

them susceptible to becoming fouled with dirt or other debris. If that occurs, they may not fully extend, causing them to have insufficient contact area with the corner casting. In the case of the third accident, there were no injuries and the accident would have been avoided by using regular SATLs which close positively when the containers are mated and have handles indicating their open or closed state (which is required by the Proposal). The Agency contracted with Robert Baron, an expert in the longshoring industry, to find other reported incidents or accidents involving VTLs, but none besides those mentioned above were found and verified (Exs. 42, 42-1, 42-2).

As will be discussed further below, provisions in OSHA's proposal would have prevented the second and third VTL accidents just discussed. (Normal operating procedures that prohibit the handling of containers that do not fit between the legs of a crane should have prevented the first accident.) The Agency preliminarily concludes that the procedures required in the proposal will substantially reduce the risk to employees of performing VTLs for these same reasons.

The Agency is concerned that lifting loaded containers in a VTL presents additional hazards to those involved with lifting empty ones. Loaded containers are more likely to have errors in weighing; so it is more likely that an overweight lift will be attempted—one weighing more than 20 tons. Secondly, loaded containers have loads that could shift during ocean transit or while being lifted by the container gantry crane (VTLs of containers with bulk and liquid cargoes would be prohibited for this reason). The Agency seeks comment on these issues and any other issues that pertain to the risk of lifting loaded versus empty containers.

The Agency is aware that containers fail even in single lifts, although this is very rare. The Agency has preliminarily concluded that, when the proper work practice precautions as specified in the proposed standard are followed, employers who follow the proposal will be able to perform VTLs safely. The industry's experience with VTLs of two containers (about 350,000 over 15 years) is substantial but relatively small when compared to the 13 million single lifts performed annually. In addition, to OSHA's knowledge, all VTLs performed in the U.S. to date have consisted of only two containers. Although the Agency has preliminarily concluded, based on the information in the record of this rulemaking, that VTLs can be performed safely with 2 containers, it has concerns about whether additional

containers would increase the risk to employees and necessitate the use of additional controls and work practices. The Agency seeks comment on the relative risk of lifting VTLs of two versus three containers. What are the additional sources of risk in lifting three containers? Are there additional safety measures that would reduce the risk of VTLs of three containers? If VTLs of three containers separated or failed, they potentially could fall much further from the crane; that is they would have a bigger "footprint" than VTLs with two containers, and thus would expand the area in which longshore workers are exposed to the risk of falling containers.

Clearly the number of empty or loaded containers permitted in a VTL by this proposed standard is a central issue in this rulemaking. The Agency welcomes comment on this issue.

OSHA also solicits information on whether employers have had experience with VTLs of more than two containers, either in the U.S. or in other countries. The Agency has preliminarily concluded that the proposed standard is feasible and that it will protect employees. The Agency also requests comment on the issue of whether or not VTLs reduce the number of lifts and time longshoremen spend unloading a vessel, thus potentially reducing the risk of handling containers. The performance of VTLs is an option for employers, and OSHA's intent is to provide safe methods for employers who choose to exercise that option.

Based on the technical studies performed on containers and SATLs, and the safe work procedures required in the proposal, the Agency also concludes that the proposal is technologically feasible (see Preliminary Economic Analysis below). Indeed, VTLs of two empty or partially loaded containers have been performed for many years. In addition, since the proposal does not require the use of VTLs when handling containers, employers may choose to perform VTLs or continue to handle containers in single lifts.

In addition, based on the Agency's Preliminary Economic Analysis (below) that VTLs, if they are used, may result in overall cost savings in cargo operations, the Agency likewise concludes that the proposal is economically feasible and cost-effective.

## II. Summary and Explanation of the Proposal

OSHA is proposing to issue new provisions in the Longshoring and Marine Terminals Standards (29 CFR parts 1918 and 1917) to regulate the use of VTLs. These proposed provisions are

based on objective research, industry experience with VTLs, ISO standards, the ICHCA VTL guidelines, and comment and testimony from the Agency's public meeting in January 1998. The proposed standards provide safe work procedures (engineering, work-practice, and administrative controls) for lifting two empty or partially loaded containers, with a total weight of up to 20 tons, connected by liftlocks. Testing has demonstrated that the liftlocks permitted by the proposal are substantially strong enough to lift 20 tons with a safety factor of five.

The proposed regulations for VTLs are contained in both the Marine Terminals Standard (29 CFR 1917) and the Longshoring Standard (29 CFR 1918). OSHA proposes that VTLs only be performed by a shore-based container handling gantry crane. In accordance with 29 CFR 1917.1(a), which states that cargo handling done by a shore-based crane is covered by part 1917, the proposed regulations that address the make-up of a VTL, such as the number of containers and maximum weight, would be in part 1917. Proposed regulations that address the certification and testing of liftlocks are in both parts 1917 and 1918. Liftlocks are vessel's gear, that is, gear owned and maintained by the vessel, and they would be addressed in part 1918. However, liftlocks can also be used in the marine terminal to assemble VTLs prior to loading on the vessel; therefore, the same certification and testing requirements for liftlocks that are proposed in part 1918 are also proposed in part 1917. The proposed VTL regulations for part 1917 are discussed first.

### A. Part 1917—Marine Terminals Standards

In § 1917.2 and § 1918.2 Definitions, OSHA is proposing to add the definition of a VTL as "the operation of lifting two intermodal containers that are coupled together vertically (one on top of the other)." OSHA is also proposing to include the definition of "liftlock" to both parts. This definition differentiates liftlocks, which are certified and used for lifting, from SATLs or other inter-box connectors, which are not certified and only used for securing containers on a vessel.

In § 1917.3(c), Incorporation by Reference, OSHA is proposing to add parts of ISO Standard 3864 that apply to VTLs.

Section 1917.46(a)(1)(viii) does not currently require a load indicating device (LID) for container handling gantry cranes. This is because the safe working load (SWL) of these cranes does