



TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER EL PASO

Operating Policy and Procedure

HSCEP OP: 75.28, **Industrial Powered Equipment: Vehicle / Forklift / Powered Platforms Aerial Lifts / Electric Pallet Jack**

Regulation: OSHA 1910.178 – 1910.602 and NFPA 505

Reference: OSHA 1910.66, 1910.67

PURPOSE: The purpose of this Texas Tech University Health Sciences Center El Paso (TTUHSC El Paso) Operating Policy and Procedure (HSCEP OP) is to provide information on the safe use of powered industrial vehicles. The Occupational Safety and Health Administration (OSHA) and the National Fire Protection Association (NFPA) have established rules and guidelines for the protection of workers and facilities in OSHA 1910.178, *Powered Industrial Trucks*, OSHA 1926.602, *Material Handling Equipment*, OSHA 1910.66 *Powered and Aerial Platforms Manlifts*, and NFPA 505, *Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Maintenance, and Operation*, which are incorporated into this TTUHSC El Paso Powered Industrial Vehicle/Forklift Safety Program.

REVIEW: All TTUHSC El Paso employees who are authorized to operate or anticipate operating powered industrial equipment: vehicle/forklift/aerial platform, during their employment shall complete the appropriate safety training and evaluation, and comply with this program and guidelines.

This HSCEP OP will be reviewed every two (2) years by the Senior Director of Safety Services, with recommendations and revisions forwarded through the Managing Director of Facilities Support Services to the Chief Finance Officer.

PROCEDURE:

I. Equipment Covered and Responsibilities

A. The following and future similar equipment will be covered under this policy and procedure:

- Doosan 25 Propane Forklift
- Bobcat 5600 4x4 Utility Work Machine with Multiple Attachments
- Genie IC Power 4x2 Z 45/25J Aerial Boom Lift
- Genie DPL 25S Platform
- Dayton 2LEB8 Electric Pallet Jack

B. TTUHSC El Paso Safety Services Department is responsible for:

1. Providing program oversight;
2. Coordinating training with any departments that have employees that operate this equipment. This includes training of employees and maintaining a list of those authorized to operate the equipment and maintaining a copy of their training documentation on file;
3. Reviewing this TTUHSC El Paso *Powered Industrial Vehicle/Forklift Program* every two years.

- C. Departmental supervisors are responsible for:
 - 1. Designating and identifying employees responsible for operating powered industrial vehicle/forklifts;
 - 2. Ensuring that each operator completes the powered industrial vehicle/forklift safety training and certifying that each operator has been trained and evaluated as required;
 - 3. Implementing employee corrective or disciplinary action for violations of this policy by subordinates;
 - 4. Submitting training documentation to Safety Services Department for employees that are authorized to operate a forklift;
 - 5. Ensuring that no employee operates a powered industrial vehicle/forklift without proper certification, training; and
 - 6. Ensuring that forklifts are not used if they need to be repaired when malfunctioning.
- D. Industrial vehicle/forklift/platform/lift operators are responsible for:
 - 1. Attending and pass safety training and evaluation before operating a powered industrial vehicle/forklift/platform/lift at least every three (3) years;
 - 2. Visibly wearing the license anytime, the equipment is being operated;
 - 3. Operating and maintaining equipment in a safe manner and according to the training provided; and
 - 4. Reporting all equipment problems to his/her supervisor and not operating a vehicle/forklift/platform/lift that has been identified with a malfunction.

II. General Vehicle Requirements

- A. All powered industrial vehicles acquired and used after February 15, 1972 are required to meet the design and construction requirements for powered industrial vehicles established in the American National Standards Institute (ANSI) Standard for Powered Industrial Trucks, Part II, ANSI B56.1, except for vehicles intended primarily for earth moving or over-the-road hauling. Approved vehicles are required to bear a label or some other identifying mark indicating approval by the testing laboratory.
- B. Nameplates and markings must be in place, must not be covered over with paint which may obscure the identification information, and the nameplates must be maintained in a legible condition.
- C. Modifications and additions which affect capacity and safe operation without the manufacturer's prior written approval are prohibited. Capacity, operation, and maintenance instruction plates, tags, or decals should not be modified.
- D. Owner-operated industrial vehicles shall not be used in locations containing hazardous concentrations of dust or where flammable gases or vapors are, or may be, present in quantities sufficient to produce explosive or ignitable mixtures. If the location is believed to be hazardous or contain any hazardous materials, Safety Services should be consulted in advance.

- E. High lift rider vehicles must be equipped with an overhead guard, unless operating conditions do not permit the use of the guard. The overhead guard is intended to offer protection from the impact of small packages, boxes, bagged material, etc., but not to withstand the impact of a falling capacity load.

III. Operator Training and Evaluation

Each powered industrial vehicle operator must be determined to be competent to operate a powered industrial vehicle safely, as demonstrated by the successful completion of the training and evaluation described in this section. Personnel who have not yet been trained to operate the industrial powered equipment under the TTUHSC El Paso powered industrial vehicle/forklift safety program, or other approved training program, may operate the equipment only for the purposes of training, and only under direct supervision of the trainer.

- A. Training shall consist of a combination of formal instruction (lecture, discussion, interactive computer learning, video tape, written material), practical training (demonstrations performed by the trainer and practical exercises performed by the trainee), and evaluation of the operator's performance in the workplace.
- B. Operator training and evaluation will be conducted by trained personnel who have the knowledge, training, and experience to train powered industrial vehicle/forklift operators and evaluate their competence.
- C. All TTUHSC El Paso powered industrial vehicle/forklift operators shall receive initial training in the following topics:
 - 1. Operating instruction, warning, and precautions for the types of vehicle the operator will be authorized to operate;
 - 2. Vehicle controls and instrumentation: location, purpose, and operation;
 - 3. Differences between a powered industrial vehicle/forklift and an automobile;
 - 4. Engine or motor operation;
 - 5. Steering and maneuvering;
 - 6. Visibility (including restrictions due to loading);
 - 7. Vehicle capacity;
 - 8. Vehicle stability;
 - 9. Any vehicle inspection and maintenance that the operator will be required to perform;
 - 10. Refueling and/or changing of batteries; and
 - 11. Operating limitations, and any workplace related topics (e.g., surface conditions, narrow aisles, pedestrian traffic, hazardous locations).
- D. Refresher training in all the above listed topics, and any other relevant topics, will be provided to all TTUHSC El Paso powered industrial vehicle/forklift operators:

1. When the operator has been observed to operate the vehicle in an unsafe manner;
 2. When the operator has been involved in an accident or near-miss incident;
 3. When the operator has received an evaluation that reveals that the operator is not operating the vehicle safely;
 4. When the operator is assigned to drive a different type of powered industrial vehicle/forklift, or conditions in the workplace change in a manner that would affect the safe operations of a powered industrial vehicle/forklift; and/or
 5. At least every three (3) years.
- E. Upon completion of the training program, operators will be provided a certificate of completion stating that they have met all required training and competency of performance of proper procedures.
- F. Department supervisor will document/certify the training and evaluation and will include in the documentation 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.

IV. Forklift Inspections

A. Pre-use Inspection

1. A pre-use inspection identifies potential hazards that may be encountered from a damaged forklift and should be performed at least daily by the operator. If at any time a forklift is found to be in need of repair, defective, or in any way unsafe, the forklift should be removed from service until it has been restored to safe operating condition.
2. The pre-use inspection process is as follows.
 - a. Inspect the mast for broken or cracked weld points and any other obvious damage;
 - b. Ensure roller tracks are greased and that chains are free to travel;
 - c. Forks shall be equally spaced and free from cracks along the blade and at the heels;
 - d. Check hydraulic fluid levels;
 - e. Check each hydraulic line and fitting for excessive wear or crimping and leaks;
 - f. Check lift and tilt cylinders for damage or leaking fluid;
 - g. Inspect mounting hardware on the cylinders;
 - h. Check tires for excessive wear, splitting or missing tire material;
 - i. Check pneumatic tires for proper pressure indicated on the tire.

B. Forklift Power Source Inspection

1. Battery Power
 - a) Batteries contain acid, so protective gloves, goggles, and long sleeves must be worn when working with batteries.
 - b) Batteries should be inspected for:
 - i. Cracks or holes,
 - ii. Securely sealed cells,
 - iii. Frayed cables,
 - iv. Broken insulation,
 - v. Tight connections, and
 - vi. Clogged vent caps.
2. Propane Power

All liquefied petroleum gas (LPG) containers shall be examined by the operator before replacing for the following defects or damage:

 - a) Dents, scrapes, and gouges of the pressure vessel;
 - b) Damage to the various valves and liquid level gauge;
 - c) Debris in the relief valve;
 - d) Damage to or loss of the relief valve cap;
 - e) Indication of leakage at the valves or threaded connections.

V. Forklift Fuel Handling and Storage

- A. Liquid fuels such as gasoline and diesel shall be stored in approved NFPA safety cans and stored in approved flammable storage cabinets.
- B. The engine shall be turned off and the operator shall not be on or inside the vehicle during refueling. Refueling shall never be done inside a building.
- C. A soap solution should be used to check for leaks. A match or open flame shall not be used to check for leaks.
- D. Smoking is prohibited on TTUHSC El Paso premises.
- E. Cylinders for LPG shall be stored in the following manner.
 1. Cylinders shall be stored in approved cylinder racks.
 2. Cylinders not in use shall be protected by:
 - a) Screw-on-type caps;
 - b) Collars; or
 - c) Closed, plugged, or capped cylinder outlet valves.

VI. Forklift Maintenance

- A. Do not use open flames to check for electrolyte level in batteries or liquid fuel level in tanks.
- B. Do not conduct repairs to fuel and ignition systems of forklifts in areas where fire hazards exist.
- C. Disconnect batteries prior to repairing electrical systems.
- D. Use only replacement parts equivalent with those in the original design.
- E. Do not alter the relative positions of various parts from where they were placed by the manufacturer. Do not add any parts not supplied by the manufacturer nor delete any parts supplied by the manufacturer. No additional counterweighting of forklifts is permitted unless approved by the manufacturer.
- F. Keep forklift mufflers in proper working condition and free of debris.
- G. Keep the forklift in clean condition, free of lint, excess oil, and grease.
- H. When antifreeze is used in the engine-cooling system, only glycol-based material should be used.

VII. Forklift Operating Guidelines

- A. Only trained and authorized personnel eighteen (18) years old and older are permitted to operate a forklift.
- B. Do not operate a gasoline-powered or diesel-powered forklift in an inside area.
- C. Do not stand or pass under the elevated portion of any forklift.
- D. Passengers are prohibited from riding on forklifts.
- E. Do not place arms or legs between the uprights of the mast or outside the running lines of the vehicle.
- F. When mounting or dismounting a forklift:
 1. Always face the vehicle,
 2. Never jump off, always use a three-point stance (always have both hands and one foot or vice-versa in contact with the unit),
 3. Always wear proper shoes (oil resistant and non-slippery),
 4. Always wear proper clothing (do not wear loose clothing or dangling jewelry), and
 5. Restrain long hair.
- G. After mounting the vehicle, always fasten the seat belt, apply the brake, and shift to neutral. Also, check around the forklift for clearance and pedestrians before moving.
- H. A forklift is considered unattended when the operator is 25 feet or more away from the vehicle and it remains in his view, or whenever the operator leaves the vehicle and it is not in his/her view. When a forklift is left unattended:

1. Fully lower load engaging means;
 2. Neutralize controls;
 3. Shut off power; and
 4. Set brakes.
- I. If the forklift operator has to dismount from the forklift for any reason, the load will be lowered, parking break set, and the forklift turned off.
- J. Maintain a safe distance from the edge of ramps or platforms while on any elevated dock or platform.
- K. Forklifts are not to be used to open or close doors.
- L. Forklifts should not be used in areas of poor lighting (less than two lumens per square foot) unless they are equipped with auxiliary directional lighting and the lighting is turned on.
- M. 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.
- N. Set brakes and block wheels with wheel chocks to prevent movement of vehicles and trailers while loading or unloading when they are boarded by forklifts.
- O. Check the flooring of vehicles and trailers for breaks and weakness before loading or unloading.
- P. Check for sufficient headroom under overhead hazards such as lights, pipes, or sprinkler systems.
- Q. Do not lift personnel or allow personnel to be lifted or work from the forklift without properly attached lifting carriage.
- R. Whenever a vehicle is equipped with a lifting carriage or forks for lifting personnel, take the following precautions:
1. Use a safety platform firmly secured to the lifting carriage and/or forks,
 2. Provide means whereby personnel on the platform can shut off power to the vehicle,
 3. Provide protection from falling objects, and
 4. Keep fire aisles, access to stairways, and fire equipment clear.
- S. If you pass over a speed bump, lower your load, and reduce your speed.

VIII. Handling and Moving Loads with the Forklift

- A. To pick a load
1. Only pick up stable and safely arranged loads within the rate capacity of the forklift.

2. Adjust long or high (including multiple tiered) loads which may affect capacity.
3. Square up on the center of the load and approach it straight with forks in traveling position.
4. Stop when the tips of the forks are about a foot away from the load.
5. Level the forks and slowly drive forward until the load is resting against the backrest.
6. Lift the load high enough to clear whatever is under it.
7. Carefully tilt the mast back to stabilize the load.

B. Driving the load

1. Starts and stops should be gradual.
2. Observe all traffic regulations and keep forklift under control at all times.
3. Reduce speed and sound horn at cross aisles and other locations where vision is obstructed.
4. Pedestrians have the right-of-way. Always be aware of their presence especially in aisles, streets and crosswalks.
5. Do not dive forklift up to anyone standing in front of a bench or other fixed object.
6. Keep clear view of the path of travel. Always look in the direction of travel.
7. Always travel with the load tilted slightly back for added stability. Do not lift or lower the load when the forklift is in motion.
8. Travel with the load at a height of four to six inches at the tips and two inches at the heels to clear most uneven surfaces and avoid debris.
9. Horse play is NOT permitted.
10. Slow down for wet, slippery or uneven surfaces.
11. Avoid running over loose objects on the roadway surface.
12. Properly secure dock boards and bridge plates before driving over them. Drive over slowly and never exceed their rated capacity.
13. Drive in reverse rather than looking around the load if you are unable to see over it. If available use a flagman.
14. Travel down inclines in reverse and up inclines going forward. Ascend or descend grades slowly. Drive loaded forklifts with the load upgrade when ascending or descending grades of 10%. On all grades, tilt the forks back and rise only as far as necessary to clear the road surface. Use low gear or the slowest speed when descending a grade.

C. Safe Steering

1. Never make a turn at normal traveling speed, always slow down to maintain balance.
 2. Stay wide when turning to help clear the sides and square up with the destination.
 3. Allow enough room for forks to clear the sides before turning, and when backing out.
 4. When negotiating turns, turn the steering wheel in a smooth sweeping motion. At very low speeds, turn the steering wheel at a moderate, even rate.
 5. Never turn forklift with the load lifted higher than the travel height (four to six inches at the tips and two inches at the heels).
- D. To put a load on an elevated surface
1. Square up and stop a foot away from the rack on which the load is to be placed.
 2. Raise load 5-10 inches above the unloading point (space permitting).
 3. Drive forward stopping 3-4 inches in front of deposit point.
 4. Tilt mast forward to a right-angle position so load is level.
 5. Drive forward until load is aligned with the deposit point then stop.
 6. Lower load to resting place.
 7. Stack pallets loaded with cases, cartons straight and square. Stagger the top tier to "tie-in place".
 8. Tilt the forks slightly forward to avoid hooking the load.
 9. Look over both shoulders and back straight out until the forks clear the rack, then stop.
 10. Lower the forks to about 2-4 inches above ground then continue to backup or turn to proceed to the next location. Do not turn with elevated forks.
- E. To put a load down
1. Square up and stop about a foot away.
 2. Level the forks and then drive the rest of the way in.
 3. Lower the load.
 4. Tilt the forks slightly forward to avoid hooking the load.
 5. Look over both shoulders and back straight out until the forks clear the pallet.

IX. Bobcat Utility Work Machine – Training

- A. Only trained and approved operators shall operate this unit.

- B. Read operation & maintenance manual before operating.
- C. Exercise caution with components that display the exclamation mark (i.e., safety alert symbol "!"), which may be found on various safety labels throughout the unit. This exclamation mark is traditionally black with a yellow background. When you see it be alert to possible injury or death.
- D. The "X" symbol displayed in components will illustrate what action you should avoid for injury.
- E. Don't wear loose clothing or anything else that can get tangled on the controls or moving parts.
- F. Follow daily maintenance or service schedules that are on the manual or labels on the machine (i.e., oil, tire pressure, etc.).
- G. Inspect the vehicle structure daily and before operation.
- H. Never remove or modify the machine.
- I. Always wear the seat belt, and only the driver should ride on the machine.
- J. Avoid making sharp turns.
- K. Use only manufactured approved attachments, and never exceed the machine loading capacities.
- L. Never operate controls from the ground.
- M. Avoid top heavy loads, and always tie down loads that are top heavy.
- N. Keep hands and feet inside the cab at all times, while operating the machine.
- O. Never carry riders in the cargo box.
- P. Keep bystanders away from the work area.
- Q. Never raise the lift arm or attachment over someone.

X. Powered Platform – Scissor Lift Training

- A. Working platforms shall be operated only by persons who are proficient in the operation, safe use and inspection of the particular working platform to be operated.
- B. All employees who operate working platforms shall be trained in the following:
 - 1. Recognition of, and preventive measures for, the safety hazards associated with their individual work tasks.
 - 2. General recognition and prevention of safety hazards associated with the use of working platforms, including the provisions in the section relating to the particular working platform to be operated.
 - 3. Personal protective equipment that will be used while operating the platform.

- C. Training of employees in the operation and inspection of working platforms shall be done by a competent person.
- D. The employer shall certify that employees have been trained in operating and inspecting a working platform by preparing a certification record which includes the identity of the person trained, the signature of the employer or the person who conducted the training, and the date that training was completed. The certification record shall be prepared at the completion of the training, and shall be maintained in a file for the duration of the employee's employment.
- E. Working platforms shall not be loaded in excess of the rated load, as stated on the platform load rating plate.
- F. The platform shall not be operated in winds in excess of 25 miles per hour, except to move it from an operating to a storage position. Wind speed shall be determined based on the best available information, which includes on-site anemometer readings and local weather forecasts which predict wind velocities for the area.
- G. A fire extinguisher shall be provided and secured to the working platform.

XI. Aerial Platform Training

- A. Only trained persons and authorized personnel shall operate an aerial lift.
- B. Employer shall provide training in the various precautions, safe work practices, and use of personnel protective equipment needed to perform the job.
- C. Employer shall certify and maintain records that employees have been trained.
- D. Training consists of classroom training and on-the-job training. Proficiency of skills is required.
- E. A body harness and hard hat shall be worn at all times by the operator while in the basket of the aerial platform.
- F. Employee shall always stay firmly on the floor of the basket and shall not sit or climb on the edge of the basket.
- G. Lift controls shall be tested each day prior to use, to determine that such controls are in safe working condition.

XII. Electric Pallet Jack Training

- A. Only trained persons and authorized personnel shall operate an electric pallet jack.
- B. Inspect, look for fluid leaks, cracked or broken parts. Pay special attention to the wheels, and forks.
- C. Test control functions for proper operation. Raise and lower forks, test the forward and reverse controls, test the horn and breaking controls.
- D. Verify the presence of the data plate and make sure it is legible. The data plate provides important information; model of vehicle, and its maximum capacity.
- E. If a problem is identified, tag-out the unit, and do not use it until the problem is resolved.

XIII. Driving & Handling Characteristics

- A. Operating a pallet jack safely requires an awareness of its unique driving and handling characteristics. These vehicles operate quite differently from automobiles or other types of powered industrial vehicles.
- B. Pallet jacks can be driven with the load leading or trailing,
- C. When operating with the forks trailing, the steering wheels are located in the front of the vehicle. This allows the vehicle to turn sharply, cutting corners abruptly.
- D. When this is the case, a wide turn is required to avoid collision.
- E. When operating with the forks leading, the steering wheels are in the back of the vehicle. This also allows sharp turning to either side; however, the rear end will now swing wide to the outside of a turn.
- F. When this is the case, keeping the vehicle tight to the inside of the turn is required to avoid collisions.
- G. Because the pallet vehicle can accelerate and turn abruptly, one should avoid sudden, extreme movements.
- H. Make a point to start, stop, turn and brake in a smooth, controlled manner. This includes coming to a complete stop before changing direction.
- I. Smooth, careful operation is required to avoid property damage and injury when operating powered pallet jacks.

XIV. Lifting Loads Safely

- A. When lifting a load, first make sure it is within the vehicle's capacity. If unsure about the weight of a load, don't hesitate to ask for assistance.
- B. Before moving a load, it must be centered on a pallet and stable. Off-center loads or loads that are unstable may fall when moved.
- C. Off-center loads or loads that are unstable must be reconfigured so they are centered on the pallet. They may also need to be secured before moving.
- D. Before lifting a pallet, make sure both forks are completely under the pallet and the pallet is resting against the back stop.
- E. Lifting a load with the forks partially under the pallet can cause damage to the pallet and spill the load.
- F. Understand that the forks are raised using a scissor-like action that lowers the load-bearing wheels and raises the forks. If these wheels contact a lower support board of the pallet while lifting, the pallet can be torn apart.
- G. To avoid damage to the vehicle, pallet or load, pay attention and use caution when placing forks and lifting a load.

XV. Traveling With & Placing A Load

- A. Before traveling with a load, make sure of destination and route. Inspect route for obstructions or hazards before proceeding with the pallet vehicle.
- B. Do not raise or lower the load while in motion. This can affect the stability of the vehicle and load. It may also damage the floor and pallet if the load scrapes across the floor while still in motion.
- C. Before moving, lift the load a few feet off the floor and then proceed to your destination.
- D. When placing a load, come to a complete stop before lowering the pallet.