

SOUTHERN METHODIST UNIVERSITY
RISK MANAGEMENT AND ENVIRONMENTAL HEALTH & SAFETY
PROCEDURE

EFFECTIVE DATE: 3/15/04

FORKLIFT SAFETY PROGRAM

Introduction

Material handling is a significant safety concern. During the movement of products and materials, there are numerous opportunities for personal injury and property damage if proper procedures and caution are not used. This program applies to all powered industrial trucks, including forklifts, tractors, platform lift trucks, motorized hand trucks, and other specialized industrial trucks powered by electric motors or internal combustion engines. The information in this program and applicable standards should be used to train prospective industrial truck operators and provide the basis for refresher and annual retraining.

Responsibilities

The Department Manager is responsible for developing, implementing, and administering forklift safety program. The Department Manager will review the forklift safety program annually and make recommendations for revisions if necessary. The Department Manager must ensure that all employees who operate or work near forklifts are properly trained.

Supervisors must ensure that their employees follow safe operating procedures when using forklifts.

Employees who operate forklifts must follow the safe operating procedures specified below.

Pre-Qualifications for Powered Industrial Truck Operators

All candidates for powered industrial truck (PIT) operators must meet the following basic requirements prior to starting initial or annual training:

- Have a driver's license and good driving record.
 - No adverse vision problems that cannot be corrected by glasses or contacts.
 - No adverse hearing loss that cannot be corrected with hearing aids.
 - No physical impairments that would impair safe operation of the PIT.
 - No neurological disorders that affect balance or consciousness.
 - Not taking any medication that affects perception, vision, or physical abilities.
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Training

An experienced operator, selected by the Department Manager, must conduct training for PIT operators. All operational training must be conducted under close supervision. All training and evaluation must be completed before an operator is permitted to use a PIT without continual and close supervision.

Trainees may operate a powered industrial truck only:

- Under the direct supervision of persons, selected by the Department Manager, who have the knowledge, training, and experience to train operators and evaluate their competence; and
- Where such operation does not endanger the trainee or other employees.

Training consists of a combination of formal instruction, practical training (demonstrations performed by the trainer and practical exercises performed by the trainee), and evaluation of the operator's performance in the workplace.

Initial Training

As specified in the OSHA standard, PIT operators must receive initial training in the following truck-related and workplace-related topics:

Truck-related topics:

- Operating instructions, warnings, and precautions for the type of truck the operator will be authorized to operate;
- Differences between the truck and automobiles;
- Truck controls and instrumentation;
- 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 that the operator will be required to perform;
- Refueling and/or charging and recharging of batteries;
- Operating limitations; and
- Operating instructions, warnings, or precautions listed in the operator's manual for the types of vehicle that the employee is being trained to operate.

Workplace-related topics:

- Surface conditions where the vehicle will be operated;
- Composition of loads to be carried and load stability;
- Load manipulation, stacking, and unstacking;
- Pedestrian traffic in areas where the vehicle will be operated;
- Narrow aisles and other restricted places where the vehicle will be operated;
- Hazardous (classified) locations where the vehicle will be operated;

- Ramps and other sloped surfaces that would affect the vehicles' stability;
- Closed environments and other areas where insufficient ventilation or poor vehicle maintenance could cause a buildup of carbon monoxide or diesel exhaust; and
- Other unique or potentially hazardous environmental conditions in the workplace that could affect safe operation.

Refresher Training and Evaluation

Refresher training, including an evaluation of the effectiveness of that training, must be conducted to ensure that the operator has the knowledge and skills needed to operate the powered industrial truck safely.

Refresher training in relevant topics must be provided to the operator in the following situations:

- The operator has been observed operating the vehicle in an unsafe manner.
 - The operator has been involved in an accident or near-miss incident.
 - The operator has received an evaluation that reveals that the operator is not operating the truck safely.
 - The operator is assigned to drive a different type of truck.
 - A condition in the workplace changes in a manner that could affect safe operation of the truck.
 - Once every three years, an evaluation will be conducted of each powered industrial truck operator's performance.
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Safe Operating Procedures

- Only authorized and trained personnel will operate PITs.
- All PITs will be equipped with a headache rack, fire extinguisher, rotating beacon, back-up alarm, and seat belts. The operator will wear seatbelts at all times.
- The operator will perform daily pre- and post-trip inspections.
- Any safety defects (such as hydraulic fluid leaks; defective brakes, steering, lights, or horn; and/or missing fire extinguisher, lights, seat belt, or back-up alarm) will be reported for immediate repair or the PIT will be taken out of service.
- Operators will follow the proper recharging or refueling safety procedures.
- Loads will be tilted back and carried no more than six inches from the ground. Loads that restrict the operator's vision will be transported backwards.
- PITs operators will obey plant speed limits and slow down on wet floors and going around turns.
- PIT operators in high lift areas will wear hard hats.
- Operator will sound the horn and use extreme caution when meeting pedestrians, making turns, and cornering.
- Passengers may not ride on any portion of a PIT. Only the operator will ride PITs.
- If PITs are used as a man lift, an appropriate man lift platform (cage with standard rails and toe-boards) will be used.

- Aisles will be maintained free from obstructions, marked, and wide enough (six-foot minimum) for vehicle operation.
 - Lift capacity will be marked on all PITs. Operators will assure the load does not exceed rated weight limits.
 - When unattended, PITs will be turned off, forks lowered to the ground, and the parking brake applied.
 - All PITs (with the exception of pallet jacks) will be equipped with a multi-purpose dry chemical fire extinguisher.
 - Operators must report all accidents, regardless of fault and severity, to the Supervisor.
 - When loading rail cars and trailers, dock plates will be used. Operators will assure dock plates are in good condition and will store them on edge when not in use.
 - Rail cars and trailers will be parked squarely to the loading area and have wheels chocked in place. Operators will follow established docking/undocking procedures.
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Changing and Charging Storage Batteries

- Battery charging installations must be located in areas designated for that purpose.
 - Facilities must be provided for flushing and neutralizing spilled electrolyte, for fire protection, for protecting charging apparatus from damage by trucks, and for adequate ventilation for dispersal of fumes from gassing batteries.
 - A conveyor, overhead hoist, or equivalent material handling equipment must be provided for handling batteries.
 - Reinstalled batteries must be properly positioned and secured in the truck.
 - A carbon filter or siphon must be provided for handling electrolyte.
 - When charging batteries, acid must be poured into water. Water must not be poured into acid.
 - Trucks must be properly positioned and brake applied before attempting to change or charge batteries.
 - Care must be taken to assure that vent caps are functioning. The battery (or compartment) cover(s) must be open to dissipate heat.
 - Smoking is prohibited in the charging area.
 - Precautions must be taken to prevent open flames, sparks, or electric arcs in battery charging areas.
 - Tools and other metallic objects must be kept away from the top of uncovered batteries.
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Trucks and Railroad Cars

- Check the flooring of trucks, trailers, and railroad cars for breaks and weakness before driving onto them.
- The brakes of highway trucks must be set and wheel chocks placed under the rear wheels to prevent the trucks from rolling while they are boarded with powered industrial trucks.
- Wheel stops or other recognized positive protection must be provided to prevent railroad cars from moving during loading or unloading operations.

- Fixed jacks may be necessary to support a semi trailer and prevent upending during the loading or unloading when the trailer is not coupled to a tractor.
 - Positive protection must be provided to prevent railroad cars from being moved while dock boards or bridge plates are in position.
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Operations

- If at any time a powered industrial truck is found to be in need of repair, defective, or in any way unsafe, the truck must be taken out of service until it has been restored to safe operating condition.
 - Trucks must not be driven up to anyone standing in front of a bench or other fixed object.
 - No person will be allowed to stand or pass under the elevated portion of any truck, whether loaded or empty.
 - Unauthorized personnel may not ride on powered industrial trucks.
 - Arms or legs may not be placed between the uprights of the mast or outside the running lines of the truck.
 - When a powered industrial truck is left unattended, load engaging means must be fully lowered, controls neutralized, power shut off, and brakes set. Wheels must be blocked if the truck is parked on an incline.
 - A safe distance must be maintained from the edge of ramps or platforms while on any elevated dock, platform, or freight car. Trucks must not be used for opening or closing freight doors.
 - There must be sufficient headroom under overhead installations, lights, pipes, sprinkler system, etc.
 - An overhead guard must be used as protection against falling objects. An overhead guard is intended to offer protection from the impact of small packages, boxes, bagged material, etc., representative of the job application, but not to withstand the impact of a falling capacity load.
 - A load backrest extension must be used whenever necessary to minimize the possibility of the load or part of it from falling rearward.
 - Trucks must not be parked so as to block fire aisles, access to stairways, or fire equipment.
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Traveling

- All traffic regulations must be observed, including authorized speed limits. A safe distance must be maintained, approximately three truck lengths from the truck ahead, and the truck must be kept under control at all times.
- The right of way must be yielded to ambulances, fire trucks, or other vehicles in emergency situations.
- Do not pass other trucks traveling in the same direction at intersections, blind spots, or other dangerous locations.
- The driver must slow down and sound the horn at cross aisles and other locations where vision is obstructed. If the load being carried obstructs forward view, the driver must travel with the load trailing.
- Railroad tracks must be crossed diagonally wherever possible. Parking closer than eight feet from the center of railroad tracks is prohibited.
- The driver must look in the direction of and keep a clear view of the path of travel.

- Grades must be ascended and descended slowly. When ascending or descending grades in excess of 10 percent, loaded trucks must be driven with the load upgrade. On all grades, the load and load engaging means must be tilted back if applicable, and raised only as far as necessary to clear the road surface.
 - Under all travel conditions the truck must be operated at a speed that will permit it to be brought to a stop in a safe manner.
 - Stunt driving and horseplay are prohibited.
 - The driver must slow down on wet and slippery floors.
 - Dock board or bridge plates must be properly secured before they are driven over. Dock board or bridge plates must be driven over carefully and slowly and their rated capacity never exceeded.
 - Avoid running over loose objects on the roadway surface.
 - While negotiating turns, reduce speed to a safe level by turning the hand steering wheel in a smooth, sweeping motion. Except when maneuvering at a very low speed, the hand steering wheel must be turned at a moderate, even rate.
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Loading

- Only stable or safely arranged loads can be handled. Exercise caution when handling off-center loads that cannot be centered.
 - Only loads within the rated capacity of the truck can be handled.
 - Adjust the long or high (including multiple-tiered) loads that may affect capacity.
 - Trucks equipped with attachments must be operated as partially loaded trucks when not handling a load.
 - A load engaging means must be placed under the load as far as possible. The mast must be carefully tilted backward to stabilize the load.
 - Use extreme care when tilting the load forward or backward, particularly when high tiering. Tilting forward with load engaging means elevated is prohibited except to pick up a load. An elevated load may not be tilted forward except when the load is in a deposit position over a rack or stack. When stacking or tiering, use only enough backward tilt to stabilize the load.
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Fueling Safety

- Fuel tanks may not be filled while the engine is running. Avoid spillage.
 - Spillage of oil or fuel must be carefully washed away or completely evaporated and the fuel tank cap replaced before restarting engine.
 - No truck can be operated with a leak in the fuel system until the leak has been corrected.
 - Do not use open flames for checking electrolyte level in storage batteries or gasoline level in fuel tanks.
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Maintenance

- Any power-operated industrial truck not in safe operating condition must be removed from service. Authorized personnel must make all repairs.
- Those repairs to the fuel and ignition systems of industrial trucks that involve fire hazards must be conducted only in locations designated for such repairs.

- Trucks in need of repairs to the electrical system must have the battery disconnected before such repairs.
 - Only parts equivalent as to safety with those used in the original design must replace all parts of any such industrial truck requiring replacement.
 - Industrial trucks must not be altered so that the relative positions of the various parts are different from what they were when originally received from the manufacturer. They also cannot be altered either by the addition of extra parts not provided by the manufacturer or by the elimination of any parts. Additional counter-weighting of fork trucks must not be done unless approved by the truck manufacturer.
 - Industrial trucks must be examined before being placed in service, and must not be placed in service if the examination shows any condition adversely affecting the safety of the vehicle. Such examination must be made at least daily. Where industrial trucks are used on a round-the-clock basis, they must be examined before each shift. Any defects must be immediately reported and corrected.
 - When the temperature of any part of any truck is found to be in excess of its normal operating temperature, thus creating a hazardous condition, the vehicle must be removed from service and not returned to service until the cause for such overheating has been eliminated.
 - Industrial trucks must be kept in a clean condition, free of lint, excess oil, and grease. Noncombustible agents should be used for cleaning trucks. Low flash point (below 100 degrees F) solvents must not be used. High flash point (at or above 100 degrees F) solvents may be used.
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