

Proposed additions to the Z245.1 Standard Petersen Industries

Proposed change to paragraph 6.2.3.1 (Applies to ALL equipment).

6.2.3.1 General equipment operation

a) ~~Employer~~ **Employee (or operator?)** shall be familiar with the manufacturer's operator's manual and operate all equipment in accordance with the manufacturer's instructions;

b) **Employee (or operator?) shall not engage in any practice that will divert his attention while actually engaged in operating the equipment.**

DISCUSSION:

I had intended to include new subparagraph b) for only grapple trucks. However, in view of the recent train crash in California where the engineer was texting on his cell phone immediately before the crash, I believe it may be a worthwhile addition for all equipment. The image of someone talking on a cell phone while operating a grapple truck or ANY of our equipment is not a pretty one. The wording of b) is from ASME/ANSI B30.22 *Articulating Boom Cranes*.

Since I have added a new subparagraph b), this necessitates making the first part an a). Upon examining a), I believe it is written incorrectly. This is the employee's section of the standard. We should be requiring the employee or operator to learn the manual, not the employer.

Proposed changes to paragraph 6.2.5.8 (Applies to only grapple trucks).

6.2.5.8.2 Operating near people

Ensuring that persons are a safe distance and free and clear of lifting and loading path. The operator should not leave a suspended load unattended.

6.2.5.8.4 Power failure

If hydraulic power fails during operation, the operator shall:

a) **Move power controls to "OFF" or neutral position.**

b) **Land the suspended load and boom, if practical.**

DISCUSSION:

Both are fairly self explanatory and come also from ASME/ANSI B30.22. The first change is simply to prevent the operator from going to lunch or elsewhere while he has the boom suspended in mid air. The second change instructs the operator what to do in the event of hydraulic failure.

Proposed changes to paragraph 7.3.7 (Applies to only grapple trucks).

7.3.7.2 Grapple truck stability

b) Grapple loaders shall have a legible load chart, permanently attached and accessible to the operator, which indicates safe working loads that the operator shall never exceed. Safe working loads shall not exceed 85% of vehicle tipping moment with boom in least stable position with outriggers extended on firm, level ground.

7.3.7.3 Load holding valves.

An integrally mounted holding device (such as a pilot-operated check valve or counterbalance valve) shall be provided on the following cylinders to prevent uncontrolled lowering or movement of the boom(s) or loss of support under load in the event of a hydraulic system failure (e.g., supply hose rupture):

- a) Cylinders for vertical stabilization/outriggers.
- b) Cylinders for vertical boom movement.
- c) Cylinders for powered extensions and retraction of telescoping boom sections.

7.3.7.4 Exhaust Gases.

Engine exhaust gases shall be piped and discharged in a direction away from the operator. All exhaust pipes shall be guarded or insulated to prevent contact by personnel when performing normal duties.

DISCUSSION:

Stability: There are three aspects to the lifting capability of a loader that should be reflected on a load chart: structural competence, hydraulic strength, and stability. Some load charts take into account only the first two. As a result, these load charts do not include information that would help the operator when judging whether he can maneuver a load safely without turning the truck over. Again referencing ANSI B30.22, the standard in the crane industry when lifting on stabilizers/outriggers is that the maximum safe load should be no more than 85% of what could tip the truck over. I will provide more information on the issue at the meeting if requested.

Load Holding Valves: To pick up a large item and have an outrigger or boom cylinder collapse because of a broken hose is a catastrophic event for a grapple loader. This can result in a truck tipping over, the collapse of the boom onto people or property, and/or sever damage to the equipment.

Exhaust Gases: Most grapple truck operators stand immediately over the truck exhaust pipe. Since adding length to an emissions system is no longer such an easy task and the gases are potentially much hotter than before, the truck should leave the grapple truck manufacturer's plant with these gases carried back beyond the operator's position and any pipes that he may come in contact with (vertical exhaust) shielded.

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