Forklift Manual

Driving Your Forklift

Forklifts are powerful machines, and while they don’t go as fast as cars or trucks, they require even more attention to safety. Most forklift accidents result from operator error, so even the most experienced forklift drivers need to review and follow the basic forklift safety rules.

Before You Drive

Check safety devices each day before you drive. You horn; lights, brakes and back-up alarm help you avoid potential accidents and should be working properly before you start the engine. Look around for any hazards you may encounter on your route (pedestrians, unstable loads or obstacles) and then figure out how to correct them. Some hazards may be hard to spot once you’re operating your vehicle.

Driving Basics

-Avoid sharp turns and fast speeds. Forklifts aren’t built to handle either. A sharp, fast turn can shift your load and cause you to tip over. Forklifts are not designed for horseplay or stunt driving.

-Whenever possible, keep loads low. Too-tall or top-heavy loads can obstruct your vision or cause you to tip over.

-Drive backward when you must move a high load, and face the direction of travel.

-Drive backward down slopes with more than a 10% incline—it’s safer. If you have to park on a slope, always block wheels, lower forks and set the parking brake.

-Never carry hitchhikers unless the forklift has approved people lifting devices.

-Keep loads within your vehicle’s rated capacity. Never raise or lower loads while moving. Start and stop gradually to avoid load shifting.

-Don’t speed. Use your horn at corners, crossings or before reversing. Back out slowly after unloading, checking over your shoulder to make sure the coast is clear.
Watch for Pedestrians

Pedestrians are involved in a majority of forklift injuries. Prevent pedestrian accidents by keeping others’ safety in mind when you drive. Drive in reverse when a high load blocks your vision. In a crowded building with lots of noise, don’t assume pedestrians can hear you coming; use your horn or lights to signal your approach at corners.

Safety First

A forklift is Different from a car. Because forklifts are steered by the rear wheels, they require different steering techniques. They’re also taller and narrower than a car and can tip over more easily. Reduce your risk by putting safety first.

Loading & Unloading

Forklifts make loading and unloading materials faster and easier, but they can be dangerous if not operated properly. Because so many steps are involved, loading and unloading present special accident risks. Follow these basic rules to stay safe.

Loading

- Plan your load. Think in advance how to make each load stable and centered. If the load consists of loose items, stack and secure them carefully.

- Before driving into trailers, rail cars or trucks always make sure that the vehicle has been secured, either with chocks under the rear wheels or with another type of restraint system. (Trailer movement is a leading cause of loading accidents.)

- Don’t cut corners by overloading. Overloads remove weight from the rear wheels, thereby causing steering loss. Keep loads well within your vehicle’s rated capacity.

- Never load higher than the height of the backrest and never carry anything on the overhead guard.

- Raising and lowering forks is part of loading and should never be done while driving. Loaded or empty forks should be 6-10 inches off the ground—high enough so they don’t hit bumps, holes or curbs.

- Plan your route. Know where to expect obstructions, intersections, pedestrians and ramps.
Unloading

- Whether unloading onto a rack or a truck, take time to position the load accurately.
- Finish lowering the forks before you back out. Always back out carefully after unloading, looking over your shoulder.
- Never place a load in an aisle or fire aisle or in front of a stairway or fire equipment.

Pedestrians and Co-workers

Most forklift accidents involve people other than the driver. Keep pedestrians a safe distance away from your vehicle while loading and unloading. If you lift co-workers onto safety platforms, make sure the platform is securely attached, and be alert for overhead obstructions. Never travel with anyone on the platform.

Use Common Sense

Following these common-sense safety rules will help you prevent accidents and property damage.

Carbon Monoxide And Your Forklift

When forklifts are used inside of buildings and confined spaces, dangerous levels or carbon monoxide (CO) can build up quickly. CO is a poisonous gas that can cause dizziness and nausea. In high concentrations it can kill. Because it is impossible to smell, taste or see CO, it’s crucial that be aware of its dangers and do as much as you can to avoid overexposure before symptoms occur.

The Problem

Forklifts powered by gasoline, propane and diesel fuel emit CO in their exhaust. In tightly insulated, enclosed areas high concentrations of CO can remain for several hours after the last entry by a forklift. Emissions are worse from vehicles that are not tuned up, but even a new, factory tuned vehicle can create a CO problem if it is used in an unventilated environment.

Recognizing the Symptoms

CO interferes with the blood’s ability to carry oxygen. As Co accumulates in the blood, less and less oxygen is carried to the body and brain, which need oxygen to survive. Low exposures cause slight headaches. As concentrations increase, weakness and dizziness may occur. High exposures can cause nausea, vomiting, confusion, collapse, coma and even death. Be alert for CO poisoning
year-round and especially during the winter months when doors and windows are kept closed and ventilation is reduced. If you suspect CO poisoning, don’t wait for symptoms to worsen. Headaches or dizziness during and after forklift operation should be reported immediately.

**Reducing the Risk**

You can do several things to reduce your exposure to CO:

- Drive smart. Avoid racing the engine, braking erratically, idling for long periods and jerky operation of the hydraulic systems. All of these increase CO emissions.

- Cold starts generate higher CO concentrations. Avoid storing or parking forklifts in cold areas to reduce warm-up time and exhaust gases.

- Make sure equipment is properly tuned up. Ask whether your vehicle can be fitted with a catalytic converter to reduce Co emissions.

- Whenever possible, do not leave your forklift running inside a shipping truck or other container. Remember, hazardous concentrations build up quickly in these confined spaces.

**Take the Team Approach**

Be alert to the dangers of CO exposure. Practice responsible driving techniques to reduce CO buildup, and encourage your co-workers to do the same.

**What is dangerous about this job?**

- Forklift trucks sometimes overturn due to overload, incorrect load positioning, driving and operating errors, or poor maintenance. This puts their operators at a life-threatening risk.

- Operators of forklift trucks may suffer serious traumas when the load falls from the truck, or stacked load collapses, etc.

- Forklift Truck Operators may, in the course of time, suffer from back, neck and hands and arm pains, cause by uncomfortable seating, vibrations and excessive physical efforts.
<table>
<thead>
<tr>
<th>Accident hazards</th>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fall of truck operator, due to slip or incautious step, while climbing to or descending from the operator's seat.</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Fall of truck from an upper level to a lower level, due to careless driving, slip or collapse</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Fall of improperly loaded cargo</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overturning of truck due to overload or incorrect positioning of the center of gravity.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overturning due to cargo lifting to an excessive height, or due to careless steering.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overturning of truck, esp. 3-wheel, while making an extremely sharp and speedy turn.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overturning due to driving on a too steep slope, or at excessive driving speed, or on an unsafe track (esp. in the event of spills on floors with loss of traction), or due to use of improper equipment/accessories.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rolling-down of truck due to insufficiently applied handbrake</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Injury from rotating parts of the truck, not fully protected against accidental contact</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Collision with a stationary (e.g. building, wall, etc.) or moving object (esp. when field of vision is obstructed by the cargo)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Collapse of a stack (mostly a stack of poorly stacked goods, when hit by a truck or due to vibration from a nearby truck)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electric shock resulting from contact with overhead electric cables</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute exposure to hazardous chemicals as a result of fall and crush of fragile containers; also potential injury from broken glass</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spill of acid during battery charging</td>
<td></td>
</tr>
<tr>
<td>Physical hazards</td>
<td>-Exposure to excessive noise levels (esp. when operating diesel trucks or working inside closed structures), with resulting hearing impairment</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Exposure to whole-body vibration caused by rigid construction of truck (particularly wheels), inadequate shock-absorbing properties of operator's seat (e.g., lacking or improperly adjusted suspension), and prolonged driving on rough grounds</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Exposure to harsh climatic conditions (heat, cold, rain, winds, etc.) while working outdoors</td>
<td></td>
</tr>
<tr>
<td>Chemical hazards</td>
<td>-Allergic skin reactions as a result of contact with fuel and/or solvents</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Eye injury due to splashes of corrosive materials.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Intoxication by exhaust gases, esp. asphyxiation by CO resulting from incomplete combustion of fossil fuel, which are emitted from the exhaust pipe and their concentration is rising rapidly inside closed and inadequately ventilated structures</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Exposure to nitrogen oxides (NOX) emitted together with the exhaust gases inside relatively closed and inadequately ventilated structures</td>
<td></td>
</tr>
<tr>
<td>Biological hazards</td>
<td>-Exposure to aerosols containing microorganisms, fungi, etc., raised into the air with the dust as result of truck movement</td>
<td></td>
</tr>
</tbody>
</table>
| Ergonomic, psychosocial and organizational factors | -Cumulative trauma disorders of hands and arms pains resulting from their overexertion while driving a non-laden truck presenting higher resistance to steering  
-Low-back pain, muscle contraction and other disorders caused by prolonged seating (in a rigid and often awkward posture) in an ergonomically inadequate seat  
-Neck pains as a result of frequent back-turning of head and neck stretching during reverse driving and while transporting bulky load obstructing operator's field of vision  
-Vision problems (eyestrain, eye burn, other kinds of irritation, double vision, etc.) due to prolonged work under condition of insufficient lighting, difficulty of adaptation to abrupt changes in visual environment (e.g., from darkness to bright lighting), blinding effect of other vehicles' headlights and floodlights, etc.  
-Psychological stress associated with increased risk of accidents involving other vehicles and suddenly appearing pedestrians  
-Psychological problems with coworkers (e.g., caused by their requests of a ride) |

**Preventive Measures**

1. Stack and secure pallets safely; do not exceed maximum recommended weight or height.
2. Install overturning protection (e.g., ROPS)
3. Wear hearing protection appropriate for the noise levels and type of noise – consult the supplier or an expert
4. Protect hands with chemical-resistant gloves; if impractical, use a barrier cream
5. Wear appropriate eye protection; consult a safety supervisor or a supplier
6. Do not operate diesel or gasoline-powered forklift truck in confined or inadequately ventilated spaces; use an electrically-operated truck

7. Use a respirator if truck motion raises much dust from the floor

8. Install an ergonomically-designed driver's seat
Lift operator Skills evaluation
Rev. 6/19/01

TRAINEE NAME: _______________________ Test Date________________ ____________
Facility/Location________________________

Truck type: sit down ☐ stand up ☐ Powered by Electric ☐ Propane ☐ Diesel/gas ☐
OTHER description______________________________________________________

1-8-Physical examination of the truck.
Operator must perform and describe inspection of each item:
  1. Tilt pass ☐ fail ☐
  2. raise/lower pass ☐ fail ☐
  3. Horn pass ☐ fail ☐
  4. Tires pass ☐ fail ☐
  5. Oil leaks pass ☐ fail ☐
  6. Brakes pass ☐ fail ☐
  7. capacity plate pass ☐ fail ☐
  8. mast chains pass ☐ fail ☐

9. Did the operator pull forward toward the designated section of racks without striking anything? Pass ☐ fail ☐

10. The operator place the forks under the pallet properly? Pass ☐ fail ☐

11. Was the load raised or tilted properly? Pass ☐ fail ☐

12. The truck strike any section of racks when removing pallet? Pass ☐ fail ☐

13. Was pallet lowered before travelling? Pass ☐ fail ☐

14. Safe rate of speed? Pass ☐ fail ☐

15. Stop/slow down at cross aisles Pass ☐ fail ☐

16. Sound horn at cross aisles? Pass ☐ fail ☐

17. When returning pallet, did operator pull into rack properly? Pass ☐ fail ☐

18. Any racks struck while replacing pallet? Pass ☐ fail ☐

19. Did the operator back out and lower forks before moving? Pass ☐ fail ☐

20. Did the operator look behind when backing up? Pass ☐ fail ☐

21. Proper safety equipment worn? Pass ☐ fail ☐

22. Did the operator drive around the "trash" or pick it up? Pass ☐ fail ☐

23. Set the load/forks flat on floor before getting off? Pass ☐ fail ☐

24. Was seat belt used? Pass ☐ fail ☐

25. Did the operator make any moves that were potentially dangerous? Pass ☐ fail ☐

26. Ask the operator to describe 3 safety rules for loading/receiving at the dock.
   • Chock wheels 1. Pass ☐ fail ☐
   • Truck turned off 2. Pass ☐ fail ☐
   • Warn others 3. Pass ☐ fail ☐
   • Proper lighting
   • Watch for others
   • Load limits on truck
   • Height limits from carriage
   • Other

27. Ask the operator to describe 2 safety rules to follow at the battery charging station
   • Proper equipment 1. Pass ☐ fail ☐
   • Proper plug/unplug 2. Pass ☐ fail ☐
   • No smoking
   • Clean-up procedure
   • Eyewash station
   • Other

Supervisor Name_______________________/Date/_________ Total Points__________ (/30)
Forklift pre-use Daily Inspection
To be completed daily prior to use
Rev 6/19/01
Fork-truck or equipment #_________

Power plant of truck:

a. Battery-powered electric truck- comments
   1. Battery for damage ok other ____________________
   2. Corrosion ok other ____________________
   3. Loose connections ok other ____________________

b. Gasoline, diesel, propane
   1. Fuel tank level ok other ____________________
   2. Fuel tank damage ok other ____________________
   3. All valves/hoses secure ok other ____________________

Truck Operation
a. Mast ok other ____________________
b. Carriage ok other ____________________
c. Forks ok other ____________________
d. Overhead guard ok other ____________________
e. Backrest ok other ____________________
f. Hydraulic system ok other ____________________
g. Tires ok other ____________________
h. Capacity name plate ok other ____________________
i. Hydraulic Fluid level ok other ____________________
j. Brake fluid level ok other ____________________
k. Oil level ok other ____________________
l. Coolant level ok other ____________________

Start Forklift, check controls as you put it through normal maneuvers and check:

a. Lift ok other ____________________
b. Tilt ok other ____________________
c. Brakes ok other ____________________
d. Steering ok other ____________________
e. Lights ok other ____________________
f. Horn ok other ____________________

General comments: __________________________________________
____________________________________________________________
____________________________________________________________

Name/Date/Initials: ____________________/_________/______

If anything is out of line, turn off forklift, tag it with a "do not operate" tag, and report problems to your supervisor.