SAINT MARY’S COLLEGE OF CALIFORNIA
STANDARD 1.1.1

POWERED
INDUSTRIAL TRUCK OPERATION

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POWERED
INDUSTRIAL TRUCK OPERATION

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1. PURPOSE

To establish and maintain safe the operation, servicing and/or maintenance of powered industrial trucks, per 29 CFR 1910.178, Title 8 (8 CCR), Chapter 4, Subchapter 7 and Saint Mary’s Colleges’ safety requirements.

2. SCOPE

This procedure applies to all employees that operate powered industrial trucks.

3. SAFETY

Every employee has the responsibility and the right to stop an operation that they feel is unsafe and could cause injury. This responsibility includes not operating an improperly functioning powered industrial truck.

4. DEFINITIONS

(a) **POWERED INDUSTRIAL TRUCK** - Any fork trucks, tractors, platform lift trucks, motorized hand trucks, and other specialized industrial trucks powered by electric motors or internal combustion engines. Must comply with a variety of national design and construction standards, depending on their date of manufacture.

(b) **NFPA** - National Fire Protection Association, Inc.
5. RESPONSIBILITIES

(a) EH&S DEPARTMENT:

(1) Provide guidance with initial training for employees.

(2) Audit the program on an as needed basis, no less than every three years.

(3) Provide initial training and refresher training to certify employees on each type of equipment.

(4) Maintain training records, for at least 7 years. Records shall include all the items listed in Section 12 of this standard.

(b) DEPARTMENT HEADS:

(1) Enforce correct application and use of this procedure to authorized employees.

(2) Maintain a work environment that assures maximum safety for employees.

(3) Audit the program on an as needed basis.

(4) Administer appropriate, tiered, disciplinary action when this procedure is violated.

(c) MAINTENANCE DEPARTMENT:

(1) Enforce correct application and use of this procedure by their craftsperson when performing work on powered industrial trucks applicable to this procedure.

(2) Ensure that craftsperson(s) understand the machines and equipment that they service or maintain.

(3) Key control and maintenance records.

(d) PURCHASING DEPARTMENT MANAGER(S):

Ensure that new machines or equipment purchased meet the requirements outlined in this procedure.
6. **PROCEDURE**

6.1 **GENERAL REQUIREMENTS**

(a) This section contains safety requirements relating to fire protection, design, maintenance, and use of fork trucks, tractors, platform lift trucks, motorized hand trucks, and other specialized industrial trucks powered by electric motors or internal combustion engines. This section does not apply to compressed air or nonflammable compressed gas-operated industrial trucks, nor to vehicles intended primarily for earth moving or over-the-road hauling.

(b) Modifications and additions which affect capacity and safe operation shall not be performed by the college or user without manufacturer’s prior written approval. Capacity, operation, and maintenance instruction plates, tags, or decals shall be changed accordingly.

(c) If the truck is equipped with front-end attachments other than factory installed attachments, the user must request that the truck be marked to identify the attachments and show the approximate weight of the truck and attachment combination at maximum elevation with load laterally centered.

(d) The user shall see that all nameplates and markings are in place and are maintained in a legible condition.

7. **TRAINING**

7.1 **OPERATOR TRAINING**

(a) All employees operating powered industrial trucks shall receive training prior to operating.

Training shall consist of formal instruction (e.g., lecture, discussion, video tape, written material), and /or written notes.

All operator training and evaluation shall be conducted by persons who have the knowledge, training and experience to train powered industrial truck operators and evaluate their competence.
NOTE: **Trainees may operate a powered industrial truck 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.
7.2 TRUCK RELATED TRAINING TOPICS

(a) Operating instructions, warnings, and precautions for the types of truck the operator will be authorized to operate.

(b) Differences between the truck and the automobile.

(c) Truck controls and instrumentation: where they are located, what they do, and how they work.

(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) 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) Other operating instructions, warnings, or precautions listed in the operator's manual for the types of vehicle that the employee is being trained to operate.

7.3 WORKPLACE RELATED TRAINING TOPICS

(a) Surface conditions where the vehicle will be operated.

(b) Composition of loads to be carried and load stability.

(c) Load manipulation, stacking, and unstacking.

(d) Pedestrian traffic in areas where the vehicle will be operated.

(e) Narrow aisles and other restricted places where the vehicle will be operated.

(f) Hazardous (classified) locations where the vehicle will be operated.
(g) Ramps and other sloped surfaces that could affect the vehicle's stability.

(h) Closed environments and other areas where insufficient ventilation or poor vehicle maintenance could cause a buildup of carbon monoxide or diesel exhaust.

(i) Unique or potentially hazardous environmental conditions in the workplace that could affect safe operation.

7.4 REFRESHER TRAINING AND EVALUATION

(a) Refresher training, including an evaluation of the effectiveness of that training, shall be conducted as required to ensure that the operator has the knowledge and skills needed to operate the powered industrial truck safely.

(b) Refresher training in relevant topics shall be provided to the operator when:

(1) The operator has been observed to operate the vehicle in an unsafe manner;

(2) The operator has been involved in an accident or near-miss incident;

(3) The operator has received an evaluation that reveals that the operator is not operating the truck safely;

(4) The operator is assigned to drive a different type of truck;

(5) A condition in the workplace changes in a manner that could affect safe operation of the truck.

(c) An evaluation of each powered industrial truck operator's performance shall be conducted at least once every three years.

(d) If an operator has previously received training in a topic specified in this section, and such training is appropriate to the truck and working conditions encountered, additional training in that topic is not required if the operator has been evaluated and found competent to operate the truck safely.
Every supervisor that has employees using industrial trucks or industrial tow tractors, shall post and enforce a set of operating rules including the appropriate rules listed below:

1. Only drivers authorized by the employer and trained in the safe operations of industrial trucks or industrial tow tractors shall be permitted to operate such vehicles. Methods shall be devised to train operators in safe operation of powered industrial trucks.

2. Stunt driving and horseplay are prohibited.

3. No riders shall be permitted on vehicles.

4. Employees or casuals shall not ride on the forks of lift trucks.

5. Employees shall not place any part of their bodies outside the running lines of an industrial truck or between mast uprights or other parts of the truck where shear or crushing hazards exist.

6. Employees shall not be allowed to stand, pass, or work under the elevated portion of any industrial truck, loaded or empty, unless it is effectively blocked to prevent it from falling.

7. Drivers shall check the vehicle at least once per shift, and if it is found to be unsafe, the matter shall be reported immediately to a supervisor or mechanic, and the vehicle shall not be put in service again until it has been made safe. Attention shall be given to the proper functioning of tires, horn, lights, battery, controller, brakes, steering mechanism, cooling system, and the lift system for fork lifts (forks, chains, cable, and limit switches).

8. No truck shall be operated with a leak in the fuel system.

9. Vehicles shall not exceed the authorized or safe speed, always maintaining a safe distance from other vehicles, keeping the truck under positive control at all times and all established traffic regulations shall be observed. For trucks traveling in the same direction, a safe distance may be considered to be approximately 3 truck lengths or preferably a time lapse--3 seconds--passing the same point.

10. Trucks traveling in the same direction shall not be passed at intersections, blind spots, or dangerous locations.
(11) 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 be required to travel with the load trailing.

(12) Operators shall look in the direction of travel and shall not move a vehicle until certain that all persons are in the clear.

(13) Trucks shall not be driven up to anyone standing in front of a bench or other fixed object of such size that the person could be caught between the truck and object.

(14) Grades shall be ascended or descended slowly.

- When ascending or descending grades in excess of 10 percent, loaded trucks shall be driven with the load upgrade.

- On all grades the load and load engaging means shall be tilted back if applicable, and raised only as far as necessary to clear the road surface.

- Motorized hand and hand/rider trucks shall be operated on all grades with the load-engaging means downgrade.

(15) The forks shall always be carried as low as possible, consistent with safe operations.

(16) When leaving a vehicle unattended, either.

- The power shall be shut off, brakes set, the mast brought to the vertical position, and forks left in the down position. When left on an incline, the wheels shall be blocked; or

- The power may remain on provided the brakes are set, the mast is brought to the vertical position, forks are left in the down position, and the wheels shall be blocked, front and rear.

NOTE: When the operator is over 25 feet (7.6 meters) from or out of sight of the industrial truck, the vehicle is "unattended."
(17) When the operator of an industrial truck is dismounted and within 25 feet (7.6 meters) of the truck which remains in the operator's view, the load engaging means shall be fully lowered, controls placed in neutral, and the brakes set to prevent movement.

**EXCEPTION:** Forks on fork-equipped industrial trucks may be in the raised position for loading and unloading if the forks are raised no more than 42 inches above the level where the operator/loaders are standing, and the power is shut off, controls placed in neutral and the brakes set. If on an incline, the wheels shall be blocked.

(18) Vehicles shall not be run onto any elevator.

(19) Motorized hand trucks shall enter confined areas with the load end forward.

(20) Vehicles shall not be operated on floors, sidewalk doors, or platforms that will not safely support the loaded vehicle.

(21) Prior to driving onto trucks, trailers and railroad containers, their flooring shall be checked for breaks and other structural weaknesses.

(22) Vehicles shall not be driven in and out of highway trucks and trailers at loading docks until such trucks or trailers are securely blocked or restrained and the brakes set.

(23) The width of one tire on the powered industrial truck shall be the minimum distance maintained from the edge by the truck while it is on any elevated dock, platform, freight car or truck.

(24) Trucks shall not be loaded in excess of their rated capacity.

(25) A loaded vehicle shall not be moved until the load is safe and secure.

(26) Extreme care shall be taken when tilting loads. Tilting forward with the load engaging means elevated shall be prohibited except when picking up a load. Elevated loads shall not be tilted forward except when the load is being deposited onto a storage rack or equivalent. When stacking or tiering, backward tilt shall be limited to that necessary to stabilize the load.
(27) The load engaging device shall be placed in such a manner that the load will be securely held or supported.

(28) Special precautions shall be taken in the securing and handling of loads by trucks equipped with attachments, and during the operation of these trucks after the loads have been removed.

(29) When powered industrial trucks are used to open and close doors, the following provisions shall be complied with:

- A device specifically designed for opening or closing doors shall be attached to the truck.
- The force applied by the device to the door shall be applied parallel to the direction of travel of the door.
- The entire door opening operation shall be in full view of the operator.
- The truck operator and other employees shall be clear of the area where the door might fall while being opened.

(30) If loads are lifted by two or more trucks working in unison, the total weight of the load shall not exceed the combined rated lifting capacity of all trucks involved.

(f) Every employee who operates an agricultural or industrial tractor shall be instructed in the following procedures and in any other practices dictated by the work environment. Such information shall be provided at the time of initial assignment and at least annually thereafter. Copies of these instructions, printed in a language understood by the majority of the employees, shall be conspicuously posted at a place frequented by the drivers.
8. **EMPLOYEE OPERATING INSTRUCTIONS**

(a) Securely fasten your seat belt.

(b) Where possible, avoid operating the tractor near ditches, embankments, and holes.

(c) Reduce speed when turning, crossing slopes, and on rough, slick, or muddy surfaces.

(d) Stay off slopes too steep for safe operation.

(e) Watch where you are going. Especially at row ends, on roads, and around trees.

(f) Do not permit others to ride.

(g) Operate the tractor smoothly--no jerky turns, starts, or stops.

(h) Hitch only to the draw bar and hitch points recommended by tractor manufacturers.

(i) When tractor is stopped, set brakes securely and use park lock if available.

(1) Every employee who operates an agricultural or industrial tractor shall be required to check the tractor prior to operation each day, and if it is unsafe, report the matter immediately to a supervisor or mechanic and shall not use the tractor again until it has been made safe.

(2) Employees shall be prohibited from stunt driving or horseplay while operating an agricultural or industrial tractor.
(3) No repairs shall be performed on any agricultural or industrial trucks or tractors until arrangements have been made to reduce the probability of injury to repairmen or others caused by sudden movement or operation of such equipment or its parts.

**NOTE 1:** Fire aisles, access to stairways, and fire equipment shall be kept clear.

**NOTE 2:** 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.*

9. **OPERATION OF THE TRUCK**

(a) If at any time a powered industrial truck is found to be in need of repair, defective, or in any way unsafe, the truck shall be taken out of service until it has been restored to safe operating condition.

(b) Spillage of oil or fuel shall be cleaned up in accordance with EH&S department procedures and the fuel tank cap replaced before restarting engine.

(c) No truck shall be operated with a leak in the fuel system until the leak has been corrected.

(d) Trucks must not be operated in atmospheres more than 20% of the lower explosive limit (LEL) of flammable gas or vapor unless the truck is approved for that area.

**WARNING 1:** *FUEL TANKS SHALL NOT BE FILLED WHILE THE ENGINE IS RUNNING.*

**WARNING 2:** *OPEN FLAMES SHALL NOT BE USED FOR CHECKING ELECTROLYTE LEVEL IN STORAGE BATTERIES OR GASOLINE LEVEL IN FUEL TANKS.*

9.1 **LOADING**

(a) Only stable or safely arranged loads shall be handled. Caution shall be exercised when handling off-center loads which cannot be centered.
(b) Only loads within the rated capacity of the truck shall be handled.

(c) Long or high (including multiple-tiered) loads which may affect capacity shall be adjusted.

(d) Trucks equipped with attachments shall be operated as partially loaded trucks when not handling a load.

(e) 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.

(f) 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.

(g) The brakes of highway trucks shall be set and wheel chocks placed under the rear wheels to prevent the trucks from rolling while they are boarded with powered industrial trucks.

(h) Fixed jacks may be necessary to support a semitrailer and prevent upending during the loading or unloading when the trailer is not coupled to a tractor.

10. FUEL HANDLING AND STORAGE

(a) The storage and handling of liquid fuels such as gasoline and diesel fuel shall be in accordance with NFPA Flammable and Combustible Liquids Code (NFPA No. 30).

(b) The storage and handling of liquefied petroleum gas fuel shall be in accordance with NFPA Storage and Handling of Liquefied Petroleum Gases (NFPA No. 58).

11. CHANGING AND CHARGING STORAGE BATTERIES

(a) Battery charging installations shall be located in areas designated for that purpose.
(b) Facilities shall be provided for flushing and neutralizing spilled electrolyte, for fire protection, for protecting charging apparatus from damage by trucks, and for adequate ventilation for dispersal of fumes from degassing batteries.

(c) A conveyor, overhead hoist, or equivalent material handling equipment shall be provided for handling batteries.

(d) Reinstalled batteries shall be properly positioned and secured in the truck.

(e) A carboy tilter or siphon shall be provided for handling electrolyte.

(f) When charging batteries, acid shall be poured into water; water shall not be poured into acid.

(g) Trucks shall be properly positioned and brake applied before attempting to change or charge batteries.

(h) Care shall be taken to assure that vent caps are functioning. The battery (or compartment) cover(s) shall be open to dissipate heat.

(i) Precautions shall be taken to prevent open flames, sparks, or electric arcs in battery charging areas.

(j) Tools and other metallic objects shall be kept away from the top of uncovered batteries.

**WARNING:** SMOKING SHALL BE PROHIBITED IN THE CHARGING AREA.
12. **CERTIFICATION**

SMC shall certify that each operator has been trained and evaluated as required by this procedure. The certification shall include the name of the operator, the date of the training, the date of the evaluation, and the identity of the person(s) performing the training or evaluation.
13. MAINTENANCE OF INDUSTRIAL TRUCKS

(a) Any power-operated industrial truck not in safe operating condition shall be removed from service. All repairs must be made by authorized personnel only.

(b) **No repairs shall be made in Class I, II, and III (flammable or combustible) locations.**

(c) Those repairs to the fuel and ignition systems of industrial trucks, which involve fire hazards, shall be conducted only in locations designated for such repairs, and by qualified mechanics.

(d) Trucks in need of repairs to the electrical system shall have the battery disconnected prior to such repairs, unless power is necessary for testing and repair.

(e) All parts of any industrial truck requiring replacement, shall be replaced only by parts equivalent as to safety with those used in the original design.

(f) Industrial trucks shall not be altered so that the relative positions of the various parts are different from what they were when originally received from the manufacturer. They shall not be altered either by the addition of extra parts not provided by the manufacturer or by the elimination of any parts. Additional counter weighting of fork trucks shall not be done unless approved by the truck manufacturer.

(g) Industrial trucks shall be examined before being placed in service, and shall not be placed in service if the examination shows any condition adversely affecting the safety of the vehicle. **Such examination shall be made at least daily.** Where industrial trucks are used on a round-the-clock basis, they shall be examined after each shift. Defects when found shall be immediately reported and corrected, before subsequent use.

(h) 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 to service until the cause for the emission of such sparks and flames has been eliminated.

(i) 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.

(j) Industrial trucks including tractors for landscaping, construction, loading, grounds keeping, and roadway maintenance (with some exceptions), must be equipped with rollover protective structures.

(k) Industrial trucks or tractors shall be kept in a clean condition, free of debris, lint, excess oil, and grease. Noncombustible agents should be used for cleaning trucks. **Low flash point (below 100°F.) solvents shall not be used.** High flash point (at or above 100°F.) solvents may be used. Precautions regarding toxicity, ventilation, and fire hazard shall be consonant with the agent or solvent used. If a respirator is worn by employees while working with solvents, the employee must have prior approval per the respiratory protection program.