

Marine Terminal Traffic

Applicable OSHA Compliance Information:

- 29 CFR 1917.27(b)(1) - Personnel
- 29 CFR 1918.98(b)(1) - Qualifications of machinery operators and supervisory training



Safety / Compliance Tips

Traffic accidents are a serious problem in marine terminals, with their fast-paced operations and large, heavy equipment. This safety bulletin provides practical recommendations to help marine terminal employers reduce the number and severity of traffic-related injuries in their workplaces.

Traffic safety programs can reduce the risk of traffic accidents in marine terminals by eliminating or reducing potential hazards and increasing awareness of traffic safety issues for everyone working in marine terminals. Employers should develop a traffic safety program that includes the following: safe operation of vehicles, Powered Industrial Truck (PIT) training, traffic controls, parking, and safety awareness for pedestrians in the terminal. The following traffic safety controls can help prevent or reduce traffic accidents, fatalities, and injuries.

Safety checks. OSHA requires vehicles used to transport employees within marine terminals to be maintained in safe working order and that safety devices shall not be removed or made inoperative (§1917.44(n)). To ensure that vehicles are in safe working order, employers should check vehicles daily. In addition, employers should train employees to recognize and report vehicle damage and deficiencies to their supervisor. If a vehicle is not working properly, it should be taken out of service until repaired.

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At a minimum, daily PIT safety checks should include the following items:

- Overhead guard
- Mast and forks
- Tires
- Fluids (levels and leaks)
- Horn
- Backup alarm (if equipped)
- Lights
- Mirrors
- Seat belts (if equipped)
- Brakes (service/emergency and parking)
- Gauges and warning lights
- Speedometer (if equipped)
- Steering
- Windshield wipers

Many companies, as well as OSHA, have developed sample daily checklists for PITs. OSHA's checklist is available at:

http://www.osha.gov/dte/library/pit/pit_checklist.html.

Vehicle selection and maintenance. Selecting safe vehicles and maintaining them in proper condition are critical components to effectively minimize traffic accidents in marine terminals. Employers should ensure that vehicle safety equipment such as horns, backup alarms, seatbelts, brakes, mirrors, and warning devices are maintained in good repair and utilized properly by the operator. Employers should also ensure that vehicle operators follow the manufacturer's design and operation parameters. Employers must also ensure that the equipment is not modified without either the manufacturer's prior written approval or the written approval of a professional engineer experienced with the equipment who has consulted with the manufacturer, if available.

Traffic controls. Employers must install traffic controls and remind drivers to operate at safe speeds and protect pedestrians. OSHA requires the following traffic controls in marine terminals:

- Stop signs shall be posted at main entrances and exits of structures where visibility is impaired;
- Stop signs shall be posted at blind intersections, unless direct traffic control or warning mirror systems or other systems of equivalent safety are provided;
- Vehicular routes, parking areas, and traffic rules shall be established, identified, and used; and
- Signs indicating pedestrian traffic shall be clearly posted at vehicular check-in and check-out lines and similar locations where employees may be working (§1917.44).

OSHA also requires that employers direct vehicle operators to comply with posted traffic controls signs (e.g., posted speed limits) or signals, and written traffic instructions (§1917.44). Other traffic controls that employers can implement include:

- Speed limit signs at appropriate locations;
- Stop lines and lane markings on pavement;
- Rumble strips/surface indentations at intersections and other critical areas to remind drivers of speed;

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- Utility vans parked to guard terminal mechanics working in a container yard, traffic cones to alert vehicle operators of the location of employees, and alerts to warn drivers about the work;
- K-rails (Jersey barriers) or other barriers used for directional traffic controls and to separate pedestrians from motor vehicle traffic;
- Sign(s) and barriers to alert drivers of construction projects and other changes to traffic routes;
- Traffic control information for OTR trucks entering terminals, including terminal maps and driving rules; and
- Supervisors or traffic guards to direct traffic in the terminal at busy intersections and work areas.

Safe operation of vehicles. Employers must ensure that employees know and follow applicable OSHA vehicle requirements (e.g., §§1917.43, 1917.44 and 1910.178(l)). Employers must ensure that only trained and authorized employees are permitted to operate vehicles in marine terminals as required in §1917.27(a). They must also train employees on any vehicle operation procedures the terminal has developed, including proper loading of vehicles and safe driving techniques (discussed below). For example, employers should ensure that employees know that vehicles must be stopped a safe distance apart to prevent employees from being struck by or crushed between vehicles. OSHA's Marine Terminal standards require that a distance of at least 20 feet be maintained between the first two vehicles in a line (i.e., vessel loading/unloading, check-in, check-out, roadability). Subsequent vehicles also must maintain a 20-foot distance if employees are required to work behind the vehicle in front of them (§1917.44(i)).

Safe driving techniques. Training in safe driving techniques should emphasize the need for operators to follow manufacturers' operating instructions, terminal traffic control signs, and terminal driving procedures; utilize good judgment while operating vehicles; and remain alert to the presence of pedestrians and other operations in the area. Employers should observe operator performance on a random basis and set an example with their own driving. The following are examples of safe driving techniques that vehicle operators should be trained to recognize:

- Keep intersections clear;
- Do not take shortcuts against the flow of traffic;
- Be aware of activities in the terminal and possible changes of traffic routes;
- Be aware of everyone walking and working in the area;
- Avoid distractions such as cell phones, two-way radios, eating, or other non-driving activities while operating equipment;
- Use seat belts when appropriate;
- Do not carry loads too high on a yard tractor or PIT;
- Do not turn a yard tractor when backing up (load can tip over and roll); and
- Do not operate when impaired due to fatigue, medications (prescription or non-prescription), alcohol, or illegal drugs.

Designated fueling areas. Mobile fuel trucks used to refuel vehicles can create roadway obstacles and fire hazards. OSHA requires that vehicles be fueled in designated, well marked, no-smoking areas located a safe distance from possible ignition sources.

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Parking. Employers shall allow private vehicle parking only in designated areas in marine terminals (§1917.44(b)). In addition, employers should ensure that:

- Vehicles are not parked in traffic lanes
- Vehicles are not parked in an equipment operator's "blind spot"
- Vehicles should not be parked in the path of cranes or other equipment
- Chassis are not parked where the chassis tongue will protrude into traffic lanes

Repair work and welding. Welding flashes should be controlled so that the rays and sparks of the arc do not distract or blind vehicle operators driving in the vicinity². Employers should communicate with site personnel about the location of welding and repair operations so that employees do not enter the area unprotected. OSHA standards also require that cargo-handling operations are not performed when noise-producing maintenance, construction, or repair work interferes with the communication of warnings or instructions (§1917.20).

Fatigue. Employers should learn about the hazards of driving when fatigued or drowsy and how to detect those conditions. Employers should also help employees learn how to deal with fatigue and how to know if they are too fatigued to operate a vehicle. In addition, employers should learn about alternative methods to transport dangerously fatigued or drowsy employees home at the end of their shift. The following are some useful resources on fatigue and managing it.

National Institute for Occupational Safety and Health (NIOSH)

<http://www.cdc.gov/niosh/docs/2004-136/>

National Highway Transportation Safety Association (NHTSA)

<http://www.nhtsa.dot.gov/>

Network of Employers for Traffic Safety (NETS)

<http://www.trafficsafety.org/index2.asp>

National Sleep Foundation <http://www.sleepfoundation.org/>

Federal Motor Carrier Safety Administration

<http://www.fmcsa.dot.gov/facts-research/research-technology/publications/cmvfatiguestudy.htm>

Substance abuse programs. To help create a safer work environment, employers should implement and employees should support measures that contribute to a drug- and alcohol-free work environment. In addition, employers should establish drug-free workplace programs for employees. A drug-free workplace program generally includes five components: a drug-free workplace policy, supervisor training, employee education, employee assistance and drug testing. More information on substance abuse programs can be found on the OSHA home page at www.osha.gov (click on "substance abuse" in the alphabetized index).

Walking safely in marine terminals. The employer should inform anyone walking and/or working in marine terminals about traffic hazards and how to protect themselves from injury. Employers should point out the following to pedestrians in marine terminals:

- The OSHA requirement that designated walkways must be provided and used. Marked or designated areas shall be set aside within a container or roll-on/roll-off terminal for passage of employees to and from active cargo transfer points, except where the employer provides transportation to and from these points (§1917.71(d)(1));

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- Pedestrians should be aware that drivers cannot see them when they are in a vehicle's "blind spot." Pedestrians should avoid these blind spots whenever possible. When approaching or walking near vehicles, it is essential that they make eye contact with the operator and be sure that the operator acknowledges them;
- The OSHA requirement that each employee working in the immediate area of container handling equipment or in the terminal's traffic lanes wear a high visibility vest (or equivalent protection) (§1917.71(e));
- Pedestrians should make sure that their movements are predictable (not darting out suddenly from behind or between containers and not suddenly changing directions);
- Avoid placing items on rolling or moving equipment. Loose items can fall off the equipment and strike someone; and
- Be aware of the swing radius on forklifts and other similar vehicles. The rear wheels of forklifts enable these machines to turn sharply and quickly.

Gangway safety meetings and toolbox talks. Frequent safety meetings (e.g., at the start of work shifts) help reinforce safety awareness and facilitate the communication that is critical for traffic safety in the terminal. Topics can include:

- Cargo operations
- Safe vehicle operation
- Activities that may affect traffic or change traffic routes in the terminal
- Oil transfers
- Ship's stores transfers
- High-hazard cargo operations (e.g., explosives, radioactives)
- Location of repair crews, construction work and mechanics

Commercial driver safety. Commercial drivers such as OTR drivers, messengers, and vendors account for much of the traffic in marine terminals. Commercial drivers may not be familiar with the terminal and its traffic patterns and rules, and are oftentimes not supervised by marine terminal employers. Marine terminal employers can help these drivers operate safely by providing them with information about terminal driving rules and traffic patterns, providing clear traffic lane designations and signs, establishing rules for when drivers and passengers are allowed to get in and out of their vehicles, and by reminding all drivers about driving hazards at the facility.

Note: Information posted above was taken from the OSHA Longshoring website



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