualifying examinations, by identifying certain key federal regulations that apply to LP-gas bobtail and transport operations in Texas. Citations are from the September 14, 2012, electronic *Code of Federal Regulations* (e-CFR) available on the web at http://ecfr.gpoaccess.gov.

The summary is not exhaustive; other federal regulations and exceptions apply to bobtail operations. Applicants are encouraged to consult the official text of 49 CFR for complete information about applicable federal requirements.

Definitions

Transport vehicle means a cargo-carrying vehicle such as an automobile, van, tractor, truck, semitrailer, tank car or rail car used for the transportation of cargo by any mode. Each cargo-carrying body (trailer, rail car, etc.) is a separate transport vehicle.
49 CFR §171.8

Emergency discharge control means the ability to stop a cargo tank unloading operation in the event of an unintentional release. Emergency discharge control can utilize passive or off-truck remote means to stop the unloading operation. A passive means of emergency discharge control automatically shuts off the flow of product without the need for human intervention within 20 seconds of an unintentional release caused by a complete separation of the liquid delivery hose. An off-truck remote means of emergency discharge control permits a qualified person attending the unloading operation to close the cargo tank's internal self-closing stop valve and shut off all motive and auxiliary power equipment at a distance from the cargo tank motor vehicle.
49 CFR §178.337-1(g)

Excess flow valve, ***integral excess flow valve***, or ***excess flow feature*** means a component that will close automatically if the flow rate of a gas or liquid through the component reaches or exceeds the rated flow of gas or liquid specified by the original valve manufacturer when piping mounted directly on the valve is sheared off before the first valve, pump, or fitting downstream from the valve.
49 CFR §178.337-1(g)

Internal self-closing stop valve means a primary shut off valve installed at a product discharge outlet of a cargo tank and designed to be kept closed by self-stored energy.
49 CFR §178.337-1(g)

Primary discharge control system means a primary shut-off installed at a product discharge outlet of a cargo tank consisting of an internal self-closing stop valve that may include an integral excess flow valve or an excess flow feature, together with linkages that must be installed between the valve and remote actuator to provide manual and thermal on-truck remote means of closure.
49 CFR §178.337-1(g)

Placarding

Each bulk packaging, freight container, unit load device, transport vehicle or rail car containing any quantity of a hazardous material must be placarded on each side and each end.
49 CFR §172.504(a)

When hazardous materials are transported by highway, placards are not required on a transport vehicle which contains less than 1,001 pounds total gross weight of hazardous materials.
49 CFR §172.504(c)(1)

Additional Description Requirements

Transportation by highway. Following the basic description for a hazardous material in a Specification MC 330 or MC 331 cargo tank, there must be entered for—

Liquefied petroleum gas. (i) The word "NONCORROSIVE" or "NONCOR" to indicate the suitability for shipping "Noncorrosive" liquefied petroleum gas in a cargo tank made of quenched and tempered steel as authorized by §173.315(a), Note 15 of this subchapter, or (ii) The words "NOT FOR Q and T TANKS" for grades of liquefied petroleum gas other than "Noncorrosive."
49 CFR §172.203(h)(2)

Off-Truck Remote Shutoff

A cargo tank motor vehicle in metered delivery service [3,500 water gallons or less] must have an off-truck remote means to close the internal self-closing stop valve and shut off all motive and auxiliary power equipment upon activation by a qualified person attending the unloading of the cargo tank motor vehicle (off-truck remote shut-off). It must function reliably at a distance of 150 feet. The off-truck remote shut-off activation device must not be capable of reopening the internal self-closing stop valve after emergency activation.
49 CFR §173.315(n)(3)

Passive Shutdown Capability

A cargo tank motor vehicle in other than metered delivery service must have a means to automatically shut off the flow of product without the need for human intervention within 20 seconds of an unintentional release caused by a complete separation of a liquid delivery hose (passive shut-down capability).
49 CFR §173.315(n)(2)

Painting of Specification MC 330 and MC 331 Cargo Tanks

Reflective design. Every uninsulated cargo tank permanently attached to a cargo tank motor vehicle shall, unless covered with a jacket made of aluminum, stainless steel or other bright nontarnishing metal, be painted a white, aluminum or similar reflecting color on the upper two-thirds of area of the cargo tank.
49 CFR §178.337-1(d)

Qualification and Maintenance

Periodic test and inspection. Each specification cargo tank must be tested and inspected by an inspector meeting the qualifications in §180.409. The retest date shall be determined from the specified interval identified from the most recent inspection or the CTMV certification date.

Test or Inspection	Interval Period
External Visual Inspection:	1 year
Internal Visual Inspection:	5 years
Leakage Test:	1 year
Pressure Test:	5 years

49 CFR §180.407(c)

External visual inspection and testing.

(2) The external visual inspection and testing must include as a minimum the following:

(i) The tank shell and heads must be inspected for corroded or abraded areas, dents, distortions, defects in welds and any other conditions, including leakage, that might render the tank unsafe for transportation service;

(ii) The piping, valves, and gaskets must be carefully inspected for corroded areas, defects in welds, and other conditions, including leakage, that might render the tank unsafe for transportation service;

(iii) All devices for tightening manhole covers must be operative and there must be no evidence of leakage at manhole covers or gaskets;

(iv) All emergency devices and valves including self-closing stop valves, excess flow valves and remote closure devices must be free from corrosion, distortion, erosion and any external damage that will prevent safe operation. Remote closure devices and self-closing stop valves must be functioned to demonstrate proper operation;

(v) Missing bolts, nuts and fusible links or elements must be replaced, and loose bolts and nuts must be tightened;

(vi) All markings on the cargo tank required by parts 172, 178 and 180 of this subchapter must be legible;

(vii) [Reserved]

(viii) All major appurtenances and structural attachments on the cargo tank including, but not limited to, suspension system attachments, connecting structures, and those elements of the upper coupler (fifth wheel) assembly that can be inspected without dismantling the upper coupler (fifth wheel) assembly must be inspected for any corrosion or damage which might prevent safe operation.

49 CFR §180.407(d)

Pressure test.

(1) Test Procedure

(i) As part of the pressure test, the inspector must perform an external and internal visual inspection, except that on a cargo tank not equipped with a manhole or inspection opening, an internal inspection is not required.
49 CFR §180.407(g)

Emergency Equipment: Inspection and Use

No commercial motor vehicle shall be driven unless the driver thereof is satisfied that the emergency equipment required by §393.95 of this subchapter is in place and ready for use; nor shall any driver fail to use or make use of such equipment when and as needed.
49 CFR §392.8

Transporting, Loading and Unloading of Class 2 Materials (Gases)

(1) *Loading.* A cargo tank must be attended by a qualified person at all times when it is being loaded. The person who is responsible for loading the cargo tank is also responsible for ensuring that it is so attended.

(2) *Unloading.* A motor carrier who transports hazardous materials by a cargo tank must ensure that the cargo tank is attended by a qualified person at all times during unloading.
49 CFR §177.834(i)

A person may not drive a cargo tank motor vehicle containing a hazardous material regardless of quantity unless (1) All manhole closures are closed and secured; and (2) All valves and other closures in liquid discharge systems are closed and free of leaks.
49 CFR §177.834(j)

Each liquid discharge valve on a cargo tank motor vehicle, other than an engine fuel line valve, must be closed during transportation except during loading and unloading.
49 CFR §177.840(g)

Operating procedure. Each operator of a cargo tank motor vehicle that is subject to the emergency discharge control requirements in §173.315(n) must carry on or within the cargo tank motor vehicle written emergency discharge control procedures for all delivery operations. The procedures must describe the cargo tank motor vehicle's emergency discharge control features and, for a passive shut-down capability, the parameters within which they are designed to function. The procedures must describe the process to be followed if a facility-provided hose is used for unloading when the cargo tank motor vehicle has a specially equipped delivery hose assembly.
49 CFR §177.840(l)

Cargo tank motor vehicle safety check. Before unloading from a cargo tank motor vehicle containing a liquefied compressed gas, the qualified person performing the function must check those components of the discharge system, including delivery hose assemblies and piping, that are readily observed during the normal course of unloading to assure that they are of sound quality, without obvious defects detectable through visual observation and audio awareness, and that connections are secure.

This check must be made after the pressure in the discharge system has reached at least equilibrium with the pressure in the cargo tank. Operators need not use instruments or take extraordinary actions to check components not readily visible. No operator may unload liquefied compressed gases from a cargo tank motor vehicle with a delivery hose assembly found to have any condition identified in Sec. 180.416(g)(1) or with piping systems found to have any condition identified in §180.416(g)(2).
49 CFR §177.840(m)

Emergency shut down. If there is an unintentional release of product to the environment during unloading of a liquefied compressed gas, the qualified person unloading the cargo tank motor vehicle must promptly shut the internal self-closing stop valve or other primary means of closure and shut down all motive and auxiliary power equipment.
49 CFR §177.840(n)

Daily test of off-truck remote shut-off activation device. For a cargo tank motor vehicle equipped with an off-truck remote means to close the internal self-closing stop valve and shut off all motive and auxiliary power equipment, an operator must successfully test the activation device within 18 hours prior to the first delivery of each day. For a wireless transmitter/receiver, the person conducting the test must be at least 150 feet from the cargo tank and may have the cargo tank in his line of sight.

Unloading procedures for liquefied petroleum gas in other than metered delivery service. An operator must use the following procedures for unloading liquefied petroleum gas from a cargo tank motor vehicle in other than metered delivery service:

(1) The qualified person attending the unloading operation must remain within 25 feet of the cargo tank when the internal self-closing stop valve is open.

(2) The qualified person attending the unloading operation must have an unobstructed view of the cargo tank and delivery hose to the maximum extent practicable, except during short periods when it is necessary to activate controls or monitor the receiving container.
49 CFR §177.840(q)

Unloading using facility-provided hoses. A cargo tank motor vehicle equipped with a specially designed delivery hose assembly to meet the requirements of §173.315(n)(2) may be unloaded using a delivery hose assembly provided by the receiving facility under the following conditions:

(1) The qualified person monitoring unloading must visually examine the facility hose assembly for obvious defects prior to its use in the unloading operation.

(2) The qualified person monitoring unloading must remain within arm's reach of the mechanical means of closure for the internal self-closing stop valve when the internal self-closing stop valve is open except for short periods when it is necessary to activate controls or monitor the receiving container.

(3) If the facility hose is equipped with a passive means to shut off the flow of product that conforms to and

is maintained to the performance standard in §173.315(n)(2), the qualified person may attend the unloading operation in accordance with the attendance requirements prescribed for the material being unloaded in §177.834.
49 CFR §177.840(r)

Discharge System Inspection and Maintenance

Hose identification. The operator must assure that each delivery hose assembly is permanently marked with a unique identification number and maximum working pressure.
49 CFR §180.416(b)

Post-delivery hose check. After each unloading, the operator must visually check that portion of the delivery hose assembly deployed during the unloading.
49 CFR §180.416(c)

Monthly inspections and tests.

(1) The operator must visually inspect each delivery hose assembly at least once each calendar month the delivery hose assembly is in service.

(2) The operator must visually inspect the piping system at least once each calendar month the cargo tank is in service. The inspection must include fusible elements and all components of the piping system, including bolts, connections, and seals.

(3) At least once each calendar month a cargo tank is in service, the operator must actuate all emergency discharge control devices designed to close the internal self-closing stop valve to assure that all linkages operate as designed.
(4) The operator of a cargo tank must check the internal self-closing stop valve in the liquid discharge opening for leakage through the valve at least once each calendar month the cargo tank is in service.

(5) The operator must note each inspection in a record. That record must include the inspection date, the name of the person performing the inspection, the hose assembly identification number, the company name, the date the hose was assembled and tested, and an indication that the delivery hose assembly and piping system passed or failed the tests and inspections. A copy of each test and inspection record must be retained by the operator at its principal place of business or where the vehicle is housed or maintained until the next test of the same type is successfully completed.
49 CFR §180.416(d)

Annual hose leakage test. The owner of a delivery hose assembly that is not permanently attached to a cargo tank motor vehicle must ensure that the hose assembly is annually tested in accordance with §180.407(h)(4).
49 CFR §180.416(e)

Rejection criteria.

(1) No operator may use a delivery hose assembly determined to have any condition identified below for unloading liquefied compressed gases. An operator may remove and replace damaged sections or correct defects discovered. Repaired hose assemblies may be placed back in service if retested successfully in accordance with paragraph (f) of this section.

(i) Damage to the hose cover that exposes the reinforcement.

(ii) Wire braid reinforcement that has been kinked or flattened so as to permanently deform the wire braid.

(iii) Soft spots when not under pressure, bulging under pressure, or loose outer covering.

(iv) Damaged, slipping, or excessively worn hose couplings.

(v) Loose or missing bolts or fastenings on bolted hose coupling assemblies.

(2) No operator may use a cargo tank with a piping system found to have any condition identified in this paragraph (g)(2) for unloading liquefied compressed gases.

(i) Any external leak identifiable without the use of instruments.

(ii) Bolts that are loose, missing, or severely corroded.

(iii) Manual stop valves that will not actuate.

(iv) Rubber hose flexible connectors with any condition outlined in paragraph (g)(1) of this section.

(v) Stainless steel flexible connectors with damaged reinforcement braid.

(vi) Internal self-closing stop valves that fail to close or that permit leakage through the valve detectable without the use of instruments.

(vii) Pipes or joints that are severely corroded.
49 CFR §180.416(g)

Unsafe Operations Forbidden

General. A motor vehicle shall not be operated in such a condition as to likely cause an accident or a breakdown of the vehicle.
49 CFR §396.7(a)

Exemption. Any motor vehicle discovered to be in an unsafe condition while being operated on the highway may be continued in operation only to the nearest place where repairs can safely be effected. Such operation shall be conducted only if it is less hazardous to the public than to permit the vehicle to remain on the highway.
49 CFR §396.7(b)

Driver Vehicle Inspection Reports (DVIR)

(1) *Report required.* Every motor carrier shall require its drivers to report, and every driver shall prepare a report in writing at the completion of each day's work on each vehicle operated except for intermodal equipment tendered by an intermodal equipment provider. The report shall cover at least the following parts and accessories:

- Service brakes including trailer brake connections;
- Parking brake;
- Steering mechanism;
- Lighting devices and reflectors;
- Tires;
- Horn;
- Windshield wipers;
- Rear vision mirrors;
- Coupling devices;
- Wheels and rims; and
- Emergency equipment.

(2) *Report content.* The report shall identify the vehicle and list any defect or deficiency discovered by or reported to the driver which would affect the safety of operation of the vehicle or result in its mechanical breakdown. If no defect or deficiency is discovered by or reported to the driver, the report shall so indicate. In all instances, the driver shall sign the report. On two-driver operations, only one driver needs to sign the driver vehicle inspection report, provided both drivers agree as to the defects or deficiencies identified. If a driver operates more than one vehicle during the day, a report shall be prepared for each vehicle operated.

(3) *Corrective action.* Prior to requiring or permitting a driver to operate a vehicle, every motor carrier or its agent shall repair any defect or deficiency listed on the driver vehicle inspection report which would be likely to affect the safety of operation of the vehicle.

(ii) Every motor carrier or its agent shall certify on the original driver vehicle inspection report which lists any defect or deficiency that the defect or deficiency has been repaired or that repair is unnecessary before the vehicle is operated again.

(4) *Retention period for reports.* Every motor carrier shall maintain the original driver vehicle inspection report, the certification of repairs, and the certification of the driver's review for three months from the date the written report was prepared.
49 CFR §396.11(a)

Driver Inspection

Before driving a motor vehicle, the driver shall:

(a) Be satisfied that the motor vehicle is in safe operating condition;

(b) Review the last driver vehicle inspection report; and

(c) Sign the report, only if defects or deficiencies were noted by the driver who prepared the report, to acknowledge that the driver has reviewed it and that there is a certification that the required repairs have been performed. The signature requirement does not apply to listed defects on a towed unit which is no longer part of the vehicle combination.
49 CFR §396.13