



Think Safety!

A Publication Of The West Virginia Propane Gas Association

Winter 2010

Delivery Procedures

At this time of year, we hope bobtails are scurrying about to meet demand. As you do so, there are a few things your drivers should be doing to make sure that they and your customers are kept safe.

A safe delivery begins before the driver even leaves the plant. He first must make sure he has the proper equipment and that it and his bobtail are working properly.

Once he or she arrives at the scene, the driver must make sure the tank is safe

to fill and that all of the proper safety precautions are taken in filling the tank.

In this issue of Think Safety, we will highlight some safe practices in propane delivery including how to proceed in the event of an out-of-gas call.



Before You Leave:

Before you start your engine, there are several things that can be done to keep you and others safe

while driving in inclement weather.

Inspect your vehicle. Problems with your vehicle tend to reveal themselves when the temperature falls.

Make sure your brakes are in good working condition.

Check for tread wear on your tires, and make sure they are inflated to the proper air pressure. Deflated tires will not give you extra traction.

Check your windshield wipers and make sure you

have plenty of washer fluid. The mixture of road salt, moisture and road grime can greatly reduce the visibility through your windshield at a time when visibility is critical.

Check your antifreeze regularly and make sure it is at adequate temperature protection. Your cooling system should be flushed periodically to help avoid overheating problems. True,

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Before You Leave:

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you will be driving in colder temperatures, but when the roads are bad you are more likely to be driving at slower speeds, which reduce the effect of air-cooling.

Keep your fuel tank as full as possible to avoid fuel-line freeze-up and provide extra weight for lighter vehicles.

Keep your headlights, tail-lights, and windows clear of snow and ice so that you can see and be seen.

Dress warmly. Layered clothing is better than just a heavy coat. If you have a cell phone, make sure it is fully charged. Keep a "care package" in your vehicle. Include a snow shovel, a blanket, warm gloves, flashlight and batteries, and some non-perishable snacks. Keep in mind, though you might

only be a few miles from the plant, in extreme conditions you could be stranded for a lengthy time.

Always allow extra time to reach your destination.

Make sure someone knows where you are going and by what route.

Inspect Equipment

Bobtails must be inspected daily for any leak that would be detectable without the use of leak detection devices. These inspections should be documented each and every time they are performed.

A DOT qualified employee must perform tests and repairs to hoses. The employee should complete a training class and receive a Certified Tester number.

The bobtail driver should visually inspect the portion



of the hose unwound after each delivery. This inspection should also be documented.

Monthly, the driver should also inspect the hose assembly and piping system. This inspection should of course be documented.

An annual leakage test should be performed on any hose assembly not permanently mounted on a bobtail. A record must be kept of the testing.

In any of the situations above, a hose showing the following type of damage should be rejected and replaced:

- Damage to the hose cover that exposes reinforcement.
- Kinking or flattening that permanently deforms the wire braid reinforcement
- Soft spots present while the hose is not under pressure
- Bulging while the hose is under pressure
- Loose outer covering
- Any hose coupling should be rejected that displays the following:
 - Damaged, slipping, or excessively worn hose couplings

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Out-Of-Gas Calls:

Out-of-gas calls, it seems, are an almost inevitable part of deliveries. As long as you sell propane, it seems there will always be that customer who pushes his or her propane supply to the limit.

Little do they know that this is a dangerous situation in which they have placed themselves when the tank is empty or right after that

empty tank is refilled. Since the tank was empty, it is impossible to know the soundness of that system without first performing a leak test.

In fact, many insurance companies are now requiring that their insured companies perform a leak test on an out-of-gas system before that system can be put

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Out-Of-Gas Calls:

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back into service. Whether your insurance company requires it or not, it is wise to perform the test as statistics show most propane accidents occur following an out-of-gas call. If you still need more convincing, it is also required by NFPA-58 to perform a leak test any time there is an interruption of service.

The following leak test procedure is based on the requirements of NFPA 54-2006.

Leak Testing A System

Unlike a pressure test, propane can be used during the performance of a leak test.

Prepare for the test. First, inspect all appliance valves and pipe connections to make sure they are wrench tight. Make sure all appliance connections including pilot and line valves are securely connected.

Note: The test can be performed on either the high or low pressure portion of the system. The procedure differs between the two.

(Low Pressure)

Step 1: Make connection. Connect the low-pressure test gauge or manometer on the outlet side of the second stage regulator.

Step 2: Pressurize the system. Open the tank valve to

pressurize the system. Leave it open for a period of two or three seconds, then close it tightly. Open each appliance shutoff valve slowly. If the pressure drops below 10 inches water column repeat step 3.

Step 3: Check for leak. Observe the pressure indicated on the water manometer or low-pressure test gauge. The reading should be at least 11 inches water column. Slowly open one valve in the system to bleed the reading down to exactly nine inches water column plus or minus one-half inch.

If the system holds pressure for three minutes without falling, it is considered a leak-tight system. However, a drop in pressure indicates a leak. If this occurs, check the joints and other possible leak points with an approved leak detector such as a gas detector or liquid leak detector. Soapy water will work, but it should be rinsed from the piping due to its corrosive nature. Never test with an open flame.

If the pressure increases, the tank valve is not shut completely off. Shut off the tank valve and repeat step four.

(High Pressure)

Step 1: Make connection. Install a high pressure (300-pound) test gauge adapter on the tank service



valve and connect the other end of the gauge adapter to the pigtail and regulator inlet.

Step 2: Pressurize the system. Open the container valve to allow the system to pressurize while observing the pressure.

Step 3: Check for leak. Close the service valve tightly. Slowly bleed gas between the service valve and the gauge adapter. Reduce the pressure at least 10 pounds per square inch and retighten the gauge adapter into the service valve.

Observe the reading on the gauge. If the gauge reading remains constant for three minutes, it can be assumed the system is leak tight. If the pressure drops, it indicates a leak somewhere in the high or low-pressure piping.

If the pressure drops in either test, find the leak, re-

pair, and retest before filling the tank.

Alternative Test

This test can be performed on the tank pressure, high pressure, or low pressure portion of the system.

Step 1: Make Connection. Connect a 30-pound gauge on the down stream port of the first stage regulator for the high pressure test.

Step 2: Pressurize the system. Open the container valve to allow the system to pressurize while observing pressure.

Step 3: Check for leak. Close the service valve tightly. If the pressure continues to climb, it could indicate a leaking service valve. If the pressure holds, bleed it down to five pounds and hold for three minutes. If the pressure drops, it indicates a leak in the system.

The Delivery:

A driver should first secure the vehicle against movement by setting the handbrake and placing chock blocks in front of and behind a wheel of the truck.

Secondly, a driver should make sure that all elements of combustion are controlled. Two elements are readily available during the delivery process: fuel (propane) and oxygen (air). Ignition, the third element, must be prevented. A spark, flame or even static electricity can provide the ignition source.

All running engines such as those of motor vehicles, lawn mowers, and etc. should be kept at least 15 feet from the point of transfer. Smoking, open flames, metal cutting or welding torches, portable electric tools and extension lights capable of igniting propane must be kept at least 25 feet



from the point of transfer.

The bobtail should be at least 10 feet from the tank and positioned so that the driver can easily access both the shutoff valve on the bobtail and the one on the tank in case of emergency.

Of course, in order to shut off the valves, the driver must be in attendance while he is unloading the bobtail.

The driver must remain within 150 feet of the cargo tank and 25 feet of the delivery hose. If the bobtail is 3,500-gallon capacity or less, then the driver must

observe the bobtail's delivery tank and the receiving tank once every five minutes while the internal self-closing valve is open, if the unloading takes more than five minutes.

If the bobtail is more than 3,500 gallon capacity, then the driver must have an unobstructed view of both the cargo tank and the delivery hose if possible. If it is not possible (then) each should be observed once every five minutes for deliveries longer than five minutes.

All bobtails must also be

equipped with an off-truck remote shutoff that will allow the driver to close the internal self-closing valve and shut off all motor and power functions of the vehicle. This remote must function at a distance of 150 feet.

Bobtails with more than 5,000 gallons of capacity must have a passive system capable of shutting down the motor and all power functions unless the driver prevents it from doing so at least once every five minutes.



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Training Quiz Answers

Name _____ Social Security Number _____

1. During cold weather, it is a good idea to inspect your vehicle before leaving the plant.
A. True B. False
2. It is a good idea to let air out of your tires during snowy weather.
A. True B. False
3. It is important to monitor the following during inclement weather.
A. Washer fluid B. Antifreeze C. Tread wear D. A,B and C
4. Antifreeze levels aren't as important during cold weather because engine overheating problems are unlikely.
A. True B. False
5. A winter "care package" should include:
A. Blanket B. Flashlight C. Nonperishable snacks D. A,B, and C
6. Bobtails should be inspected _____ for leaks that are detectable without leak detection devices.
A. Weekly B. Daily C. Monthly D. Yearly
7. How often should bobtail leak inspections be documented?
A. Sometimes B. Each time C. Weekly D. When you feel froggy
8. Which employee can perform repairs on a delivery hose?
A. Any employee B. DOT qualified C. Manager D. Any Bobtail driver
9. A bobtail driver should inspect the portion of hose unwound after each delivery.
A. True B. False
10. The driver should inspect the bobtail hose assembly and piping system _____.
A. Weekly B. Yearly C. Monthly D. Not at all
11. A hose assembly not permanently mounted on a bobtail should be leak tested _____.
A. Annually B. Monthly C. Weekly D. Daily
12. Which of the following conditions under pressure requires the rejection of a hose?
A. Soft Spots B. Bulging C. Loose outer covering D. A, B, and C
13. A leak test should be performed anytime a system runs out of gas.
A. True B. False
14. Propane should never be used when performing a leak test.
A. True B. False
15. If a system holds pressure for _____ minutes during a low pressure test, it is considered a leak-tight system.
A. 10 B. Three C. 15 D. 20
16. Which of these is a potential source of ignition?
A. Lawn mower B. Motor Vehicles C. Open flames D. A, B, and C
17. Extension lights or portable electric tools capable of igniting propane should be kept at least _____ feet from the point of transfer.
A. 25 B. 35 C. 50 D. 10
18. During delivery the bobtail should be positioned so that he or she can easily access _____.
A. The tank shutoff valve B. Bobtail shutoff valve C. His coffee D. A and B