



LAKE COUNTY

Board of County Commissioners

ES-5.01.05
Procedure

SUBJECT: Powered Industrial Vehicle

APPROVED: March 6, 2006

EXPIRATION DATE: This procedure remains in effect until superseded or cancelled.

SUPERSEDES: New

ORIGINATOR: Employee Services

PURPOSE & SCOPE:

This procedure establishes the minimum requirements for Power Industrial Vehicle (PIV) Operation and Maintenance. It will provide the necessary guidelines for safe operation of vehicles used to transport materials, equipment and people.

REFERENCES:

- Lake County Safety Policy (LCC-68)
- Lake County Safety Program (ES-5.01.01)

APPLICABILITY:

This procedure applies to Operators of Powered Industrial Vehicles, which are employees of Lake County Board of County Commissioners (BCC) and representatives from other Lake County agencies covered by the County's Workers' Compensation and Property & Liability programs.

PROCEDURE:

1. Responsibility

- A. Supervisor - The Supervisor must ensure that their Powered Industrial Vehicle (PIV) operators are trained and evaluated, and that all powered industrial vehicles are inspected and properly maintained.
- B. Operator - The Operator must successfully complete the initial PIV safety training program and a practical evaluation. An operator must also complete a PIV evaluation every three years from the time of their initial evaluation, attend refresher training, inspect the vehicle before each operation, and report any safety deficiencies to their immediate supervisor for corrective measures to be taken.

2. Definitions

- A. Attachments - Devices (other than conventional forks or load backrest extensions) mounted permanently or temporarily on the elevating mechanism of the powered industrial vehicle. Popular types include fork extensions, clamps, booms, rams, baskets, and personnel platforms.

- B. Capacity - Used to designate the weight-handling ability of a particular powered industrial vehicle as equipped.
- C. Dockboard - Portable or fixed device for spanning the gap or compensating for the differences in the level between loading platform and carrier.
- D. Environment - Locations are classified as hazardous or nonhazardous when considering the type of industrial powered industrial vehicle required.
- E. Forklift - A self-loading forklift, equipped with load carriage and forks for transporting and tiering loads.
- F. Forks - Horizontal, tine-like projections normally suspended from the carriage that engage and support loads.
- G. Operator – An individual who is trained and authorized to control any function(s) of a powered industrial vehicle.
- H. Tiering - The process of placing one load on or above another.
- I. Powered Industrial Vehicle – The type of designation:
 - 1) D designated units are diesel engine powered, instead of gasoline engine powered.
 - 2) DS designated units are diesel-powered units that are provided with additional safeguards to the exhaust, fuel and electrical systems. DS units may be used in some locations where a D unit may not be considered suitable.
 - 3) DY designated units are diesel-powered units that have all the safeguards of the DS units, do not have any electrical equipment including the ignition, and are equipped with temperature limitation features.
 - 4) E designated units are electrically powered units that have minimum acceptable safeguards against inherent fire hazards.
 - 5) ES designated units are electrically powered units that, in addition to all of the requirements for the E units, are provided with additional safeguards to the electrical system to prevent emission of hazardous sparks and to limit surface temperatures. ES units may be used in some locations where the use of an E unit may not be considered suitable.
 - 6) EE designated units are electrically powered units that have, in addition to all of the requirements for the E and ES units, electric motors and all other electrical equipment completely enclosed. In certain locations, the EE unit may be used where the use of an E and ES unit may not be considered suitable.

- 7) EX designated units are electrically powered units that differ from the E, ES, or EE units in that the electrical fittings and equipment are so designed, constructed and assembled that the units may be used in certain atmospheres containing flammable vapors or dusts.
- 8) G designated units are gasoline-powered units having minimum acceptable safeguards against inherent fire hazards.
- 9) GS designated units are gasoline-powered units that are provided with additional safeguards to the exhaust, fuel, and electrical systems. They may be used in some locations where the use of a G unit may not be considered suitable.
- 10) LP designated unit share similar to the G unit except that liquefied petroleum gas is used for fuel instead of gasoline.
- 11) LPS designated units are liquefied petroleum gas powered units that are provided with additional safeguards to the exhaust, fuel, and electrical systems. LPS units may be used in some locations where the use of an LP unit may not be considered suitable.

3. Protective Devices

The use of protective devices is an important factor in safe PIV operation. Although powered industrial vehicles need not be equipped alike, there are some similarities such as lights. Also, manufacturers are required by federal standards to equip powered industrial vehicles with certain mandatory features such as back-up alarms. The requirement exists to warn others when the powered industrial vehicle is reverse. Some other protective devices include:

- A. Overhead protection to guard the operator from falling objects.
- B. Seat belt (Operator must wear if provided by equipment manufacturer.)
- C. Wheel plates to protect the operator from objects picked up and thrown by tires.
- D. On-board fire extinguishers.
- E. Horns to warn others when the powered industrial vehicle is moving forward.
- F. Other protective devices that might be seen in the work area or specifically designed for the operator include:
 - 1) Signs informing operator of conditions, such as stop, caution, danger, speed limits, etc.

- 2) Gloves and safety shoes, as necessary, when handling material or equipment.
- 3) Eyewash stations near battery charging area or chemical process.
- 4) Eye protection devices.
- 5) Hardhats to protect operators when there is an overhead hazard.

4. Safe Work Practices

- A. All powered industrial vehicles must be inspected before being placed in service to ensure that all controls and safety features are working properly. If a vehicle fails the inspection, then it shall be tagged as out-of-service and maintenance performed by a certified maintenance specialist. Operators must use the Vehicle Checklist to document inspections. (*Attachment 2*)
- B. It is very important to make sure that a vehicle is appropriate for the type of work environment. Gasoline and diesel powered units must not be permitted to operate indoors, unless adequate ventilation is supplied to keep vehicle exhaust to the lowest levels possible.
- C. Only properly equipped vehicles that are explosion proof, such as EE designation, are permitted to operate in hazardous environment such as those with flammable gases or vapor present.
- D. The atmosphere and location must be classified, as to whether it is hazardous or non-hazardous, prior to identifying the type of powered industrial vehicle permitted to operate in that environment and determining if a particular vehicle can be used.
- E. Operators must follow all safety rules related to speed, parking, fueling, loading, and moving loads. While the powered industrial vehicle is in operation, keep the forks low with the mast tilted slightly back. Very tall or "top-heavy" loads can change the powered industrial vehicle's center of gravity and cause it to tip over. Follow safe speed limits, including low speeds for traveling with loaded powered industrial vehicles. Powered industrial vehicles without loads are not weighted and are especially unstable, so sharp turns should be avoided and lower speeds should be observed.
- F. Horn should be sounded when approaching blind corners or intersections, and stopping at intersections when required. Use mirrors to view other traffic when approaching blind corners or intersections. When parking on a hill, always chock the powered industrial vehicle's wheels, lower the forks, and set the parking brake. Also, to avoid tipping, always carry loads up a grade and back down ramps. Never turn on grades. Keep safe visibility. If a load blocks forward vision, drive backwards. Always use the horn at intersections and be cautious around uneven surfaces; chuckholes and other uneven ground can cause powered industrial vehicles to tip.

- G. Semi-Trailers must be chocked before the powered industrial vehicle enters the trailer. Chocking the trailer's rear wheel will prevent the trailer from separating from the loading dock. Trailer jacks must be properly positioned when the tractor is not attached to the trailer.
- H. Never allow passengers to ride on powered industrial vehicles, for they can easily fall off and become injured.
- I. If a work platform is used on a powered industrial vehicle, always ensure:
 - 1) The platform is securely attached to the powered industrial vehicle.
 - 2) Personnel using the platform are wearing proper personal protective equipment (e.g., hardhat and safety belt).
 - 3) Never travel while anyone is performing work on the platform.
 - 4) Watch out for overhead obstructions.
- J. PIV operators must yield to all pedestrian traffic. People working nearby should be sure to keep a safe distance from powered industrial vehicles. That means staying clear of the powered industrial vehicle's turning radius and making sure the driver knows where everyone is at.
- K. Powered industrial vehicles left unattended must have the parking brake set, motor turned off, and forks lowered to the ground.
- L. Gas or diesel vehicle fuel tanks shall not be filled while the engine is running. Spillage shall be avoided, and in cases of spillage gas/fuel shall be carefully washed away or completely evaporated and fuel tank cap replaced prior to restarting engine. No powered industrial vehicle shall be operated with a leak in the fuel system until the leak has been corrected.

5. Maintenance and Repair of Powered Industrial Vehicles

It is required that trained/authorized personnel maintain and inspect powered industrial vehicles. All work should be done in accordance with the manufacturer's specifications. Since vehicles are generally used daily, it is particularly important for personnel to follow the maintenance, lubrication, and inspection schedules. Special attention should be given to powered industrial vehicle control and lifting features such as brakes, steering, lift overload devices, and tilt mechanism.

6. Safety Training

PIV safety training includes instruction (lecture, discussion, interactive computer learning, video tape, and written material), practical training (demonstrations by the Training & Safety Specialist or their supervisor who has been properly trained in facilitating the program and practical exercises performed by trainees) and evaluation of the operator's performance in the workplace.

Training programs are devised to allow employees opportunities to demonstrate the knowledge and skills required for their position and work area. Employees benefit more from training that simulates their daily processes, rather than from watching "canned" programs that are not applicable to their specific operations.

A. Initial Training and Evaluation - Supervisors are responsible for facilitating and/or coordinating the proper training and evaluations to operators. It is important that these individuals have the necessary training and are able and willing to perform their jobs properly. The initial training includes:

- 1) The nature of hazards in the work area.
- 2) How to perform work safely.
- 3) Training programs for operators include the following:
 - a. Physical and mental condition, attitude, and aptitude.
 - b. Rules of PIV operation and why these rules exist.
 - c. Special emphasis on loading and unloading, center of gravity, stability, and mechanical limitations.
 - d. Supervised practice on an operating course that simulates actual conditions, e. g. stacking, loading semi-trailers and boxcars, and unloading.
 - e. The types of powered industrial vehicles used in various hazardous locations and environments.
 - f. A combination of oral, written, and operational performance evaluations.

B. Evaluations & Refresher Training – An evaluation of each operator's performance must be conducted at least every three (3) years. Refresher training is conducted by the supervisor to ensure that the operator has the knowledge and skills needed to operate the powered industrial vehicle safely. Refresher training is required when:

- 1) The operator is involved in an accident or near-miss incident.
- 2) The operator has been observed operating the vehicle in an unsafe manner.
- 3) The operator has been determined in an evaluation to need additional training.
- 4) There are changes in the workplace that could affect safe operation of the powered industrial vehicle; or the operator is assigned to a different type of powered industrial vehicle.

- C. Powered Industrial Vehicle Skills Evaluation Form (*Attachment 1*) - The operator will be required to demonstrate their skills following initial/refreshers training. Adequate completion of skill tests demonstrates that the operator knows and understands the unit's functional features, is familiar with overall departmental safety rules and can identify specific safety factors at a dock and battery recharge station if applicable, and demonstrates overall driving skills. Evaluations can be administered on the job during the employee's normal work day by the supervisor. The PIV training records and skill evaluation forms will be kept at the departmental level.

RESERVATION OF AUTHORITY:

The Office of Employee Services is responsible for developing, implementing and updating policies and procedures supporting employment standards, programs and benefits as delegated by the Lake County Board of County Commissioners and the County Manager. The authority to issue and/or revise this procedure is reserved for the County Manager.

Approved By: Cindy Hall, County Manager

Date: 3/6/06

Attachment 1

**POWERED INDUSTRIAL VEHICLE
Skills Evaluation Form**

Lake County Board of County Commissioners

Evaluation Date: _____ (Re-evaluation required every three years.)

Operator Name: _____

Operator Department/Division: _____

✓ - Satisfactory U - Unsatisfactory

Vehicle Inspection:

- | | |
|---------------------------------|---|
| <input type="checkbox"/> Forks | <input type="checkbox"/> Tire/Rims |
| <input type="checkbox"/> Fluids | <input type="checkbox"/> Data/Safety Plates |
| <input type="checkbox"/> Guards | <input type="checkbox"/> Battery/Fuel |

Comments:

Operations Procedures:

- | | |
|--|---|
| <input type="checkbox"/> Fork Mechanisms | <input type="checkbox"/> Brakes |
| <input type="checkbox"/> Horn/Lights | <input type="checkbox"/> Fork Clearances |
| <input type="checkbox"/> Speed Control | <input type="checkbox"/> Pivot/Turns |
| <input type="checkbox"/> Acceleration | <input type="checkbox"/> Auxiliary Controls |

Load Handling:

- | | |
|--|---|
| <input type="checkbox"/> Pre-Lift Inspection | <input type="checkbox"/> Up/Down Inclines |
| <input type="checkbox"/> Balance/Positioning | <input type="checkbox"/> Stacking |
| <input type="checkbox"/> Tiering | <input type="checkbox"/> Safety |
| <input type="checkbox"/> Load Height | |

Parking:

- | | |
|--------------------------------------|---|
| <input type="checkbox"/> Positioning | <input type="checkbox"/> Forks on Floor |
| <input type="checkbox"/> Brakes Set | <input type="checkbox"/> Power/Fuel Off |

General Safety:

- | | |
|--|--|
| <input type="checkbox"/> Watch for Pedestrians | <input type="checkbox"/> Backing/Looking |
| <input type="checkbox"/> Personal Protective Equipment | <input type="checkbox"/> Ramp/Dock Driving |
| <input type="checkbox"/> Overhead Clearances | <input type="checkbox"/> Aisle Driving |
| <input type="checkbox"/> Local Safety Procedures | <input type="checkbox"/> Attitude |

Pass: YES ___ NO ___ (If yes employee is certified as a PIV operator. If no than retraining is recommended. *Operator must have all satisfactory to pass.*)

Supervisor: _____
Print Name

Signature

Revised 2/14/2006

Attachment 2

POWERED INDUSTRIAL VEHICLE CHECKLIST

Month																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Head Lights																															
Tail Lights																															
Turn Signals																															
Brake Lights																															
Emergency Lights																															
Wipers																															
Tire Pressures																															
Front																															
Rear																															
Tread Condition																															
Front																															
Rear																															
Damage																															
Scratches																															
Dents																															
Holes																															
Other																															
Fluids																															
Oil																															
Tansmission																															

Vehicle	
Employee	