

OSHA's
Powered Industrial
Truck
Operator
Training Standard



Oklahoma Department of Labor

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Developing A Training Program for Powered Industrial Truck Operators

This handout is intended to be used for training purposes only. It is not a substitute for any provisions of the Occupational Safety and Health Act of 1970, or for any standards issued by the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA).

How Do I Develop A Powered Industrial Operator Training Program?

Before you begin developing your operator training program you should become familiar with the OSHA standard for powered industrial trucks and any operator's manual pertinent to the equipment you have in your workplace.

√ *Identify Your Operators*

First, you need to determine the employees that will be required to operate powered industrial trucks in your workplace. If an employee has other duties but sometimes operates a powered industrial truck, training must be provided.

√ *Identify the types of powered industrial trucks you have in your workplace and those employees who will be required to operate the vehicles.*

There are many different types of powered industrial trucks. Typically, these types of vehicles are known as forklifts or lift trucks. Some types of trucks are not capable of being ridden by the operator. These are also covered by OSHA standard and training is required. Some trucks are fitted with attachments purchased from the manufacturer. The use of these attachments may affect the manner in which the truck is handled; therefore training on the use of the attachment would also be required. If your employees will be expected to operate several different types of powered industrial trucks, then training is required on the unique handling characteristics of the vehicles.

√ *Methods of Training*

Once you have identified your truck operators and types of trucks you have in your workplace, you should determine the methods of training you will use.

Training must consist of a combination of formal instruction and practical training. Using both methods is the only way to ensure that the trainee receives and comprehends the instruction and uses the information to safely operate a powered industrial truck. Note that the formal training need not take place in a classroom. Discussions can consist of the trainer talking to the trainee and explaining the training material, either in the workplace or in another location. The training must, however, include an explanatory element as well as a practical element.

Formal instruction may include lectures, conferences, classroom discussions, demonstrations, and written or oral tests. To enhance the training and make it more understandable to the employee, employers and other trainers may use movies, slides, computers, video tapes and other visual presentations.

Using visual aids has several advantages, including:

1. The employees being trained remain more attentive, thereby increasing the training's effectiveness;
2. The trainer can use visual presentations to ensure that the necessary information is covered during the training;

3. Graphical presentations make better use of the training time by decreasing the need for the instructor to carry on long discussions about the instructional material; and,
4. Trainees have greater retention of information learned from graphical presentations.

While some employees can learn instructional material while seated in a classroom, other employees may learn best by observing an operation (demonstration) and/or by personally performing an operation (practical exercise). In most cases, a combination of different training methods provides the best training in the least amount of time.

Once you have selected the method of training, then the content of the training program must be considered to include all pertinent training items.

√ *Training Program Content*

Because each type (make and model) of powered industrial truck has different operating characteristics, limitations, and other unique features, a good employee training program for powered industrial truck operators should be based upon the type of vehicles that the employee will be trained and authorized to operate. The training should also emphasize the workplace's features that will affect how the vehicle must be operated. Finally, the training should include the general safety rules applicable to operating any powered industrial truck.

The following is an outline of a generic powered industrial truck operator training program:

1. Characteristics of the powered industrial truck(s) the employee will be allowed to operate:
 - a. Differences from the automobile;
 - b. Controls and instrumentation: location, what they do, and how they work;
 - c. Engine or motor operation;
 - d. Steering and maneuvering;
 - e. Visibility;
 - f. Fork and/or attachment adaptation, operation, and limitations of their use;
 - g. Vehicle capacity;
 - h. Vehicle stability;
 - i. Vehicle inspection and maintenance the operator will be required to perform;
 - j. Refueling or charging and recharging batteries;
 - k. Operating limitations; and
 - l. Any other operating instruction, warning, or precaution listed in the operator's manual for the type of vehicle the employee is being trained to operate.
2. The operating environment:
 - a. Floor surfaces and/or ground conditions where the vehicle will be operated;
 - b. Composition of probable loads and load stability;
 - c. Load manipulation, stacking, unstacking;
 - d. Pedestrian traffic;
 - e. Narrow aisle and restricted place operation;
 - f. Operating in classified hazardous locations;
 - g. Operating the truck on ramps and other sloped surfaces that would affect the stability of the vehicle;

- h. Other unique or potentially hazardous environmental conditions that exist or may exist in the workplace; and
- i. Operating the vehicle in closed environments and other areas where insufficient ventilation and/or poor vehicle maintenance could cause a buildup of carbon monoxide or diesel exhaust.

3. Requirement of the OSHA Standard.

After the training program has been completed, the employer must evaluate the trainee's knowledge and skills and determine that the employee is competent to operate the truck safely.

√ Employee Evaluation

When the employee completes the training exercises and prior to operating the truck in the workplace, an evaluation of the employee must be performed. This evaluation will determine the adequacy of training and the ability of the employee to perform truck operations safely in the workplace. The OSHA standard also requires that an evaluation of the operator's performance be conducted at least once every three years and after refresher training.

The employer should then complete a certification of training record containing the name of the operator, the date of the training, the date of the evaluation, and the identity of the person(s) performing the training or evaluation.

√ Refresher Training

During the course of truck operation, the supervisor may observe the employee performing an unsafe act, such as riding with the load too high or traveling at an unsafe speed. The person making the correction should point out the incorrect manner of operation of the truck or other unsafe act being conducted, tell the employee how to do the operation correctly, and then ensure the employee does the operation correctly. When there have been multiple on-the-spot corrections, the employer may decide to conduct a more structured retraining program which would include the following information:

1. Common unsafe situations encountered in the workplace;
2. Unsafe operating methods observed or known to be used;
3. The need for constant attentiveness to the vehicle, the workplace conditions, and the manner in which the vehicle is operated.

Each of these areas need to be taught so that the trainee receives all the information needed for safe vehicle operation. Specific details of the above subject areas may be found in the vehicle manufacturer's literature, the national consensus standards [e.g., the ASME B56 series of standards (current revisions)], and the OSHA standards relating to powered industrial truck operator training.

1. Introduction
 - a. Overview of the program
 - b. Goal of the program: to provide a training program based on the trainee's prior knowledge, the types of vehicles used in the workplace, and the hazards of the workplace.
 - c. Course will utilize video, group discussion and hands-on practice. Each operator must obtain the knowledge and skills needed to do their job correctly and safely.
2. Types, Features, and Physics
 - a. Familiarize each operator with the basic types and functions of powered industrial trucks.
 - b. Develop an understanding of the information shown on a data plate.
 - c. Understand the critical truck measurements that affect safety.
 - d. Understand the forces that cause tipovers, and the truck design considerations and safety ratings that help prevent them, including the "stability triangle."
3. Inspecting the vehicle
 - a. Understand the purpose and importance of pre-operational checkouts.
 - b. Provide a basic understanding of areas covered during a pre-operational checkout.
 - c. Familiarize each operator with a checklist for pre-operational checkouts, and what to do if a problem is discovered.
4. Driving the truck
 - a. Understand the elements of safe movement of a powered industrial truck.
 - b. Understand the differences between an automobile and a powered industrial truck.
 - c. Recognize the safety hazards associated with operating a powered industrial truck.
5. Load handling
 - a. Understand the elements of load lifting safety.
 - b. Understand the safe operating procedures for raising and lowering loads in aisles.
6. LPG for lift trucks
 - a. Discuss LPG and its properties.
 - b. Understand the elements and procedures of safely refueling internal combustion vehicles.
 - c. Describe tank components: service valve, surge valve, relief valve, etc.
 - d. Discuss related safety issues.
7. Battery and charging
 - a. Understand the elements and procedures of safely changing and charging batteries.
 - b. Discuss the filling procedures and maintenance.
 - c. Discuss related safety issues.
8. Safety concerns
 - a. Review/reinforce potential of serious injury.
 - b. Review/reinforce safety procedures in your facility.
9. Specific truck and workplace training/hands-on
 - a. Review features of specific PIT's to be operated.
 - b. Review operating procedures of specific PIT's to be operated.
 - c. Review safety concerns of specific PIT's to be operated.

Sample Powered Industrial Truck (PIT) Operator Training Program Outline*

- d. Review workplace conditions and safety concerns of areas where PIT's will be operated.
 - e. Learn/practice actual operation of specific PIT's to be operated and specific workplace conditions where PIT's will be operated.
 - f. Demonstrate proficiency performing the powered industrial truck operator duties specific to the trainee's position and workplace conditions.
10. Certification and completion of the course

**This outline is intended as a resource in implementing a powered industrial truck operator training program. It is not a substitute for any standards issued by the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA). OSHA's Office of Training and Education wishes to acknowledge Material Handling Services for contributing some of the information used in this outline. This acknowledgment does not imply endorsement by the U.S. Department of Labor.*

Frequently Asked Questions About Powered Industrial Truck Operator Training

On December 1, 1998, the Occupational Safety and Health Administration (OSHA) published a standard that revised the existing requirements and issued new requirements to improve the training of powered industrial truck operators. The standard becomes effective on March 1, 1999. This new standard is intended to reduce the number of injuries and deaths that occur as a result of inadequate operator training. The powered industrial truck operator training requirements will apply to all industries where trucks are being used, except agricultural operations.

1. What is the definition of a powered industrial truck?

Any mobile power-propelled truck used to carry, push, pull, lift, stack or tier materials. Powered industrial trucks can be ridden or controlled by a walking operator. Earth moving and over the road haulage trucks are not included in the definition. Equipment that was designed to move earth but has been modified to accept forks are also not included.

2. What does the new standard require?

The new standard requires employers to develop and implement a training program based on the general principles of safe truck operation, the types of vehicle(s) being used in the workplace, the hazards of the workplace created by the use of the vehicle(s), and the general safety requirements of the OSHA standard. Trained operators must know how to do the job properly and do it safely as demonstrated by workplace evaluation. Formal (lecture, video, etc.) and practical (demonstration and practical exercises) training must be provided. Employers must also certify that each operator has received the training and evaluate each operator at least once every three years. Prior to operating the truck in the workplace, the employer must evaluate the operator's performance and determine the operator to be competent to operate a powered industrial truck safely. Refresher training is needed whenever an operator demonstrates a deficiency in the safe operation of the truck.

3. Does OSHA provide a list of topics to include in my training program?

Yes. The standard provides a list of training topics; however, the employer may exclude those topics which are not relevant to safe operation at the employee's work location.

4. Who should conduct the training?

All training and evaluation must be conducted by persons with the necessary knowledge, training, and experience to train powered industrial truck operators and evaluate their competence. An example of a qualified trainer would be a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience has demonstrated the ability to train and evaluate powered industrial truck operators.

There are many resources available to the employer if he/she chooses not to perform the training himself. Truck manufacturers, local safety and health safety organizations, such as the National Safety Council local chapters, private consultants with expertise in powered industrial trucks, local trade and vocational schools are some available resources.

Various internet sites are devoted to forklift safety. Private companies who provide forklift safety training services, including videos and written programs, can be located on various internet web sites. Most videos can either be leased or

purchased. One important thing to remember is that simply by showing employees a video or videos on some aspect of forklift safety does not meet the full requirements of the OSHA standard. Site specific information must be conveyed as well as a method to evaluate the employee's acquired knowledge subsequent to the training.

5. If my employees receive training from an outside consultant, how will I know that these employees have been adequately trained?

Outside qualified training organizations can provide evidence that the employee has successfully completed the relevant classroom and practical training. However, each employer must ensure that each powered industrial truck operator is competent to operate a truck safely, as demonstrated by the successful completion of the training and evaluation.

6. My employees receive training from the union on the use of powered industrial trucks. Will I have to provide any additional training?

When a worker reports to work, the employer must evaluate the employee to ensure that he/she is knowledgeable about the operation of the powered industrial trucks he/she will be assigned to operate. This evaluation could be as simple as having a person with the requisite skills, knowledge and experience observe the operator performing several typical operations to ensure that the truck is being operated safely and asking the operator a few questions related to safe operation of the vehicle. If the operator has operated the same type of equipment before in the same type of environment that he/she will be expected to be working, then duplicative or additional training is not required.

7. Will testing be required?

No. The standard does not specifically require testing; however, some method of evaluation is necessary.

8. Does OSHA require the employer to issue licenses to employees who have received training?

No. The OSHA standard does not require employees to be licensed. An employer may choose to issue licenses to trained operators.

9. What type of records or documentation must I keep?

The OSHA standard requires that the employer certify that each operator has received the training and has been evaluated. The written certification record must include the name of the operator, the date of the training, the date of evaluation, and the identity of the person(s) performing the training or evaluation.

10. How long must I keep the certification records?

Employers who evaluate the operator's performance more frequently than every three years may retain the most recent certification record; otherwise, certification records must be retained for three years.

11. If my employees receive training, but accidents still continue to occur, what should I do?

Refresher training in relevant topics is necessary when the operator has been involved in an accident or near-miss incident.

12. Is annual training required?

No. An evaluation of each powered industrial truck operator's performance is required to be conducted after initial training, after refresher training, and at least once every three years.

13. How often must refresher training be given?

The standard does not require any specific frequency of refresher training. Refresher training must be provided when:

1. The operator has been observed to operate the vehicle in an unsafe manner.
2. The operator has been involved in an accident or near-miss incident.
3. The operator has received an evaluation that reveals that the operator is not operating the truck safely.
4. The operator is assigned to drive a different type of truck.
5. A condition in the workplace changes in a manner that could affect the safety operation of the truck.

14. If my employees have already received training, or have been operating trucks for many years, must I retrain them?

No. An employer does not need to retrain an employee in the operation of a powered industrial truck if the employer certifies that the operator has been evaluated and has proven to be competent to operate the truck safely. The operator would need additional training in those elements where his or her performance indicates the need for further training and for new types of equipment and areas of operation.

15. How do I evaluate my employee's competency to operate a truck safely?

Evaluation of an operator's performance can be determined by a number of ways, such as:

- a discussion with the employee
- observation of the employee operating the powered industrial truck
- written documentation of previous training
- a performance test

16. Will OSHA provide training to my truck operators?

No. It is the employer's responsibility to train the employees.

17. Will I have to train all employees in my workplace?

Any employee that operates a powered industrial truck must be trained.

18. Will I have to ensure that my operators are physically capable of driving a powered industrial truck?

The new standard does not contain provisions for checking vision, hearing or general medical status of employees operating powered industrial trucks. The Americans With Disabilities Act (ADA) addresses the issue of whether employers may impose physical qualifications upon the employees or applicants for employment. The ADA permits employers to adopt medical qualification requirements which are necessary to assure that an individual does not pose a "direct threat to the health or safety of other individuals in the workplace" provided all reasonable efforts are made to accommodate otherwise qualified individuals.

19. I have three different types of trucks in my workplace. Can I provide training on just one type of truck?

If an operator will be expected to operate all three types of vehicles, then training must address the unique characteristics of each type of vehicle the employee is expected to operate. When an attachment is used on the truck to move odd-shaped materials, then the operator training must include instruction on the safe conduct of those operations so that the operator knows and understands the restrictions or limitations created by each vehicle's use.

20. I only have powered hand trucks in my workplace. Do the training requirements cover the operators of this type of vehicle? The operator walks alongside the unit while holding onto the handle to guide it.

Yes, the use of powered hand trucks present numerous hazards to employees who operate them and those working in the area where they are used.

21. I employ drivers from a temporary agency. Who will provide them training - the temporary service or me?

OSHA has issued several letters of interpretations on the subject of training of temporary employees. Basically, there is a shared responsibility for assuring employees are adequately trained. The responsibility for providing training should be spelled out in the contractual agreement between the two parties. The temporary agency or the contracting employer may conduct the training and evaluation of operators from a temporary agency as required by the standard; however, the host employer (or other employer who enters into a contract with the temporary agency) must provide site-specific information and training on the use of the particular types of trucks and workplace-related topics that are present in the workplace.

22. Should my training include the use of operator restraint devices (e.g. seat belts)?

Employers are required to train employees in all operating instructions, warnings and precautions listed in the operator's manual for the type of vehicle which the employee is being trained to operate. Therefore, operators must be trained in the use of operator restraint systems when it is addressed in the operating instructions.

23. What does OSHA expect to achieve as a result of improved operator's training?

OSHA's goal is to reduce the number of injuries and illnesses that occur to workers in the workplace from unsafe powered industrial truck usage. By providing an effective training program many other benefits will result. Among these are the lower cost of compensation insurance, less property damage, and less product damage.

24. Where can I get additional information about OSHA and new standards?

For more information, contact your local or regional OSHA office (listed in the telephone directory under United States Government - Department of Labor - Occupational Safety and Health Administration). OSHA also has a Home Page on the Internet. The address is <http://www.osha.gov/>

1. What OSHA standards apply to the training of powered industrial truck operators in general industry?

The OSHA standard for the training of truck operators is located in 29 CFR 1910.178(I).

2. What types of equipment are covered by the standard?

Vehicles covered include:

- High lift trucks
- Counter-balanced trucks
- Cantilevered trucks
- Rider trucks
- Forklift trucks
- High lift platform trucks
- Low lift trucks
- Low lift platform trucks
- Motorized hand trucks
- Pallet trucks
- Narrow aisle rider trucks
- Straddle trucks
- Reach rider trucks
- Single side loader rider trucks
- High lift order picker rider trucks
- Motorized hand/rider trucks
- Rough terrain trucks

3. What industries are covered by the standard?

Every type of establishment (except agricultural operations) that has employees who operate powered industrial trucks will have to comply with the requirements of the standard. Powered industrial trucks are used in a wide variety of workplaces, including but not limited to retail establishments, warehousing and distribution operations, and manufacturing establishments.

1. What OSHA standards apply to the training of powered industrial truck operators in construction?

The OSHA standard on training powered industrial truck operators applicable to construction is 29 CFR 1926.602(d).

2. What types of equipment are covered by the standard?

The construction standard covers the same types of equipment as covered by the general industry standard. Specialized equipment used in the construction industry includes rough terrain straight-mast and extended reach forklift trucks.

Questions and Answers Specific to General Industry

Questions and Answers Specific to Construction

This handout is intended only as a general description of the Powered Industrial Truck Operator Training Requirements. It does not carry the force of legal opinion. For more detailed information, consult the OSHA standards.

FYI

• What vehicles are considered to be powered industrial trucks?

The American Society of Mechanical Engineers (ASME) defines a powered industrial truck as a mobile, power-propelled truck used to carry, push, pull, lift, stack, or tier materials. Powered industrial trucks, often called forklifts or lift trucks, can be ridden or controlled by a walking operator. Excluded from the OSHA standard are vehicles used for earthmoving or over-the-road haulage.

• How has OSHA changed its powered industrial truck standard?

Previously, the OSHA standards required that only trained operators could operate powered industrial trucks and that methods of training be devised. The new standard requires employers to develop a training program specific to the type of truck driven and the working conditions encountered. Employers must also evaluate the operator's performance in the workplace and certify that each operator has received the training needed.

• What industries are covered by the new standard?

The new standard covers general industry, maritime and construction. The general industry standard is 1910.178(1).

• Where can an operator obtain the training required to become a certified forklift operator?

The employer is responsible for implementing a training program and ensuring that only trained drivers who have successfully completed the training program are allowed to operate powered industrial trucks. An evaluation of each trained operator must be conducted during the initial training, at least once every three years, and after refresher training. The training and evaluation may be conducted by the employer, if qualified, or an outside training organization.

• What type of training is required?

The training must be a combination of formal (lecture, video, etc.) and practical (demonstration and practical exercises), and include an evaluation of operator performance in the workplace. Truck-related and

workplace-related topics must be included, along with the requirements of the OSHA standard. The specific training topics are listed in the standard.

• Who should conduct the training?

All training and evaluation must be conducted by a person with the necessary knowledge, training and experience to train operators and evaluate their competency. This may be the employer, another employee, or other qualified person. The training and evaluation does not have to be conducted by a single individual, but can be done by several persons, provided that each one is qualified.

• Is refresher training required?

Refresher training is required when the operator has been observed driving unsafely, been involved in an accident or near-miss, received an evaluation that indicates unsafe operation, is assigned to drive a different type of truck, or if a workplace condition affecting safe operation changes. An operator evaluation is required after refresher training.

• What does "certified" mean?

The employer must certify that each operator has been trained and evaluated as required by the standard. The certification must include the name of the operator, the date of training, the date of evaluation, and the identity of the person(s) performing the training or evaluation.

• Does an operator who has already been trained as a powered industrial truck operator have to be retrained under the new standard?

If an operator has received training in a required topic and the training is appropriate to the truck and the working conditions encountered, additional training in that topic is not required if the operator has been evaluated and found competent.

• Where can I get additional information about OSHA and new standards?

For more information, contact your local or regional OSHA office. OSHA also has a home page on the internet. The address is: <http://www.osha.gov/>



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