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|  | **2.08 Powered Industrial Forklifts**  **General Information for HHW Programs** |

# 1. Introduction

This Household Hazardous Waste (HHW) Program shall ensure safe operation and compliance with [OSHA Forklift Standards](https://www.osha.gov/laws-regs/federalregister/1996-01-30-0). Powered Industrial Trucks (referred to as “forklifts” in this SOP) are used for material handling and may include fork, platform, and motorized hand trucks, as well as other specialized units powered by electric motors or internal combustion engines.

# 2. Program administration

The employer is responsible for identifying, and appointing/authorizing facility staff who can serve to both train and evaluate their operators. This Program’s Facility Manager is the designated staff person is responsible for coordinating all training, evaluating staff competency in forklift operation and has demonstrated expertise based on work experience and technical familiarity. An effective and safe forklift program includes:

* Coordinating a vigorous training program.
* Maintaining the knowledge, skills, and expertise to present effective training.
* Assessing the skills and knowledge of forklift operators (see Attachment A).
* Certifying only skilled and knowledgeable operators.
* Revoking operator certification if it becomes apparent they endanger themself, other staff and/or property.
* Certifying operator has been trained, passed a written test and practical evaluation.
* Maintaining records (e.g., training, operator certification, maintenance checklists).
* Periodically reviewing policy and revising as necessary.
* Ensuring preventative maintenance and repair of forklifts.
* Ensuring safety deficiencies of forklifts are promptly remedied.

# 3. Training

OSHA standards list no specific training requirement for the persons ‘who have the knowledge, training, and experience to train forklift operators and evaluate their competence’. However, only trained staff using the established protocol set up by this Program shall be authorized to operate forklifts at this Facility. Forklift refresher training is required every 3 years or for the following reasons:

* Operator exhibits poor operation or was in forklift related accident.
* Workplace setting changes or operator is assigned a different forklift class.

3.1 OSHA does require initial training that consists of a combination of exercises to help establish or build competency for the forklift designated trainer(s) to ensure all OSHA standards are addressed during the employers training program. The employer is required to document and evaluate an operator’s performance, including:

* Forklift-related topics (e.g., characteristics, operation, vehicle limitations).
* Practical training- demonstrations performed by the trainer and practical exercises performed by the operator.
* Formal training- instruction -lecture, discussion, interactive computer learning, video tape, and/or written material.
* Workplace-related topics or hazards due to the characteristics of the facility (e.g., surface conditions, proper loading, pedestrian traffic).
* Hands on experience that is specific to each piece of equipment.
* Evaluation of the trainee’s practical skill while utilizing the equipment once every three years.

3.2 Refresher training is required once every three years. If an operator does not fall within one of the occurrences listed below, they do not have to go through the full training program again. An evaluation of each operator’s performance shall be conducted at least once every three years. Certifications may be revoked or re-evaluated when forklift operators have:

* Been observed to operate in an unsafe manner.
* Been involved in an accident or near-miss incident.
* Received an evaluation regarding unsafe actions.
* Assigned to a different type of forklift class.
* Conditions in the workplace change in a manner that could affect safe forklift operation.

3.3 The Facility forklift operator shall be responsible for:

* Inspecting forklifts, once per shift and reporting unsafe conditions.
* Following OSHA and HHW facility forklift operating rules.
* Consistently demonstrating safe driving habits.
* Immediate reporting of all accidents and near misses.
* Removing unsafe forklifts from operation.
* Being aware of pedestrian hazards.
* Being aware of other forklift traffic hazards.

# 4. Maintenance procedures

**4.1 Inspection**

Each forklift shall be inspected by the first operator prior to starting a new shift. Completed inspection checklists shall be reviewed by designated staff and kept on file for at least six months. If deficiencies are noted that prevent safe operation, the forklift shall be taken out of service until the repairs have been completed. Check with the equipment manufacturer for additional recommendations and/or inspection checklists. To view an example inspection checklist, see Attachments B & C.

**4.2 Changing and charging forklift batteries**

Only trained and authorized staff can remove batteries from forklifts; forklift battery maintenance and operation practices include:

* Preventing ignition sources in battery charging areas.
* Ensuring metallic objects (tools) are kept away from battery terminals and unguarded conductors.
* Following specific battery charger manufacturer recommended procedures.
* Ensuring an eyewash station is positioned nearby due to a risk of acid splashing in the battery charging area.
* Carefully managing any spilled acid.

**4.3** Control of emissions from internal combustion engines

Indoor carbon monoxide levels shall be monitored where forklifts are propelled by internal combustion engines. Minnesota OSHA’s 8-hour time-weighted average exposure limit for carbon monoxide is 35 parts per million (ppm) with a ceiling limit of 100 ppm. Carbon monoxide monitoring shall:

* Be conducted quarterly and kept on file.
* Ensure tail-pipe exhaust gases do not contain more than one percent carbon monoxide (measured at idle and at three-fourths throttle during final engine tuning in a regular maintenance program).
* Have results posted for staff information.

**4.4 Preparation for loading or unloading**

Before forklifts enter the back of a truck or trailer to load or unload, ensure:

* The brakes set, and wheels chocked.
* If trailers are not attached to tractors, use fixed jacks to support the trailer to prevent it from upending.

**4.5 Loading trucks**

To promote staff safety, ensure all loads are:

* Within the rated capacity of the forklift.
* Stable and safely arranged.
* Kept as close as possible to the forklift with the forks tilted back slightly.
* Evaluated for safe clearance through aisles and doorways.
* Only used with dock boards (bridge plates) constructed with sufficient strength.
* Closely monitored while loading or unloading operations are taking place between vehicles and docks.

4.6 Forklift operating

Forklift operating guidelines include:

* No riders are allowed.
* When left unattended, the forks shall be lowered, the power shall be shut off, and the parking brakes shall be engaged.
* No driving in areas where potential flammable gases or vapors may be present, unless the forklift is especially designed for that purpose.
* While parked: do not block exits, accesses to stairways, eyewash stations, electrical panels, or fire equipment.
* Operated at speeds that will permit a quick and safe stop.
* Driven slowly while turning.
* A safe distance is maintained between forklift and other moving objects.
* Always driven slowly and operated under control.
* The horn is sounded when passing through areas with an obstructed view.
* Driver is always looking in the direction of travel.
* Traverse ramps slowly and with caution.
* Stunt driving or horseplay behavior shall be subject to disciplinary action.
* Avoid objects in the roadway.
* Ensure provisions to assure no one will be passing directly under hoisted or suspended loads.

# 4. Recordkeeping

4.1 Designated staff shall maintain the following forklift records:

* Certification of staff training, including the name of operator, date of training, evaluation, and name of trainer.
* Pre-operation inspection checklists (6 months); see Attachment B or C.

Attachment A: Written Test for Forklift Operators

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| **Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Score: \_\_\_\_\_** | |
| ***Answer the following questions by filling in the blank, circling True or False, or circling the letter of the correct choice.*** | |
| 1. A lift truck training program helps to:   1. Reduce maintenance costs 2. Increase efficiency 3. Reduce accidents 4. All the above. | 11. A truck traveling at 8.7 miles-per-hour is traveling approximately:   1. 9 feet per second 2. 11 feet per second 3. 13 feet per second 4. 16 feet per second |
| 2. The maximum allowable load should be indicated on the data plate.   1. True 2. False | 12. Staff is responsible for reading the Operator’s Manual for any type of truck operated:   1. True 2. False |
| 3. Equipment data plates and decals must be in legible condition.   1. True 2. False | 13. The load backrest extension is connected to the:   1. Mast 2. Lift cylinder 3. Forks 4. Carriage |
| 4. The \_\_\_\_\_\_\_\_\_\_\_\_ is a safety device designed to protect the driver from falling objects. | 14. Loads should be carried with the mast tilted forward.   1. True 2. False |
| 5. A raised load stabilizes the truck.   1. True 2. False | 15. Data plates provide information on the trucks:   1. Height and width dimensions 2. Type of liquid fuel 3. Maximum lift height 4. Required safety equipment |
| 6. What is the general weight ratio of truck to capacity load?   1. 1:1 2. 2:1 3. 3:1 4. 4:1 | 16. OSHA requires that employers offer operator training.   1. True 2. False |
| 7. The rear-end steering of lift trucks:   1. Causes the rear end to swing more than an auto. 2. Is about the same as an auto. 3. Swings less than an auto. 4. Allows the truck to take sharp turns at high speeds. | 17. It is not the responsibility of lift truck operators to protect pedestrians in the work area.   1. True 2. False |

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| 8. Lift trucks with four wheels are supported at four points:   1. True 2. False | 18. The fulcrum point is a vertical line through the middle of:   1. Drive wheel hub 2. Center of gravity 3. Operator compartment 4. Counterweight | | |
| 9. When traveling with a load, the forks should be off the floor:   1. 18 inches 2. 6 – 8 inches 3. 2 feet 4. At stacking height |  | | |
| 10. Equipment modifications and additions which affect capacity should not be made without the manufacturer’s prior approval.   1. True 2. False | **Answers:**  **1. D**  **2. T**  **3. T**  **4. Cage**  **5. F**  **6. B** | **7. A**  **8. F**  **9. B**  **10. T**  **11. C**  **12. T**  **13. A** | **14. F**  **15. C**  **16. A**  **17. F**  **18. A** |

Attachment B

Operator's Daily Checklist: Internal Combustion Engine Industrial Forklift—Gas/LPG/Diesel Forklift

Forklift number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| Visual checks: | | | | | | Operational checks | | | | | | |
| Fluid levels (coolant, oil, hydraulic, brake) | | | | | | Horn | | | | | | |
| Fuel level | | | | | | Service and/or parking brakes | | | | | | |
| Obvious damage and/or leaks | | | | | | Seat belt and/or lap bar | | | | | | |
| Tire condition | | | | | | Hydraulic controls | | | | | | |
| Head, tail and warning lights | | | | | | Temperature gauge | | | | | | |
| Hour meter | | | | | | Steering | | | | | | |
| Other gauges and instruments | | | | | | Other: | | | | | | |
| Unit cleanliness | | | | | |  | | | | | | |
| Other: | | | | | |  | | | | | | |
| **Date** | **Operator** | **Battery**  **connection** | **Battery charge** | **Brakes** | **Lights /horn** | | **Hour meter** | **Steering**  **/tires** | **Hydraulics** | **Forks** | **Overhead**  **guards** | **Other** |
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For additional comments on circled items, see back of this sheet.

Attachment C

Operator's Daily Checklist: Electric Industrial Forklift

Forklift number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| Visual checks: | | | | | | Operational checks: | | | | | | |
| Obvious damage or leaks | | | | | | Horn | | | | | | |
| Tire condition | | | | | | Steering | | | | | | |
| Battery plug connection  Note: Be sure battery plug connection is tight. | | | | | | Service and/or parking brakes | | | | | | |
| Head, tail, and warning lights | | | | | | Seat belt and/or lap bar | | | | | | |
| Fluid levels (oil, hydraulic, brake) | | | | | | Hydraulic controls | | | | | | |
| Hour meter | | | | | | Other: | | | | | | |
| Other gauges and instruments | | | | | |  | | | | | | |
| Battery charge indicator level | | | | | |  | | | | | | |
| Other: | | | | | |  | | | | | | |
| **Date** | **Operator** | **Battery**  **connection** | **Battery charge** | **Brakes** | **Lights /horn** | | **Hour meter** | **Steering**  **/tires** | **Hydraulics** | **Forks** | **Overhead**  **guards** | **Other** |
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