

# TerranearPMC Safety Share

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## Week of November 11, 2019 – Forklifts

Forklifts...we use these pieces of equipment (sometimes referred to as industrial trucks) for just about all types of field work. They are excellent to move heavy items around. And while items are typically transported by placing them on tines (aka forks); either directly on the metal forks or using a pallet, under special circumstances, items can be carried by chains or slings, so the load is suspended. This type of activity is often referred to as “free-rigging,” and when this is performed, some very specific requirements must be applied. But we’ll discuss this later.

Here’s a question. “How many workers are injured each year as a result of forklift misuse?” Rather than keeping everyone guessing, the total number of injuries that occur every year – this includes non-serious, serious, and fatalities - is 96,785. That’s nearly 100,000 workers that are injured per year for work involving fork lift use. Compared to the estimated number of forklifts in the United States (855,900) – if we assume 1 accident per forklift - that means that each year, more than 1 in 10 forklifts are involved in an accident (however, in certain instances, there may be multiple incidents associated with a single forklift).

Despite hundreds of different industrial forklifts, the most common type by far is the sit-down, counter-balanced forklift. The following is a discussion of some of the most common safety issues associated with industrial forklifts.

Failure to conduct operator training: Many operators say that driving a forklift feels very similar to driving a car. However, there are many different types of forklifts and each type demands that the operator is trained to that specific type to which he/she will be operating. For instance, there are three-wheel counterbalance forklifts and side loaders as well as teletrucks (aka telehandlers – often mistakenly categorized as cranes - that have a telescoping boom which allows accessibility for heights and angles that typical forklifts cannot achieve). According to OSHA, (29 CFR 1910.178(l)) training shall be required for each type of forklift to be used. Training and evaluations shall be conducted by a person who has the knowledge, training and experience to perform these activities. This is required even if a new worker claims to be experienced. The specific topics to be covered are listed in the OSHA regulation.

Failure to conduct re-training: OSHA requires that operators need to be re-evaluated on their performance at least every three years. Reasons for retraining include: when an operator has been observed to operate a forklift in an unsafe manner, when an accident or near-miss occurs, and when the operator is assigned to operate a different type of forklift, or when a condition in the workplace changes in a manner that could affect safe operation.

Failure to use seatbelts: The fact is, workers who fail to wear their seatbelts are much more likely to suffer fatal injuries in a tip-over situation.

Unsafe load capacity and load center: Workers may understand the importance to not exceed the rated load capacity of a forklift; but that means knowing the load center as well. If a load doesn’t fit on a standard 4’x4’ pallet, its center-of-gravity may be far enough away from the mast to make the forklift unstable, possibly resulting in a tip-over. The forklift stability triangle is a fundamental



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concept that operators of counterbalanced lift trucks must understand. In order to maintain longitudinal, lateral, and dynamic stability, operators must be able to locate the center of gravity of a loaded truck and ensure that it falls within this imaginary triangle that spans the front axle to the center of the steer axle. If the center of gravity is outside this triangle, there is a strong likelihood of a tip-over.

Overhead Hazards: These include utility lines, doorways, lighting, and sprinkler heads (for indoor workplace environments). This means constantly checking surroundings to be sure to avoid these hazards. In the case of energized overhead power lines, at least 10' clearance is required; additional clearance is required for lines over 50 kV (refer to the OSHA regulation, 29 CFR 1926.600 for the specific distances based on overhead voltage lines).

Pedestrians and other vehicles: Visibility can change greatly moment to moment. Eye contact between the operator and workers is imperative while persons should not assume operators see them. Let the operator signal to ensure they acknowledge your presence. A spotter may be necessary to guide the operator safely through tight pathways and blind spots.

Improperly arranged loads: Loads must be secure and balanced to avoid dropping them, which is a serious safety issue with industrial forklifts that could lead to damaged loads and serious or fatal injuries to pedestrians.

Failure to conduct pre-operation inspections on each shift: Operators who don't check their forklift for damage, leaks, or other unsafe conditions, may be inviting equipment failure, property damage, injury, or even death. And daily inspections need to be documented. As a popular saying goes, "if it isn't documented, it wasn't done."

Floor/ground conditions: When used outside, potholes, mud, gravel, ice, snow, and soft soil can cause a forklift to get stuck and/or make braking difficult. Inside a plant or warehouse, debris such as loose papers, dust, water, or oil on the floor can also make braking more difficult. A "2-minute drill" is an effective method to check for hazards prior to operating any piece of heavy equipment.

Free rigging is the practice of attaching any of a variety of rigging equipment (such as chains, slings, shackles, rings, etc.) directly to the forks and suspending an object below the forks. The problem is that free rigging, even though common, poses several hazards. The most notable concern is that the load can shift, causing the center of balance of the forklift to fall outside the forklift's "stability triangle." 29 CFR 1910.178(a)(4) requires that modifications and additions which affect the capacity and safe operation shall not be performed by the customer or user without manufacturers prior written approval. However, if the manufacturer doesn't respond, OSHA will accept a written approval of the modification/addition from a Qualified Registered Professional Engineer.

Forklift operators should always review the operator's manual, so they are aware of any specific safety issues as well as special features or differences related to that forklift.

**Never argue with a fool. An onlooker may not be able to tell the difference - Mark Twain**

