Powered Industrial Trucks Procedure

1. Purpose
   1.1. The purpose of this procedure is to establish the requirements for safe operation of powered industrial trucks in accordance with 29 CFR 1910.178 and ANSI B56.1a-2018 that clarify and expand on regulatory requirements. These requirements, which may exceed governmental rules, define minimum mandates to prevent injuries, ensure proper equipment operation, and avoid property damage.

2. Scope
   2.1. This procedure applies to all University owned or rented powered industrial trucks (PITs). This procedure does not apply to compressed air or nonflammable compressed gas-operated industrial trucks, nor to farming vehicles, nor to vehicles intended primarily for earth moving or over-the-road hauling.

3. Definitions

   3.1. Attachment: a device other than conventional forks or load backrest extension, mounted permanently or removably on the elevating mechanism of a PIT for handling the load.

   3.2. Center of Gravity (of load): that point at which the load mass is concentrated.

   3.3. Dock: an area where industrial trucks transfer product to and from road or rail conveyances where the operating surface for the industrial truck is approximately the same level as the road or rail conveyance load carrying surface.

   3.4. Dockboard: a portable or fixed device for spanning the gap or compensating for difference in level between loading platforms and road or rail conveyances.

   3.5. Fork Extension: a lift truck attachment that is added to the PIT fork to increase the fork's effective length for handling oversized uniformly distributed loads.

   3.6. Fork Height: the vertical distance from the floor to the horizontal load carrying surface of the forks, measured adjacent to the heel of the forks, and in the case of reach trucks, with the forks extended.

3.7. Forks: horizontal tine-like projections, normally suspended from the carriage, for engaging and supporting loads.

3.8. Load Backrest: that portion of the carriage and forks serving to restrain the load when the load is tilted rearward or upward.

3.9. Load Backrest Extension: a removable device that increases the load restraining area beyond that provided by the load backrest.

3.10. Mast: the support member providing the guideways permitting vertical movement of the carriage.

3.11. Operator: a trained and authorized person who controls any function(s) of a powered industrial truck.

3.12. Overhead Guard: a framework fitted to a PIT over the head of a riding operator for the purpose of providing protection for the operator from falling objects.

3.13. Powered Industrial Truck (PIT): a mobile powered propelled truck used to carry, push, pull, lift, stack, or tier material. This includes fork trucks, tractors, platform lift trucks, motorized hand trucks, and other specialized industrial trucks powered by electric motors or internal combustion engines.

3.14. Qualified Trainer: a person who, by possession of a recognized degree, certificate, or professional standing, or who by knowledge, training and experience, has demonstrated the ability to train and evaluate PIT operators.

3.15. Rated Capacity: for a PIT equipped with load carriage and forks or attachments it is the weight established by the manufacturer at a required load center that a given PIT can transport and stack to a height established by the manufacturer.

3.16. Tiering: the process of placing one load on or above another.

4. Responsibilities

4.1. Departmental Managers/Supervisors shall

4.1.1. Ensure that the program requirements are met.

4.1.2. Acquire the operator's manual and make it available to all operators.

4.1.3. Acquire the parts and service manual.

4.1.4. Ensure the proper maintenance of the PIT.

4.1.5. Ensure that only trained operators operate the PIT.

4.2. Employee/Operator Responsibilities
4.2.1. The operator is responsible for the safe operation of the PIT.

4.3. Risk Management and Safety
4.3.1. Complete a biennial audit of this program and revise it as necessary.
4.3.2. Ensure that initial training is provided to all PIT operators.
4.3.3. Maintain training records for approved PIT operators.
4.3.4. Approve trainers that carry out the specific PIT familiarization training.
4.3.5. Provide technical support to departments and employees when questions or concerns arise with regard to PIT safety.
4.3.6. Maintain a database and tracking system for all PITs and operators through the cooperation of the University departments.
4.3.7. Conduct periodic audits to ensure that the annual, frequent, and pre-start inspections are being completed appropriately, maintenance is being completed at the proper intervals, training is completed for all operators, and all records are being maintained properly.
4.3.8. Ensure that a contract agreement is in place with a qualified contractor to conduct the annual inspections, frequent inspections, and maintenance programs and that the inspections take place on the appropriate scheduled basis.

5. Inspections
5.1. Pre-start inspections shall be completed at the beginning of each shift or before operating the PIT, whichever comes first, the operator shall check its condition.
5.2. Inspections shall be documented on the pre-start inspection sheet that is appropriate for the type of PIT being inspected (Appendix A-C). One month of completed inspection sheets shall remain with the PIT for operator reference.
5.3. If the PIT is found to be in need of repair or in any way unsafe, it shall be the operator's responsibility to report the matter immediately. The PIT shall not be operated until it has been restored to a safe operating condition. It shall be taken out of service and secured to prevent use.

6. Maintenance
6.1. All repairs shall be made by authorized personnel.
6.2. Modifications and additions shall not be performed by an unauthorized person or without manufacture's prior written approval. Capacity,

operation, and maintenance instruction plates, tags, or decals shall be changed accordingly when modified.

7. Battery Charging and Fueling
   7.1. Battery charging and fueling of PITs shall be done in a non-hazardous environment with adequate ventilation.
      7.1.1. A minimum of a 10 lb. ABC fire extinguisher shall be available within 20 feet of a charging or fueling station.
      7.1.2. If applicable, the engine shall be shut down while fuel tanks are being filled.
   7.2. Notre Dame employees shall not refill batteries. All battery maintenance shall be completed by an qualified contractor.
   7.3. LPG tanks shall be stored in a suitable enclosure or otherwise protected against tampering.
   7.4. While changing LPG tanks, operators shall:
      7.4.1. Wear leather gloves, safety glasses, and a face shield to protect from frostbite in the event of a propane leak.

8. PIT Safety Features
   8.1. MANDATORY
      8.1.1. Seat belt – (brightly colored seatbelt is suggested)
      8.1.2. Operator controlled horn, whistle, gong, or other sound producing device(s)
      8.1.3. Strobe light
      8.1.4. Overhead guard
   8.2. RECOMMENDED
      8.2.1. Swivel seat (reduces ergonomic strain while driving in reverse)
      8.2.2. Impact monitoring system
      8.2.3. Computerized inspection/badging system
      8.2.4. Presence sensing devices
      8.2.5. Backup pedestrian spotlight, warning system
      8.2.6. Backup handle with horn

9. PIT Operations
   9.1. PITs shall not be driven up to anyone standing in front of a fixed object.
   9.2. No person shall be allowed to stand or pass under the elevated portion of any PIT, whether loaded or empty.
   9.3. Unauthorized personnel shall not be permitted to ride on a PIT.
   9.4. Hands and feet shall be kept inside the operator's designated area or compartment.
   9.5. No material shall be stored inside the operator's designated area or compartment, which could interfere with the safe operation of the PIT.

Any material stored on the outside of the operator's compartment shall be limited and secured.

9.6. Seatbelts shall be worn any time a sit-down PIT is operated.

9.7. A PIT is unattended when the operator is 25 ft or more away from the vehicle which remains in his view or whenever the operator leaves the vehicle and it is not in his view. When a PIT is left unattended, load engaging means shall be fully lowered, controls shall be neutralized, power shall be off, and brakes set. Wheels shall be blocked if the truck is parked on an incline. When the operator is dismounted and within 25 ft of the truck still in his view, the load engaging means shall be fully lowered, controls neutralized, and the brakes set to prevent movement. Keys shall be removed from the ignition when a PIT is unattended.

9.8. A safe distance shall be maintained from the edge of ramps or platforms while on any elevated dock, platform or freight car. PITs shall not be used for opening or closing freight doors.

9.9. Brakes shall be set and wheel blocks shall be in place to prevent movement of a delivery truck or trailer while loading or unloading. The use of dock locks is preferred.

9.10. The flooring of delivery trucks and trailers shall be checked for breaks and weakness before they are driven onto.

9.11. There shall be sufficient headroom under overhead installations, lights, pipes, sprinkler systems, etc.

9.12. A load backrest extension shall be used whenever necessary to minimize the possibility of the load or part of it from falling rearward.

9.13. Loads shall not be placed in fire aisles, access to stairways, employee designated walkways and fire equipment shall be kept clear.

10. Traveling

10.1. All traffic regulations shall be observed. A safe distance shall be maintained, approximately three PIT lengths from the PIT ahead, and the PIT shall be kept under control at all times. A PIT shall be driven at a speed that is as low as reasonably achievable.

10.2. The right of way shall be yielded to pedestrians and emergency vehicles.

10.3. Other PITs traveling in the same direction at intersections, blind spots, or other dangerous locations shall not be passed.

10.4. The operator shall slow down and sound the audible warning device at cross aisles and other locations where vision is obstructed.

10.5. If the load being carried obstructs forward view, the operator shall be required to travel with the load trailing.

10.6. The operator shall be required to look in the direction of, and keep a clear view of, the path of travel.

10.7. Grades shall be ascended or descended slowly.

10.8. When ascending grades exceed 10%, loaded PITs shall be driven with the load upgrade.
10.9. 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.
10.10. Under all travel conditions, operate the PIT at a speed that shall permit stopping in a safe manner.
10.11. Stunt driving and horseplay shall not be permitted.
10.12. The operator shall slow down for wet and slippery floors.
10.13. Dockboards or bridgeplates shall be properly secured before they are driven over.
10.14. Dockboards or bridgeplates shall be driven over carefully and slowly and their rated capacity never exceeded.
10.15. Elevators shall be approached slowly, and then entered squarely after the elevator car is level. The PIT controls shall be neutralized, power shut off, and brakes set while inside of the elevator.
10.16. While negotiating turns, speed shall be reduced to a safe level.

11. Loading
11.1. Only stable or safely arranged loads shall be handled.
11.2. Only loads within the rated capacity of the PIT shall be handled.
11.3. PITs equipped with attachments shall be operated as partially loaded when not handling a load.
11.4. 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.
11.5. 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.

12. The Use of Forklifts as Aerial Lifts
12.1. Prior to use of a forklift as an aerial lift, documented approval from the forklift manufacturer shall be obtained. Capacity, operation, and maintenance instruction plates, tags, or decals shall be changed accordingly.
12.2. To use a forklift as an aerial lift, operators shall:
12.2.1. Use only an approved lifting cage that is designed to raise personnel. An approved lifting cage shall have a guard on the rear of the platform, rails, chains, or a fall protection device for personnel in the cage. The cage shall be secured to the

carriage of the forklift. Raising personnel on the forks or on a pallet shall not be permitted.

12.2.2. Not permit personnel to ride in the approved lifting cage while the forklift is traveling. Position the forklift directly below the work area prior to personnel entering the approved lifting cage.

12.2.3. Never elevate a worker until the forklift has been properly secured. Place the travel controls in neutral, set the brakes, and chock the wheels.

12.2.4. Remain at the controls of the forklift at all times that personnel are elevated in the approved lifting cage.

12.2.5. Operate the controls in a smooth manner when lifting and lowering personnel in an approved lifting cage.

12.2.6. Keep the approved lifting cage horizontal and centered. Tilting the mast forward or rearward is prohibited.

12.2.7. Ensure that personnel in the approved lifting cage are wearing a hard hat and a personal fall protection harness and lanyard. Lanyards shall be connected to a rated anchor point.

12.3. Personnel inside the approved lifting cage shall remain on the platform floor. Personnel shall not use ladders, railings, planks, etc. to achieve additional height or reach.

12.4. Personnel entering and exiting the approved lifting cage shall only do so when the approved lifting cage is fully lowered. Personnel shall not climb on any part of the forklift to enter and exit the approved lifting cage.

13. Training

13.1. Prior to permitting an employee to operate a PIT (except for training purposes), the operator shall successfully complete a training course consisting of a combination of formal instruction, practical training, and evaluation of the operator's performance in the workplace.

13.2. Trainees may operate a PIT only under the direct supervision of persons 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.

13.3. The formal instruction shall include a written test to verify class room material competency.

13.4. Training program content:

13.4.1. PIT operators shall receive initial training in the following topics

13.4.1.1. Operating instructions, warnings, and precautions for the types of PIT the operator shall be authorized to operate

13.4.1.2. Differences between the PIT and the automobile

13.4.1.3. PIT controls and instrumentation: where they are located, what they do, and how they work

13.4.1.4. Engine or motor operations

13.4.1.5. Steering and maneuvering
13.4.1.6. Visibility (including restrictions due to loading)
13.4.1.7. Fork and attachment adaptation, operation and use limitations
13.4.1.8. PIT capacity
13.4.1.9. PIT stability
13.4.1.10. Any PIT inspection and maintenance that the operator shall be required to perform
13.4.1.11. Refueling and/or charging and recharging of batteries
13.4.1.12. Operating limitations
13.4.1.13. Any other operating instructions, warnings, or precautions listed in the operator's manual for the types of PIT that the employee is being trained to operate
13.4.1.14. Workplace related topics, such as, but not limited to, areas of low clearance, areas where only specific PIT types are permitted, and areas where all PITs are prohibited
13.4.1.15. Surface conditions where the PIT shall be operated
13.4.1.16. Composition of loads to be carried and load stability
13.4.1.17. Load manipulation, stacking and unstacking
13.4.1.18. Pedestrian traffic in areas where the PIT shall be operated
13.4.1.19. Narrow aisles and other restricted places where the PIT shall be operated
13.4.1.20. Hazardous (classified) locations where the PIT shall be operated
13.4.1.21. Ramps and other sloped surfaces that could affect the PIT's stability
13.4.1.22. Closed environments and other areas where insufficient ventilation or poor PIT maintenance could cause a buildup of carbon monoxide or diesel exhaust
13.4.1.23. Other unique or potentially hazardous environmental conditions in the workplace that could affect safe operation

13.4.2. The operator shall be provided sufficient practical training exercises and time under the direct supervision of a qualified trainer/mentor.
13.4.3. An evaluation of the effectiveness of the training and practical driving shall be conducted to ensure that the operator has the knowledge and skills needed to operate a PIT safely.
13.4.4. The employer shall certify that each operator has been trained and evaluated.
13.4.5. The certification shall include the names of the company, site and operator, the date of the training, date of expiration, type of

PITs the operator is authorized to operate, restrictions and the identity of the person(s) performing the training or evaluation.

13.4.6. An evaluation of each PIT operator's performance shall be conducted at least once every three years.

13.5. Refresher training, in relevant topics, shall be conducted under the following circumstances:

13.5.1. The operator has been observed to operate the PIT in a unsafe manner

13.5.2. The operator has been involved in an accident or near-miss incident

13.5.3. The operator is assigned to drive a different type of PIT or use different attachment

13.5.4. A condition in the workplace changes in a manner that could affect safe operation of the PIT

13.6. Instructors and qualified trainers shall be knowledgeable of equipment operation, inspection procedures, basic maintenance, and of the OSHA standards.

13.7. The initial practical training location shall be in an unobstructed area, free of traffic and personnel. A safe zone shall be established for the trainer and trainees.

13.8. Practical training shall be conducted at a ratio of one trainer with only one trainee in motion.

14. Records Retention

14.1. Training records shall be maintained by Risk Management and Safety for a period of five (5) years.

14.2. The following records shall be maintained by each department who owns a PIT:

14.2.1. Pre-start inspection documents shall be maintained for a period of the current plus one year.

14.2.2. Inspection documentation shall be maintained for the entire ownership of the PIT.

14.2.3. All maintenance performed on the PIT shall be maintained for the entire ownership of the PIT.

15. Procedure Evaluation

15.1. An biennial documented audit of the Powered Industrial Truck program and procedures shall be conducted by RMS. The audit shall include truck inspections, record inspections, and verification that procedures are appropriate, understood and implemented. The audit shall ensure the process is being followed and PITS are being properly maintained and inspected. As necessary, revision to the program or training process shall be made as a result of the audit.

15.2. Deviations or deficiencies shall be corrected.

Revision History Table

History	Effective Date
Revised	February 2019

APPENDIX A – INTERNAL COMBUSTION ENGINE

Appendix A – FORKLIFT PRE-START INSPECTION (Internal Combustion Engine) **Department:** _____ **Forklift Make/Model:**			Mon	Tues	Wed	Thurs	Fri	Sat	Sun
		Date:	/ /	/ /	/ /	/ /	/ /	/ /	/ /
Checks before starting engine	1	Leaks – oil, fuel, coolant							
	2	Forks, Backrest, Carriage							
	3	Overhead Guard							
	4	Wheels, Tires, Axles							
	5	Chains, pulleys, hoses							
	6	Fuel tank and connections							
	7	Data Plate							
	8	Seat Belt							
Checks with engine running	9	Dashboard Instruments							
	10	Hydraulic functions							
	11	Horn							
	12	Headlights and Brake Lights							
	13	Backup Alarm							
	14	Service Brake							
	15	Parking Brake							
	16	Steering							
		Operator's Initials							

1. For each day that the equipment is used, a pre-start inspection shall be performed and documented.
2. Mark the box with ☑ if the item is OK and mark with ☒ if the items need repair.
3. If the equipment is found to be unsafe: remove the key, hang a tag from the steering wheel, notify your supervisor.
4. Equipment pre-start inspections are to be kept for a year and then can be destroyed.

Repair Comments:

_____

_____

_____

_____

APPENDIX B – ELECTRIC FORKLIFT

Appendix B – FORKLIFT PRE-START INSPECTION (Electric Forklift) **Department:** _____ **Forklift Make/Model:**			Mon	Tues	Wed	Thurs	Fri	Sat	Sun
		Date:	/ /	/ /	/ /	/ /	/ /	/ /	/ /
Checks before starting engine	1	Leaks – oil, coolant							
	2	Forks, Backrest, Carriage							
	3	Overhead Guard							
	4	Wheels, Tires, Axles							
	5	Chains, pulleys, hoses							
	6	Battery and connections							
	7	Data Plate							
	8	Seat Belt							
Checks with engine running	9	Dashboard Instruments							
	10	Hydraulic functions							
	11	Horn							
	12	Headlights and Brake Lights							
	13	Backup Alarm							
	14	Service Brake							
	15	Parking Brake							
	16	Steering							
		Operator's Initials							

1. For each day that the equipment is used, a pre-start inspection shall be performed and documented.
2. Mark the box with ☑ if the item is OK and mark with ☒ if the items need repair.
3. If the equipment is found to be unsafe: remove the key, hang a tag from the steering wheel, notify your supervisor.
4. Equipment pre-start inspections are to be kept for a year and then can be destroyed.

Repair Comments:

APPENDIX C – PALLET MOVER

Appendix C – FORKLIFT PRE-START INSPECTION (Pallet Mover) **Department:** _____ **Forklift Make/Model:**			Mon	Tues	Wed	Thurs	Fri	Sat	Sun
		Date:	/ /	/ /	/ /	/ /	/ /	/ /	/ /
Checks before starting engine	1	Leaks – oil, coolant							
	2	Forks, Backrest, Carriage							
	4	Wheels, Tires, Axles							
	5	Chains, pulleys, hoses							
	6	Battery and connections							
	7	Data Plate							
Checks with engine running	9	Dashboard Instruments							
	10	Hydraulic functions							
	11	Horn							
	13	Backup Alarm							
	14	Service Brake							
	16	Steering							
		Operator's Initials							

1. For each day that the equipment is used, a pre-start inspection shall be performed and documented.
2. Mark the box with ☑ if the item is OK and mark with ☒ if the items need repair.
3. If the equipment is found to be unsafe: remove the key, hang a tag from the steering wheel, notify your supervisor.
4. Equipment pre-start inspections are to be kept for a year and then can be destroyed.

Repair Comments:

_____

_____

_____

_____