

Dare County Schools

Powered Industrial Truck and Motorized Pallet Jack Safety Plan

February 2006

Powered Industrial Truck and Motorized Pallet Jack Safety

Purpose

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 chapter applies to all powered industrial trucks, hoists & lifting gear. The information in this chapter shall be used to train prospective industrial truck operators and provide the basis for refresher and annual retraining. OSHA reference for Powered Industrial Trucks is 1910.178.

Dare County Schools Responsibilities

Management

- Provide adequate training in safe operation of all equipment used to move or access materials
- Provide equipment that is safe to operate
- Implement a Dare County Schools "Out of Service" program for damaged equipment
- Not allow modification to equipment except those authorized in writing by the equipment manufacturer
- Establish safe operating rules and procedures

Supervisors

- Monitor safe operations of material handling equipment
- Ensure all equipment is safety checked daily
- Tag "Out of Service" any damaged equipment

Employees

- Operate only that equipment for which they have been specifically trained and authorized
- Conduct required daily pre-use inspections
- Report any equipment damage or missing safety gear
- Follow all safety rules and operating procedures

Hazards

- Falling loads
- Overloading of equipment
- Impact with equipment
- Piercing of containers
- Loading dock roll off

- Chemical contact - battery acid
- Fires during refueling

Hazard Controls

- Control of equipment keys
- Authorized fueling & recharge areas
- Proper palletizing of material
- Marked travel lanes
- Equipment warning lights
- Seat belts
- Mounted fire extinguishers

Pre-Qualification

All candidates for Dare County Schools Powered Industrial Truck (PIT) operators must meet the following basic requirements prior to starting initial or annual refresher training:

- Must have 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

Training

Training for Dare County Schools Powered Industrial Truck (PIT) Operators shall be conducted by an experienced Dare County Schools operator, selected by either the Assistant Director of Maintenance, the Director of Transportation or the Industrial Health & Safety Manager. All operational training shall be conducted under close supervision. All training and evaluation must be completed before a Dare County Schools operator is permitted to use a Powered Industrial Truck (forklift, etc) without continual & close supervision. Training consists of:

Trainees may operate a powered industrial truck only:

- Under the direct supervision of persons, selected by Dare County Schools management, 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.

Dare County Schools Training Content

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: Powered industrial truck operators shall receive initial training in the following topics:

Truck-related training topics:

1. Operating instructions, warnings, and precautions for the types of truck the operator will be authorized to operate
2. Differences between the truck and the automobile
3. Truck controls and instrumentation: where they are located, what they do, and how they work
4. Engine or motor operation
5. Steering and maneuvering
6. Visibility (including restrictions due to loading)
7. Fork and attachment adaptation, operation, and use limitations
8. Vehicle capacity
9. Vehicle stability
10. Any vehicle inspection and maintenance that the operator will be required to perform
11. Refueling and/or charging and recharging of batteries
12. Operating limitations
13. Any other operating instructions, warnings, or precautions listed in the operator's manual for the types of vehicle that the employee is being trained to operate.

Dare County Schools Workplace-related topics:

1. Surface conditions where the vehicle will be operated
2. Composition of loads to be carried and load stability
3. Load manipulation, stacking, and unstacking
4. Pedestrian traffic in areas where the vehicle will be operated
5. Narrow aisles and other restricted places where the vehicle will be operated
6. Hazardous (classified) locations where the vehicle will be operated
7. Ramps and other sloped surfaces that could affect the vehicle's stability
8. Closed environments and other areas where insufficient ventilation or poor vehicle maintenance could cause a buildup of carbon monoxide or diesel exhaust
9. 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, shall 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 shall be provided to the operator 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 safe operation of the truck
6. Once every 3 years an evaluation will be conducted of each powered industrial truck operator's performance.

Dare County Schools Safe Operating Procedures (SOP) & Rules

- Only authorized and trained Dare County Schools personnel will operate PITs.
- All PITs will be equipped with an over head guard, fire extinguisher, rotating beacon, back-up alarm and seat belts. Seat belts will be worn at all times by the Dare County Schools Operator.
- 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 have the PIT taken "Out of Service".
- Operators will follow the proper recharging or refueling safety procedures.
- Loads will be tilted back and carried no more than 6 inches from the ground. Loads that restrict the operator's vision will be transported backwards.
- PITs will travel no faster than 5 mph or faster than a normal walk.
- Hard hats will be worn by Dare County Schools PIT Operators in high lift areas. .
- Operator will sound horn and use extreme caution when meeting pedestrians, making turns and cornering.
- Passengers may not ride on any portion of a PIT. Only the Dare County Schools operator will ride PITs. "NO PASSENGERS" decals will be affixed on all PITs.
- If PITs are used as a man lift, an appropriate man lift platform (cage with standard rails and toe-boards) will be used.
- Aisle will be maintained free from obstructions, marked and wide enough (six foot minimum) for vehicle operation.
- Lift capacity will be marked on all PITs. Dare County Schools Operator will assure load does not exceed rated weight limits.
- When un-attended, PITs will be turned off, forks lowered to the ground and parking brake applied.
- All PITs (with exception of pallet jacks) will be equipped with a multi-purpose dry chemical fire extinguisher. (Minimum rating; 2A:10B:C)

- Operators are instructed to report all accidents, regardless of fault and severity, to Dare County Schools Management. Dare County Schools Management will conduct an accident investigation.
- When loading rail cars and trailers, dock plates will be used. Operators will assure dock plates are in good condition and will store 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 Dare County Schools Docking/Un-Docking Procedures.

Changing and Charging Storage Batteries

- Battery charging installations shall be located in areas designated for that purpose.
- Dare County Schools facilities shall 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 shall be provided for handling batteries.
- Reinstalled batteries shall be properly positioned and secured in the truck.
- A carboy tilter or siphon shall be provided for handling electrolyte.
- When charging batteries, acid shall be poured into water; water shall not be poured into acid.
- Trucks shall be properly positioned and brake applied before attempting to change or charge batteries.
- Care shall be taken to assure that vent caps are functioning. The battery (or compartment) cover(s) shall be open to dissipate heat.
- Smoking is prohibited on all Dare County Schools property.
- Precautions shall be taken to prevent open flames, sparks, or electric arcs in battery charging areas.
- Tools and other metallic objects shall be kept away from the top of uncovered batteries.

Trucks and Trailers

- The flooring of trucks and trailers shall be checked for breaks and weakness before they are driven onto.
- The brakes of highway trucks shall 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 shall be provided to prevent trucks/trailers from moving during loading or unloading operations.
- Fixed jacks may be necessary to support a semitrailer and prevent unloading during the loading or unloading when the trailer is not coupled to a tractor.

Dare County Schools 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 shall be taken out of service until it has been restored to safe operating condition.
- Trucks shall not be driven up to anyone standing in front of a bench or other fixed object.
- No person shall be allowed to stand or pass under the elevated portion of any truck, whether loaded or empty.
- Unauthorized personnel shall not be permitted to ride on powered industrial trucks.
- Arms or legs shall 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 shall be fully lowered, controls shall be neutralized, power shall be shut off, and brakes set. Wheels shall be blocked if the truck is parked on an incline.
- A safe distance shall be maintained from the edge of ramps or platforms while on any elevated dock, or platform or freight car. Trucks shall not be used for opening or closing freight doors.
- There shall be sufficient headroom under overhead installations, lights, pipes, sprinkler system, etc.
- An overhead guard shall be used as protection against falling objects. It should be noted that 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 shall be used whenever necessary to minimize the possibility of the load or part of it from falling rearward.
- Trucks shall not be parked so as to block fire aisles, access to stairways, or fire equipment.

Traveling

- All traffic regulations shall be observed, including authorized speed limits. A safe distance shall be maintained approximately three truck lengths from the truck ahead, and the truck shall be kept under control at all times.
- The right of way shall be yielded to ambulances, fire trucks, or other vehicles in emergency situations.
- Other trucks traveling in the same direction at intersections, blind spots, or other dangerous locations shall not be passed.
- The Dare County Schools driver shall be required to 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 shall be required to travel with the load trailing.

- Railroad tracks shall be crossed diagonally wherever possible. Parking closer than 8 feet from the center of railroad tracks is prohibited.
- The Dare County Schools driver shall be required to look in the direction of, and keep a clear view of the path of travel.
- Grades shall be ascended or descended slowly. When ascending or descending grades in excess of 10 percent, loaded trucks shall be driven with the load upgrade. On all grades the load and load engaging means shall be tilted back if applicable, and raised only as far as necessary to clear the road surface.
- Under all travel conditions the truck shall be operated at a speed that will permit it to be brought to a stop in a safe manner.
- Stunt driving and horseplay shall not be permitted.
- The Dare County Schools driver shall be required to slow down for wet and slippery floors.
- Dockboard or bridgeplates, shall be properly secured before they are driven over. Dockboard or bridgeplates shall be driven over carefully and slowly and their rated capacity never exceeded.
- Running over loose objects on the roadway surface shall be avoided.
- While negotiating turns, speed shall be reduced to a safe level by means of turning the hand steering wheel in a smooth, sweeping motion. Except when maneuvering at a very low speed, the hand steering wheel shall be turned at a moderate, even rate.

Loading

- Only stable or safely arranged loads shall be handled. Caution shall be exercised when handling off-center loads which cannot be centered.
- Only loads within the rated capacity of the truck shall be handled.
- The long or high (including multiple-tiered) loads which may affect capacity shall be adjusted.
- Dare County Schools trucks equipped with attachments shall be operated as partially loaded trucks when not handling a load.
- A load engaging means shall be placed under the load as far as possible; the mast shall be carefully tilted backward to stabilize the load.
- Extreme care shall be used when tilting the load forward or backward, particularly when high tiering. Tilting forward with load engaging means elevated shall be prohibited except to pick up a load. An elevated load shall not be tilted forward except when the load is in a deposit position over a rack or stack. When stacking or tiering, only enough backward tilt to stabilize the load shall be used.

Fueling Safety

- Fuel tanks shall not be filled while the engine is running. Spillage shall be avoided.

- Spillage of oil or fuel shall be carefully washed away or completely evaporated and the fuel tank cap replaced before restarting engine.
- No truck shall be operated with a leak in the fuel system until the leak has been corrected.
- Open flames shall not be used for checking electrolyte level in storage batteries or gasoline level in fuel tanks.

Maintenance of Powered Industrial Trucks

- Any power-operated industrial truck not in safe operating condition shall be removed from service. All repairs shall be made by authorized personnel.
- Those repairs to the fuel and ignition systems of industrial trucks which involve fire hazards shall be conducted only in locations designated for such repairs.
- Trucks in need of repairs to the electrical system shall have the battery disconnected prior to such repairs.
- All parts of any such industrial truck requiring replacement shall be replaced only by parts equivalent as to safety with those used in the original design.
- Industrial trucks shall not be altered so that the relative positions of the various parts are different from what they were when originally received from the manufacturer, nor shall they 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 shall not be done unless approved by the truck manufacturer.
- Industrial trucks shall be examined before being placed in service, and shall not be placed in service if the examination shows any condition adversely affecting the safety of the vehicle. Such examination shall be made at least daily. Where industrial trucks are used on a round-the-clock basis, they shall be examined prior to use each shift. Defects when found shall 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 shall be removed from service and not returned to service until the cause for such overheating has been eliminated.
- Industrial trucks shall 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 deg. F.) solvents shall not be used. High flash point (at or above 100 deg. F.) solvents may be used.

Dare County Schools Safe Operation Procedure for Charging LPG Tank

1. No Smoking.
2. Move LPG PIT outside for refueling.
3. Turn off PIT.
4. LPG tanks will be removed in the following order:
 - shut off service valve
 - disconnect tank from hose
 - unbuckle and remove tank from bracket
 - store empty cylinder in designated area
5. LPG tanks will be replaced in to following order:
 - remove cylinder from storage area
 - place tank in bracket and re-buckle
 - reconnect hose to tank and tighten firmly
 - open valve slowly and assure proper seal

NOTE: Federal Law Prohibits dispensing an improper fuel type into any Vehicle or into a non-approved fuel container.

In Case of LPG Leaks or Tank Rupture

1. DO NOT start or move the PIT.
2. If fuel hose is leaking, Close valve immediately and place PIT "Out of Service" until repaired.
3. If tank ruptures, warn others, immediately leave the area (at least 50 feet) and notify Dare County Schools Management. Do not re-enter the area until cleared by Dare County Schools Management.

Powered Industrial Truck Checklist

A check of the following items (as applicable) is to be conducted by the operator prior to use.

- Overhead Guard – Are there broken welds, missing bolts or damaged areas?
- Hydraulic Cylinders – Is there leakage or damage on the lift, tilt or attachment functions of the cylinders?
- Mast Assembly – Are there broken welds, cracked or bent areas, or worn or missing stops?
- Lift Chains and Rollers
 - Is there wear or damage or kinks, signs of rust, or any sign that lubrication is required?
 - Is there squeaking?
 - Are they cracked or bent, worn, or mismatched?
 - Is there excessive oil or water on the forks?
- Tires – What do the tires look like?
 - Are there large cuts that go around the circumference of the tire?
 - Are there large pieces of rubber missing or separated from the rim?
 - Are there missing lugs?
 - Is there bond separation that may cause slippage?
- Battery Check
 - Are the cell caps and terminal covers in place?
 - Are the cables missing insulation?
- Hydraulic Fluid - check level.
- Gauges – Are they all properly working?
- Steering
 - Is there excessive free play?
 - If power steering, is the pump working?
- Brakes
 - If pedal goes all the way to the floor when you apply the service brake, that is the first indicator that the brakes are bad. Brakes should work in reverse, also.
 - Does the parking brake work? The truck should not be capable of movement when the parking brake is engaged.
- Lights – If equipped with lights, are they working properly?
- Horn – Does the horn work?

Powered Industrial Truck Checklist Continued

- Safety Seat – If the truck is equipped with a safety seat, is it working?
- Load Handling Attachments
 - Is there hesitation when hoisting or lowering the forks, when using the forward or backward tilt, or the lateral travel on the side shift?
 - Is there excessive oil on the cylinders?
- Propane Tank – Is the tank guard bracket properly positioned and locked down?
- Propane Hose –
 - Is it damaged? It should not be frayed, pinched, kinked or bound in any way.
 - Is the connector threaded on squarely and tightly?
- Propane Odor – If you detect the presence of propane gas odor, turn off the tank valve and report the problem.
- Engine Oil – Check levels.
- Engine Coolant
 - Visually check the level. NOTE: Never remove the radiator cap to check the coolant level when the engine is running or while the engine is hot. Stand to the side and turn your face away. Always use a glove or rag to protect your hand.
- Transmission Fluid – Check levels.
- Windshield Wipers – Do they work properly?
- Seat Belts – Do they work?
- Safety Door (found on stand up rider models) – Is it in place?
- Safety Switch (found on stand up riding tow tractors) – Is it working?
- Hand guards (found on stand up riding tow tractors, walking pallet trucks, waling Tran stackers) – Are they in place?
- Tow Hook
 - Does it engage and release smoothly?
 - Does the safety catch work properly?
- Control Lever – Does the lever operate properly?
- Safety Interlock (found on order pickers) – If the gate is open, does the vehicle run?
- Gripper Jaws (found on order pickers) – Do the jaws open and close quickly and smoothly?
- Work Platform (found on order pickers) – Does the platform raise and lower smoothly?

If any deficiencies are noted, the unit is to be placed **OUT OF SERVICE** until the problem has been corrected. Additionally, it is the operator's responsibility to notify the immediate supervisor and fill out a maintenance request.

Propane Forklift Truck

Key OFF procedures

- The vehicle inspection
 - Overhead guard
 - Hydraulic cylinders
 - Mast assembly
 - Lift chains and rollers
 - Forks lowered in the stored position
 - Tires
 - LPG tank and locator pin
 - LPG tank hose
 - Gas gauge
- Check the engine oil level
- Examine the battery
- Inspect the hydraulic fluid level
- Check the engine coolant level
- Cylinder valve to be turned off and cylinder to be removed and stored in designated storage location

Key ON Procedure

- Install gas cylinder and turn on supply valve
- Test the front , tail and brake lights
- Engine Running Procedures
 - Check the gauges
 - Oil pressure indicator lamp
 - Ammeter indicator lamp
 - Hour meter
 - Water temperature gauge
 - Test the standard equipment
 - Steering
 - Brakes
 - Horn
 - Safety seat (if equipped)\
 - Check the operation of load-handling attachments
 - Check the transmission fluid level

Performance Test & Certificate for Forklift Operators

Employee _____ Date _____ Time _____

1. Shows familiarity with truck controls.
2. Gave proper signals when turning.
3. Slowed down at intersections.
4. Sounded horn at intersections.
5. Obeyed signs.
6. Kept a clear view of direction of travel.
7. Turned corners correctly – was aware of rear end swing.
8. Yielded to pedestrians.
9. Drove under control and within proper traffic aisles.
10. Approached load properly.
11. Lifted load properly.
12. Maneuvered properly.
13. Traveled with load at proper height.
14. Lowered load smoothly/slowly.
15. Stops smoothly/completely.
16. Load balanced properly.
17. Forks under load all the way.
18. Carried parts/stock in approved containers.
19. Checked bridgeplates/ramps.
20. Placed loads within marked area.
21. Stacked loads evenly and neatly.
22. Drove backward when required.
23. Checked load weights.
24. Placed forks on the floor when parked, controls neutralized, brake on set, power off.
25. Followed proper instructions for maintenance – checked both at beginning and end.

Total Rating _____ Evaluator _____ Date _____