



Bowling Green State University

Powered Industrial Truck Program

Last Review: January 2024
Last Revision: November 2025

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INTRODUCTION

Foreword

In 1970, the United States Congress established the right of workers to "safe and healthful working conditions" through the Occupational Safety and Health Act. This act created the Occupational Safety and Health Administration (OSHA). House Bill 308 incorporates by reference all federal OSHA standards found in the Code of Federal Regulations (CFR), Title 29 Parts 1910, 1926 and 1928 as Ohio Public Employment Risk Reduction Program (PERRP) standards. All Ohio PERRP standards are found in Chapter 4167 of the Ohio Revised Code and the Ohio Administrative Code.

This program has been established by Bowling Green State University to comply with OSHA's Powered Industrial Truck (PIT) standard, 29 CFR 1910.178, as well as all other state and local regulations.

Objective

The objective of this program is to convey expectations on the safe use and personnel training related to PITs to ensure a safe working and community environment.

Applicability

This program applies to all university employees who operate PITs. A PIT is an industrial vehicle that pushes, pulls, stacks or tiers loads. PITs include fork trucks, tractors, platform lift trucks, motorized hand trucks, and other specialized industrial trucks powered by electric motors or internal combustion engines.

This program does not apply to compressed air or non-flammable compressed gas-operated industrial trucks, farm vehicles, or vehicles intended for earth moving or over-the-road hauling.

Responsibilities

Environmental Health and Safety (EHS) department, is responsible for:

- Coordinating, periodically evaluating, and updating the university's PIT Program;
- Assisting departments and areas with implementation of the program; and
- Ensuring all affected employees receive proper training at required intervals.

Supervisors/Management are responsible for:

- Ensuring employees attend required training and driving evaluations administered by the EHS department;
- Attending training administered by the EHS department at least once to ensure the same level of understanding of the basic principles, safety rules and regulations as licensed operators even if one doesn't personally operate a PIT;
- Designating an employee in their area who has the knowledge, training and experience to provide hands-on training for new PIT operators and evaluating the trainee's general ability to operate the unit(s) safely;
- Locating and maintaining PIT instruction manuals;
- Ensuring PIT operators are completing pre-operational inspections at required intervals;
- Enforcing BGSU's PIT Program by ensuring all employees under their direction comply with all facets of the program; and

- Providing a copy of the PIT Program to employees upon request.

PIT Operators are responsible for:

- Completely adhering to all requirements set forth in this program;
- Attending training sessions and performing driving evaluations as required;
- Performing and documenting pre-operational inspections when required.

Program Enforcement

A violation of a university employee's responsibility must be reported to the employee's immediate supervisor for appropriate action.

Accident Reporting

BGSU's electronic Injury/Illness form must be submitted if an operator has been involved in an accident or near-miss incident involving a PIT. This form can be found on EHS's website.

OPERATING PROCEDURES

Operation

The following operating procedures apply:

- Where general lighting is less than 2 lumens per square foot, auxiliary directional lighting shall be provided on the truck.
- 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 the truck, whether loaded or empty.
- Unauthorized personnel shall not be permitted to drive or ride on PITs.
- Hands, arms, feet, legs, and head shall at no time be placed between the upright of the mast or outside the running line of the truck.
- Unattended trucks -
 1. When a PIT is left unattended, the load engaging means shall be fully lowered, controls neutralized, power shut off, and brakes set. Wheels shall be blocked if the truck is parked on an incline.
 2. A PIT is unattended when the operator is 25 feet or more away from the vehicle even though it remains in his view, or whenever the operator leaves the vehicle and it is not in his view.
 3. When the operator of a PIT has dismounted and is within 25 feet of the truck while still in his view, the load engaging means shall be fully lowered, controls neutralized, and the brakes set to prevent movement, however, the power can remain on.
- A safe distance shall be maintained from the edge of ramps or platforms while on any elevated dock, 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 systems, 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., 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 entire load or in part from falling rearward.
- Only approved industrial trucks shall be used in hazardous locations and/or environments.
- Fire aisles, access to stairways, fire equipment, or other emergency equipment/areas shall be kept clear.

Traveling

- All traffic regulations shall be observed, including authorized speed limits where posted. 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. The right of way shall also be yielded to pedestrians at all times.
- Other trucks traveling in the same direction at intersections, blind spots, or other dangerous locations shall not be passed.
- The driver shall 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 travel with the load trailing (reverse).
- Railroad tracks shall be crossed diagonally wherever possible. Parking closer than 8 feet from the center of railroad tracks is prohibited.
- The driver shall look in the direction of the path of travel and keep a clear view.
- Grades shall be ascended or descended slowly.
 1. When ascending or descending grades in excess of 10 percent, loaded trucks shall be driven with the load upgrade.
 2. 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 ground surface where possible.
- 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 driver shall slow down for wet and slippery floors.
- Dock boards or bridge plates shall be properly secured before they are driven over. Dock boards or bridge plates shall be driven over carefully and slowly while never exceeding their rated capacity.
- Running over loose items shall be avoided.
- While negotiating turns, speed shall be reduced to a safe level by means of turning the steering wheel in a smooth, sweeping motion. Except when operating at a very low speed, the steering wheel shall be turned at a moderate, even rate.

Load Lifting and Carrying

- Only stable or safely arranged loads shall be handled. Caution shall be exercised when handling off-centered loads, which cannot be centered.
- Only loads within the rated capacity of the truck shall be handled.
- Long or high (including multiple-tiered) loads, which may affect capacity, shall be adjusted.
- When attachments are used, particular care should be taken in securing, manipulating, positioning, and transporting the load. Trucks equipped with attachments shall be operated as partially loaded trucks when not handling a load. Only manufacturer approved attachments can be used.
- A load engaging means shall be placed under the load as far as possible and the mast shall be carefully tilted back to stabilize the load.
- Extreme care shall be used when tilting the load forward or backward, particularly when high tiering. Tilting forward with the load engaging means elevated shall be prohibited except to pick up a load or 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.

Fuel Handling and Storage

The storage and handling of liquid fuels, including gasoline and diesel fuel must be done in accordance with the NFPA Flammable and Combustible Liquids code (NFPA 30). The storage and handling of liquefied petroleum gas fuel must be done in accordance with the NFPA Storage and Handling of Liquefied Petroleum Gases code (NFPA 58). Contact the EHS department for more details or questions about these codes.

Battery Charging

Because of the hazards involved in battery charging and changing, only personnel who have been trained in the appropriate procedures, safety precautions, and the dangers involved may be allowed to perform this work.

Departments must have an area specifically designated for charging or changing batteries. This area must remain separate from the main aisles and be protected from damage by trucks. Good housekeeping procedures are essential. The area must be clean and free of any combustible materials and maintain a moderate temperature range suitable for battery maintenance.

The following safety features must exist in these areas:

- An eyewash station for employees when activities are carried out that could cause electrolyte splashes.
- A hose and floor drain for flushing and neutralizing spilled electrolyte if the potential exists.
- Protection of the charging apparatus to prevent damage from vehicles.
- Adequate ventilation for dispersal of vapors from gassing batteries.

Other requirements include:

- Smoking is prohibited in charging areas. Battery charging generates hydrogen gas that may present an explosion hazard. This precaution also applies to open flames, sparks, or electric arcs. An effective means of fire protection must be provided in the area.
- A conveyor, overhead hoist, or equivalent material handling equipment shall be provided for handling batteries (if applicable).
- 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 cover(s) shall be open to dissipate heat.
- Tools and other metallic objects shall be kept away from the top of uncovered batteries.

NOTE: Other than plugging in PITs to charge, BGSU personnel do not perform any battery or PIT maintenance in general. This is all contracted through a 3rd party.

Carbon Monoxide Awareness

All machines with internal combustion engines produce carbon monoxide (CO), an odorless, colorless, and deadly gas produced by the incomplete burning of materials that contain carbon. These materials include gasoline, natural gas, propane, coal, and wood. Adequate ventilation in areas of truck traffic is essential to keep CO at safe levels. In areas where this is uncertain or not available, a CO detector shall be installed and maintained.

Trucks

- Brakes shall be set and wheel chocks placed under rear wheels (at a minimum) of trucks, trailers, or railroad cars while loading or unloading to prevent movement. The flooring inside trucks, trailers, and railroad cars shall be checked for breaks and weakness before being driven on.
- Fixed jacks may be necessary to support a semitrailer to prevent upending during the loading or unloading when the trailer is not coupled to a tractor.
- Prior to a highway truck being entered by a PIT, the floor or bed should be checked for weaknesses or soft spots, cracks, breaks, holes, and damage of any kind as well as a quick visual outdoors looking at the underside of the truck floor. Highway trucks shall not be driven into if there is any concern that the floor will not support the weight of the PIT.

VEHICLE INSPECTIONS AND MAINTENANCE

Vehicle Inspection

PITs must be examined before being placed in service and shall not be used if the examination shows any condition adversely affecting the safe operation of the vehicle. Such examination shall be made at least daily. Where PITs are used on multiple work shifts, they must be inspected at the beginning of each shift. Defects must be reported and corrected immediately. The BGSU PIT Preoperational Checklist is in Appendix A and is intended for documenting the preoperational inspection of most PITs on the main and satellite campuses. The BGSU Crown Work Assist Vehicle Preoperational Checklist is in Appendix B and should only be used when inspecting Crown WAV models. Vehicle inspection documentation must be retained by the supervisor for at least one year.

Maintenance

If at any time a PIT 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 a safe operating condition. The following procedures also apply:

- The manufacturer's recommended maintenance and lubrication schedule must be followed.
- Modifications and additions, which affect capacity and safe operation, shall not be performed by the customer or user without the manufacturer's prior written approval. Capacity, operation, and maintenance instruction plates, tags, or decals shall then be changed accordingly.
- If the truck is equipped with front-end attachments other than factory installed attachments, the truck shall be marked to identify the attachments and show the approximate weight of the truck and attachment combination at maximum elevation with load laterally centered. These attachments must also be from the manufacturer or approved by the manufacturer.
- The user shall ensure that all nameplates and markings are in place and maintained in a legible condition.
- All repairs shall be made by authorized personnel. No BGSU personnel are authorized to make repairs.
- All PIT parts requiring replacement shall only be replaced by parts equivalent to the safety of those used in the original design.
- PITs 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, with the exception of conversion from gasoline to petroleum gas as stated in 29CFR1910.178 (q) (12).
- Additional counter weighting of fork trucks shall not be done unless approved by the truck manufacturer.
- Water mufflers shall be filled daily or as frequently as is necessary to prevent depletion of the supply of water below 75 percent of the filled capacity. Vehicles with mufflers having screens or other parts that may become clogged shall not be operated while such screens or parts are clogged. Any vehicle that emits hazardous sparks or flames from the exhaust system shall immediately be removed from service and not returned until the cause for the emission of such sparks and flames has been eliminated.
- 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.
- PITs 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. Precautions regarding toxicity, ventilation, and fire hazard shall be followed for the agent or solvent used.

- 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 the 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 levels in fuel tanks.

TRAINING

In-Class Training

The following information will be covered at a minimum:

- The importance of the powered industrial truck program and procedures;
- A summary of the OSHA powered industrial truck standard;
- An overview of BGSU's written Powered Industrial Truck Program;
- An explanation of how Environmental Health and Safety can assist departments;
- Truck related topics;
- Workplace related topics;
- Truck operations;
- Traveling;
- Loading; and
- Inspection and maintenance.

Hands-On Training

This training will be provided by a designated employee in each department who has the knowledge, training, and experience to train PIT operators and evaluate their competency. This training will include at a minimum:

- An overview of the truck controls, operation, maintenance, daily inspections, etc.;
- Demonstrations performed by the trainer; and
- Job specific tasks performed and practiced by trainee.

Trainers must be present at all times while trainees are operating lifts.

Driving Evaluations

After successful completion of classroom and hands-on training, the employee will perform a driving evaluation administered by a member of the EHS department or designee. This evaluation will mimic the tasks the operator is expected to perform in their position and is required once every three years. Results will be documented on the form found in Appendix C. Once passed, the employee will be issued a license indicating the name of the driver, date of the training, expiration date, signature of the program administrator, and what type of PIT was operated during the driving evaluation. At any time, a list of current licensed operators can be extracted from the university's Learning Management System.

Re-Training

Refresher training in relevant topics is required when any of the following occur:

- An operator has been observed to operate the vehicle in an unsafe manner;
- The operator has been involved in an accident or a near miss;
- The operator is assigned to a different truck;
- The conditions change in an area where the PIT is operated;
- A new truck is brought into use; or
- The operator has received an evaluation revealing unsafe PIT operation.

APPENDIX A - POWERED INDUSTRIAL TRUCK PREOPERATIONAL CHECKLIST

Performed By: _____ Date: _____ Time: _____ AM/PM

	OK (x)	Problems/Comments
Tires		
Steering		
Brake(s)		
Hydraulics		
Horn/Lights/Gauges		
Controls		
Guards and body		
Leaks		
Alarm(s)		
Seatbelt		

Performed By: _____ Date: _____ Time: _____ AM/PM

	OK (x)	Problems/Comments
Tires		
Steering		
Brake(s)		
Hydraulics		
Horn/Lights/Gauges		
Controls		
Guards and body		
Leaks		
Alarm(s)		
Seatbelt		

NOTE 1: If anything faulty is found that could endanger the safety of the driver or a pedestrian, the lift shall be taken out of service immediately.

NOTE 2: All needed repairs should be reported to the area supervisor immediately.

APPENDIX B - CROWN WORK ASSIST VEHICLE PREOPERATIONAL CHECKLIST

Performed By: _____ Date: _____ Time: _____ AM/PM

	OK (x)	Problems/Comments
Batteries/Charged		
Wheels		
Brake(s)		
Hydraulics		
Power Disconnect		
Horn/Gauges		
Controls		
Gates and Body		
Leaks		
Alarm(s)		

Performed By: _____ Date: _____ Time: _____ AM/PM

	OK (x)	Problems/Comments
Batteries/Charged		
Wheels		
Brake(s)		
Hydraulics		
Power Disconnect		
Horn/Gauges		
Controls		
Gates and Body		
Leaks		
Alarm(s)		

NOTE 1: If anything faulty is found that could endanger the safety of the driver or a pedestrian, the lift shall be taken out of service immediately.

NOTE 2: All needed repairs should be reported to the area supervisor immediately.

APPENDIX C - POWERED INDUSTRIAL TRUCK OPERATOR EVALUATION

EMPLOYEE (Print) _____ (Sign) _____ DATE _____ TIME _____ am/pm

Observe the following:

1. Checked preoperational checklist and performed an inspection if one had not been performed for that work shift yet.
☐Yes ☐No ☐N/A
2. Shows familiarity with truck controls. ☐Yes ☐No ☐N/A
3. Gave proper signals when turning and slowed down at intersections. ☐Yes ☐No ☐N/A
4. Sounded horn at intersections and obeyed signs. ☐Yes ☐No ☐N/A
5. Kept a clear view of direction of travel, driving backward when required. ☐Yes ☐No ☐N/A
6. Turned corners correctly - was aware of rear end swing. ☐Yes ☐No ☐N/A
7. Yielded to pedestrians. ☐Yes ☐No ☐N/A
8. Drove under control and within proper traffic aisles. ☐Yes ☐No ☐N/A
9. Approached load properly. ☐Yes ☐No ☐N/A
10. Lifted and maneuvered load properly. ☐Yes ☐No ☐N/A
11. Traveled with load at proper height. ☐Yes ☐No ☐N/A
12. Lowered load smoothly/slowly. ☐Yes ☐No ☐N/A
13. Drove with platform gates open when lowered and closed while elevated (Crown WAV only). ☐Yes ☐No ☐N/A
14. Stops smoothly/completely. ☐Yes ☐No ☐N/A
15. Load balanced properly and forks were under the load all the way. ☐Yes ☐No ☐N/A
16. Carried parts/stock in approved containers. ☐Yes ☐No ☐N/A
17. Placed loads within designated area. ☐Yes ☐No ☐N/A
18. Stacked loads evenly and neatly. ☐Yes ☐No ☐N/A
19. Checked load weights. ☐Yes ☐No ☐N/A
20. Upon parking, lowered forks to floor, neutralized controls, set brakes, turned ignition off. ☐Yes ☐No ☐N/A
21. Exited using 3 points of contact while facing the unit. ☐Yes ☐No ☐N/A

Evaluator's Signature: _____ Overall Results: ☐Pass ☐Fail (needs more practice time)

Notes: _____

REFERENCES

1. Occupational Safety and Health Administration. Powered Industrial Trucks (29 CFR 1910.178).