

University of Illinois at Urbana-Champaign
Division of Safety and Compliance

Powered Industrial Truck Program

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I. PURPOSE

The University of Illinois at Urbana-Champaign (U of I), through the Division of Safety and Compliance Occupational Safety and Health Section (OSHS), has established this Powered Industrial Truck (PIT) Program to assist campus units in providing a safe work environment and to assure compliance with State and Federal occupational safety and health standards, particularly the Powered Industrial Truck Standard of the Occupational Safety and Health Administration (OSHA) located in 29 CFR 1910.178 and enforced by the Illinois Occupational Safety and Health Administration (ILOSHA).

It is expected that campus units will develop site-specific written standard operating procedures (SOPs) to complement and meet the requirements detailed in this program.

II. POLICY

Campus units that operate PITs must ensure that supervisors and operators comply with all aspects of this PIT Program. All university students, faculty and staff that will operate PITs must successfully complete a training program and receive authorization from their respective campus unit prior to the operation of any PIT.

III. SCOPE

The provisions of this PIT Program shall apply to the operation of all PITs, rider trucks, motorized or powered hand trucks, pallet trucks and tugs, and other specialized industrial trucks powered by electric motors or internal combustion engines used to carry, push, pull, lift or stack material by university students, faculty and staff. This Program does not apply to compressed air or nonflammable compressed gas-operated industrial trucks, farm vehicles or vehicles intended primarily for earth moving or over-the-road hauling.

IV. RESPONSIBILITIES

Deans, Department Heads, and Directors of academic/administrative units shall:

- A. Ensure that their unit follows this PIT Program and applicable OSHA regulations;
- B. Provide fiscal and administrative resources for the implementation of this PIT Program within the campus unit;
- C. Ensure that all personnel within the campus unit affected by this program receive proper training and evaluation; and
- D. Designate a program administrator that will be responsible for implementing this PIT Program within the campus unit.

The campus unit's program administrator shall:

- A. Know and understand the requirements of this PIT Program and applicable OSHA regulations;
- B. Implement and administer this PIT program within the campus unit;
- C. Develop site-specific written SOPs;
- D. Verify that all employees who operate or work near PITs are properly trained;

- E. Maintain a training record for all employees that have been trained in the components of this PIT Program;
- F. Maintain written records of operator training on each model of a PIT and the name of the trainer; and
- G. Maintain written records of the pre-shift and annual inspections performed by the PIT operators, including the date any problems found, the date when fixed, and the name of the person performing the repairs;

Supervisors of PIT operators shall:

- A. Know and understand the requirements of this PIT Program;
- B. Coordinate employee training, and certify that all operators receive training including, but not limited to, the items listed in the TRAINING section of this Program;
- C. Ensure that only trained and authorized individuals use PITs;
- D. Verify employee compliance with the principles and practices outlined in this PIT Program;
- E. Monitor the effectiveness of program by receipt of copies of inspection checklists;
- F. Provide specific operational training for each PIT in their campus unit;
- G. Observe the operation of PITs in their campus unit, and correct unsafe practices; and
- H. Evaluate each operator at least every three years on the items listed in the TRAINING Section of this Program.

PIT Operators shall:

- A. Know, understand, and follow the requirements of this PIT Program, and unit-specific SOPs;
- B. Attend training as outlined in the TRAINING section of this Program;
- C. Complete the Daily Pre-Use Inspection Checklist before operating any powered industrial truck;
- D. At least annually review the procedures outlined in this PIT Program and unit-specific SOPs; and
- E. Observe the operation of PITs in their unit, and report unsafe practices to their supervisor.

The Division of Safety and Compliance shall:

- A. Develop and implement a written PIT Program and review it on an annual basis;
- B. Provide or arrange for OSHA-required training on PITs for campus units;
- C. Maintain copies or logs of training, and operator evaluations when those activities are administered by OSHS;
- D. Evaluate designated areas for forklift use upon request;
- E. Observe the operation of PITs, and report unsafe practices to the appropriate supervisor; and
- F. Assist campus units in developing unit-specific SOPs upon request.

V. DEFINITIONS

Backrest: Supports the load when tipped back and adds stability.

Carriage: The part of the mast where the forks and backrest are mounted.

Counterbalance Forklifts: Designed for both indoor and outdoor use, counterbalance truck wheels as their center of gravity and can be powered by battery, propane, gasoline or diesel fuel.

Full-tapered Forks: Forks that gradually increase in thickness from the tip of the fork all the way back to the fork's heel (rear). Full-tapered forks are used to lift lighter loads.

Half-tapered Forks: Forks that gradually increase in thickness from the tip of the fork (front) to about midway back where the blade reaches its maximum thickness. Half-tapered forks are used to lift heavier loads.

Identification Plate (Data Plate): Contains information about the truck's design and capacity including information about the truck's engine, load capacity, serial number, weight and the truck's type designation. The identification plate may also contain additional information specific to that type of truck.

Lift Cylinders: Hydraulically operated single acting cylinders used to lift the carriage.

Load Center: The distance from the heels of the forks to the load's center of gravity.

Mast: The mechanism on the truck that raises and lowers the load. The mast is made up of a set of tracks that house bearings and chains.

Material Handling: Any activity that involves picking up and moving materials, parts and/or finished products.

Powered Industrial Truck: An industrial vehicle used to carry, push, pull, lift or stack material that is powered by an electric motor or an internal combustion engine. This includes vehicles commonly referred to as forklift trucks, rider trucks, motorized or powered hand trucks, pallet trucks and tugs. This does not include compressed air or nonflammable compressed gas-operated industrial trucks, farm vehicles or vehicles intended primarily for earth moving or over-the-road hauling.

Powered Pallet Jack: A type of powered industrial truck designed to move palletized materials. These trucks may be called walkies, or walkie-riders.

Order Picker: A type of truck designed to allow the operator to ride up and down the load so that individual items can be pulled from a rack or storage self.

Overhead Guard: A guard over the operator's head that protects the operator from falling debris.
Note: The overhead guard is not designed to withstand the full impact of falling objects.

Rated Capacity: The maximum weight that the truck is designed to lift as determined by the manufacturer. To lift the maximum rated capacity, the load must be as close as possible to the drive wheels. The rated capacity of a truck can be found on the Identification Plate on the vehicle and/or in the manufacture's operator manual.

Side Stability: Refers to the truck's ability to resist tipping sideways under various loaded and unloaded conditions.

Tilt Cylinders: Hydraulically operated double acting cylinders used to tilt the backrest and forks. Tilt cylinders work in both forward and backward directions.

Type designation: Refers to the truck's power source (diesel, gas, electric or liquefied propane gas) and if the truck is equipped with any additional safeguards to the exhaust, fuel and/or electrical systems. The designation will also indicate any locations where the truck may not be used such as in atmospheres containing flammable vapors or dusts.

VI. GENERAL REQUIREMENTS

Training and Evaluation

Operator training, evaluation and certification shall be conducted by designated personnel who have the knowledge, training and experience to train prospective PIT operators and evaluate their proficiency. Initial training will be provided by or coordinated through OSHS. A department can request training for a PIT operator by contacting OSHS.

Training shall include all of the following:

- A. Operating instructions, warnings, and precautions for the type(s) of truck the operator will be authorized to operate;
- B. Differences between the truck and an automobile;
- C. Truck controls and instrumentation;
- D. Engine or motor operation;
- E. Steering and maneuvering;
- F. Visibility (including restrictions due to loading);
- G. Fork and attachment adaptation, operation, and use limitations;
- H. Vehicle capacity;
- I. Vehicle stability;
- J. Any vehicle inspection and maintenance that the operator will be required to perform;
- K. Refueling and/or charging and recharging of batteries;
- L. Operating limitations;
- M. Any other operating instructions, warnings, or precautions listed in the operator's manual for the type(s) of vehicle that the employee is being trained to operate;
- N. Surface condition where the vehicle will be operated;

- O. Composition of loads to be carried and load stability;
- P. Load manipulation, stacking, and restacking;
- Q. Pedestrian traffic in areas where the vehicle will be operated;
- R. Narrow aisles and other restricted places where the vehicle will be operated;
- S. Hazardous locations where the vehicle will be operated;
- T. Ramps and other sloped surfaces that could affect the vehicle's stability;
- U. Closed environments and other areas where insufficient ventilation or poor vehicle maintenance could cause a build-up of carbon monoxide or diesel exhaust; and
- V. Other unique or potentially hazardous environmental conditions in the workplace that could affect safe operation.

Where units provide their own training and evaluation, OSHS will be provided copies of the sign-in sheets, written quizzes, equipment hands-on checklists, and/or evaluation checklists to the unit-identified instructor(s).

Operator Evaluation and Re-evaluation

Prospective PIT operators must complete operator evaluation before being authorized to operate any PIT. Operator evaluations should be completed by the campus unit's program administrator with assistance from OSHS prior to granting authorization to operate a PIT.

If a prospective PIT operator has previously received classroom training, and such training is appropriate to the PIT and working conditions encountered, additional training is not required. The operator must still be evaluated and found competent to operate the PIT safely. Documentation of completed classroom training must be provided to the unit's program administrator.

PIT Operators who were trained and authorized on a different type of PIT than the type they are assigned to use are required to complete an operator evaluation on the new equipment.

Appendix A provides an operator evaluation form that must be completed for each operator, at least every three years. Copies of the completed operator evaluations must be provided to OSHS.

Refresher Training

Refresher classroom training is required only under the following circumstances:

- A. The operator has been observed to operate the vehicle in an unsafe manner;
- B. The operator has been involved in an accident or near-miss incident;
- C. The operator has received an evaluation that reveals that the operator is not operating the truck safely;
- D. The operator is assigned to drive a different type of truck; or
- E. A condition in the workplace changes in a manner that could affect safe operation of the truck.

Certification

The trainer shall certify that each operator has been trained as described above. The written certification will include the operator's name, date of training, date of the evaluation, and identity of person(s) performing the training or evaluation.

Authorization

The campus unit's program administrator shall authorize each PIT operator on the PIT(s) s/he will operate after successful completion of the training and certification process and prior to work assignments requiring PIT operation. See **Appendix A** of this document for the authorization form.

Pre-Use Inspection

Prior to the operation of any PIT, the Pre-Shift Inspection Checklist found in **Appendix B**, or a checklist specific to the model of PIT in use must be completed. This applies at the beginning of every work period, and whenever a new equipment operator takes control of the PIT.

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) must be reported for immediate repair. PITs must be tagged out of service to prevent use until repairs are completed.

Operation

Only authorized personnel may operate a PIT. Trainees may operate a PIT only under the direct supervision of an authorized PIT operator and where such operation does not endanger the trainee or other personnel.

When a PIT is left unattended (more than 25' away or out of sight) the load engaging means must be fully lowered, controls neutralized, power shut off, brakes set and key removed. Wheels must be blocked or chocked if the PIT is parked on an incline. Do not block walkway, roadway, or emergency access area.

Operators must immediately report all accidents, regardless of fault and severity, to their Supervisor.

Loading

Only handle loads within the rated capacity of the PIT. Loads should be safely arranged, stable, and centered. Adjust long or high (including multiple-tiered) loads that may affect capacity. PITs equipped with attachments must be operated as partially loaded trucks even when not handling a load.

Traveling

The operator 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. Grades must be ascended and descended slowly. Position the load uphill relative to the operator when ascending or descending grades. While negotiating turns, reduce speed and turn the hand steering wheel in a smooth, sweeping motion.

Fueling

Fuel tanks may not be filled while the engine is running. Avoid spillage. Spillage of oil or fuel must be absorbed using appropriate absorbent material, the affected area washed, and the fuel tank cap replaced before restarting engine. Any spill clean-up debris must be disposed of as hazardous waste by the Division of Research Safety.

Changing and Charging Batteries

Battery charging installations must be located in areas designated for that purpose. Facilities must be provided for: flushing and neutralizing spilled electrolyte, fire protection, protection of charging apparatus from damage by trucks, adequate ventilation for dispersal of fumes from gassing batteries and emergency eyewash stations in accordance with the [Emergency Eyewash and Shower program](#).

Employees charging and changing batteries shall be authorized to do the work, trained in the proper handling, and required to wear protective clothing, including safety glasses, face shields, long sleeves, rubber boots, aprons, and gloves.

Maintenance

Any PIT not in safe operating condition must be immediately removed from service. Authorized personnel must make all repairs. Repairs to the fuel and ignition systems of PITs 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 repairs are begun.

Modifications

All modifications must be approved by the manufacturer, and new rated load capacities determined and posted on the PIT. Written approval is required.

Program Evaluation

This PIT Program shall be reviewed annually by OSHS. The written Unit-Specific SOPs shall be reviewed and updated by those campus units at least annually and more frequently as hazards, tasks, procedures and/or equipment change.

Name: _____
 Lift Make/Model: _____
 Location: _____
 Date: _____

Department: _____
 Class/Lift Code: _____

Pre-Start Check	Yes	No	NA
Checks engine and oil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Checks hydraulics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Checks ROPS/FOPS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Checks carriage and attachment points	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Checks all I.D plates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Checks tires	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Checks forks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Checks seat belt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Start-up			
Gets on forklift properly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Puts on and adjusts seatbelt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sets controls to neutral	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sounds and checks horns	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Checks for personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Starts engine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Performs function checks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Operation			
Accelerates smoothly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Limits speed to conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turning			
Slows before turns	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Considers balance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stays within lines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Careful of turning radius	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stopping			
Slows down	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comes to a full stop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sets parking brake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Load Pick-up	Yes	No	NA
Aligns forklift with load	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Approaches slowly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stops prior to load	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Makes final adjustments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lifts load slowly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cradles load	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Backs off slowly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lowers forks immediately	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Checks load stability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transport			
Accelerates slowly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Keeps load low	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Frequently scans area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Decelerates for turns	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exercises caution on hills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Handles ascent properly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Handles descent properly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Load Deposit			
Aligns forks with landing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Approaches slowly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stops prior to landing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Makes final adjustments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Positions load above landing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Levels load	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Deposits load slowly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Backs off slowly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forklift shutdown			
Parks on level surface	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sets parking brake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sets controls to neutral	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turns off engine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exits machine correctly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

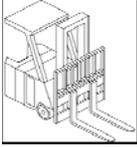
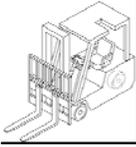
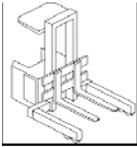
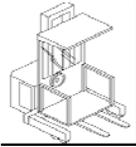
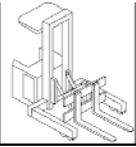
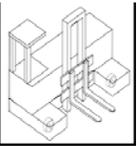
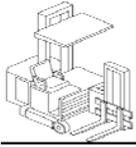
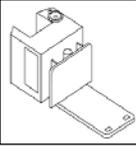
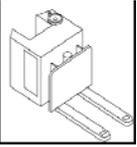
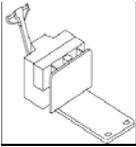
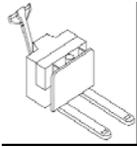
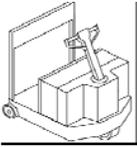
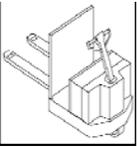
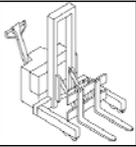
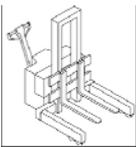
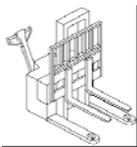
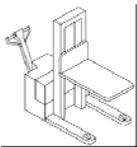
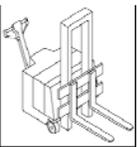
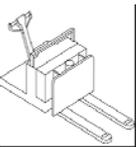
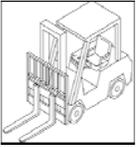
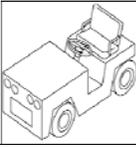
Comments: _____

This employee is authorized to operate the Lift Make/Model identified above.

Yes **No**

Evaluator _____

Signature _____

Class I: Electric Motor Rider Trucks				
				
Lift Code 1: Counterbalanced Rider Type, Stand-Up	Lift Code 4: Three Wheel Electric Truck, Sit-Down	Lift Code 5: Counterbalanced Rider, Cushion Tires, Sit-Down	Lift Code 6: Counterbalanced Rider, Pneumatic or Either Type Tire, Sit-Down	
Class II: Electric Motor Narrow Aisle Trucks				
				
Lift Code 1: High Lift Straddle	Lift Code 2: Order Picker	Lift Code 3: Reach Type Outrigger	Lift Code 4: Side Loaders: Platforms	
				
Lift Code 4: Side Loaders: High Lift Pallet	Lift Code 4: Turret Trucks	Lift Code 6: Low Lift Platform	Lift Code 6: Low Lift Pallet	
Class III: Electric Motor Hand Trucks or Hand/Rider Trucks				
				
Lift Code 1: Low Lift Platform	Lift Code 2: Low Lift Walkie Pallet	Lift Code 3: Tractors	Lift Code 4: Low Lift Walkie/Center Control	Lift Code 5: Reach Type Outrigger
				
Lift Code 6: High Lift Straddle	Lift Code 6: Single Face Pallet	Lift Code 6: High Lift Platform	Lift Code 7: High Lift Counterbalanced	Lift Code 8: Low Lift Walkie/Rider Pallet and End Control
Class IV: Internal Combustion Engine Trucks (Solid/Cushion Tires)		Class V: Internal Combustion Engine Trucks (Pneumatic Tires)		Class VI: Electric and Internal Combustion Engine Tractors
				
Lift Code 3: Fork, Counterbalanced (Cushion Tire)		Lift Code 4: Fork, Counterbalanced (Pneumatic Tire)		Lift Code 1: Sit-Down Rider (Draw Bar Pull Over 999 lbs.)

Make/Model:	Date:	
<p>Note general vehicle condition. Clear away all collected debris, steam clean if necessary. Check for mechanical damage and loose or leaking components. Report faults to your supervisor.</p>		
Before starting engine, check the following:		
WALK-AROUND ITEMS	STATUS	REMARKS
	OK NO NA	
Walk-around inspection (warning decals, capacity plate, etc.)		
Forks/locking pins, carriage, mast		
Wheels, tires & lug nuts (condition/pressure)		
Battery (electrolyte level, connections)		
Engine (fluid levels, leaks, belts, hoses, debris)		
Transmission (fluid level, leaks)		
Air cleaner (clean or change as required)		
Radiator (fluid level, leaks)		
Hydraulic tank (fluid level, leaks)		
Fuel tank (secure, valve open & fuel level)		
Overhead guard (no damage)		
Seatbelt		
After starting engine, check the following:		
START-UP ITEMS	STATUS	REMARKS
	OK NO NA	
Engine (sounds normal, no excessive exhaust smoke)		
Gauges/warning lights (fuel/charge level, oil pressure, etc.)		
Wipers & lights		
Warning devices (horn, back-up alarm, strobe lights, etc.)		
All powered controls		
Direction/speed controls		
All brakes		
Steering		
Fuel/Charge Level		
Note anything abnormal or in need of repair:		
Operator Name:	Operator Signature:	