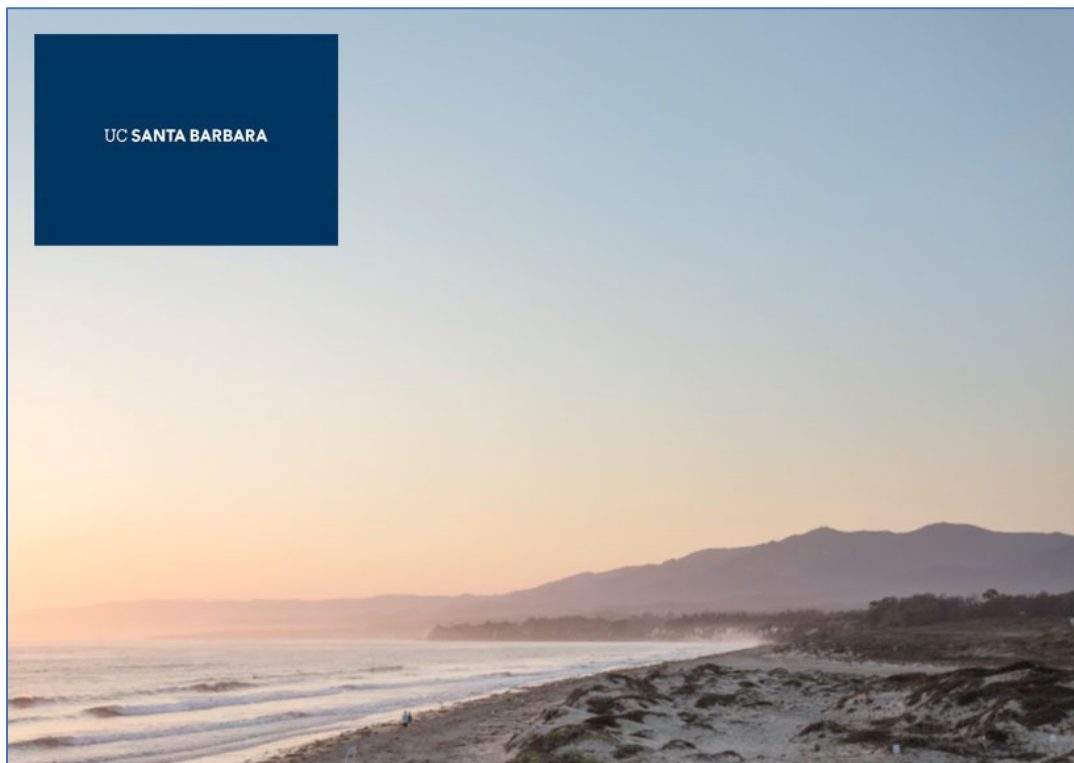


UC Santa Barbara Forklift/Powered Industrial Lift Truck Safety Program Manual

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I. Purpose/Introduction

This program outlines all aspects of the Forklift/Powered Industrial Lift Truck Safety Program (program) for University of California, Santa Barbara (UCSB) controlled facilities as mandated by the UCSB Injury and Illness Prevention Program (IIPP), the California Occupational Safety and Health Administration (Cal/OSHA), and other regulatory compliance regulations and industry standards.

II. Applicability/Scope

This program applies to applicable UCSB departments that rent/lease/own and operate Forklifts, Powered Industrial Lift Trucks, and Power Operated Pallet Jacks (abbreviated herein as FLs/PILTs) and includes Department Heads, Principal Investigators, Responsible Persons, Certified Operators, and the UCSB Department of Environmental Health & Safety (EH&S).

The scope of this document is to define owner department roles and responsibilities including administrative, operational, training/certification, inspection, maintenance, and recordkeeping; and outlines specific safe-work practices to ensure safe and legal operation of FLs/PILTs.

FLs/PILTs equipped to lift personnel in a manufacturer-approved Personnel Lifting Platform are considered under this program as both a FL/PILT and an "Aerial Lift" or "Elevated Work Platform" and will be regulated under this program, the UCSB Aerial Lift/Elevated Work Platform Safety Program, and the UCSB Fall Protection program. This program does not apply to manually operated pallet jacks.

III. Definitions

Competent Person

One who is capable of identifying existing and predictable hazards in surrounding area or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Counter Weight

The rear section or area of the FLs/PILTs which is usually made of solid steel, and/or combination of steel and the weight of the battery that counterbalances the load that is placed on the forks.

Data Plate

Manufacturer's equipment specification and information data, which includes load rating/lift capacity, lift heights, load center measurements, vehicle weight, and vehicle attachments. This plate is required to be affixed to all FLs/PILTs by regulatory code. This is the vehicle operator's primary source of basic information about their vehicle for safe-work and use planning.

Fall Protection

An approved full body safety harness w/lanyard is to be worn at all times and attached to a secure anchor point when drivers or personnel are using an AL/PILT with a "Personnel Lifting Platform" fork attachment.

Fork Extensions

These attachments can be slipped over the existing forks to lift larger/longer loads with greater stability. Using Fork Extensions does not increase the FL/PILT lift load capacity.

Load Backrest Extension

A device (permanently affixed or removable) extending vertically from the fork carriage/load apron frame.

Load Apron

The part of the fork carriage permanently affixed and extending vertically from the fork carriage upon which the forks are "hung"/attached.

Mast

Part of the lifting mechanism that the hydraulic lift cylinders are attached which allows the load to be lifted up and down.

Personnel Lifting Platform (unauthorized without inclusion in AL/EWP Program)

A fork-attachment work platform designed for personnel to safely perform work in an elevated location. Fall protection is required during use of this attachment

Powered Industrial Lift Truck (Forklift and Powered Pallet Jack)

A mobile power-driven truck used for hauling, pushing, lifting, or stacking materials. A diagram of a standard FL/PILT and its components is included in Attachment 1.

Qualified Person

A person designated by the employer who by reason of training, experience or instruction has demonstrated the ability to safely perform all assigned duties and, when required, is properly licensed in accordance with federal, state, or local laws and regulations.

Rider Truck

Any industrial FL/PILT that is designed to be controlled by a riding operator. The operator may be standing or sitting during operation depending upon its design.

Rollover Protective Structure (ROPS)

Includes protective frames, overhead guards and driver enclosures to isolate the driver from injury in a "safe zone" in the event of rollover or falling objects.

Seat Belt

The seat belt limits body movement and mechanically “connects” the operator to the equipment keeping the FL/PILT operator inside the safety zone of the ROPS during a rollover.

Side Shifter

An equipment attachment that allows the forks and load apron carriage to be shifted side to side, allowing easier fork-load alignment.

IV. Types of FLs/PILTs

The following are classes of commonly-used FLs/PILTs. Explanations for truck classes are included in Attachment 6.

- Class I: Electric motor rider trucks
- Class II: Electric motor narrow aisle trucks
- Class III: Electric motor hand trucks or hand/rider trucks
- 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
- Class VII: Rough terrain forklift trucks

V. UCSB Roles/Responsibilities

A. Department Heads and Chairs

Department Heads and Chairs must:

- Ensure owner department compliance with the requirements of this program.
- Identify FL/PILT Responsible Person(s) (RPs) and ensure they have the knowledge, skill, and authority to carry out the responsibilities listed below.
- Identify FLs/PILTs under their purview that fall under the requirements of this program.
- Provide necessary resources to ensure the health and safety of their employees.

B. Responsible Persons

FL/PILT Equipment Responsible Persons must:

- Understand and comply with UCSB FL/PILT Program requirements including referenced regulatory requirements and industry standards.
- Support owner department procurement of FLs/PILTs that will safely operate in the work environment with the anticipated maximum load capacities required.

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- Notify EH&S Program Administrator of changes in equipment and ensure equipment not previously approved by the EH&S Program Administrator is reviewed and approved prior to purchase, lease, rental, or operation.
- Notify EH&S Program Administrator of owner department equipment not included in periodic EH&S inspections.
- Understand equipment inspection and maintenance frequencies and ensure they are performed by a Qualified Person and meet regulatory requirements and manufacturer specifications.
- Designate qualified equipment operators and maintain an equipment-specific and up-to-date operator roster to monitor training and certification needs.
- Ensure Training/Qualification/Retraining of new personnel or existing certified operators within required timeframes in coordination with EH&S Industrial Safety or an EH&S-approved 3rd-party training vendor.
- Verify training and equipment-specific certification before each use for outside department use of FLs/PILTs under purview.
- Maintain owner department FL/PILT safety records including operator training/certification records, pre-operation inspection records, qualified person inspection/maintenance records, lockout/tagout records, and hazard identification/control forms.
- Ensure site hazard evaluations and pre-operation inspections are completed before each use.
- Maintain and utilize up-to-date hazard identification/control tools (i.e. SOPs/JHAs, or equivalent).
- Conduct documented equipment-specific personal protective equipment (PPE) assessments for all equipment operators.
- Identify and mitigate hazards encountered during operation or while observing certified operators performing work and update hazard identification/control and PPE assessment tools.
- Maintain a written equipment-specific lockout/tagout (LOTO) procedure for all FLs/PILTs under purview.
- Ensure equipment that has not been properly inspected, maintained, is unsafe to operate, or lacks available certified operators is removed from service using documented LOTO procedures.
- Ensure manufacturer manuals are maintained with the FL/PILT (or promptly ordered and added) and data plates and vendor labeling are legible and accurate.
- Ensure FL/PILT-mounted fire extinguishers are included in the Facilities Management Life Safety Program for regular inspection and maintenance.

C. Certified FL/PILT Operators

Certified FL/PILT Operators must:

- Understand and comply with all FL/PILT Safety Program requirements.
- Notify their Supervisor, the Equipment RP, or the EH&S Program Administrator about any hazardous conditions observed.
- Only operate the class of FL/PILT trained and certified to operate.
- Perform documented site hazard assessments and pre-operation inspections prior to equipment use and notify RP if equipment selection is insufficient or creates a potential safe operation hazard or load rating exceedance.
- Operate FLs/PILTs in accordance with instruction and training provided by the certification process through EH&S or an EH&S-approved 3rd-party training vendor.
- Inform the RP, Supervisor, EH&S Program Administrator, or Human Resources if taking medication or have any other conditions or concerns that could result in unsafe operation.
- Immediately report identified, observed, or suspected malfunctioning of equipment to the RP, Supervisor, or the EH&S Program Administrator.
- Do not disassemble, modify, or otherwise alter FLs/PILTs in any way.

D. EH&S

The EH&S Program Administrator will:

- Develop and maintain the UCSB FL/PILT Safety Program and ensure it meets applicable regulatory and UCSB requirements.
- Designate an individual who is qualified by appropriate training and/or experience to administer the program.
- Communicate requirements, objectives, and program changes to Department Heads and RPs impacted by this program.
- Monitor owner department program records during routine inspections and ensure they are retained for the appropriate amount of time.
- Conduct regular program audits to ensure the program is being properly implemented and assess overall program effectiveness.
- Conduct periodic “customer service” inquiries to learn how the program can be modified to better meet owner department needs.
- Review new equipment purchases/rentals/leases to identify equipment covered by this program.

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- Keep an accurate and up to date inventory of campus FLs/PILTs based on information provided by the owner department or RP during routine inspections.

VI. Program Requirements and Procedures

In addition to the roles and responsibilities described above, owner department RPs and certified operators must meet the following program requirements and procedures.

A. Responsible Person and Operator Safe-Work Procedures

Identification of Certified Operators

Certified FL/PILT operators must be identified in writing by the RP on an equipment-specific owner department operator roster. The details recorded include operator name, UCSB department, certification date(s), and operator-specific notes. This roster should be utilized on a regular basis to verify training and equipment-specific certifications before permitting the use of FL/PILT. An owner-department equipment-specific roster is included in Attachment 2.

FL/PILT Site Hazard Assessment

Prior to conducting work, a FL/PILT-Site Hazard Assessment Checklist must be completed. These inspections must be performed when working in a new or unfamiliar location, when a location is identified as a high pedestrian- or worker-traffic area, or when new unanticipated hazards or environmentally sensitive locations are identified in proximity of the work area.

This assessment ensures that the proper equipment is selected based on rated load capacities and all hazards in the work area are identified and mitigated prior to commencing work activities. A site hazard assessment checklist is included in Attachment 3.

FL/PILT Pre-Operation Inspection

At the beginning of each work shift, and prior to using a FL/PILT, a documented pre-operation inspection must be performed. This inspection documents essential FL/PILT operator and use hours information and examines safety and operational components of the equipment. Pre-operation inspection checklist forms are included in Attachment 4 for Forklifts and Attachment 5 for Powered Pallet Jacks.

FL/PILT Safe Operating Procedures

In addition to completing a Site Hazard Assessment and Pre-Operation Inspection, FL/PILT operators must review the following **pre-operation, operation, and load carrying safe operating procedures**:

Pre-Operation

- Perform, document, and keep on file FL/PILT pre-use inspections as described above.
- Ensure the appropriate Personal Protective Equipment (PPE) is present, sufficient, and inspected.
- Review work area for hazards, and remove and/ or control all recognized hazards prior to operation (Attachment 3).
- If the work area or FL/PILT are found to be unsafe during pre-operation inspection, report this immediately to the RP and do not initiate work until the worksite is safe or the FL/PILT has been repaired by a Qualified Person and determined safe for use.
- If the work area is determined to be hazardous to personnel or the public, delineate the area with cones and/or delineators, paint striping, and caution tape to prevent access in the vicinity of recognized hazards.
- If the FL/PILT is unsafe for use or planned for required maintenance, conduct documented LOTO procedures as described in this program manual.
- Only use a FL/PILT designed to safely work in observed work-area conditions.
- Only lift loads that are on pallets or other "gathered" framework devices, move loads across clear surfaces, and set down or place loads in a storage rack.
- Never utilize a FL/PILT to lift personnel without a manufacturer-approved basket and in accordance with the requirements of the AL/EWP and Fall Protection programs.
- Review operating instructions, limitations, warnings, and precautions listed in the operations manual (required to be available).
- Review controls and instrumentation. Where are they located, what do they do, and how do they work.
- Review engine or motor operation, as well as steering and maneuvering.
- Become familiar with visibility (including limitations due to loading and truck components).
- Review fork and attachment adaptation, operation, and use limitations.
- Review FL/PILT weight capacity and vehicle stability, stop work if unsure about load stability, and immediately seek guidance from the RP.

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- Check fuel or charge of batteries, and refuel/recharge as needed.
- Alert all persons in the work area of intended work activities and hazards.

Operation

- Don all required PPE prior to operating the FL/PILT.
- ALWAYS securely fasten seat belt when operating.
- Where possible, avoid operating near ditches, embankments, and holes.
- Reduce speed when turning or crossing slopes and on rough, slick, or muddy surfaces.
- Stay off slopes too steep for safe operation.
- Never permit others to ride the FL/PILT.
- Operate the FL/PILT at a low speed and safely (e.g. no jerky turns, starts, stops).
- Hitch only to the drawbar and hitch points recommended by the FL/PILT manufacturer.
- Set brakes securely and use park lock if available when stopped.
- Do not operate FLs/PILTs that generate emissions in indoor or enclosed spaces.
- If left unattended, shut the FL/PILT off, set the brake, and remove the ignition keys.

Load Carrying

- Always lift loads that fall within the capacity limits of the equipment being used. Do not exceed limits.
- Always place the load against the backrest to stabilize the load.
- Always place the larger or heaviest part of the load closest to the backrest.
- When carrying wide loads such as lumber or steel, adjust the forks as wide as possible.
- Use ropes or straps to secure the load and only attach to the Backrest Extension or Apron Carriage.
- Use clamps or wood blocks to keep round objects such as pipes from rolling during transport.
- Use shrink wrap or tape as needed to secure items stacked on pallets.
- Always evaluate the situation before making an unusual lift.
- If the load is too large to see around; reduce load, drive in reverse (for short distances only), or request a "spotter".
- Never allow a person to walk or stand between the load and another object.

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- Always carry the load as low as possible and watch for overhead obstructions.
- Always honk the horn at intersections, blind spots, corners, or where pedestrians are nearby.

These safe work procedures do not apply to all classes and/or make/models of FLs/PILTs. The RP and operator are encouraged to utilize these steps as a minimum for review and implementation. Changes or additions to these procedures are encouraged as conditions change. Additional safe work procedures are included in Attachment 7 (Cal/OSHA's Operating Rules for Industrial Trucks).

FL/PILT Hazard Identification/Control and Operator PPE Assessments (SOPs/JHAs)

Applicable regulatory standards and UCSB requirements state that the workplace must be assessed to determine if hazards are present, or are likely to be present, which necessitate hazard controls and use of PPE.

If such hazards are present, or likely to be present, the employer must:

- Select, and have each affected employee use, the types of PPE that will protect the affected employee from the hazards identified in the hazard assessment.
- Communicate selection decisions to each affected employee.
- Select PPE that properly fits each affected employee.

In addition, in accordance with the UCSB IIPP and applicable Cal/OSHA requirements, owner departments must prepare, maintain, and periodically update an equipment-specific document for hazard identification/control and PPE assessments. An efficient method to accomplish this is to create and utilize a Job Hazard Analysis (JHA) or Standard Operating Procedure (SOP). Once prepared, JHAs and SOPs can be utilized in pre-operation safety reviews to document communication of hazard identification/control methods and associated PPE requirements.

Contact the EH&S Program Administrator for resources and support in preparing these tools for owner department FLs/PILTs.

FL/PILT Personal Protective Equipment (PPE)

Adequate Personal Protective Equipment (PPE) is required to safely operate a FL/PILT. Based on the work environment and type of equipment, the following PPE is required unless downgraded following review of EH&S' [Requirements for Work Clothing and Personal Protective Equipment \(PPE\)](#) guidance document and careful consideration by the owner department (in coordination with EH&S):

- Hard hat
- Safety gloves

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- Protective footwear
- Safety glasses

In addition, a High Visibility Reflective vest is recommended PPE for low-light/poor visibility environments or high-traffic areas.

PPE protects against workplace hazards associated with FL/PILTs. These hazards can come from operation, working in an area where FL/PILTs are operated, or performing routine maintenance or battery access.

Examples of task-specific PPE and associated hazards are as follows:

Hard Hats

When working with FLs/PILTs, there are many struck-by hazards such as falling objects from loads and collisions or hitting one's head when entering/exiting the equipment. The number one cause of death when operating a FL/PILT is overturns. In many of these cases, an employee strikes their head against the ground or heavy equipment. Using an ANSI Z89.1-approved hard hat prevents accidents and potential head injuries.

Hand Protection

Wearing safety gloves protects personnel when handling FL/PILT batteries and prevents hand injuries near pinch points. FL/PILT batteries contain sulfuric acid that can cause chemical burns. Utilize heavy work gloves for pinch points with covering 14-inch / 11 mil nitrile gloves when handling corrosive chemicals and batteries.

Protective Footwear

Protective footwear is important when operating a FL/PILT to prevent damage should a load fall onto your feet, and to prevent equipment from rolling over or crushing feet. This is also important when handling batteries due to their weight and potential for chemical exposure.

High Visibility (Hi-Vis)/Reflective Vests

Wearing a high-visibility reflective vest ensures that your fellow employees can see you when you are operating a FL/PILT or working around one. The bright color/reflectiveness provides awareness of your location at all times and prevents struck-by accidents.

FL/PILT "Lockout/Tagout" for Non-compliance, Deficiencies, or Repairs

A documented LOTO procedure is required for all FLs/PILTs. If FLs/PILTs do not meet regulatory or manufacturer-recommended inspection/maintenance frequencies, has identified hazardous conditions discovered during pre-operation inspections, or mechanical problems requiring repair, the operator or RP must remove the FL/PILT from service using documented LOTO procedures (i.e. de-energizing the equipment, controlling all ignition keys, and placing a warning tag on the steering wheel).

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The warning tag must include the following information:

- Name of person that conducted LOTO, date equipment was removed from service, and their contact information.
- Confirmation that the person performing LOTO has removed the ability to operate the equipment, and has removed the keys (note: several copies of equipment keys may be accessed by a third party).
- Reason(s) for tagging out the equipment including all noted deficiencies and/or scheduled maintenance. Photocopies of related inspection forms must be maintained in the onsite safety files.

No repairs should be made on any FLs/PILTs until the equipment and its components are blocked, locked out, and tagged for repair work.

FL/PILT Operation on Loading Docks

Applicable Cal/OSHA regulatory requirements for operating FLs/PILTs on Loading Docks include:

- Prior to driving onto trucks, trailers and railroad cars, their flooring shall be checked for breaks and other structural weaknesses.
- 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.
- 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.

Other industry best practices for operating FLs/PILTs on Loading Docks include:

- **Safe distance:** Keep a safe distance from the loading dock's edge.
- **Tail swing:** Be aware of tail swing, which is when the rear of the forklift moves in the opposite direction of the steering.
- **Visibility:** Paint the edges of the loading dock to improve visibility.
- **Speed:** Drive slowly, especially in congested areas or on slippery surfaces.
- **Dock plates:** Secure dock plates and check that they can support the load.
- **Protective barriers:** Use protective barriers (such as guardrails) to prevent forklifts from tipping over.
- **Ramps:** Use curbed ramps to prevent forklifts from sliding.
- **Driving on flatbed trailers:** Only drive a forklift on a flatbed trailer if there's no gap in height or distance.
- **Load placement:** Center loads side-to-side when possible.
- **Load height:** Only raise the load as much as necessary.

- **Overhead clearance:** Check overhead clearance when raising and lowering the mast.

FL/PILT Operation in Enclosed Areas or Hazardous Atmospheres

Internal combustion engine-driven FL/PILT equipment operated inside of buildings or enclosed structures, are permitted only when such operation does not result in harmful exposure to concentrations of dangerous gases or fumes.

Please contact EH&S Industrial Safety for FLs/PILTs that generate emissions in indoor or enclosed spaces to request a risk assessment.

FL/PILT Operation in Low-light Conditions

Where general lighting is less than 2 lumens per square foot, auxiliary directional lighting shall be provided on the FL/PILT.

Housekeeping Practices near FLs/PILTs

Ensure adequate floor space and FL/PILT travel paths are clear of obstructions that could cause strike hazards, flying debris, or loads to become unstable during transport.

Class III FL/PILT (Powered Pallet Jack) Safety

Regulatory requirements for inspection, maintenance, and training for Class III FLs/PILTs (Powered Pallet Jacks) are the same requirements as indicated in this program.

Additional operational safe work practices for Powered Pallet Jacks include:

- Before using a pallet jack, check for damage, such as fluid leaks or bent parts. Also, test the hydraulic lift without a load.
- Plan your route and be aware of obstructions.
- Ensure the load is centered under the forks and doesn't exceed the pallet jack's capacity. Inspect the load before moving it, and repack it if it's unbalanced or oversized.
- Use both forks to lift the load. When traveling, walk ahead and to the side of the pallet jack, with the forks trailing. Maintain a safe speed and be ready to stop if needed.
- When going down an incline, push the load, don't pull it. Avoid turning or traveling at an angle on an incline.
- When lowering a load, alert others to stand clear and come to a complete stop.
- Store the powered pallet jack in a dry area away from travel paths with the forks lowered.
- Wear required PPE: protective footwear to protect your feet. Use gloves if you're handling heavy or abrasive materials.

- Use a spotter when needed, and communicate with other personnel.

B. FL/PILT Operator Training/Certification Procedures

FL/PILT training and certification must include a combination of formal instruction (i.e. coursework), practical training including demonstrations performed by the trainer, practical exercises performed by the trainee, and hands-on evaluation of the trainee's performance in the workplace.

In addition, equipment operators must hold a current certification for each class of FL/PILT equipment they will operate. However, if considerable differences exist between different manufacturers of the same type of class; a documented familiarity training should also take place. Training must be provided by EH&S or an approved 3rd party training vendor. Operator training records must be maintained by the owner department. A list with photographs of specific FL/PILT classes is included in Attachment 6.

Powered Pallet Jacks are a Class III Powered Industrial Lift Truck and carry the same regulatory training and certification requirements as forklifts.

Operator training and certification is required when:

- **Initial training** (new operator or new employee). Existing documented training compliant with this program within three years by a Qualified Person may be approved by EH&S if the operator has provided valid certification records, has been field evaluated by an EH&S-approved Qualified Person, and found competent to operate the FL/PILT in a safe manner.
- **Recertification** is required every three years thereafter.

Operator refresher training is required when:

- Operator is observed to operate the FL/PILT in an unsafe manner.
- Operator has been involved in an accident, incident, or near-mis incident while operating a FL/PILT.
- Operator has received an evaluation that reveals that the operator is not operating the truck safely
- The workplace condition has changed in a manner that could affect safe operation of the FL/PILT.

According to Cal/OSHA, equipment operators must be trained in the following topics:

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- Operating instructions, warnings, and precautions for the types of truck the operator will be authorized to operate.
- Differences between the truck and the automobile.
- Truck controls and instrumentation: where they are located, what they do, and how they work.
- Engine or motor operation.
- Steering and maneuvering.
- Visibility (including restrictions due to loading).
- Fork and attachment adaptation, operation, and use limitations.
- Vehicle capacity.
- Vehicle stability.
- Any vehicle inspection and maintenance that the operator will be required to perform.
- Refueling and/or charging and recharging of batteries.
- Operating limitations.
- Any other operating instructions, warnings, or precautions listed in the operations manual for the types of vehicle that the employee is being trained to operate.
- Workplace-related topics.
- Surface conditions where the vehicle will be operated.
- Composition of loads to be carried and load stability.
- Load manipulation, stacking, and unstacking.
- Pedestrian traffic in areas where the vehicle will be operated.
- Narrow aisles and other restricted places where the vehicle will be operated.
- Hazardous (classified) locations where the vehicle will be operated.
- Ramps and other sloped surfaces that could affect the vehicle's stability.
- Closed environments and other areas where insufficient ventilation or poor vehicle maintenance could cause a build-up of carbon monoxide or diesel exhaust.
- Other unique or potentially hazardous conditions in the workplace that could affect safe operation.

Please note that Cal/Fed OSHA regulations and industry best practices/standards for operating FLs/PILTs are included in EH&S-approved coursework/practical training and are not described in detail in this program.

C. FL/PILT Inspection and Maintenance Procedures

FL/PILT inspection and maintenance activities must be performed as indicated within this document and must include the following:

- Maintenance and inspection of all FLs/PILTs must be performed in accordance with manufacturer recommendations.
- A scheduled preventive maintenance, lubrication, and inspection system must be followed.
- Only Qualified Persons are permitted to maintain, repair, adjust, and inspect FLs/PILTs.
- Contact the RP immediately if mechanical issues are encountered. Do not attempt maintenance or handling of sensitive FL/PILT components if not qualified.
- Verify Qualified Person inspections are within manufacturer-recommended timeframes when maintenance is performed.
- Records for routine preventative maintenance and "as needed" repairs must be kept by the RP and be readily available for inspection.
- FLs/PILTs must be kept in a clean condition free of debris, oil, and grease.
- When changing batteries of battery-electric FLs/PILTs, replacement batteries must be of the service weight that falls within the minimum/maximum range specified on the manufacturer data plate.
- Do not alter or modify any FL/PILT unless documented approval is obtained by the manufacturer.
- Remove FLs/PILTs from service using documented LOTO procedures if manufacturer-recommended inspection/maintenance is not current.

VII. Record Keeping Requirements

A. Responsible Persons

Responsible Persons must maintain accurate and readily available records of the following:

Records	Retention Period
FL/PILT Site Hazard Assessment Checklist Forms	Retain the most recent version for each work location
Pre-operation Inspection Checklist Forms	1 year
Qualified Person Inspection Records	1 year
Equipment Maintenance Records	Life of Equipment
Rental/lease/purchase agreements	1 Year
Current Operator Training/Certification Records	3 Years

B. EH&S Program Administrator

The EH&S Program Administrator will maintain accurate and up to date records of the following:

- Operator training records for training conducted or approved by EH&S.
- FL/PILT Equipment Inventory Records (updated in owner department FL/PILT Inspections).

VIII. References

- T8 Cal/OSHA §3650. General Safety Orders
- T8 Cal/OSHA §3661. Brakes and Warning Devices
- T8 Cal/OSHA §3662. Internal Combustion Engines
- T8 Cal/OSHA §3663. Maintenance of Industrial Trucks
- T8 Cal/OSHA §3664. Operating Rules
- T8 Cal/OSHA §3668. Powered Industrial Truck Training
- T8 Cal/OSHA §3380. Personal Protective Devices
- Occupational Safety and Health Act of 1970 (29 U.S.C. § 651 et seq.)
- Federal OSHA (CFR 1910 subpart I. standard 1910.178 Powered Industrial Trucks
- Federal OSHA (CFR 1910 subpart I. standard 1910.602 Material Handling Equipment
- Federal OSHA (CFR 1910 subpart I. standard 1910.132 Personal Protective Equipment

- Federal OSHA (CFR 1910 subpart I. standard 1910.333 Selection and Use of Work Practices (LOTO)
- Federal OSHA (CFR 1926 subpart C. standard 1926.32 (f) (m) Competent and Qualified Persons
- American Standards National Institute (ANSI) B56.1 (Adopted by Federal OSHA/OSH Act)
- NFPA 505-1982 Fire Safety Standard for Powered Industrial Trucks

IX. Issued by and Next Review Date

Issued by: Bryan E. Bowe, Safety Specialist, EH&S FL/PILT Program Administrator

Review Date: Three years from publish date

X. Attachments

Attachment 1–FORKLIFT COMPONENTS DRAWING

Attachment 2: OWNER-DEPARTMENT EQUIPMENT-SPECIFIC ROSTER

Attachment 3: FL/PILT SITE HAZARD ASSESSMENT CHECKLIST

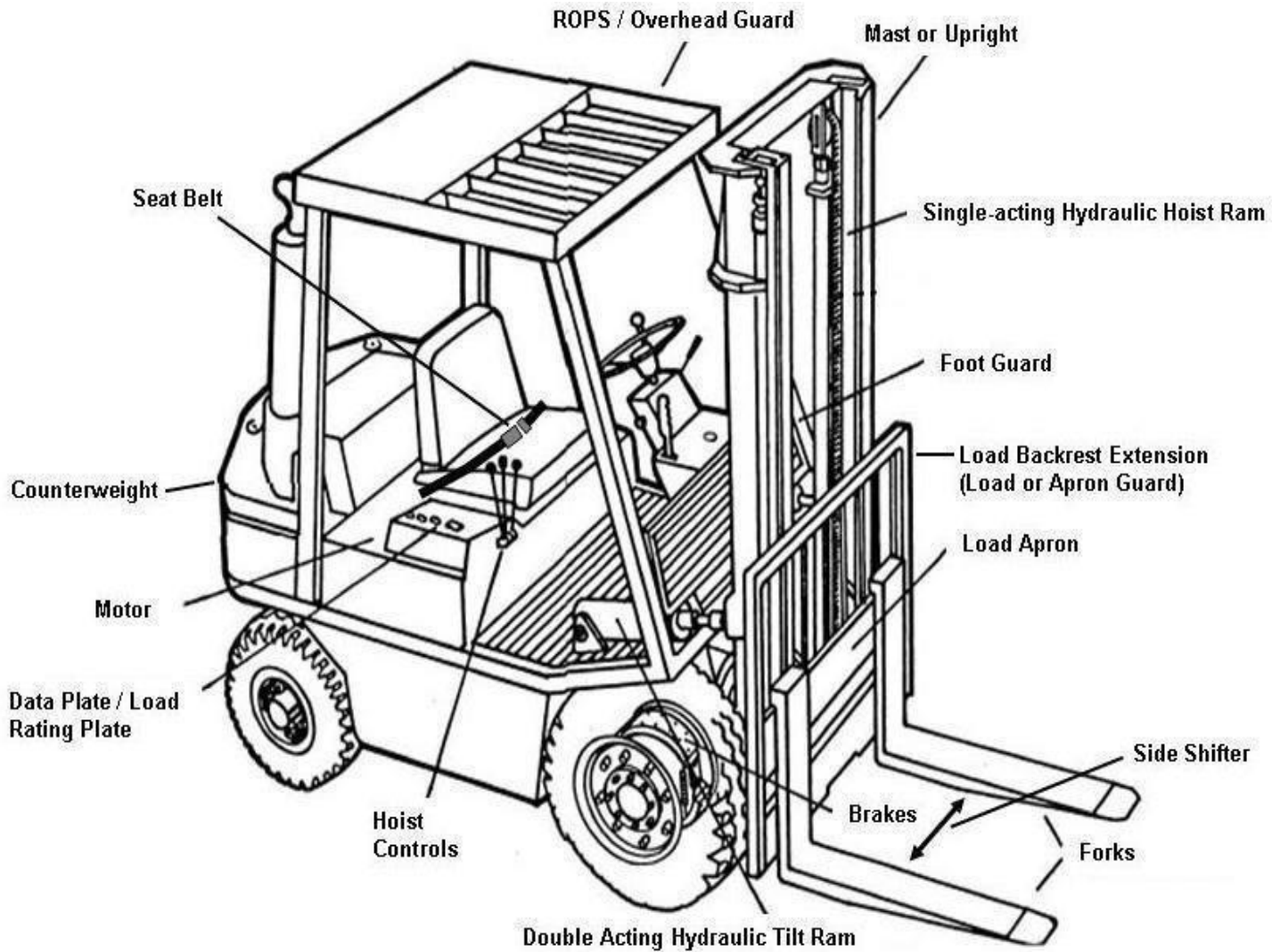
Attachment 4: DAILY PRE-USE INSPECTION REPORT (For Forklifts)

Attachment 5: DAILY PREVENTIVE MAINTENANCE & INSPECTION REPORT
(For Powered Pallet Jacks)

Attachment 6: LIFT TRUCK CLASSIFICATION CHART

Attachment 7: CAL/OSHA FL/PILT OPERATING INSTRUCTIONS

Attachment 1: FORKLIFT COMPONENTS DRAWING



Attachment 2: OWNER-DEPARTMENT EQUIPMENT-SPECIFIC ROSTER

FL/PILT SERIAL #: _____ Make: _____ Model: _____

FL/PILT CLASS (See Attachment 6): _____

Last Update (Date): _____

OWNER DEPARTMENT RESPONSIBLE PERSON (RP) - Complete one for each Forklift or Powered Pallet Jack:

Operator Name	Department	Training/Certification Date(s)	Notes

RP NAME (Print): _____ (Signature): _____

Note to Supervisors: It is your responsibility to ensure all operators are currently trained and certified for this Class of Powered Industrial Lift Truck.

Attachment 3: FL/PILT SITE HAZARD ASSESSMENT CHECKLIST

Selected FL/PILT Serial #: _____ Make: _____ Model: _____

Date: _____ Time: _____ Work Location Investigated: _____

Instructions: An operator uses this form to perform a Site Hazard Assessment for FL/PILT equipment owned/operated by each department, identify all hazards in the area of intended work, and to select appropriate equipment for the work-task. Update this Hazard Assessment as equipment is purchased or retired from service, work activities or hazards change, and when new operators are added to the owner department's operator roster for using Industrial Lift Equipment.

Inspection Item (Visual Check)	YES	NO	NA	COMMENTS
SITE EVALUATION				
Is the floor/work surface structurally strong enough to handle the weight/load(s)?				
Are surface conditions where the vehicle will be operated clean, dry and have good traction?				
Is there pedestrian traffic in areas where the FL/PILT will be operated?				
Are there narrow aisles and other restricted places where the FL/PILT will be operated?				
Will the loads to be carried be stable and of uniform composition?				
Are there ramps and other sloped surfaces that could affect equipment stability?				
Will there be significant load manipulation, stacking and unstacking of materials?				
Are there "Classified Hazardous" locations where the vehicle will be operated?				
Is there an enclosed environment(s) or other areas where insufficient ventilation or poor vehicle maintenance could cause a build-up of carbon monoxide or diesel exhaust buildup for combustion motors, or hydrogen gas buildup at electric vehicle recharging stations?				
List below other potentially hazardous site-conditions that could affect safe operation:				
1.				
2.				
PROCESS / USE OF LIFT TRUCK				
Should an FL/PILT be used in the type of work being conducted?				
Does the FL/PILT have the proper lift height and capacity for the job?				
Are the proper attachments being used in the type of work in this process?				
Are cables and/or chains being used to lift objects with the FL/PILT?				

UC Santa Barbara Forklift and Powered Industrial Lift Truck Safety Program

PROCESS / USE OF LIFT TRUCK (continued)	YES	NO	NA	COMMENTS
Are there designated parking areas for FLs/PILTs? (Clear of exits, fire extinguishers, hydrants, pedestrian-aisles, doorways, footpaths, or electrical panels.)				
Is the fueling and/or charging area well ventilated?				
Is there proper lighting in the areas the Lift Truck(s) is being used?				
In loading dock areas, are there proper dock plates available for use?				
Are Propane bottles being kept in a secure area, and are they tagged "Full" or "Empty"?				
List below other potentially hazardous process-conditions that could affect safe operation:				
1.				
2.				
SAFETY DEVICES / SIGNS / POSTINGS / EQUIPMENT REPAIR	YES	NO	NA	COMMENTS
Are there signs warning pedestrians that FLs/PILTs are operating in the area?				
Are there proper warning signs at blind corners, exits, and high traffic areas?				
Are wheel chocks available if needed during loading or unloading of FLs/PILTs?				
Are there proper warning signs in refueling or battery charging areas?				
Are all low overhead obstructions tagged, painted or marked for visibility to operators?				
Are there walking lanes marked with yellow paint for pedestrians to use?				
Are there warning lights or buzzers to warn pedestrians on sidewalks of FL/PILT cross traffic?				
Is an eye wash station with an unobstructed path within 10 seconds walking-distance of the battery charging area?				
Are there a sufficient amount of fire extinguishers on site that have been inspected regularly?				
Is the CAL/OSHA poster (Operating Rules) posted and available to all employees who operate FLs/PILTs?				
Are service repair orders for FLs/PILTs and/or attachments(s) being kept for recordkeeping purposes?				
Are Daily Inspections being completed, and are records being kept for program documentation?				
Are all other employees in the area aware that FLs/PILTs are operating in the area?				

SAFETY DEVICES / SIGNS / POSTINGS / EQUIPMENT REPAIR (Continued)	YES	NO	NA	COMMENTS
Are all safety devices on the FL/PILT in proper work condition (lights, horn, flashing lights, guards, seat belt, back-up alarm, etc.)?				
Are the FLs/PILTs being kept in good working condition (maintenance, fuel, battery, oil, hoses, etc.)?				
List below other equipment device(s)/operation(s) that could improve safe operation:				
1.				
2.				

OPERATOR NAME (Print): _____ (Signature): _____

Note to Supervisors: *It is your responsibility to ensure your operators are continually performing and documenting pre-use inspections.*

Attachment 4: DAILY PRE-USE INSPECTION REPORT (For Forklifts)

FL/PILT Serial #: _____ Make: _____ Model: _____

Date: _____ Time: _____ Hour Meter Reading: _____

Certified Forklift/PILT Operator: Complete this form, before each use. Check "OK" if the items are in good condition/operation or check the "Repair Required" box if the item is not in proper working order.

IMPORTANT: The FL/PILT must not be utilized if there are any items that require repairs. **Report all "Repair Required" items to your supervisor immediately.**

Inspection Item (Visual Check)	N/A	OK	Repair Required	Comments/Action Taken
FL/PILT BODY (Dents)				
DATA PLATE & SAFETY DECALS (Present & Legible)				
FUEL LEVEL / BATTERY CHARGE LEVEL				
BATTERY (Clean & Serviceable)				
BATTERY PLUG CONNECTION				
OIL LEVEL & OIL PRESSURE				
WATER LEVEL				
FAN BELT (Serviceable)				
ENGINE HOSES (No Leaks/Cuts)				
TIRES/WHEELS (Air Pressure/Wear/Bolts Tightened)				
HYDRAULIC HOSES (No Leaks/Cuts/Excessive Wear)				
CHAINS (<u>Not</u> Loose, broken, or worn) Properly lubricated				
MAST (Serviceable)				
FORKS (No Cracks at Joints) Properly Mounted & Secured				
PARKING BRAKE (Operational: Forward & Reverse)				
SERVICE BRAKES (Operational) Not loose/spongy				
STEERING (No Excessive Play)				
HYDRAULIC CONTROLS				
HORN (Operational)				
BACK-UP ALARM (Functioning)				
OVERHEAD CAGE Properly Mounted, No visible damage				
WARNING LIGHT (Functional)				

OPERATOR NAME (Print): _____ (Signature): _____

Note to Supervisors: It is your responsibility to ensure your operators are continually performing and documenting pre-use inspections.

Attachment 5: DAILY PREVENTIVE MAINTENANCE & INSPECTION REPORT
 (For Powered Pallet Jacks)

FL/PILT Serial #: _____ Make: _____ Model: _____

Date: _____ Time: _____ Hour Meter Reading: _____

Certified Motorized Pallet Jack Operator: Complete this form, before each use. Check "OK" if the items are in good condition/operation or check the "Repair Required" box if the item is not in proper working order.

IMPORTANT: The FL/PILT must not be utilized if there are any items that require repairs. **Report all "Repair Required" items to your supervisor immediately.**

Inspection Required	N/A	OK	Repair Required	Comments
PALLET JACK BODY (Dents)				
BATTERY CHARGE LEVEL				
BATTERY LOAD TEST				
BATTERY PLUG & CONNECTOR				
BATTERY (Clean & Serviceable)				
TIRES/ LOAD WHEELS (Serviceability/Wear/Bolts Tightened)				
HYDRAULIC HOSES (No Leaks/Cuts/Excessive Wear)				
DATA PLATE AND SAFETY DECALS (Present, Legible)				
FORKS (No Cracks at Joints)				
KEY SWITCH (Functional)				
SPEED CONTROLS (Rabbit/Turtle) (Operational)				
SERVICE BRAKES (Operational) Not loose/spongy				
STEERING (No Excessive Play)				
HYDRAULIC CONTROLS (Smooth & Continuous Operation)				
HORN (Operational)				
FORWARD/REVERSE CONTROLS (Functioning)				
WARNING LIGHT (Functional)				

INSPECTOR'S NAME (Print): _____ (Signature): _____

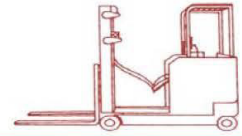
Note to Supervisors: It is your responsibility to ensure your operators are continually performing and documenting their pre-use inspections.

Attachment 6: LIFT TRUCK CLASSIFICATION CHART

FL/PILT Class	Photo	Description
<p>CLASS I.</p> <p>ELECTRIC MOTOR COUNTER-BALANCED RIDER TRUCKS</p>		<p>These general use vehicles are most often found indoors, though varieties with pneumatic tires are sometimes used outdoors in dry conditions. These vehicles are versatile and protect air quality by running on battery instead of gasoline, natural gas, or diesel fuel.</p>
<p>CLASS II.</p> <p>ELECTRIC MOTOR NARROW AISLE TRUCKS</p>		<p>These narrow vehicles are designed to operate in small spaces efficiently. Narrow FLs/PILTs allow for their companies to pack in shelving or aisles close together to maximize storage area.</p>
<p>CLASS III.</p> <p>ELECTRIC MOTOR HAND TRUCKS</p>		<p>These small vehicles battery-powered vehicles are driven by an operator in front of the truck. Steering and controls are contained in the tiller.</p>
<p>CLASS IV.</p> <p>INTERNAL COMBUSTION COUNTER BALANCED TRUCKS</p> <p>(Cushion Tires)</p>		<p>These FLs/PILTs are often seen courrying pallets from the loading dock to indoor storage. They feature a low clearance thanks to their smaller profile tires and can be used indoors or outdoors on smooth surfaces.</p>
<p>CLASS V.</p> <p>INTERNAL COMBUSTION COUNTERBALANCED TRUCK</p> <p>(Pneumatic Tires)</p>		<p>These trucks feature an internal combustion engine that is powered by compressed, diesel or LP gas. They are versatile and seen in all kinds of warehouses, from large to small.</p>
<p>CLASS VI.</p> <p>ELECTRIC & INTERNAL COMBUSTION TOW TRACTORS</p>		<p>These electric and combustion-powered tractors are known for their pulling power and are commonly seen on the airport tarmac hauling luggage.</p>
<p>CLASS VII.</p> <p>ROUGH TERRAIN FORKLIFT TRUCKS</p>		<p>Popular in construction, these large forklifts are designed for heavy outdoor use at a job site to lift and transport large loads of lumber or building materials.</p>



OPERATING RULES FOR INDUSTRIAL TRUCKS



General Industry Safety Order [3664](#) Operating Rules (Part (a))

- (a) Every employer using industrial trucks or industrial tow tractors shall post and enforce a set of operating rules including the appropriate rules listed in Section [3650](#) (t).

General Industry Safety Order [3650](#) Industrial Trucks. General (Part (t))

- (t) Industrial trucks and tow tractors shall be operated in a safe manner in accordance with the following operating rules:
- (1) Only drivers authorized by the employer and trained in the safe operations of industrial trucks or industrial tow tractors pursuant to Section [3668](#) shall be permitted to operate such vehicles.
 - (2) Stunt driving and horseplay are prohibited.
 - (3) No riders shall be permitted on vehicles unless provided with adequate riding facilities.
 - (4) Employees 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 the beginning of each shift, and if it is found to be unsafe, the matter shall be reported immediately to a foreman 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 forklifts (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.

General Industry Safety Order [3650](#) Industrial Trucks. General (Part (t))

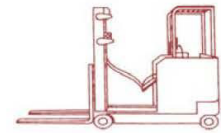
- (10) Trucks traveling in the same direction shall not be passed at intersections, blind spots, or dangerous locations.
- (11) The driver shall slow down and sound the horn at cross aisles and other locations where vision is obstructed. If the load being carried obstructs forward view, the driver shall 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.
 - (A) When ascending or descending grades in excess of 10 percent, loaded trucks shall be driven with the load upgrade.
 - (B) 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.
 - (C) 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 (the operator is over 25 feet (7.6 meters) from or out of sight of the industrial truck), the brakes are set, the mast is brought to the vertical position, and forks are left in the down position, either:
 - (A) The power shall be shut off and, when left on an incline, the wheels shall be blocked; or
 - (B) The power may remain on provided the wheels are blocked, front and rear.
- (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.

Continued in the next page....

LEFT (1/2)



OPERATING RULES FOR INDUSTRIAL TRUCKS



General Industry Safety Order [3650](#) Industrial Trucks. General (Part (t))

Exception:

Forks on fork-equipped industrial trucks may be in the raised position for loading and unloading by the operator if the forks are raised no more than 42 inches above the same level on which the industrial truck is located, the power is shut off, controls placed in neutral and the brakes set. If on an incline, the wheels shall be securely blocked. Whenever the forks are raised, the operator will remain in the seat of the industrial truck except when the operator is actively loading or unloading materials.

- (18) Vehicles shall not be run onto any elevator unless the driver is specifically authorized to do so. Before entering an elevator, the driver shall determine that the capacity of the elevator will not be exceeded. Once on an elevator, the industrial truck's power shall be shut off and the brakes set.
- (19) Motorized hand trucks shall enter elevators or other 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 cars, 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) To prevent railroad cars from moving during loading or unloading operations, the car brakes shall be set, wheel chocks or other recognized positive stops used, and blue flags or lights displayed in accordance with Section [3333](#) of these Orders and [Title 49, CFR, Section 218.27](#) which is hereby incorporated by reference.
- (24) 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.
- (25) Railroad tracks shall be crossed diagonally, wherever possible. Parking closer than 8 1/2 feet from the centerline of railroad tracks is prohibited.
- (26) Trucks shall not be loaded in excess of their rated capacity.
- (27) A loaded vehicle shall not be moved until the load is safe and secure.

General Industry Safety Order [3650](#) Industrial Trucks. General (Part (t))

- (28) 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.
- (29) The load engaging device shall be placed in such a manner that the load will be securely held or supported.
- (30) 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.
- (31) When powered industrial trucks are used to open and close doors, the following provisions shall be complied with:
 - (A) A device specifically designed for opening or closing doors shall be attached to the truck.
 - (B) The force applied by the device to the door shall be applied parallel to the direction of travel of the door.
 - (C) The entire door opening operation shall be in full view of the operator.
 - (D) The truck operator and other employees shall be clear of the area where the door might fall while being opened.
- (32) 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.
- (33) When provided by the industrial truck manufacturer, an operator restraint system such as a seat belt shall be used.



Follow operating rules so that everyone is safe.

(2/2) RIGHT