Forklift Know-How on Safety and Compliance

By Guy Snowdy

There are many regulations for the operators of powered lift trucks. Most of the current operator training requirements in effect today came to life as part of OSHA's December 1999 rule overhaul, which dramatically expanded and strengthened OSHA's requirements for operator training and assessment.

Over the past 11 years, the expanded rules have significantly cut down the number of forklift and telehandler fatalities. But tougher rules have also brought millions of dollars in preventable fines and litigation costs for companies that fail to train operators to the extent intended.

Think about this: OSHA issues four times as many citations for improper training as it does for not conducting any training at all. It is vital that employers understand the key areas of training and assessment compliance that the regulations require. They should also understand that improper training is dangerous because it gives operators the false feeling that they are operating safely and correctly, when they may not be. Doing just-enough-to-get-by training can be both dangerous and costly.

Modifications and Attachments Affect Capacity

Equipment compliance also presents challenges. One common area is the requirement that the forklift user—not the distributor or manufacturer—make sure the capacity rating data tag is in place and legible.

One of the most challenging and confusing equipment portions of the regulation says: "Modifications and additions which affect capacity and safe operation shall not be performed by the customer or user without manufacturer prior written approval. Capacity, operation, and maintenance instruction plates, tags, or decals shall be changed accordingly." And continuing: "If the [lift] truck is equipped with front-end attachments other than factory-installed attachments, the user shall request that the truck be marked to identify the attachments and show the approximate weight of the truck and attachment combination at maximum elevation with load laterally centered."

The confusion—and fines—are often the result of the compliance officer failing to distinguish the difference between a lift truck attachment and a load-handling device, which are treated differently under the regulation. Many attachments are available for all classes of forklifts, including Class 7 rough-terrain forklifts and telehandlers.

The most common attachments range from simple side shifters to complex multi-function rotators, drum clamps, fork positioners, carton clamps, paper-roll clamps, push-pulls, and other special-application devices. All of these attachments require the forklift's capacity tag to be changed to show net capacity. Although attachments make forklift operation more efficient, their added weight can reduce the machine's net lifting capacity by a few hundred pounds to several thousand pounds.

The use of either a load-handling device that mounts temporarily to the truck or use of permanent attachments like those listed above requires that operators be trained in their use.

The most important aspect of making any forklift operation as safe as possible is the operator's ability to control the equipment under a wide range of load and machinery configurations.

Understanding Capacity

The capacity of every lift truck is based on weight, height, and horizontal distance. A straight-mast forklift may have a maximum rated capacity of 5,000 pounds at a 24-inch load center, and be able to lift 5,000 pounds to a height of 150 inches, laterally centered. But a properly trained operator should also know how much less the forklift's capacity and permissible lift height are if the load center is at 30 inches. He or she should also know how much a telehandler's lift capacity goes down as the boom extends.

As an extension of that knowledge, a properly trained forklift operator must know the load center of an empty load-handling devise and the combined load center and capacity when holding cargo. He or she should also be aware of how load stability and ground conditions affect lift capacity.

These points and many more must be addressed in order to demonstrate to OSHA that an operator has been trained properly. In addition, operator testing must be as technical as the operator's expected exposure on the job.

Many operators have never been educated in the most important areas of lift truck operation: how to keep the wheels on the ground. Many just lift until the rear wheels start to come up, and then try to react.

The OSHA regulation holds employers responsible for complying with the most misunderstood part of the regulation 1910.178(l)(2)(iii), which requires that all operator training and evaluation be conducted by persons who have the knowledge, training, and experience to train powered industrial truck operators and evaluate their competence.

To help ensure the safety of your workers and to avoid unexpected OSHA citations and fines, make sure your forklift and telehandler training teaches operators the levels of understanding and skill they will need to work safely in the real-world work situations they will face on your jobsite each day.

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The New Powered Industrial Truck Operator Training Requirements—What Safety Professionals Should Know

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truck's Longitudinal and Lateral stability—in laymen's terms, how much weight the powered industrial truck can lift, how long the can load be, the composition of the load weight, how high the load can be lifted before the capacity is reduced, ground/floor conditions, etc. The equipment installed at the factory or by the distributor or other modifications (fork attachment adaptation) will determine the truck's net lifting capacity. For example, a common fork lift that can be rented at your local distributor will have a 5,000 pound capacity chassis at a 24" Load Center and a 187" TSU (triple stage upright) mast with a Class II side shifter. The net capacity of the Nissan C50 will be 4,400 pounds at a 24" Load Center to a height of 187 inches; a similarly equipped Nissan P50 will have a net capacity of 3,975 pounds. Although these trucks come from the same manufacturer and each has a chassis capacity of 5,000 pounds, the net capacity will differ with different equipment—cushion or pneumatic style; two, three, or four stage mast; make and model of side shifter. Other factors would be a different manufacturer, height the load can be lifted, tire configuration, load center, etc.

Load Center

Most people believe that all you need to do is look at the capacity tag to determine the load center. Unfortunately, many capacity tags are not changed when the lift is modified with any of the above. Most tags, if correct, only indicate the capacity at a given load center at a maximum elevation and not when the capacity starts to change—if the Load Center of the load is further from the truck than designed, the capacity of the truck will change.

Surface Condition

[1910.178 (l)(3)(ii)(A)] The type/condition of the surface needs to be covered in the training since different types of lifts will have different gradeability, ground clearance, and suspension systems. These differences can cause the truck to be down-rated when operated on different floor and ground conditions resulting in reduced lateral stability and stopping ability. Some powered industrial trucks are designed to operate only on smooth floors. An example is a Reach Truck on uneven floors where the truck becomes unstable and the drive tire may leave the ground, making stopping next to impossible.

Composition of Loads

[1910.178 (l)(3)(ii)(B)] is a major concern. This is what determines the Load Center of any load. Does the load start off with a 24" Load Center but move to 30" when the operator steps on the brakes? The type of material that is being handled and how the load is placed can make the Load Center of the load change. When the Load Center changes, the Longitudinal stability decreases and the lift can become unstable.

Narrow Aisles

[1910.178 (l)(3)(ii)(C & E)] All lift trucks have a set space requirement for them to operate safely—making turns, stacking, unstacking material. The operator needs to know the safety operating distances in order to get in and out of tight areas without hitting something or someone. Bent racks and damaged product are indications that the operator may not have had safe operating clearances or the operator may not be trained/evaluated in safe operations ("right angle stack" positioning of the truck).

Refueling & Recharging

[1910.178 (l)(3)(i)(K)] The trainer needs to address the type of fuel or battery (wet or dry) system and how the operator should inspect it as part of the daily inspection. The operator should also be instructed in how to charge the batteries or how to change/fill LP tanks, if that will be part of the operator's duties.

Other regulatory required subject areas that the trainer must include in the operators' training program are operating limitations [1910.178 (l)(3)(i)(L)], vehicle inspection [1910.178 (l)(3)(i)(J)], and work related topics [1910.178 (l)(3)(ii)(A-F)].

The National Electronic Injury Surveillance Systems (NEISS) reported in

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