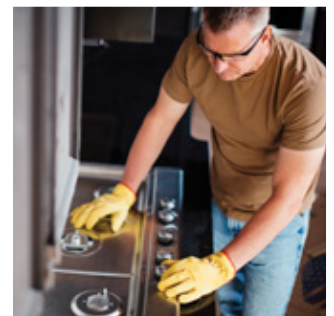
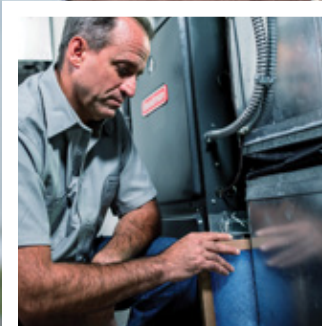


NPGA

NATIONAL PROPANE GAS ASSOCIATION

FUELING THE FUTURE: APPRENTICESHIPS IN PROPANE

A guide to developing skilled workers and administering the propane industry's U.S. Department of Labor registered apprenticeship programs



[NPGA.ORG/APPRENTICESHIP-PROGRAM](https://www.npga.org/apprenticeship-program)

CONTENTS

APPRENTICESHIP BASICS	3
What is an Apprenticeship	4
Is an Apprenticeship Program Right for My Business?	4
Propane Apprenticeship Programs	5
Apprenticeship Partners	6
Responsibilities of an Apprentice	7
Applying for an Apprenticeship	8
Program Terms and Information	9
How Can My Business Participate?	10
Apprentice Recruitment Toolkit	11
▪ Promotional Flyer on Propane Industry Jobs [English and Español]	13
PROGRAM TYPES, COMPONENTS, AND COMPETENCIES	14
Propane Service Technician	15
Commercial Motor Vehicle Driver	19
▪ Bobtail Vehicle Driver	19
▪ Transport Vehicle Driver	26
▪ Utility/Service Vehicle Driver	32
PROGRAM ENROLLMENT FORMS AND RESOURCES	38



APPRENTICESHIP BASICS

WHAT IS AN APPRENTICESHIP?

IS AN APPRENTICESHIP PROGRAM RIGHT FOR MY BUSINESS?

PROPANE APPRENTICESHIP PROGRAMS

APPRENTICESHIP PARTNERS

RESPONSIBILITIES OF AN APPRENTICE

APPLYING FOR AN APPRENTICESHIP

PROGRAM TERMS AND INFORMATION

HOW CAN MY BUSINESS PARTICIPATE?

APPRENTICE RECRUITMENT TOOLKIT

PROMOTIONAL FLYER ON PROPANE INDUSTRY JOBS (ENGLISH AND ESPAÑOL)



APPRENTICESHIP BASICS

WHAT IS AN APPRENTICESHIP?

An apprenticeship is a training and education program in which an individual learns a set of core competencies by completing job tasks through on-the-job training and professional development.

Some programs are nationally-recognized by the U.S. Department of Labor (DOL), and upon completion, individuals earn a Certificate of Completion in Apprenticeship, awarded by the DOL. The certificate is sometimes referred to as a “journeyman credential.”

In a DOL-approved program, an apprentice is also granted the privilege of earning income as a full-time employee while he or she learns new skills.

Each DOL-approved program offers a “learn and earn” compensation model that allows an apprentice to earn wages through on-the-job instruction as well as earn progressive pay increases as he or she reaches established benchmarks within the program.

IS AN APPRENTICESHIP PROGRAM RIGHT FOR MY BUSINESS?

Investing in apprenticeships can help meet your company’s need for skilled workers.

If you are a propane retailer that needs help in building and maintaining a skilled workforce, participation in the propane industry’s apprenticeship program may be a worthwhile investment. Apprenticeship programs are a proven solution for businesses to recruit, train, and retain skilled workers across a wide range of industries.

APPRENTICESHIPS: A WIN-WIN

COMPANY BENEFITS



1. Advantage in Attracting and Retaining Employees
2. Highly Skilled Employees
3. Reduced Turnover
4. Higher Productivity

WORKER BENEFITS



1. Increased Skills
2. Higher Compensation
3. Nationally-Recognized Credentials
4. Career Advancement

PROPANE APPRENTICESHIP PROGRAMS

NPGA offers four types of apprenticeships to connect motivated workers with propane employers. Each program has been approved by the U.S. Department of Labor (DOL) and is registered with the DOL.

These apprenticeships fall within two separate job classifications: propane service technicians and commercial truck drivers.

- **Propane service technicians** include tank, piping, and appliance installers
- **Commercial motor vehicle driver** includes three separate driver programs within this classification:
 - **Bobtail vehicle driver** [for short-haul delivery vehicles]
 - **Transport vehicle driver** [for long-haul delivery vehicles]
 - **Utility/Service vehicle driver** [light truck or delivery service vehicles]

NPGA's apprenticeships are competency-based, meaning each uses an on-the-job competency-based model for instruction and learning and the apprentice works with a mentor to learn the required skills.

For propane service technicians, a minimum of 6 to 12 months of training is required to learn eighty-eight (88) core competencies.

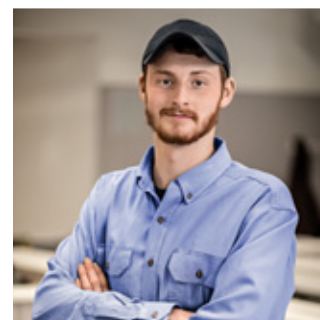
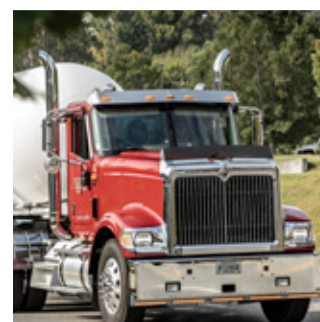
Commercial motor vehicle drivers also need a minimum of 6 to 12 months of instruction. However, the number of competencies varies among vehicle type:

- **Bobtail vehicle drivers** - 50 competencies
- **Transport vehicle drivers** - 56 competencies
- **Utility/service vehicle drivers** - 44 competencies

Each competency has one or more educational lessons associated with it. These lessons have been created by the Propane Education & Research Council (PERC). Most lessons can be found in PERC's Certified Employee Training Program (CETP) Manual and can be verified through the administering of CETP Certification exams. The apprentice must reach an acceptable competency level in each of the outlined tasks.

NPGA recommends industry-developed resources for training in these areas but the sponsoring company is responsible for facilitating the training curriculum. Information on potential funding resources for training or any other aspects of apprenticeship that may exist at the federal and/or state level can be found at: www.npga.org/apprenticeship-program.

These programs are a partnership between an employer who facilitates on-the-job training, the apprentice who works for the employer, and NPGA who helps manage the program.



APPRENTICESHIP PARTNERS

PROPANE EMPLOYER

- Hire new employees or selects current employees to be apprentices
- Provides on-the-job training component
- Identifies an experienced mentor to work with each apprentice
- Pays progressively higher wages as skills increase
- Provides necessary participant information to NPGA
- Provides related technical training as needed
- Tracks hours and competencies

NATIONAL PROPANE GAS ASSOCIATION

npga.org

- Sponsors the apprenticeship programs
- Administers the programs and files all necessary paperwork with the U.S. Department of Labor, Office of Apprenticeship
- Works with propane businesses to set up their programs
- Refers apprenticeship applicants to participating propane business partners

PROPANE EDUCATION & RESEARCH COUNCIL

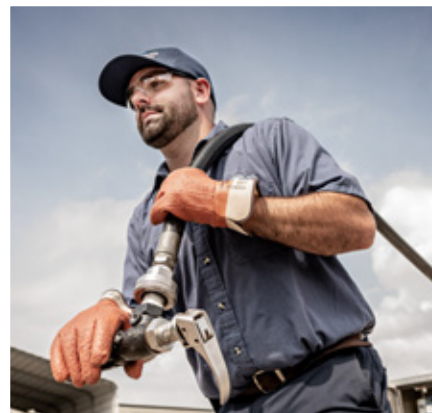
propane.com

Develops the educational material, such as the propane industry's Certified Education Training Program [CETP], for lessons to achieve apprenticeship program competencies.

U.S. DEPARTMENT OF LABOR / OFFICE OF APPRENTICESHIP

apprenticeship.gov

- Helps program sponsor and participating businesses
- Tracks program completion
- Issues certifications



Throughout this handbook you will find information on the various apprenticeship opportunities within the propane industry that have been approved by the U.S. Department of Labor as nationally recognized apprenticeship programs.

RESPONSIBILITIES OF AN APPRENTICE

Candidates of an NPGA apprenticeship *shall*:

1. Perform the required duties of the apprenticeship in accordance with the provisions of NPGA's registered Standards of Apprenticeship
2. Complete on-the-job training and related instruction as listed on the applicable apprenticeship's competency checklist under the supervision of a qualified mentor
3. Provide documentation of on-the-job training and related instruction to NPGA
4. Provide documentation of prior experience or previous related instruction in the form of a certificate, official transcript, or other evidence
5. Communicate changes in the status of employment, lay-off, or the ability to complete instruction to NPGA

Candidates of an NPGA apprenticeship *must*:

1. Be at least 21 years of age
2. Provide proof of completion of high school or GED [or equivalent]
3. Be able to read technical and manufacturers' manuals
4. Be able to perform mathematical skills as required
5. Be eligible to work in the United States
6. Be able to pass a substance abuse screening if required by the employer*
7. Be physically able to perform the duties required of the relevant program
8. Be eligible to obtain a commercial driver's license [CDL]
9. Be eligible for hire by a company that agrees to participate in a NPGA registered apprenticeship program

**Candidates are subject to the substance abuse policies of the participating company.*



APPLYING FOR AN APPRENTICESHIP

For an individual to become an apprentice, he or she must apply for one of NPGA's programs with a participating propane employer. If an individual applies for an apprenticeship but is not employed with a participating employer, NPGA will assist by referring him or her to a local employer who is a member of the association.

Visit [apprenticeship.gov/apprenticeship-finder](https://www.npga.org/apprenticeship-finder) to find participating propane companies in the program.

The application process begins by applying for an NPGA apprenticeship. All forms can be found on [npga.org/apprenticeship-program](https://www.npga.org/apprenticeship-program).

1. Complete the Individual Enrollment Form
2. Complete *Part A* of the U.S. Department of Labor Apprenticeship Agreement.
3. NPGA requires proof of high school graduation or equivalent to approve applications. Applicants should submit their official high school transcript, GED, or High School Equivalency Diploma certificate to NPGA.
4. If not a naturalized citizen, NPGA requires proof of eligibility to work in the United States.
5. Provide copies of current work certifications or licenses (including CDL), if applicable.
6. If an applicant wishes to request credit for prior learning for either related instruction and/or on-the-job experience competencies for an apprenticeship program, complete the appropriate form.

NPGA's apprenticeship programs have a "rolling admission." NPGA will consider each application as soon as all required information has been received.



PROGRAM TERMS AND INFORMATION

Here are some definitions and descriptions of terms used in the program.

COMPETENCY-BASED

In a competency-based apprenticeship program, an individual is required to learn and demonstrate that he or she fully understands and can perform on-the-job tasks clearly and properly. These tasks are defined as “competencies”. An apprentice will demonstrate their knowledge and skills and the employer will verify that they have met the competency requirements.

CERTIFICATE OF COMPLETION IN APPRENTICESHIP

The credential issued by the U.S. Department of Labor, Office of Apprenticeship is awarded to those registered apprentices as having successfully completed the apprentice training requirements.

ON-THE-JOB LEARNING (OJL)

Tasks learned on-the-job in which the apprentice must become proficient before a Certificate of Completion in Apprenticeship is awarded. The learning must be through a structured, supervised work experience.

RELATED INSTRUCTION

Means an organized and systematic form of instruction designed to provide the apprentice with the knowledge of the theoretical and technical subjects related to the apprentice’s occupation. Such instruction may be given in a classroom, through occupational or industrial courses, or by correspondence courses of equivalent value, electronic media, or other forms of self-study approved by the Office of Apprenticeship.

PROBATIONARY PERIOD

Every applicant selected for apprenticeship will serve a probationary period. The probationary period is 500 working hours and 25 percent of the competencies have been met.

CREDIT FOR PRIOR LEARNING

Apprentices may be granted credit for prior learning or experience when competencies have been mastered, including during a previous registered apprenticeship program. The apprentice must present documentation of the experience and training, and the employer will validate mastery of the competencies. Either party (apprentice or employer) may submit the documentation, with the verification checklist, to NPGA.

WORK HOURS

Apprentices will generally work the same hours as fully proficient workers, except no apprentice will be allowed to work if it conflicts with “related instruction” activities or classes.

WAGE PROGRESSION

Apprentices must be paid a progressive increasing schedule of wages during their apprenticeship based on the acquisition of increased skills, knowledge, and competence on-the-job and in related instruction.

TRANSFER

NPGA will assist apprentices transferring between employers by reviewing documentation of work experience and related instruction.

In instances where the employer terminates the apprentice’s employment, the apprentice must notify NPGA immediately. The reasons for termination are not recorded by NPGA. NPGA will work with the apprentice and refer them to other registered employers within their area.



HOW CAN MY BUSINESS PARTICIPATE?

Having your company become involved in providing apprenticeships involves a few easy steps. Below is a step-by-step guide to help you get started.

STEP 1: RECRUIT CANDIDATES

Each participating company will need to recruit their own candidates to participate in an apprenticeship offered by NPGA. Candidates may be new hires or current employees. Candidates must be at least 21 years old and have a high school diploma or equivalent. Applicants must also be physically capable of performing the essential functions of their apprenticeship with or without reasonable accommodation, and without posing a direct threat to the health and safety to themselves or others.

STEP 2: ACCEPT CANDIDATES

Participating companies will also need to screen candidates to ensure they meet their own requirements and that of the program they pursue. This acceptance process may be different from company to company. A company must have a written process in place and it must follow guidelines not to discriminate.

STEP 3: REGISTER YOUR COMPANY AND PROGRAM CANDIDATES WITH NPGA

A company must submit an application to NPGA to be enrolled in an apprenticeship program. Once enrolled, all candidates will need to complete an NPGA application form, a U.S. Department of Labor enrollment form, and provide necessary documentation.

Once your company has selected its candidates and the required paperwork has been filed with NPGA, you're ready to begin!

STEP 4: BEGIN YOUR ON-THE-JOB TRAINING PROGRAM

Use the job task requirements [which vary among each apprenticeship program] as a guide for how your company organizes on-the-job training. Remember, job tasks are meant to educate an apprentice on the fundamentals of a core competency required by the program.

If an apprentice has received training in various job tasks prior to employment with you, such as through another company or military service, you may submit an affidavit validating they have demonstrated specific knowledge and skills required by the program and thereby request an exemption from various training requirements.

Each of NPGA's apprenticeship programs is structured so that core competencies can be learned through on-the-job training and related instruction in 12 months.

STEP 5: ASSESS AND CONTINUOUSLY IMPROVE

Your company should have evaluation benchmarks for each apprentice at three months, six months, nine months, and at one year. By one year, an apprentice should be at or near completion of the program, having learned the core competencies of that program. Apprentices must earn compensation increases as their knowledge of competencies increase. It is required they receive at least one such increase within six months of starting their program.

STEP 6: TRACK PROGRESS

Your company must track the individual progress of each participant in order to certify that he or she has met the requirements for each competency and work area.

STEP 7: CONTINUOUSLY MARKET YOUR PROGRAM

It is important to regularly market the availability of your apprenticeship program to support a critical workforce need. Promotion through local job boards, social media [including Facebook and Instagram], your state/regional propane association, community colleges, and vocational schools are just a few examples.

STEP 8: SHARE YOUR SUCCESSSES

Completion of an apprenticeship is a proud moment for both the apprentice and the employer. Recognize this achievement by holding a graduation ceremony where your employee is awarded their Certificate of Completion in Apprenticeship, create a news release for local press, vocational schools, and industry trade publications, and boast about your new apprentices with industry colleagues.





APPRENTICE RECRUITMENT TOOLKIT

HOW DOES MY COMPANY RECRUIT EMPLOYEES AND CANDIDATES FOR APPRENTICESHIPS?

Propane companies that participate in NPGA's apprenticeship program can showcase to prospective employees how they will invest in their future and career by providing formalized on-the-job training. Apprenticeships can offer competitive and professional development advantages not available from all employers within the industry. This guide provides some resources and tips to help your company communicate your value and investment in the apprenticeship program.



EXPLORE THE U.S. DEPARTMENT OF LABOR'S RESOURCES

The U.S. Department of Labor's Office of Apprenticeship has many available resources both for companies considering adopting a program and those who are ready to go. Visit [apprenticeship.gov](https://www.apprenticeship.gov) to learn more.



INVOLVE YOUR HUMAN RESOURCES DEPARTMENT (IF APPLICABLE)

Involve your HR department to help advertise to current and potential employees about your apprenticeship program. Develop handouts and other promotional material to distribute to these audiences.



BE PREPARED TO TALK COMPENSATION

Candidates interested in an apprenticeship with your company may want to know how their compensation will grow as they learn through the program. Prepare a scale to illustrate how this will happen.



CONNECT WITH YOUR LOCAL WORKFORCE DEVELOPMENT BOARD

Workforce development boards (WDB) are a network of federal, state, and local offices that support economic expansion and develop skillsets of the nation's workforce. WDBs serve as liaisons between the U.S. Department of Labor and more than 2,500 local American Job Centers to connect workers and employers. Visit [careeronestop.org](https://www.careeronestop.org) to find your local WDB.



ATTEND JOB FAIRS SPONSORED BY YOUR LOCAL CHAMBER OF COMMERCE

Chambers of Commerce, non-profits, government agencies, and business organizations host numerous job fairs nationwide throughout the year. Reach out to these groups to see how you can best promote your apprenticeship to career-focused groups of individuals.



TAKE PART IN COLLEGE FAIRS

High schools often host college fairs, where colleges exhibit to recruit students to visit and attend their institution. Often, you will also find recruiters from the military at these fairs, offering an alternative to college. Similarly, consider a booth at a college fair to present your profession and apprenticeship as an alternative to college. Be sure to highlight that an apprenticeship provides paid educational training.



USE SOCIAL MEDIA

Social media is an inexpensive way to promote your company and apprenticeship, especially to young people. Don't miss out on opportunities offered through Facebook, Instagram, LinkedIn, and Twitter. Be sure to use photos in any platform you use.



EDUCATE VOCATIONAL/TECHNICAL SCHOOL SYSTEM PERSONNEL ABOUT YOUR APPRENTICESHIP

Your company should already be recruiting graduates at your local community college, vocational, and technical schools. Be sure to include information about your apprenticeship in any promotional material you provide to these institutions. By virtue of their field of study, many of these graduates may already have met several of the competencies required of an apprenticeship.



HOST AN "OPEN HOUSE" OR CAREER DAY AT YOUR COMPANY TO MARKET YOUR APPRENTICESHIPS

In conjunction with your suppliers, vendors, and community groups, host an "open house" or career day at your business to showcase the many opportunities a career in the propane industry can offer.



BE AN INVOLVED MEMBER OF YOUR COMMUNITY

A marketer involved in their community is more well known, tends to be well respected, and a company people want to work for. This is a great opportunity to plant the seeds for future employees when your company is involved in the community doing good. An added benefit is the marketing your company receives when doing this.

Keep in mind, growing your company's staff and careers in the propane industry is an investment; it will take time, money, and patience. Just as your employees are your company's biggest investment, development of these recruiting activities is essential and should be thoroughly considered. Use some of your marketing and recruiting budgets to help.



PROMOTIONAL FLYER ON PROPANE INDUSTRY JOBS (ENGLISH & ESPAÑOL)



Promotional brochures are available at www.npga.org/apprenticeship-program.

PROGRAM TYPES, COMPONENTS, AND COMPETENCIES

PROPANE SERVICE TECHNICIAN

BOBTAIL VEHICLE DRIVER

TRANSPORT VEHICLE DRIVER

UTILITY/SERVICE VEHICLE DRIVER



PROPANE SERVICE TECHNICIAN: COMPONENTS AND COMPETENCIES

In order to complete the required on-the-job training, the propane service technician apprentice must successfully meet both the following related instruction and experience competencies listed below.

Related instruction competencies are broken down into eight course areas. Each course includes a series of lessons designed to help the apprentice learn and master the competencies required by the program. Most lesson information can be found in PERC's CETP manual.



RELATED INSTRUCTION COMPETENCIES

COURSE	COMPETENCIES	LESSONS
1. Basic Principles and Practices of Propane	9	22
2. Initial OSHA/ DOT Training	10	32
3. Designing and Installing Exterior Vapor Distribution System Operations	13	27
4. Placing Vapor Distribution Systems and Appliances into Operations	13	19
5. Installing Appliances and Interior Vapor Distribution Systems	10	27
6. Basic Electricity for Propane Appliance Service	10	31
7. Basic Propane Appliance Service and Troubleshooting	13	41
8. Advanced Propane Appliance Service and Troubleshooting	10	42
TOTAL	88	241

PROPANE SERVICE TECHNICIAN: PROGRAM GUIDE

Each competency is broken down into several possible lessons. The supervisor can use the following listing as a helpful guide in judging an apprentice's training and progress. The following instruction shall include, but is not limited to:

1. BASIC PRINCIPLES AND PRACTICES OF PROPANE (CERTIFICATION)

- Organizations that influence, publish, or enforce codes and standards
- Introduction to basic principles and practices of propane
- Propane customer applications and customer service
- Sources and physical properties of propane
- Odorants and service interruptions
- Complete and incomplete combustion characteristics
- DOT cylinders, propane piping, and residential systems
- National Fire Protection Association (NFPA) regulations
- Updated or new federal, state, and local regulations and policies

2. INITIAL OSHA/ DOT TRAINING

- Introduction to OSHA and DOT training
- OSHA hazard communication
- DOT general awareness HAZMAT training
- Emergency response
- Loading and unloading
- CMV driver requirements
- Vehicle inspection
- Cylinder safety
- Materials of trade
- Security

3. DESIGNING AND INSTALLING EXTERIOR VAPOR DISTRIBUTION SYSTEM OPERATIONS

- Basic designing vapor distribution systems
- Designing vapor systems: container and lines.
- Designing vapor distribution systems: regulators and meters
- Preparing system components for transport
- Installing containers
- Installing lines
- Installing regulators and meters
- Tank-to-tank transfer
- Other installations
- System tests
- Safety information
- National Fire Protection Association (NFPA) regulations
- Updated or new federal, state, and local regulations and policies

4. PLACING VAPOR DISTRIBUTION SYSTEMS AND APPLIANCES INTO OPERATION (CERTIFICATION)

- Vapor distribution system tests
- Validating vapor distribution systems
- Identifying venting requirements and characteristics
- Validating combustion air
- Leak check procedures
- Purging air from a piping system
- Placing appliances into operation
- Appliance controls and safety devices
- Spillage test
- Identifying burning characteristics of propane
- Safety information
- National Fire Protection Association (NFPA) regulations
- Updated or new federal, state, and local regulations and policies

5. INSTALLING APPLIANCES AND INTERIOR VAPOR DISTRIBUTION SYSTEMS (CERTIFICATION)

- Introduction to installing appliances and interior vapor distribution system
- Design considerations for gas appliances
- Designing venting systems
- Design of interior vapor distribution systems
- Installing appliances
- Installing venting systems
- Installation of interior vapor distribution system
- Safety information
- National Fire Protection Association (NFPA) regulations
- Updated or new federal, state, and local regulations and policies

6. BASIC ELECTRICITY FOR PROPANE APPLICATIONS (CERTIFICATION)

- Overview of basic electricity for propane appliances
- Follow safety procedures
- Electrical circuits
- Interpret electrical control circuit diagrams for basic appliances
- Measuring electrical quantities
- Use a digital multimeter
- Measure voltage, resistance, and current at any point in an electrical circuit
- Identify functions of common sensing devices in basic appliances
- Identify functions of common controls and components in basic propane appliances including:
 - Transformers
 - Relays and contactors
 - Motors and capacitors
 - Wall thermostats
 - Limit and fan controls
 - Ignition systems
 - Gas control valves
- Troubleshoot electrical circuits

7. BASIC PROPANE APPLIANCE SERVICE AND TROUBLESHOOTING

- Basic propane appliance service and troubleshooting
- Measuring temperature, pressure, and gas concentration
- Common sensing devices in propane appliances
- Electrical components in propane appliance systems
- Wall thermostats and wireless controls
- Limit and fan controls
- Ignition systems for basic propane appliances
- Pressure-regulated gas control valves
- Burners and orifices
- Electrical control circuit diagrams and troubleshooting
- Appliance service tools and techniques
- Troubleshooting basic propane appliance systems
- Leaks, odor, and carbon monoxide complaints

8. ADVANCED PROPANE APPLIANCE SERVICE AND TROUBLESHOOTING

- Systematic approach to troubleshooting propane appliances
- Advanced electrical circuits and electrical safety
- Measuring differential temperature, pressure, and other key tests
- Common components in propane appliance systems
- Advanced ignition systems and gas control valves
- Electrical control circuit diagrams and troubleshooting
- Typical propane appliance distribution systems
- Appliance service tools and techniques
- Troubleshooting advanced appliance systems
- Leaks, odor, and carbon monoxide complaints

EXPERIENCE COMPETENCIES

Experience competencies are broken down among 27 various work areas. Apprentices will be evaluated on their understanding and mastery in the required areas as part of the program:

1. Follow all safety policies and regulations
2. Obtain the necessary license and meet DOT requirements necessary to operate a commercial vehicle over 26,000 lbs.
3. Safely operate commercial vehicles and propane related equipment associated with the installation of propane containers and systems, such as tank trailers, trenchers, backhoes, liftgates, and vehicle mounted cranes
4. Safely operate trucks and equipment associated with the installation of propane tanks, such as tank trailers, trenchers, backhoes, liftgates, and vehicle mounted cranes
5. Test piping or tubing joints or connections for leaks, using acceptable methods including gauges, combustible gas detector, or leak detector solution
6. Repair or replace piping or tubing as necessary
7. Install propane containers, exterior piping, regulators, interior piping, appliances, and venting systems
8. Perform inspections, tests, and procedures to address gas odors and gas leaks
9. Test electrical circuits or components for continuity, using electrical test equipment
10. Repair or replace defective equipment, components or wiring
11. Troubleshoot heating or water heating systems with users to isolate problems or to verify that repairs have been completed
12. Repair or service heating, water heating, and other propane appliances to improve efficiency, such as by changing filters, cleaning ducts, flues, or making necessary adjustments
13. Install, connect, or adjust thermostats, humidistats, timers, or other control equipment associated with heating, water heating, and other propane appliances
14. Install heating, water heating, other propane appliances, and associated equipment
15. Connect heating, water heating, and other propane appliances to gas and water sources to form a complete system
16. Study blueprints, design specifications, or manufacturers' recommendations to ascertain the configuration of heating or cooling equipment components and to ensure the proper installation of components
17. Comply with all applicable standards, policies, or procedures that apply to the appliance system
18. Test electrical wiring between controls and equipment, according to wiring diagrams, using the appropriate electrician's testing tools
19. Diagnose and inspect systems to verify compliance with plans and specifications or to identify defects or locate malfunctions
20. Record and report time, materials, faults, deficiencies, or other unusual occurrences on service work orders
21. Install and test automatic, programmable, or wireless thermostats in residential or commercial buildings to minimize energy usage for heating or cooling
22. Adjust system controls to settings recommended by manufacturer
23. Recommend, develop, or perform preventive or general maintenance procedures, such as cleaning, power-washing, or vacuuming equipment, oiling parts, or changing filters
24. Cut or drill holes in floors, walls, or roof to install equipment using power tools such as saws or drills.
25. Measure, cut, thread, or bend piping or tubing, using appropriate pipe fitter's tools
26. Install heating, water heating, or other propane appliances, following blueprints or manufacturer's installation specifications
27. Identify and inspect all components of ASME and DOT containers following regulations pertaining to each



BOBTAIL VEHICLE DRIVER: COMPONENTS AND COMPETENCIES

In order to complete the required on-the-job training, the bobtail driver apprentice must successfully meet both the following related instruction and experience competencies listed below.

Related instruction competencies are broken down into 14 course areas. Each course includes a series of lessons designed to help the apprentice learn and master the competencies required by the program. Most lesson information can be found in PERC's CETP manual.



RELATED INSTRUCTION COMPETENCIES

COURSE	COMPETENCIES	LESSONS
1. Basic Principles and Practices of Propane	9	22
2. Initial OSHA/ DOT Training	10	32
3. Introduction to Bobtail Delivery Operations	1	4
4. DOT Licensing and Driving Requirements	3	11
5. Vehicle Inspections, Identification, and Documentation	3	20
6. Safely Handling Hazardous Materials	4	36
7. Driving Defensively and Handling Accidents and Emergencies	3	30
8. Parking, Servicing, and Security	2	11
9. Bobtail Equipment and Systems	3	24
10. Bobtail Inspections	2	9
11. Loading Bobtails	3	16
12. Unloading Bobtails	2	7
13. Injecting Methanol and Evacuating Containers	5	34
14. Commercial Driving Licensing	Federal & State Regulations [+]	
TOTAL	50 (+)	256 (+)

BOBTAIL DRIVER: PROGRAM GUIDE

Each competency is broken down into several possible lessons. The supervisor can use the following listing as a helpful guide in judging an apprentice's training and progress. The following instruction shall include, but is not limited to:

1. BASIC PRINCIPLES AND PRACTICES OF PROPANE (CERTIFICATION)

- Organizations that influence, publish, or enforce codes and standards
- Introduction to basic principles and practices of propane
- Propane customer applications and customer service
- Sources and physical properties of propane
- Odorants and service interruptions
- Complete and incomplete combustion characteristics
- DOT cylinders, propane piping, and residential systems
- National Fire Protection Association (NFPA) regulations
- Updated or new federal, state, and local regulations and policies

2. INITIAL OSHA/DOT TRAINING

- Introduction to OSHA and DOT training
- OSHA hazard communication
- DOT general awareness HAZMAT training
- Emergency response
- Loading and unloading
- CMV driver requirements
- Vehicle inspection
- Cylinder safety
- Materials of trade
- Security

3. INTRODUCTION TO BOBTAIL DELIVERY OPERATIONS

- Safety

4. DOT LICENSING AND DRIVING REQUIREMENTS

DOT Driver Qualifications

- Commercial motor vehicle definition
- Personal qualifications
- Documentation requirements
- Other requirements

Commercial Driver's License (CDL) Information

- Requirements
- CDL classifications
- CDL endorsements
- Hazardous materials endorsement

Drug and Alcohol Awareness

- Drug and alcohol restrictions
- Testing
- Post-accident drug and alcohol testing



5. VEHICLE INSPECTIONS, IDENTIFICATION, AND DOCUMENTATION

Vehicle Inspections and Maintenance

- Importance of vehicle maintenance
- Preparing for inspections
- Types of inspections
- Types of daily inspections
- Pre- and post-trip inspections
- Pre-trip inspection requirements
- Post-trip inspection requirements
- Annual/periodic inspections and maintenance

Vehicle Identification Requirements

- Verifying proper vehicle identification
- Bobtail identification requirements

- Bobtail placards
- Placarding methods
- Bobtail product shipping name
- Bobtail data plates

Vehicle Documentation Requirements

- Shipping papers
- Emergency response information
- Complying with emergency response
- Information requirements
- HAZMAT certificate of registration
- Documentation requirements

6. SAFELY HANDLING HAZARDOUS MATERIALS

Methanol and Other Flammable Liquids

- Commonly used flammable liquids
- Methanol
- Hazards of methanol
- Personal Protective Equipment (PPE)
- Indoor storage requirements
- Outdoor storage requirements
- Labeling storage containers
- Transferring flammable liquids
- Transferring flammable liquids as materials of trade
- Other flammable liquids

Verifying Propane Odorization

- Propane odorization requirements
- The sniff test
- Handling unodorized propane

Out-of-Gas Calls and Leak Checks

- Potential causes of an interruption of service
- Minimizing out-of-gas calls
- Handling out-of-gas situations
- Handling out-of-gas situations: appliance access
- Handling out-of-gas situations: no appliance access
- Leak check

- Performing a leak check
- Appliances with 100 percent safety shutoff valves
- Appliances without 100 percent safety shutoff valves
- Leak check instruments
- Leak check methods
- Using a manometer
- Performing a leak check using a manometer
- Using a test-block gauge
- Performing a leak check using a test-block gauge
- Using a high-pressure gauge
- Performing a leak check using a high-pressure gauge
- Discovering a leak
- Restoring gas appliance to service
- Lighting appliance pilots
- Lighting a standing pilot

Restoring Service

- Steps for lighting pilots without pilot safety devices
- Steps for starting up electronic control ignition systems

7. DRIVING DEFENSIVELY AND HANDLING ACCIDENTS AND EMERGENCIES

Driving Defensively

- Safe driving practices
- Defensive driving tips
- Maintaining vehicle control
- High center of gravity
- Load and suspension shifts
- Tire condition
- Re-inflating tires
- Blowouts
- Blind spots
- Weather and road conditions
- Skids
- Control of your vehicle/rollover awareness
- Preventing collisions

Selecting the Safest Delivery Route and Protecting Property

- Routing CMVs and protecting property
- Routing bobtails
- Railroad crossings
- Bridges and culvert crossings on customer property
- Protecting landscaping and structures

Handling Accidents and Emergencies

- When accidents and emergencies happen
- Handling accidents with no propane leak: take initial precautions
- Handling accidents with no propane leak: ensure safe conditions
- Handling emergencies with a propane leak
- Fire extinguishers
- Non-propane fire control actions
- Accidents and emergencies
- Hazard warning signal flashers
- Warning devices
- Warning devices: additional guidelines
- DOT notification requirements
- Reporting accident/incident details to your company

8. PARKING, SERVICING, AND SECURITY

Parking and Servicing Requirements

- Parking indoors at public garages or buildings
- Parking indoors at non-public buildings
- Parking outdoors
- Servicing cargo tanks and piping systems
- Servicing the engine/chassis in a public garage – vehicle attended
- Servicing the engine/chassis in a public garage – vehicle unattended
- Servicing the engine/chassis in a non-public building
- Servicing requirements

Security of Propane Delivery Vehicles

- Importance of vehicle security
- Attending your vehicle
- Security training and communications

9. BOBTAIL EQUIPMENT AND SYSTEMS

Cargo Tank and Connections

- Common bobtail equipment and systems
- Different bobtail equipment and systems
- Cargo tank
- Data plate
- Gauges, valves, and connections
- Fixed maximum liquid level gauge
- Float gauge
- Rotary gauge
- Temperature and pressure gauges
- The importance of understanding cargo tank gauges
- Pressure relief valves
- Liquid fill connection
- Vapor equalizing connection
- Internal valves

- Manual internal valves
- Pressure differential internal valves
- Excess flow valves

Pumps and Associated Systems

- Bobtail pump
- Power Take-Off (PTO) assembly
- Engine pumping speeds
- Pump bypass system

Meters, Hoses, and Emergency Discharge Control Equipment

- Liquid meters
- Liquid delivery hoses
- Emergency discharge control equipment

10. BOBTAIL INSPECTIONS

Walk-Around and Pre-Transfer Inspections

- Walk-around inspection
- Pre-transfer inspection
- Cargo tank discharge system: rejection criteria
- Delivery hose and assembly: rejection criteria
- Emergency discharge control equipment: rejection criteria

Monthly, Annual, and Five-Year Inspections

- Monthly inspections
- Inspecting the delivery hose and assembly
- Documenting the monthly inspection
- Annual and five-year cargo tank inspections

11. LOADING BOBTAILS

Bulk Plant Loading Systems and Equipment

- Bulk plant design variations
- Single and multiple tank bulk plants
- Understanding bulk plant transfer operations
- Liquid transfer pumps and vapor compressors
- Transfer hoses
- Emergency shutdown systems
- Systems and equipment

Other Loading Methods

- Vapor compressor
- Auxiliary pump inlet

Filling a Bobtail Using a Plant Pump

- Prepare for loading operation
- Check the liquid level gauges
- Ensure valves are closed and check hoses
- Connect the transfer hoses
- Perform the sniff test
- Fill the cargo tank
- Disconnect hoses and prepare bobtail for travel



12. UNLOADING BOBTAILS

Transfer Site Hazards

- Inspect the transfer site
- Hazards at residential customer sites
- Hazards at commercial, industrial, and agricultural sites
- Containers and installations

Filling Propane Storage Containers at Customer Location

- Unloading safety precautions
- Containers at customer locations
- Unloading the bobtail at the bulk plant

13. INJECTING METHANOL AND EVACUATING CONTAINERS

ASME Tank Requirements

- DOT and ASME containers
- ASME tank size
- ASME tank design information
- Valves and gauges on ASME stationary tanks
- Aboveground ASME tanks
- Underground ASME tanks
- Parts, valves, and gauges on ASME vehicle mounted tanks

- Steps for injecting methanol into a negative pressure container
- After injecting methanol into a negative pressure container
- Preparing to inject methanol into a positive pressure container
- Steps for injecting methanol into a positive pressure container
- After injecting methanol into a positive pressure container

Examining Customer Containers and Installations

- Inspect the supporting foundation
- Inspect container location: aboveground ASME tanks
- Inspect container location: underground ASME tanks
- Inspect container location: DOT stationary cylinders
- Inspect container information
- Inspect overall fitness
- Inspect valves
- Inspect pressure regulator[s]

Evacuation Equipment

- Portable compressors
- Bobtail pumps
- Liquid transfer hose
- Vapor hose
- Liquid withdrawal valves
- Liquid transfer valves
- Additional equipment

Injecting Methanol into Containers

- Methanol hazards
- Preparing to inject methanol
- Preparing to inject methanol into a negative pressure container

Evacuation Procedures

- Pre-transfer review
- Evacuation safety precautions
- The portable compressor method
- The bobtail pump method

14. COMMERCIAL DRIVING LICENSING

Courses, rules, and regulations on how to obtain a commercial driver's license [CDL] are established by state and federal guidelines and are not addressed in this handbook.

EXPERIENCE COMPETENCIES

Experience competencies are broken down among 33 various work areas. Apprentices will be evaluated on their understanding and mastery in the required areas as part of the program:

1. Follow all safety policies and regulations
2. Obtain the necessary license and meet DOT requirements to operate a commercial vehicle with a tanker and hazmat endorsement
3. Perform tests and inspections that are unique to the type of equipment being operated
4. Check vehicles to ensure that mechanical, safety, and emergency equipment is in good working order
5. Inspect and maintain vehicle supplies and equipment, such as fuel, oil, water, tires, lights, or brakes to ensure that vehicles are in proper working condition
6. Follow appropriate safety procedures for hazardous materials
7. Inspect loads to ensure that cargo is secure
8. Maintain logs of working hours, vehicle service, and repair status following applicable state and federal regulations
9. Secure cargo tank to vehicle
10. Maneuver trucks into loading or unloading positions
11. Report vehicle defects, accidents, traffic violations, or damage to the vehicles
12. Obtain receipts and/or signatures for delivered goods and collect payment for services when required by employer
13. Drive trucks with capacities greater than three tons to transport and deliver bulk products
14. Check all load-related documentation for completeness and accuracy
15. Read shipping papers to determine assignment details
16. Collect delivery instructions from appropriate sources, verifying instructions and routes
17. Drive trucks along routes in compliance with state regulations
18. Perform basic vehicle maintenance tasks, such as adding oil, fuel, or radiator fluid or performing minor repairs
19. Read and interpret maps to determine vehicle routes
20. Operate equipment, such as truck cab computers, phones, and global positioning systems (gps), and other navigation devices safely and according to applicable regulations to exchange necessary information with bases, supervisors, or other drivers
21. Plan or adjust routes based on changing conditions using computer equipment, global positioning systems (gps) or other navigation devices
22. Load or unload trucks, using special loading-related equipment, or other equipment as necessary including pumps and compressors
23. Follow special cargo-related procedures related to bulk propane deliveries
24. Inventory and inspect goods to be moved to determine quantities and conditions
25. Install or remove special equipment, such as tire chains
26. Perform emergency roadside repairs, such as changing tires, installing light bulbs, or replacing fuses
27. Operate trucks in inclement weather like rain and snowy conditions
28. Obey traffic laws and follow established traffic and transportation procedures
29. Turn in receipts and required paperwork from deliveries
30. Verify the contents of inventory loads against shipping papers
31. Use and maintain the tools or equipment found on commercial vehicles
32. Present bills, bills of lading, and receipts and collect payments for goods delivered or loaded
33. Report delays, accidents, or other traffic and transportation situations to bases or other vehicles, using telephones or mobile two-way radios



TRANSPORT VEHICLE DRIVER: COMPONENTS AND COMPETENCIES

In order to complete the required on-the-job training, the transport driver apprentice must successfully meet both the following related instruction and experience competencies listed below.

Related instruction competencies are broken down into 12 course areas. Each course includes a series of lessons designed to help the apprentice learn and master the competencies required by the program. Most lesson information can be found in PERC's CETP manual.



RELATED INSTRUCTION COMPETENCIES

COURSE	COMPETENCIES	LESSONS
1. Basic Principles and Practices of Propane	9	22
2. Initial OSHA/DOT Training	10	32
3. Introduction to Propane Transport Delivery Operations	1	4
4. DOT Licensing and Driving Requirements	3	11
5. Operating a Transport to Deliver Propane	1	19
6. Applying Driving Techniques for Safe Operation of a Transport	6	22
7. Identify Components of Terminal and Bulk Plant Loading & Unloading Systems	5	12
8. Unload a Transport Cargo Tank in a Non-Metered Delivery Service	7	12
9. Perform a Post-Trip Inspection of a Transport	4	14
10. Perform Monthly Inspections of the Transport Delivery Hose Assembly(s)	5	5
11. Perform Monthly Tests of the Emergency Discharge System	5	5
12. Commercial Driving Licensing	Federal & State Regulations (+)	
TOTAL	56 (+)	158 (+)

TRANSPORT DRIVER: PROGRAM GUIDE

Each related instruction competency is broken down into several lessons. The supervisor can use the following listing as a guide in evaluating an apprentice's training and progress. The following related instruction shall include, but is not limited to:

1. BASIC PRINCIPLES AND PRACTICES OF PROPANE (CERTIFICATION)

- Organizations that influence, publish, or enforce codes and standards
- Introduction to basic principles and practices of propane
- Propane customer applications and customer service
- Sources and physical properties of propane
- Odorants and service interruptions
- Complete and incomplete combustion characteristics
- DOT cylinders, propane piping, and residential systems
- National Fire Protection Association (NFPA) regulations
- Updated or new federal, state, and local regulations and policies

2. INITIAL OSHA/DOT TRAINING

- Introduction to OSHA and DOT Training
- OSHA hazard communication
- DOT general awareness HAZMAT training
- Emergency response
- Loading and unloading
- CMV driver requirements
- Vehicle inspection
- Cylinder safety
- Materials of trade
- Security

3. INTRODUCTION TO TRANSPORT DELIVERY OPERATIONS

- Safety

4. DOT LICENSING AND DRIVING REQUIREMENTS

DOT Driver Qualifications

- Commercial motor vehicle definition
- Personal qualifications
- Documentation requirements
- Other requirements

Commercial Driver's License (CDL) Information

- Requirements
- CDL classifications
- CDL endorsements
- Hazardous materials endorsement

Drug and Alcohol Awareness

- Drug and Alcohol Restrictions
- Testing
- Post-accident drug and alcohol testing



5. OPERATING A TRANSPORT TO DELIVER PROPANE

Loading a Transport Cargo Tank

- Ensuring the truck and appropriate equipment are prepared, proper positioning, and securing bulkhead for loading
- Shutting down the engine and attaching a grounding cable
- Inspecting the condition of and preparing all hoses, valves, and connections for the loading process
- Wearing proper Personal Protective Equipment (PPE)
- Determining the proper setting for the cargo tank liquid level gauge for proper filling level based on temperature and specific product gravity
- Verifying proper conditions and locations of Emergency Shutdown Valves (ESVs) and remote emergency shut down controls
- Inspecting the condition of all transfer hoses including loading rack transfer hoses
- Determining if the liquid and vapor cargo tank inlet valves are closed
- Removing caps from the cargo tank loading connections and inspecting the conditions of ACME threads and the O-ring or gasket
- Preparing for transfer using:
 - Plant pump
 - Plant compressor
 - Cargo Tank Motor Vehicle [CTMV] pump
- Verifying gas odorization
- Shutting down pumps, compressors, or Power Take-Off [PTO] and activating emergency controls
- Detecting liquid propane at the fixed maximum level gauge or at a set point for the liquid level gauge
- Shutting down the transfer pump, compressor, or PTO and vehicle engine and closing the ESVs, the hose-end valves, cargo tank valves, loading rack valves, and bulk tank valves and piping valves
- Venting gas trapped in the hose connections between the hose-end valves and cargo tank valves
- Replacing the dust covers on the cargo inlets and transfer hoses and properly stowing the transfer hoses and delivery hose assembly and any other equipment used in the loading process for transport and/or safe storage
- Inspecting the vehicle and preparing it for movement.
- Completing bill of lading and shipping papers for the load as well as any other necessary documentation
- Securing access gates, valve locks, or other security controls accessed or opened during the loading operation

6. APPLYING DRIVING TECHNIQUES FOR SAFE OPERATION OF A TRANSPORT

- Operating the vehicle safely and make appropriate use of the vehicle's safety equipment including the following:
 - Mirrors
 - Traffic and roadway conditions
 - Speed
 - Advance preparation, mirrors, and directional signals when making lane changes and turns
- Adjusting driving techniques for weather and traffic conditions
- Techniques for controlling skids and recovering from a tire blowout or pavement drop off
- Causes of vehicle roll-overs and how to avoid them
- Maneuvering the vehicle onto customer property in such a way to:
 - Avoid damage to the property
 - Ensure not having to re-enter the roadway by backing into traffic
- Handling accidents and emergencies
 - When accidents and emergencies happen
 - Handling accidents with no propane leak: take initial precautions
 - Handling accidents with no propane leak: ensure safe conditions
 - Handling emergencies with a propane leak
 - Delivery vehicle emergencies: accidents
 - Delivery vehicle emergencies: leaking container
 - Fire extinguishers
 - Non-propane fire control actions
 - Hazard warning signal flashers
 - Warning devices
 - Warning devices: additional guidelines
 - DOT notification requirements
 - Reporting accident/incident details to your company

7. IDENTIFY COMPONENTS OF TERMINAL AND BULK PLANT LOADING/UNLOADING

- Locating the data plate on each bulk storage tank and identifying:
 - Working pressure
 - Walter gallon capacity
 - Outside diameter
- Liquid and vapor piping circuits from each bulk storage tank to and from the:
 - Unloading bulkhead
 - Unloading compressor
 - Loading pump and bulkhead
 - Commonly used flammable liquids
- Avoiding overfilling bulk storage tanks inter-connected at the bottom openings when unloading:
 - Using a compressor
 - Using the cargo tank of plant unloading pump
 - Bulk tanks of different diameters that are interconnected but maximum liquid fill levels are not at same height
- Verification and inspection of valve integrity, fittings and bulk plant transfer hoses
- Locating and explaining how to use the bulk plant emergency shutdown controls

8. UNLOAD A TRANSPORT CARGO TANK IN NON-METERED DELIVERY SERVICE

- Locating the vehicle and the unloading bulkhead
- Securing the vehicle against movement:
 - Setting the parking brake
 - Shutting down engine
- Preparing for transfer using:
 - Compressor
 - Cargo tank motor vehicle pump
- Completing transfer using:
 - Compressor
- Continue with the transfer using a compressor
- Securing access gates, valve locks, and security control measures
- Using a CTMV Pump for Transfer

9. PERFORM A POST-TRIP INSPECTION OF A TRANSPORT

- Inspection:
 - Engine
 - Service brakes
 - Parking (hand brake)
 - Steering mechanism
 - Rear-vision mirrors
 - Emergency equipment
 - Windshield wiper or wipers
 - Horn
 - Lighting devices and reflectors
 - Tires, wheels, and rims
 - Additional company specified items
- Defects and deficiencies affecting safe operation of vehicle
- Documentation of inspection
- Procedures for correcting defect(s), scheduling repairs, and documenting corrections
- Procedures for correcting defect(s), scheduling repairs, and documenting corrections

10. PERFORM MONTHLY INSPECTIONS OF THE TRANSPORT DELIVERY HOSE ASSEMBLY(S)

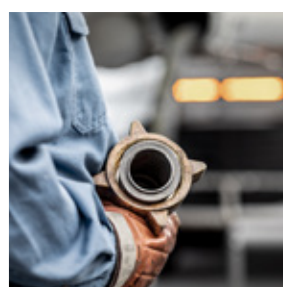
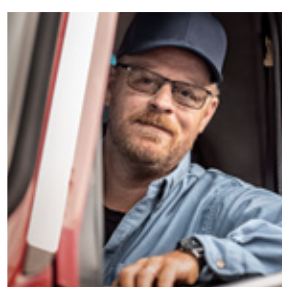
- Identification numbers of delivery hose assembly
- Inspecting delivery hose assembly based on rejection criteria
- Documentation of inspection
- Retrieving delivery hose assembly and securing on vehicle
- Reporting repairs, testing, and replacements

11. PERFORM MONTHLY TESTS OF THE EMERGENCY DISCHARGE SYSTEM

- Inspection of components of the discharge system
- Recording deficiencies
- Internal self-closing stop valve inspections
- Emergency shutdown controls
- Documentation of inspections and tests

12. COMMERCIAL DRIVING LICENSING

Courses, rules, and regulations on how to obtain a commercial driver's license (CDL) are established by state and federal guidelines and are not addressed in this handbook.



EXPERIENCE COMPETENCIES

Experience competencies are broken down among 35 various work areas. Apprentices will be evaluated on their understanding and mastery in the required areas as part of the program:

1. Follow all safety policies and regulations
2. Obtain the requirements necessary to operate a commercial vehicle with a tanker and hazmat endorsement
3. Perform tests and inspections that are unique to the type of equipment being operated
4. Check vehicles to ensure that mechanical, safety, and emergency equipment is in good working order
5. Inspect and maintain vehicle supplies and equipment, such as fuel, oil, water, tires, lights, or brakes, to ensure that vehicles are in proper working condition
6. Follow appropriate safety procedures for hazardous materials
7. Inspect loads to ensure that cargo is secure
8. Maintain logs of working hours, vehicle service, and repair status, following applicable state and federal regulations
9. Secure cargo tank trailer to tractor
10. Maneuver vehicles into loading and unloading positions
11. Report vehicle defects, accidents, traffic violations, or damage to the vehicles
12. Obtain receipts and/or signatures for delivered goods and collect payment for services when required by employer
13. Drive vehicles with capacities greater than three tons to transport and deliver bulk products
14. Check all load-related documentation for completeness and accuracy
15. Read bills of lading to determine assignment details
16. Collect delivery instructions from appropriate sources, verifying instructions and routes
17. Drive vehicles along routes in compliance with state regulations
18. Drive commercial vehicles with trailers and be able to properly couple or uncouple trailers
19. Check conditions of trailers after contents have been unloaded to ensure that there has been no damage
20. Perform basic vehicle maintenance tasks, such as adding oil, fuel, or radiator fluid or performing minor repairs
21. Read and interpret maps to determine vehicle routes
22. Operate equipment, such as truck cab computers, phones, and global positioning systems (gps), and other navigation devices safely and according to applicable regulations to exchange necessary information with bases, supervisors, or other drivers
23. Plan or adjust routes based on changing conditions using computer equipment, global positioning systems (gps) or other navigation devices
24. Load or unload vehicle, using special loading-related equipment, or other equipment as necessary including pumps and compressors
25. Follow special cargo-related procedures related to bulk propane deliveries
26. Inventory and inspect goods to be moved to determine quantities and conditions
27. Install or remove special equipment, such as tire chains
28. Perform emergency roadside repairs, such as changing tires, installing light bulbs, or replacing fuses
29. Operate trucks in inclement weather like rain and snowy conditions
30. Obey traffic laws and follow established traffic and transportation procedures
31. Turn in receipts and required paperwork from deliveries
32. Verify the contents of inventory loads against bill of lading
33. Use and maintain the tools or equipment found on commercial vehicles
34. Present bills, bills of lading, and receipts and collect payments for goods delivered or loaded
35. Report delays, accidents, or other traffic and transportation situations to bases or other vehicles using telephones or two-way radios



UTILITY VEHICLE DRIVER: COMPONENTS AND COMPETENCIES

In order to complete the required on-the-job training, the utility driver apprentice must successfully meet both the following related instruction and experience competencies listed below.

Related instruction competencies are broken down into 12 course areas. Each course includes a series of lessons designed to help the apprentice learn and master the competencies required by the program. Most lesson information can be found in PERC's CETP manual.



RELATED INSTRUCTION COMPETENCIES

COURSE	COMPETENCIES	LESSONS
1. Basic Principles and Practices of Propane	9	22
2. Initial OSHA/DOT Training	10	32
3. Introduction to Utility Delivery Operations	1	4
4. DOT Licensing and Driving Requirements	3	11
5. Vehicle Inspections, Identification, and Documentation	3	15
6. Safely Handling Hazardous Materials	4	35
7. Driving Defensively and Handling Accidents and Emergencies	3	31
8. Vehicle Parking, Servicing, and Security	2	9
9. Preparing Cylinders for Filling	4	26
10. Filling Containers	2	14
11. Delivering Containers	3	13
12. Commercial Driving Licensing	Federal & State Regulations [+]	
TOTAL	44 (+)	212 (+)

UTILITY DRIVER: PROGRAM GUIDE

Each competency is broken down into several possible lessons. The supervisor can use the following listing as a guide in evaluating an apprentice's training and progress. The following instruction shall include, but is not limited to:

1. BASIC PRINCIPLES AND PRACTICES OF PROPANE (CERTIFICATION)

- Organizations that influence, publish, or enforce codes and standards
- Introduction to basic principles and practices of propane
- Propane customer applications and customer service
- Sources and physical properties of propane
- Odorants and service interruptions
- Complete and incomplete combustion characteristics
- DOT cylinders, propane piping, and residential systems
- National Fire Protection Association (NFPA) regulations
- Updated or new federal, state, and local regulations and policies

2. INITIAL OSHA/DOT TRAINING

- Introduction to OSHA and DOT Training
- OSHA hazard communication
- DOT general awareness HAZMAT training
- Emergency response
- Loading and unloading
- CMV driver requirements
- Vehicle inspection
- Cylinder safety
- Materials of trade
- Security

3. INTRODUCTION TO UTILITY DELIVERY OPERATIONS

- Safety

4. DOT LICENSING AND DRIVING REQUIREMENTS

DOT Driver Qualifications

- Commercial motor vehicle definition
- Personal qualifications
- Documentation requirements
- Other requirements

Commercial Driver's License (CDL) Information

- Requirements
- CDL Classifications
- CDL Endorsements
- Hazardous Materials Endorsement

Drug and Alcohol Awareness

- Drug and alcohol restrictions
- Testing
- Post-accident drug and alcohol testing

5. VEHICLE INSPECTIONS, IDENTIFICATION, AND DOCUMENTATION

Vehicle Inspections and Maintenance

- Importance of vehicle maintenance
- Preparing for inspections
- Types of inspections
- Types of daily inspections
- Pre- and post-trip inspections
- Post-trip inspection requirements
- Pre-trip inspection requirements
- Annual/periodic inspections and maintenance

Vehicle Identification Requirements

- Verifying proper vehicle identification
- Utility delivery vehicle identification requirements

Vehicle Documentation Requirements

- Shipping papers
- Emergency response information
- Complying with emergency response
- Information requirements
- Hazmat certificate of registration

6. SAFELY HANDLING HAZARDOUS MATERIALS

Methanol and Other Flammable Liquids

- Commonly used flammable liquids
- Methanol
- Hazards of methanol
- Personal Protective Equipment (PPE)
- Indoor storage requirements
- Outdoor storage requirements
- Labeling storage containers
- Transferring flammable liquids
- Transferring flammable liquids as materials of trade

Verifying Propane Odorization

- Propane odorization requirements
- The sniff test
- Handling unodorized propane

Out-of-Gas Calls and Leak Checks

- Potential causes of an interruption of service
- Minimizing out-of-gas calls
- Handling out-of-gas situations
- Handling out-of-gas situations: appliance access
- Handling out-of-gas situations: no appliance access

- Leak check
- Performing a leak check
- Appliances with 100 percent safety shutoff valves
- Appliances without 100 percent safety shutoff valves
- Leak check instruments
- Leak check methods
- Using a manometer
- Performing a leak check using a manometer
- Using a test-block gauge
- Performing a leak check using a test-block gauge
- Using a high-pressure gauge
- Performing a leak check using a high-pressure gauge
- Discovering a leak
- Restoring gas appliances to service

Restoring Service

- Lighting appliance pilots
- Lighting a standing pilot
- Lighting pilots without pilot safety devices
- Starting up electronic control ignition systems

7. DRIVING DEFENSIVELY AND HANDLING ACCIDENTS AND EMERGENCIES

Maintaining Control of Your Vehicle

- Safe driving practices
- Defensive driving tips
- Maintaining vehicle control
- High center of gravity
- Load and suspension shifts
- Tire condition
- Re-inflating tires
- Blowouts
- Blind spots
- Weather and road conditions
- Skids
- Control of your vehicle/rollover awareness
- Preventing collisions

Selecting the Safest Delivery Route and Protecting Property

- Routing CMVs and protecting property
- Routing utility delivery vehicles
- Railroad crossing
- Bridges and culvert crossings on customer property
- Protecting landscaping and structures

Handling Accidents and Emergencies

- When accidents and emergencies happen
- Handling accidents with no propane leak: take initial precautions
- Handling accidents with no propane leak: ensure safe conditions
- Handling emergencies with a propane leak
- Utility delivery vehicle emergencies: accidents
- Utility delivery vehicle emergencies: leaking container
- Fire extinguishers
- Non-propane fire control actions
- Hazard warning signal flashers
- Warning devices
- Warning devices: additional guidelines
- DOT notification requirements
- Reporting accident/incident details to your company

8. VEHICLE PARKING, SERVICING, AND SECURITY

Parking and Servicing Requirements

- Parking indoors at public garages or buildings
- Parking indoors at non-public buildings
- Parking outdoors
- Servicing the engine/chassis in a public garage – vehicle attended
- Servicing the engine/chassis in a public garage – vehicle unattended
- Servicing the engine/chassis in a non-public building

9. PREPARING CYLINDERS FOR FILLING

Types and Features of Cylinders, Valves, and Gauges

- Cylinder types
- Liquid and vapor service
- Valve overview
- Cylinder valves
- Cylinder multivalve
- Types of cylinder gauges
- Overfilling prevention devices

Inspecting Cylinders

- Steps for inspecting DOT/ICC cylinders
- Requalification methods
- Important DOT requalification terms
- Inspecting cylinder valves

Purging Cylinders of Air

- The importance of purging cylinders
- Steps for purging cylinders with propane vapor
- Steps for purging cylinders with a vacuum pump

10. FILLING CONTAINERS

Filling Cylinders

- Characteristics of cylinder filling stations
- Types of cylinder filling stations
- Characteristics of platform scales
- Single and double beam platform scales
- Setting scale weight
- Cylinder filling precautions
- Filling cylinders: connections
- Automatic versus manual shutdown systems
- Filling cylinders by volume
- Post-filling procedures

Security of Propane Delivery Vehicles

- Importance of vehicle security
- Attending your vehicle
- Security training and communications

Replacing Cylinder Valves

- Common problems with cylinder valves
- Valve exposure to anhydrous ammonia
- Inspecting pressure relief valves
- When pressure relief valves open
- Replacing pressure relief valves
- Inspecting service valves
- Inspecting filler valves
- Safety precautions for valve replacement
- Cylinder evacuation and vapor flaring
- Procedures for valve replacement
- Servicing float gauges
- Installing dip tubes

Filling Vehicle-Mounted ASME Tanks

- Propane filling operation responsibilities
- Features of vehicle-mounted ASME tanks
- Preparing to fill vehicle-mounted ASME tanks
- Tank decals

11. DELIVERING CONTAINERS

Features and Equipment of Utility Delivery Vehicles

- Types of utility delivery vehicles
- Common features of utility delivery vehicles
- Service beds
- Container securing devices
- Container dollies
- Safely using container dollies
- Lift gates
- Safely using lift gates

Delivering Containers to Residential Customers

- Loading and securing containers
- Deliver containers to residential customers

Delivering Containers to Commercial Customers

- Inspecting indoor storage facilities
- Inspecting outdoor storage facilities
- Deliver containers to commercial customers

12. COMMERCIAL DRIVING LICENSING

Courses, rules, and regulations on how to obtain a commercial driver's license (CDL) are established by state and federal guidelines and are not addressed in this handbook.

EXPERIENCE COMPETENCIES

Experience competencies are broken down among 34 various work areas. Apprentices will be evaluated on their understanding and mastery in the required areas as part of the program:

1. Follow all safety policies and regulations
2. Obtain the necessary license and meet DOT requirements to operate a commercial vehicle
3. Perform tests and inspections that are unique to the type of equipment being operated
4. Check vehicles to ensure that mechanical, safety, and emergency equipment is in good working order
5. Inspect and maintain vehicle supplies and equipment, such as fuel, oil, water, tires, lights, or brakes, to ensure that vehicles are in proper working condition
6. Follow appropriate safety procedures for hazardous materials
7. Inspect loads to ensure that cargo is secure
8. Maintain logs of working hours, vehicle service, and repair status, following applicable state and federal regulations
9. Secure cargo to vehicle using ropes, blocks, chains, binders, or covers
10. Maneuver trucks into loading or unloading positions
11. Report vehicle defects, accidents, traffic violations, or damage to the vehicles
12. Obtain receipts and/or signatures for delivered goods and collect payment for services when required by employer
13. Drive trucks with capacities to transport and deliver bulk products
14. Check all load-related documentation for completeness and accuracy
15. Read shipping papers to determine assignment details
16. Collect delivery instructions from appropriate sources, verifying instructions and routes
17. Drive trucks along routes in compliance with state regulations
18. Drive commercial vehicles with trailers and be able to properly couple or uncouple trailers
19. Perform basic vehicle maintenance tasks, such as adding oil, fuel, or radiator fluid or performing minor repairs
20. Read and interpret maps to determine vehicle routes
21. Operate equipment such as truck cab computers, phones, global positioning systems (gps), and other navigation devices safely and according to applicable regulations to exchange necessary information with bases, supervisors, or other drivers
22. Plan or adjust routes based on changing conditions using computer equipment, global positioning systems (gps) or other navigation devices
23. Load or unload trucks using special loading-related equipment, or other equipment as necessary
24. Follow special cargo-related procedures related to propane deliveries
25. Inventory and inspect goods to be moved to determine quantities and conditions
26. Secure loads and containers using load bars, chains, or straps
27. Install or remove special equipment, such as tire chains
28. Perform emergency roadside repairs, such as changing tires, installing light bulbs, or replacing fuses
29. Operate trucks in inclement weather like rain and snowy conditions
30. Obey traffic laws and follow established traffic and transportation procedures
31. Verify the contents of inventory loads against shipping papers
32. Use and maintain the tools or equipment found on commercial vehicles
33. Present bills, bills of lading/shipping papers, and receipts and collect payments for goods delivered or loaded
34. Report delays, accidents, or other traffic and transportation situations to bases or other vehicles, using telephones or mobile two-way radios

PROGRAM ENROLLMENT FORMS AND RESOURCES

All program enrollment forms are available on the National Propane Gas Association website at www.npga.org/impact/workforce/registered-apprenticeship-program.

These include forms for company enrollment, apprentice enrollment and any required forms for the Department of Labor as well as forms for requesting credit for prior instruction or prior experience.

Other program resource information available online includes potential funding opportunities and links to other relevant organizations such as state apprenticeship offices and local workforce boards, among others.