

**POWERED INDUSTRIAL TRUCK  
(FORKLIFT)**

**CERTIFICATION TRAINING PACKAGE**



**for**

**PAVEMENTS AND CONSTRUCTION EQUIPMENT OPERATOR**

**(3E2X1)**

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USE CerTest # 8167 for written general knowledge examination.

Upon completion of hands on certification and the CerTest, document training on an AF Form 1098 and maintain in the trainees training record. This is a 3-year reoccurring training as directed by OSHA Standard 29 CFR 1910.178.

# POWERED INDUSTRIAL TRUCK (FORKLIFT)

## CERTIFICATION GUIDE

<b>Title:</b>	<ul style="list-style-type: none"> <li>Powered Industrial Truck (Forklift) Certification</li> </ul>
<b>Training References:</b>	<ul style="list-style-type: none"> <li>OSHA Standard 29 CFR 1910.178</li> <li>AFOOSH Standard 91-46, Material Handling Equipment</li> <li>FM 21-305/AFJMAN 24-306, Manual for the Wheeled Vehicle Driver</li> <li>NAVEDTRA 12535 Basic Equipment Operator (Navy)</li> <li>AFI 24-301, Vehicle Operations</li> <li>AFM 52-4, Special Purpose Vehicle Training Manual</li> </ul>
<b>Prerequisites:</b>	<ul style="list-style-type: none"> <li>Possess a valid AF Form 2293</li> </ul>
<b>Equipment/Tools Required:</b>	<ul style="list-style-type: none"> <li>Powered Industrial Truck (4, 6, or 10 Thousand Pound Capacity Forklift)</li> <li>AF Form 2293, Government Vehicle Operator's Permit</li> <li>AF Form 171, Request for Driver's Training (Initial Training Only)</li> <li>AF Form 1810, Operator's Inspection Guide and Trouble Report</li> <li>AF Form 483, Certificate of Competency</li> <li>Manufacture's Operating Manual</li> <li>Required Safety Gear</li> <li>Personal Protective Equipment</li> </ul>
<b>Learning Objective:</b>	<ul style="list-style-type: none"> <li>To certify heavy equipment operators in operating procedures of the 4K, 6K, and 10K capacity forklift</li> </ul>
<b>Samples of Behavior:</b>	<ul style="list-style-type: none"> <li>Understand general knowledge of the 4K, 6K, and 10K forklift</li> <li>Perform operational checks</li> <li>Efficiently operate a forklift</li> <li>Perform operator maintenance</li> <li>Pass practical and CerTest # <b>8167</b> exam</li> </ul>
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>Personnel are required to wear all personal protective equipment pertaining to each task (i.e. work gloves, hearing protection, and safety goggles)</li> </ul>	
<ul style="list-style-type: none"> <li>Any safety violation is an automatic failure</li> </ul>	



**POWERED INDUSTRIAL TRUCK  
(FORKLIFT)**

**UNIT 1**

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**GENERAL KNOWLEDGE**

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## GENERAL KNOWLEDGE

**Background:** Powered industrial trucks, otherwise known as forklifts, are considered material handling equipment. The term material handling describes an ongoing activity for every construction project or operation that requires the raising, lowering, and moving of raw materials, processed parts, finished products, tools, equipment, supplies, and maintenance items. Forklifts excel over other methods in this area and are specifically designed to ensure efficient handling of materials under varied conditions. Design specifications and performance characteristics of forklifts define their capabilities and limitations.

**Certification Requirement:** Occupational Safety & Health Administration (OSHA) published 29 CFR 1910.178 establishing the requirement for initial forklift training followed by an evaluation of the operator's performance at least once every 3 years. Initial training or evaluation must be conducted by 1 December 1999. For individuals who are newly assigned or have yet to be evaluated, it is required before they are allowed to operate a forklift. The requirement pertains to all employers who have employees who operate forklifts or who have and maintain forklifts. This Certification Package provides an overview of forklift operations and provides the minimum requirement for conducting the training and evaluation. Further details can be found in Unit 3, Practical Exam.

### NOTE

OSHA Standard 29 CFR 1910.178 does not apply to vehicles intended primarily for earth moving or over-the-road hauling such as front end loaders with forklift attachment.

**Types:** The most common types of forklifts include:

- Warehouse Forklifts

Warehouse forklifts are electric, gasoline, or propane powered units having solid, semisolid, or pneumatic rubber tires. They are designed to pickup, carry, and stack material and equipment. Standard warehouse forklifts have lifting capacities ranging from 2,000 to 15,000 pounds and lifting heights from 100 to 210 inches. They are also equipped with a telescopic mast that permits loads to be lifted beyond the height of the collapsed mast. The height that the forks can be raised before the inner slides move upward from the mast, is called "free lift" as illustrated in Fig. 1.

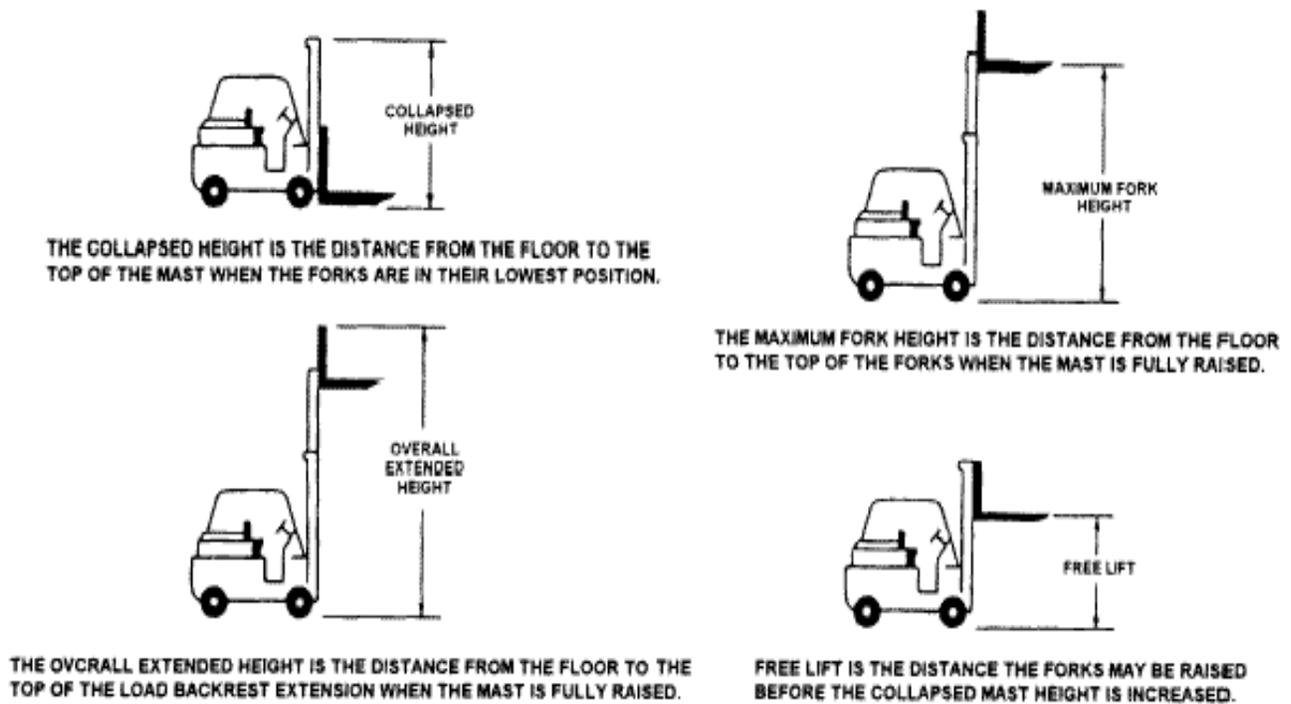


Fig. 1 Technical Terms

- The 4K Rough-Terrain (RT) Forklift

The 4K forklifts (Fig. 2) are diesel engine-driven, rubber-tired, self-contained, material handling vehicle. They are designed to lift loads of a 4,000-pound capacity with a 24-inch load center to a maximum height of 100 inches.

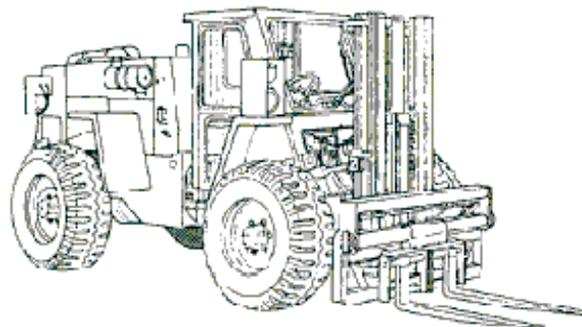


Fig. 2 4K Rough Terrain (RT) Forklift

The lifting forks on a 4K are mounted on the front of the vehicle and the engine faces the rear. Controls for operating the forks (lifting, tilting, rotating, and side shifting) are located to the right when the operator is sitting in the seat. The 4K forklift is designed for loading and unloading of flatcars, flatbed trailers, and cargo aircraft. Additionally, the 4K is used for stacking, unstacking, and transporting heavy-crated boxes, containers, and palletized loads of material and supplies over unprepared and unstable surfaces. The 4K is the primary forklift used in rough terrain, such as deep sand and where terrain is covered with ice, snow, and mud, or hard surfaces are not available. The 4K forklift can be used both indoors and outdoors and is capable of fording streams or pools of water up to 30 inches deep.

- The 6K Rough-Terrain (RT) Forklift

The 6K forklifts (Fig. 3) are all-wheel drive, all-wheel steer material handling equipment capable of lifting 6,000-pound loads to a height of 200 inches. The 6K is designed to handle loads over rough terrain consisting of unprepared or unstabilized surfaces such as beaches, deep sand, snow, ice, and mud. The 6K forklift is primarily used for loading and unloading flatbed trailers and other types of cargo hauling equipment. A hydraulic operated forklift mechanism is mounted on the extreme front providing for lifting, reaching, tilting, and sliding loads during material handling operations. A unique design feature of the rough-terrain forklift is an oscillating hydraulic cylinder that allows the rotation of the forklift frame about its longitudinal axis when being operated over rough terrain. The operator controls the rotation by manipulating the control that activates the oscillating hydraulic cylinder. The 6K is also equipped with a power shift transmission for smooth acceleration, deceleration, and easy handling.

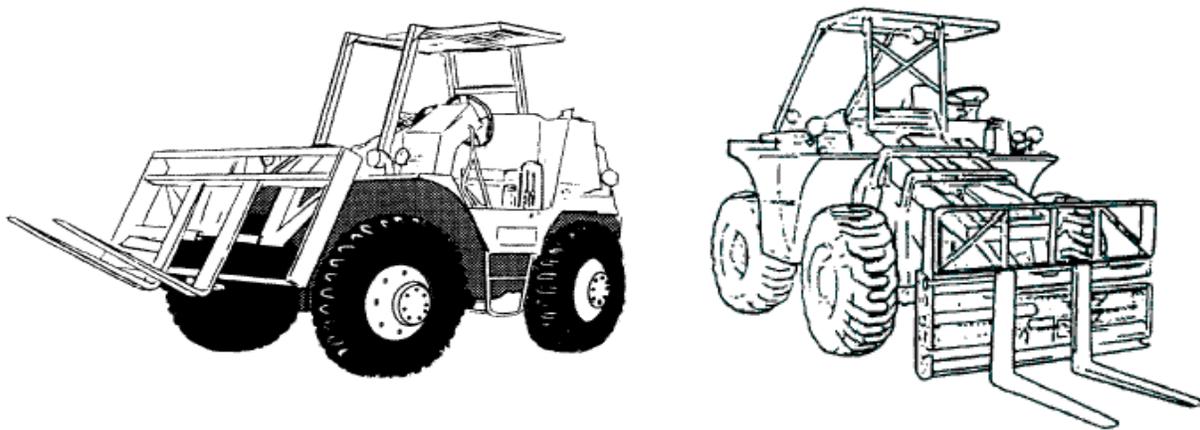


Fig. 3 6K Rough Terrain (RT) Forklifts

**Attachments:** Attachments give forklifts the versatility to allow them to conduct more work, more efficiently; however, the attachment may reduce the capacity of the forklift by changing the center of gravity of the load.

- Fork Extensions

Forklift extensions are known by the term tine (fork) extender and designed in two configurations: bare tine extender (Fig. 4) and rollerized tine extenders (Fig. 5). An extender provides additional length to the forklift tines permitting an easier way to load tractor-trailers and 463-L aircraft pallets. But since the extender moves the center of gravity of the load, it restricts the amount of weight that can be lifted. Remember these restrictions when using the extensions to handle large or bulky items.

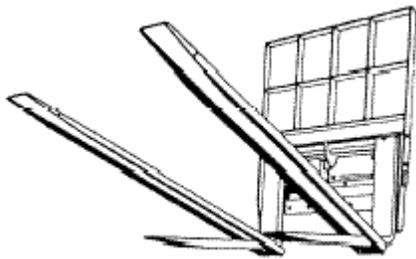


Fig. 4 Bare Tine Extender

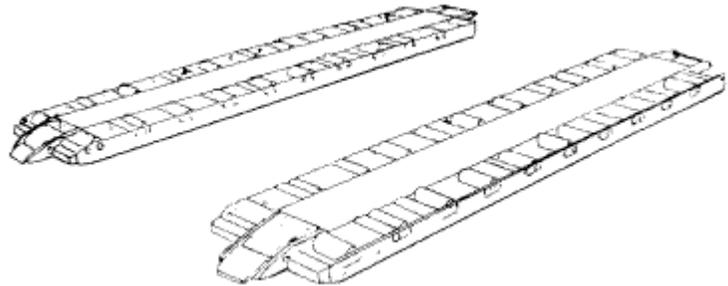


Fig. 5 Rollerized Tine Extender

- Crane Boom Attachment

The crane boom attachment (Fig. 6) converts the forklift into a mobile crane jib capable of handling bulky, irregularly shaped objects and is a valuable aid in maintenance work. The crane boom is raised or lowered with the standard lift mechanism.

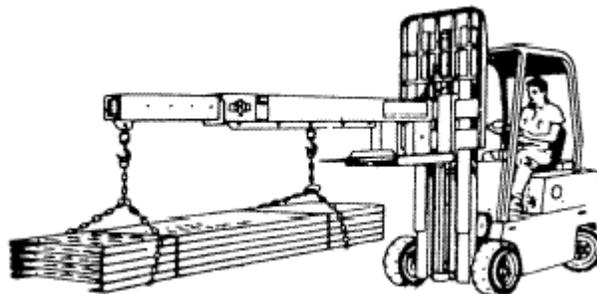


Fig. 6 Crane Boom Attachment

- Drum-Handling Attachment

A drum-handling attachment can handle empty or filled 55-gallon drums. There are three types of attachments. The first (Fig. 7A) consists of a series of specially shaped and spaced forks that cradle the drum and is capable of handling three filled drums at one time. The second type (Fig. 7B) is mounted on the forks and consists of side rails from which specially designed hooks are suspended at the front and rear. This attachment is lowered over the drums until the hooks drop into position on the rims. It can handle two filled drums at one time. The third type (Fig. 7C) is vertically operated and handles one filled drum at a time.

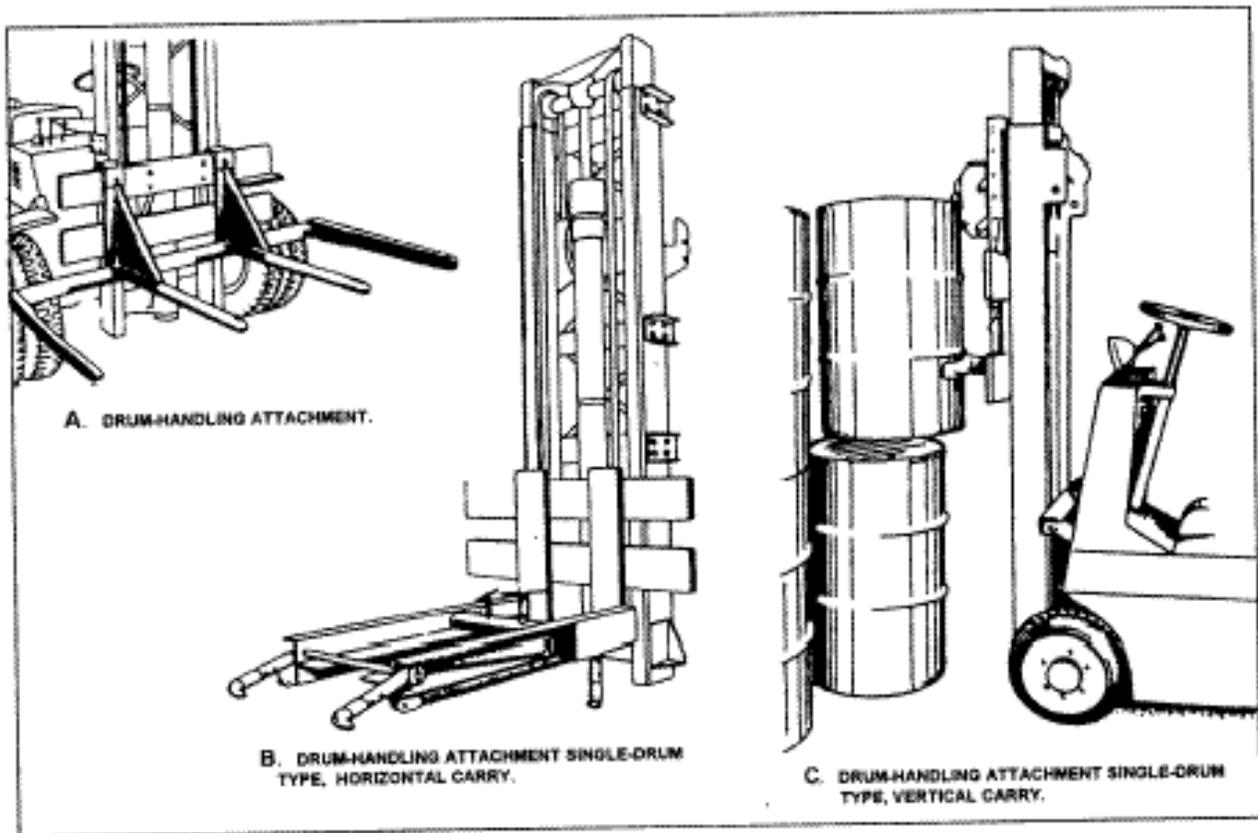


Fig. 7 Drum Handling Attachments

- Personnel Safety Platform

A forklift is built for only one rider—the operator but a secured safety platform can be utilized when lifting personnel. Because of the hazardous conditions that can result, it is unauthorized for anyone to ride the forks of a forklift or hitch a ride in any manner. If a forklift is used to elevate workers, a safety platform (Fig. 8) must be secured to the forks. The platform should be specially built and secured to keep it from slipping from the forks and should include a solid floor and handrails. Keep arms and legs inside the safety platform. Holding them outside the machine can be dangerous.

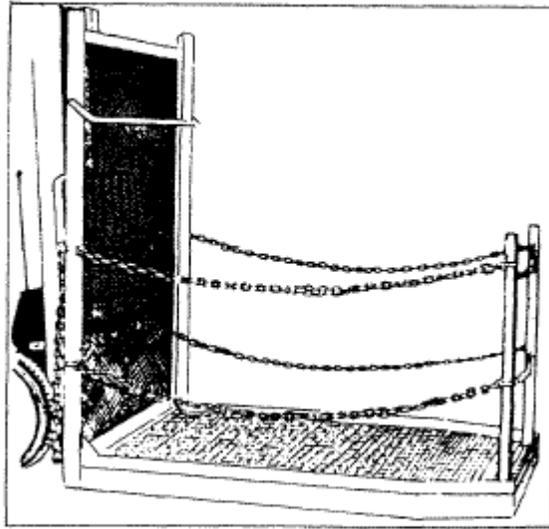


Fig. 8 Personnel Safety Platform

**Location Restrictions:** Forklifts may not be used in atmospheres containing hazardous concentrations of acetylene, butadiene, ethylene oxide hydrogen (or gases or vapors equivalent to hydrogen, such as manufactured gas), propylene oxide, acetaldehyde, cyclopropane, diethyl ether, ethylene, isoprene, or unsymmetrical diethyl hydrazine (UDMH).

**Forklift Safety:** Safety is a vital part of any job and forklift operations are not exempt. Many forklift safety practices are as simple and clear as those for driving the automobile. For instance, before starting a car, you check to see if the transmission is in NEUTRAL or PARK. When stopping a car, you do so gradually, not abruptly. Because a forklift is a special machine designed for a different purpose, you must exercise more caution and receive more training to operate a forklift properly. Some of the techniques for safe forklift operations include:

- Avoid lifting or hitting anything that is likely to fall on you or other personnel in the area. Remember a forklift equipped with an overhead guard or Rollover Protection Structure (ROPS) and load backrest extension provide reasonable protection against falling objects but cannot protect against every impact. For this reason, never attempt to pick-up any loose, unstable, or stacked load if it appears any part of the elevated load might topple through or over the top of the upright or fall on someone nearby. **A forklift without an overhead guard protection is not authorized for Air Force use.**
- Because a forklift is designed to perform so many functions within a small space, you must anticipate certain clearance situations. As an operator, be aware the forks will sometimes protrude beyond the front of the load. Because of this, it may strike objects or lift or nudge other loads on pallets. Many serious mishaps have also been caused by uprights and overhead guards striking pipes and beams connected in the ceiling of a warehouse. Also remember some forklift models steer from the rear axle. On these machines, the rear of the forklift swings and can hurt personnel or damage property if not properly monitored.
- Before leaving the forklift for any amount of time, lower the carriage completely, set the parking brake, neutralize controls, and shut off power. Chock the wheels when parking on an incline or working on the forklift. These rules apply under all conditions, even if you are only going to leave your forklift for a moment. A driverless forklift does not have to move far in close quarters to cause serious injury.
- Keep yourself and all others clear of the hoisting mechanisms. Never put hands, arms, head, or legs through the hoisting mechanism.
- Never allow anyone under a raised load.
- Report damaged or faulty equipment immediately and do not operate a forklift that is unsafe. You can safely complete a job with a forklift only when it is working correctly; therefore, a forklift should never be operated when it is not running properly.



**POWERED INDUSTRIAL TRUCK  
(FORKLIFT)**

**UNIT 2**

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**PERFORM OPERATIONAL CHECKS**

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## PERFORM OPERATIONAL CHECKS

**Background:** Because of the variety of makes and models of forklifts used in the Air Force and throughout the military services, this unit covers only the characteristics and basic principles of forklift operations. By reading the operator's manuals that accompanied the equipment, you can obtain detailed information about each make and model. When performing operational checks, it is important to properly check and service the equipment prior to operation. If any safety defect is identified, the forklift must be immediately removed from service until corrected.

**AF Form 1810:** Conduct a thorough pre-inspection of the vehicle utilizing AF Form 1810. There are 27 items identified to be checked and another 15 open spaces that can be used to write additional items required by the manufacture and/or work site specifics.

**Vehicle Exterior:** Inspection of the vehicle exterior begins with a 360-degree walk around looking for damage and leaks. Check wheels/tires for wear, lugnut tightness, and correct air pressure. Check mirrors and windows for cleanliness and cracks. Inspect all lights for operability.

**Miscellaneous Checks:** Check engine oil, coolant, brake, power steering, transmission, and hydraulic fluid levels and fill as needed--do not overfill. Inspect the drive belts for wear, tension, and alignment. Ensure battery connections are secure and free from corrosion.

**Forklift Unique Items:** There are many safety features installed on a forklift that require inspecting additional items. Check lift chains for wear. Inspect the raise/lower cylinder for rust and pitting. Look for missing bolts or broken welds on the ROPS. If equipped with a pintle hook, ensure it opens, closes, and swivels freely. Place the safety pin through the top jaw once closed. With forklift running, move controls to ensure each works properly. Approved forklifts must bear a label or some other identifying mark to indicate approval by a nationally recognized testing laboratory. If additions have been made to capacity, operation, and/or maintenance requirements, then the instruction plates, tags, and decals must change to reflect modifications. Locate these markings to verify lifting capacity.

### CAUTION:

Internal combustion engine equipment will NOT be warmed up inside a building and will be turned off when not in use.



**POWERED INDUSTRIAL TRUCK  
(FORKLIFT)**

**UNIT 2**

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**LIFTING/POSITIONING MATERIAL**

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## LIFTING/POSITIONING MATERIAL

**Background:** The safe and efficient use of a forklift requires skill and alertness on part of the operator. For the majority of material handling operations, forklifts are used because they are self-propelled and require only the operator to control the lifting, transporting, stacking, unstacking, and positioning of material. To develop the skill required for safe and efficient operations, you must understand the makeup, capabilities, and limitations of the forklift and see it is maintained in good mechanical condition. In the selection of a forklift to accomplish a task, consider the performance, lift height, power, capacity, space available, and terrain the forklift must operate in. To operate a forklift efficiently, you must know its capabilities and limitations.

**NOTE:**

For complete information on the capabilities of a specific forklift, refer to the manual provided by the manufacturer.

**Lifting Height:** Select the proper forklift depending on the lifting height required. The lifting height for an operation depends on how high the material is stacked and overall height of the forklift (with the mast lowered) that must clear door casings, overhead obstructions, and other building limitations. There are also restrictions and limitations on lifting height during unloading and loading of cargo.

**Capacity:** Handle each load within the rated capacity of the forklift. The rated capacity is the weight the forklift can safely handle. The data plate rating indicates the maximum safe load that can be lifted. This maximum rating should never be exceeded; however, there are conditions requiring a load less than the rated capacity. The data plate rating does not apply for weak floors, uneven terrain, special load handling attachments, or loads with a high center of gravity. Under these conditions, the safe working load is well below the rated capacity and loads must be reduced so the forklift will remain stable. The capacity of the forklift must be equal to the task. For this reason, the weight of each load must be known before a lift is made.

**Center of Balance:** The center of balance (C/B) is a critical factor for capacity. On most forklifts, the C/B is under the operator's seat (Fig. 8). When a load is lifted, a combined center of balance (C C/B) is created (Fig. 9) but when the load is raised, the C C/B changes (Fig. 10). A forklift is designed to lift its maximum capacity with the load centered on the forks, not with the tip of the forks. You should know where the C/B is before trying to lift any. If the C/B is on one side, the load may flip off the forks once it's lifted. The C/B (of the load) should be placed directly in front of the C/B (of the forklift). Additionally, the C/B should be centered and placed as far back as possible on the forks.

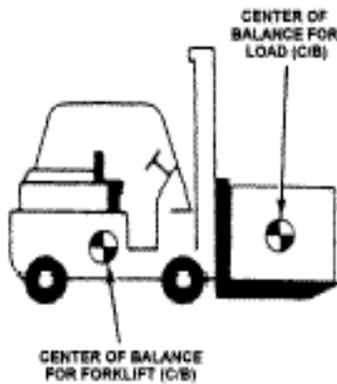


Fig. 8 C/B for Forklift and Load

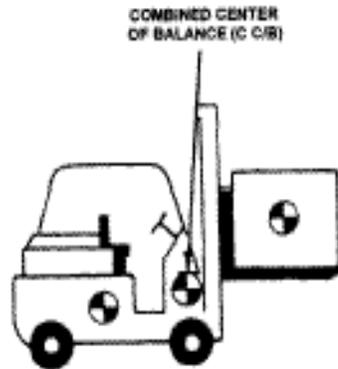


Fig. 9 C C/B

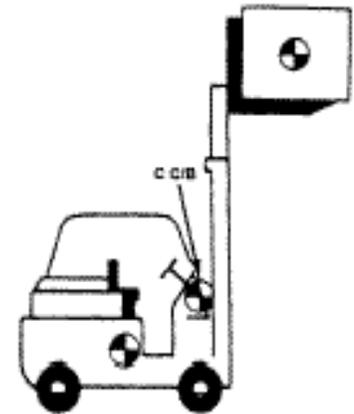


Fig.10 C C/B Raised Load

**CAUTION:**

Never lift a load balanced on the tip of the forks.

**Lifting:** Lifting speed is controlled by the speed of the engine and the extent to which the control lever is pulled back. Engine speed has no effect on lowering speed. Never race the engine while hoisting a load since too much engine speed may result in accelerated wear and possible damage to the engine. From practice and experience, you will soon be able to determine the best hoisting speed by sound, sight, and feel. When a load has been raised to the desired height, ease the hoist lever to the neutral position and move the forklift to the base of the stack where the load is to be placed. Most loads handled are on pallets or in boxes. A standard pallet is 40 inches by 48 inches. The technique for lifting a pallet is as follows:

- Position the forklift squarely in front of the load and raise the forks to the proper level, halfway between the top and bottom boards of the pallet.

- Slowly insert forks into pallet until the load rests against the fork faces. If the mast is not in a vertical position, the forks may hang up in the pallet when inserted.

**NOTE:**

If the pallet or load is against a wall or obstruction and the forks are longer than the pallet, you must pick up the pallet and back up the forklift until there is enough room to reposition the forks entirely under the pallet.

- Lift the load just enough to clear the floor then tilt the mast or forks far enough back to cradle the load. The load should always be carried as low as possible (approximately 6 inches from the ground) for maximum stability and vision.
- When picking up round objects, first tilt the uprights so the forks slide along the floor or ground under the object to be lifted as illustrated in Fig. 11. Then decelerate, tilt backward, and accelerate until there is enough backward tilt of the mast to allow safe handling of the load.



Fig. 11 Picking Up Round Objects

**Overloading:** Overloading a forklift is strictly prohibited. The forklift can not safely lift or carry more than its rated capacity. Among the dangers of overloading are injury to the operator, damage to the cargo, increased wear on the forklift tires, engine, and motor, and damage to the forklift pump and lift mechanism. Also, a forklift will tip forward if the load on the forks exceeds the lift capacity. The manufacturer has established the forklift rating (expressed in pounds of load on the fork) and the allowable distance in inches from the heel of the forks to the center of gravity of the load. This distance is known as the load center.

**CAUTION:**

Under no circumstances should additional counterweights be added to any material handling equipment to increase its stability or lifting capacity.

**Positioning Loads:** The positioning of material can be a serious problem if not properly conducted. For ease in unloading and picking up the materials not on a pallet, dunnage should be placed under the object prior to removing the tines. The thickness of the dunnage should allow the forks to slide in and out freely from the load. To position a piece of pipe, piling, or anything round, you must place blocking or dunnage to prevent the object from rolling.



**POWERED INDUSTRIAL TRUCK  
(FORKLIFT)**

**UNIT 2**

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**TRANSPORTING MATERIAL**

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## TRANSPORTING MATERIAL

**Background:** Carrying material is a primary function of a forklift. To move material from one location to another requires skill and concentration that only comes with experience and practice. There are a several issues to remember when transporting material. Always know the ground clearance of the forklift and the surface you are traveling on. Always change speed gradually as sudden starts and stops will cause the load to shift. Gradual starts and stops also prevent rapid wear of equipment components. Always center the weight of loads between the forks; otherwise, the load may topple off when turning a corner or hitting a bump. Drive carefully, observe traffic rules, and be in full control of the forklift at all times.

**Carrying Height:** Do not move the forklift long distances with the load carriage elevated. When loads are carried in an elevated position, the stability of the forklift is reduced and the load, or part of it, may fall. Abiding by this rule may require a smaller load, but you are protecting yourself and others working in your area. Travel with the load raised no higher than 6 inches from the floor until you are ready to drop off the load.

**Carrying Long Objects:** As a forklift operator, you may be tasked to move lumber, steel, piling, or pipe. In order to accomplish this, you must know where the center of balance (C/B) is to move long loads. Moving long objects takes special forklift operator skills. If the load on the forklift is too wide for the entrance door, as in Fig. 12, it does not mean it won't fit. Follow the technique shown in Fig. 13 to see how this is done.

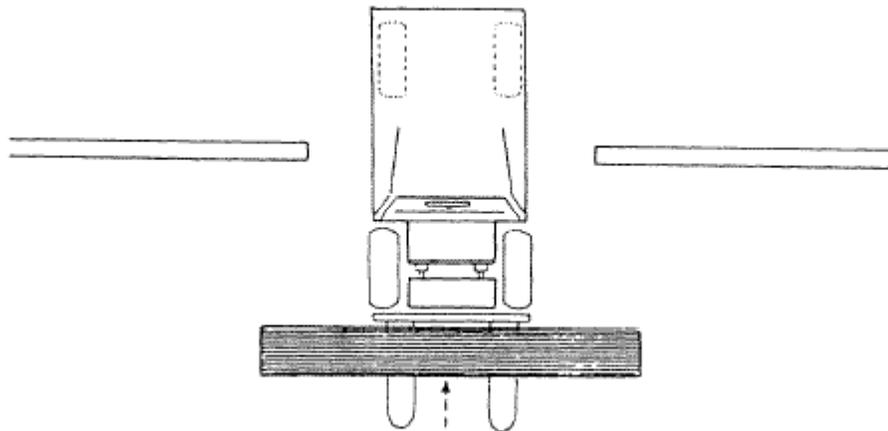


Fig. 12 Load Too Wide to Maneuver Through Entrance

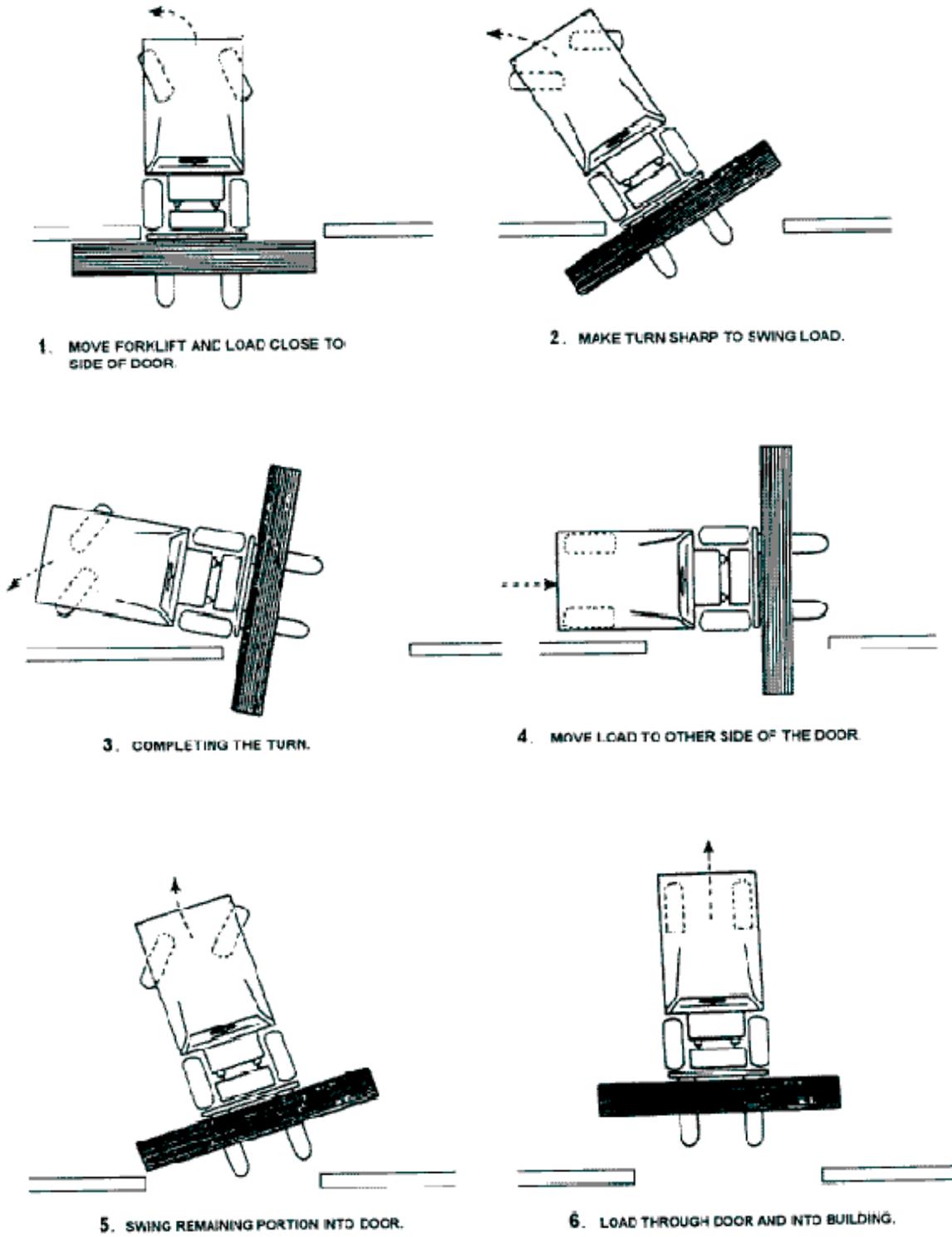


Fig. 13 Technique to Maneuver Wide Load Through Entrance

With practice, this technique can be used to maneuver around most obstacles. Watch the “swing” when handling long loads. Failure to watch clearance at both ends of the load can cause you to strike persons or objects. Keep the load against the carriage by maintaining a slight backward tilt. A spotter is required during this operation to prevent damage to the vehicle, load, and building.

**Inclined Surfaces:** You should ascend and descend a grade with the load pointing upgrade when operating a loaded forklift on an incline. Normally direction of travel should be determined by what direction the operator can see best but on grades of 10 percent or more, both forklift and load stability demand that the load be kept upgrade. Do not turn while on an incline.

**Uneven Ground:** Different models of forklifts are designed to operate under different conditions. Although large forklifts can adapt to more uneven ground, do not expect them to maintain their balance under abusive ground conditions. Try to pick the smoothest areas when moving material from one place to another avoiding bumps, holes, slick spots, and loose materials that may cause the forklift to swerve or tip over. Railroad tracks shall be crossed diagonally wherever possible and never parked closer than 8 feet from the center of the tracks.

**Warehouse Operations:** While operating inside a warehouse, do not exceed 5 miles per hour and maintain a safe distance (approximately three vehicle lengths) from the vehicle ahead. Maintain control of the forklift especially during turns and while traveling over slippery or wet floors. Slow down when approaching aisles or where vision is restricted. Horseplay is strictly prohibited.

**NOTE:**

If the load is so bulky that your vision is obstructed, drive in reverse. Extra care must be taken when driving in reverse because the operator does not have a constant view of the load; therefore, a backing guide is usually required.



**POWERED INDUSTRIAL TRUCK  
(FORKLIFT)**

**UNIT 2**

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**PERFORM OPERATOR MAINTENANCE**

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## PERFORM OPERATOR MAINTENANCE

**Background:** Forklift maintenance, like any other maintenance, is very important. If the machine is not running well, how is the job going to get done? The more effective maintenance program there is for the equipment, the better an operation will run. Correct and timely operator maintenance ensures equipment will do the job when needed and last longer saving the Air Force needless expenditure. A good operator maintenance program includes inspections to detect and correct minor deficiencies before they develop into major defects.

### CAUTION:

Modifications and additions affecting the capacity and safe operation of a forklift shall not be performed without manufacture's prior written approval.

**Cleaning:** Clean the forklift inside and out. If you have trash or dirt all over, you won't be able to find lubrication points. It will also be hard to inspect the vehicle for damage, loose bolts, and broken welds.

**Lubrication:** Lubricate the forklift according to the intervals listed in the maintenance chart. If operating in severe conditions then lubricate more frequently. Be sure to remove all dirt from the grease fittings before lubricating and remove any grease that remains on the fitting after lubrication.

**Refueling:** Refueling a gas or diesel forklift is easy, simply drive to the service station and fill the fuel tank. If it can't be driven to the service station, arrange for the fuel truck to come to the work location. Fuel all equipment at the end of each working day to prevent moisture from condensing and forming droplets within the fuel tank. If the forklift is electric, charge the batteries as necessary, following manufacture's recommendations. If the forklift is powered by propane, fill the tank as required.

### CAUTION:

Do not refuel tanks with the engine running. Avoid overfilling and spillage.

**Post Operation Inspection:** As stated in operational checks, inspection is the best way to ensure proper care to equipment. Air intake breathers are of special importance. There are generally two elements: first is the primary (outer) element and, second is the secondary (inner) element. Under dusty operating conditions, clean both elements daily and even more often if working conditions are extremely dusty.



**POWERED INDUSTRIAL TRUCK  
(FORKLIFT)**

**UNIT 3**

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**PRACTICAL EXAM**

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## PRACTICAL EXAM

**Background:** Only trained and authorized persons are permitted to operate a powered industrial truck. Extensive and specific operation rules and instructions are detailed in OSHA Standard 1910.178 (m), (n), (o), and (p). When conducting training, these rules must be thoroughly explained to and learned by the trainee. A list of approved instructors is retained on file by the using activity and the vehicle operations section.

**Certification:** Certification shall include the name of the operator, date of training or date of evaluation, and the name of the person(s) who conducted the training or evaluation. In addition, all training and evaluations must be conducted by persons who have the knowledge, training, and experience to train forklift operators and evaluate their competence. Certification is documented on AF Form 483, Certificate of Competency and the names forwarded to the vehicle operations officer.

### NOTE

As identified in Unit 1, this requirement does not apply to vehicles intended primarily for earth moving or over-the-road hauling such as front end loaders with a forklift attachment.

**Training Program Implementation:** Training must consist of a combination of formal instruction (lecture, discussion, video, written material), practical training (demonstrations performed by the trainer and exercises performed by the trainee), and an evaluation of the trainee's performance in the workplace.

**Training Program Content:** Along with passing a written exam, initial training, as a minimum, must include the following:

#### *Forklift related topics*

- All operating instructions, warnings, and precautions for the types of forklift the operator will be authorized to operate.
- Similarities to and differences from the automobile.
- Controls and instrumentation: location, what they do, and how they work.
- Engine or motor operation.
- Steering and maneuvering.
- Visibility (including restrictions due to loading).

- Fork and attachment adaptation, operation, and use limitations.
- Vehicle capacity.
- Vehicle stability.
- Vehicle inspection and maintenance.
- Refueling and/or charging and recharging of batteries.
- Operating limitations.
- Any other operating instruction, warning, and precaution listed in the operator's manual for the type of forklift the individual is being trained to operate.
- Fire extinguisher training, which will be accomplished annually after initial instruction. All material lifting equipment powered by internal combustion engines will be equipped with fire extinguishers as determined by the local fire chief.

*Workplace related topics*

- Surface conditions where the forklift will be operated.
- Composition of probably loads and load stability.
- Load manipulation, stacking, and unstacking.
- Pedestrian traffic in areas where the forklift will be operated.
- Narrow aisles and other restricted places of operation.
- Operating in hazardous classified locations.
- Operating the forklift on ramps and other sloped surfaces that could affect the stability of the vehicle.
- Operating the forklift in closed environments and other areas where insufficient ventilation could cause a build-up of carbon monoxide or diesel exhaust.
- Other unique or potentially hazardous environmental conditions that exist or may exist in the workplace.

**Refresher Training:** Refresher training, including an evaluation of the effectiveness of the training must be conducted to ensure the operator has the knowledge and skills needed to safely operate a forklift. If an operator has previously received training on the above listed items, additional training in that topic is not required if the operator has been evaluated and found competent to operate the forklift in a safe manner. Refresher training is mandatory with the following conditions:

- At least once every 3 years.  
Since mandated compliance with the standard is 1 Dec 99, it does not mean every 3 years from that date. The date of the previous training/evaluation controls the time frame for the next evaluation. A written exam is not required but is encouraged for this type of evaluation (employers may deem it necessary.)
- The operator is assigned to operate a different type of forklift.  
A written/CerTest exam is not required for this type of evaluation unless the employer deems it necessary.
- A condition in the workplace changes in a manner that could affect safe operation of the forklift.  
A written/CerTest exam is not required for this type of evaluation unless the employer deems it necessary.
- When the operator has been observed to operate the forklift in an unsafe manner.  
Written/CerTest exam is required.
- The operator has been involved in an accident or near-miss incident.  
Written/CerTest exam is required.
- The operator receives an evaluation that reveals they are not operating in a safe manner.  
Written/CerTest exam is required.

**Recommended Training Time:**

- Explain the principles of operation (30 min)  
Explain the importance of the forklift to the mission and principles of operation.
- Explain and demonstrate use of AF Form 1810 (30 min)  
Explain difference between AF Form 1800, 1806, and 1810. Go over, in detail, the 1810.
- Familiarization with preventive and operator maintenance (1 hr)  
Using AF Form 1810 and manufacturer's operating manual discuss the importance of maintenance and what to do with identified damage and safety discrepancies.

- Perform preventive and operator maintenance (2 hrs)  
Conduct hands-on training to include performing preventive and operator maintenance.
- Practice operating 4K, 6K, and/or 10K capacity forklift under supervision of a trainer (4 hrs)  
Demonstrate the operating capabilities from starting the engine to transporting a load to shutting down.
- Evaluation of operating capabilities (1 hr)  
Let trainee demonstrate their capability to operate a forklift. All areas identified in the “initial training program content” must be addressed. Conduct training in an area that does not endanger the trainee or those within the immediate area.
- Pass electronic CerTest # **8167** with a minimum passing score of 80%.  
See Unit Education Training Manager to take the CerTest “FORKLIFT CERT. TEST”

**Feedback:** Trainer should provide positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.



## **POWERED INDUSTRIAL TRUCK (FORKLIFT)**

### **UNIT 4**

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#### **WRITTEN EXAM**

**See your Unit Education & Training Manager to complete the CerTest "FORKLIFT CERT. TEST".**

**Successful completion of CerTest # 8167, with a minimum passing score of 80% provides the required knowledge testing for certification as outlined in OSHA Standard 29 CFR 1910.178.**

**Upon completion of hands on certification and the CerTest, document training on an AF Form 1098 and maintain in the trainees training record. This is a 3-year reoccurring training as directed by OSHA Standard 29 CFR 1910.178.**

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