

not vary with the location of the load. However, in using these cranes to perform VTLs, a LID is needed, both to prevent the crane from being overloaded by multiple containers and to assure the liftlocks and the containers used in the VTL are not overloaded. Accordingly, this proposal would revise paragraph 1917.46(a)(1)(viii) to require a LID when performing VTLs. OSHA has concluded this is necessary because if two containers weighing more than 20 tons are lifted in a VTL by mistake, the crane operator will realize this condition through the reading on the LID and be able to lower the load before overloading the liftlocks, upper container, or the crane itself. OSHA believes that the LID requirement is essential to the safe handling of VTLs.

The Marine Terminal Standards require that the employer know whether a container is empty or loaded before it is hoisted (29 CFR 1917.71(b)(1) and (b)(2)(ii)). For containers being discharged from a vessel, most employers and employees rely on the vessel cargo stowage plan, also called a stow plan, that shows: The location of each container on the vessel, the container's unique identification number, the weight of the container, and other information, such as if the container contains hazardous material. For containers being loaded onto the vessel, the same information is contained on a stow plan that shows where the containers are to be placed on the vessel. This method of determining the weight of a container is adequate for handling containers individually. This is because if the stow plan understates the weight of the container, the hoisting of a fully loaded container will not overload the crane. However, it is not adequate for handling a VTL, because if the weights of multiple containers are understated, the hoisting of those containers in a VTL could overload the crane. A crane operator testified that:

I know I've picked up containers they told me were empty and I say it's a load. And they say, no, it's an empty. I tell them, listen, this is a load. And they don't know it until they get it down. (Tr. p.252).

The proposed LID requirement for VTLs is supported by comments already received by the Agency from the public meetings. One commenter observed:

What concerns Peck and Hale as an American based company that supplies equipment to ships worldwide is that of safety. OSHA can approve empty lifting but no one can guarantee that these containers are empty. Containers are shifted in ports. Containers are mismarked and not accurate [sic] weighed. (Tr. p.161.)

Proposed paragraph 1917.71(b)(9) requires that a copy of the vessel cargo stowage plan be given to the crane operator. This paragraph also requires that the vessel cargo stowage plan be used to identify the location and characteristics of any VTLs to be lifted. Although crane operators may not be accustomed to referring to a vessel cargo stowage plan while handling containers, this requirement will help the crane operator to better anticipate and focus on the VTL operation. This provision would supplement existing § 1917.71(b)(1) and (b)(2)(ii), which require those in charge of loading to be notified of the location of all empty and loaded containers that are to be handled as VTLs.

Proposed paragraph 1917.71(b)(10) requires that the crane operator conduct a pre-lift before hoisting a VTL. A pre-lift is a pause in the VTL as the initial strain is taken and the lifting frame wires tensioned, which allows a physical testing of the liftlocks to ensure that they are engaged. This is consistent with the practice previously described by Sea-Land.

Existing paragraph 1917.71(f) addresses the normal handling of containers. OSHA is proposing to add additional operational requirements to this paragraph for performing VTLs, based on research studies, ISO Standard 3874, and the ICHCA VTL guidelines.

Proposed § 1917.71(f)(3)(i) limits a VTL to two ISO series 1 containers², with a total weight of 20 tons, which includes the weight of the container directly under the spreader bar.

Proposed § 1917.71(f)(3)(ii) requires that VTLs be handled only by container gantry cranes. This is necessary because this type of crane is specifically designed to handle intermodal containers and has the precise control needed for such lifts. While this control is important for handling single containers, it is even more important when handling VTLs, because the volume of the load and the sail area created by the VTL are greater.

Proposed paragraphs 1917.71(f)(3)(iii), (iv), (v), and (vi) are a listing of "do nots" when handling VTLs. Proposed paragraph 1917.71(f)(3)(iii) would prohibit VTLs for containers with hazardous cargo, liquid or solid bulk cargoes, or flexible tanks that are full or partially full. Any failure of a container with a hazardous cargo poses a very significant risk to employees. Bulk cargoes can quickly shift inside the container, causing a free surface effect

that can move the weight of the container to one end. This would quickly increase the weight on two of the four liftlocks and could lead to failure. Containers loaded with such cargo must be handled individually. Containers holding liquids pose a similar hazard of shifting or spilling cargo. Paragraph 1917.71(f)(3)(iv) addresses platform containers, or "flat racks." Platform containers are those that are open on the sides and top, but have panels on both ends. These end panels are either fixed or can be folded flat with the floor of the container, depending on the design of the flat rack. When the end panels are in the upright position, handling as a VTL is not allowed in proposed paragraph (iv) because the lack of sides and roof lessen the stability and strength of the container. However, under paragraph 1917.71(f)(3)(iv), if empty platform containers have the ends folded down, and have built-in connectors that are designed for the purpose of lifting multiple units, they may be handled in accordance with manufacturers' recommendations. This continues a current industry practice (Exs. 10-2, 10-2A, 10-2B, and 11-6C). Two flatracks with the ends folded down may be handled as a VTL if they are connected by liftlocks that are not built-in.

Paragraph 1917.71(f)(3)(v) would prohibit VTLs of any containers that are in the hold of a vessel. Containers are stacked in the hold in cell guides, which are steel beams constructed to secure stacks of containers. There is not enough clearance for the handle of a liftlock between the liftlock and the cell guide. If used, the handles of liftlocks would break off in the cell guide as containers were lowered into the guide. It would also be very difficult or even impossible for the crane operator or other observer to see whether the liftlocks are in the locked position, or to determine the condition of the containers or liftlocks.

Paragraph 1917.71(f)(3)(vi) prohibits the handling of VTLs when the wind speed exceeds 34 mph. At the request of the ICHCA VTL workgroup, an engineering analysis was conducted by a consultant to determine an appropriate maximum wind speed for VTLs (Ex. 41, Appendix 4). The 34-mph limit was calculated based on a three-container VTL with a total weight of 20 tons.

Existing paragraphs 1917.71(f)(3), (f)(4), and (f)(5) have been redesignated as 1917.71(f)(4), (f)(5), and (f)(6), respectively.

Proposed paragraph 1917.71(i) prohibits the movement of VTLs on flat bed trucks, chassis, bomb carts, or

² An ISO series 1 container is one that is intended for intercontinental use and is in compliance with relevant ISO standards.