ICHCA International Safety Panel
Technical/Operational Advice No 1A
Vertical Tandem Lifting - Operations Checklist

This checklist is a summary of the key points that are necessary to ensure the safety of vertical tandem lifting (VTL) operations. It is intended as an aid for use in every day operations. The full text of the ICHCA International Ltd Safety Panel Technical/Operational Advice No 1 - "Vertical Tandem Lifting of Freight Containers" should be considered before VTL operations are carried out for the first time. As each terminal and ship can be different it is important to ensure understanding and agreement on the actual VTL operation before it is commenced at any particular terminal.

As a result of further consideration, the last bullet point of the section on Liftlocks was added in July 2007.

This publication is one of a series developed by the International Safety Panel ("Safety Panel") of ICHCA International Limited ("ICHCA"). The series is designed to inform those involved in the cargo-handling field of various practical health and safety issues. ICHCA aims to encourage port safety, the reduction of accidents in port work and the protection of port workers' health.

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GENERAL

- All VTL operations should be carried out under the supervision of a person with appropriate training and experience.
- Only ISO freight containers, or containers of similar standard and capacity, should be lifted in VTL units.
- A VTL unit with a total gross mass that exceeds the SWL of the crane or other lifting device should not be lifted in a VTL operation.
- A VTL unit with a total gross mass of more than 20,000 kg should not be lifted in a VTL operation.
- A VTL unit with a total gross mass of more than 18,800 kg that includes a thermal or refrigerated container should not be lifted in a VTL operation.
- No more than three containers should be lifted in a single VTL unit. A twin lift spreader can lift two VTL units at the same time.
- When a twin lift spreader is used both VTL units should be of the same height and within 5% of each other in total mass.
- A folding end platform based container with its end frames erect should not be lifted as part of a VTL unit.
- Flats and folding end platform based containers with their end frames folded may be lifted in a VTL unit
- Folding end platform based containers that are designed to be interlocked and lifted linked together are not considered to be VTL units. When they are interlocked and lifted as a unit they are not subject to the VTL guidelines
- A tank container or other type of container carrying a flexible tank inside it that is fully or partially loaded with a fluid cargo should not be lifted as part of a VTL unit. Such containers, when empty, may be so lifted.
- A container that is fully or partially loaded with solid bulk cargoes should not be lifted as part of a VTL unit. Empty containers may be so lifted subject to the limitations above.
- A container that is fully or partially loaded with dangerous packaged goods within the scope of the International Maritime Dangerous Goods (IMDG) Code should not be lifted as part of a VTL unit.

LIFTLOCKS

- Only certificated liftlocks should be used in VTL units.
- If liftlocks are not used exclusively on the ship, the liftlocks should be readily identifiable from deck level.
- Every liftlock should be clearly and durably marked with its SWL for lifting (SWLL). This should be at least 10,000 kg.
- Each liftlock should be examined before use for obvious structural defects, and excessive corrosion and deterioration, and physically operated to determine that the lock is fully functional with adequate spring tension on each head or latch.

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- No manual twistlock or latch lock should be used as a liftlock.
- The liftlocks used to make up a VTL unit should be of uniform design and should lock and release in an identical manner. They should have a “telltale” incorporated into the design that indicates whether the liftlock is locked or unlocked in the corner fittings. This “telltale” should be visible from deck level.

OPERATIONS

- VTL operations should not be carried out in winds of more than 15 m/s (average) (55 kph, 34 mph or 30 knots).
- VTL units should only be drawn from shipboard container stacks fitted with liftlocks.
- The liftlocks used to make up a VTL unit should be of uniform design which incorporates a "telltale" that indicates whether the liftlocks are locked or unlocked in the corner fittings.
- VTL units should be made up with the heaviest container is in the lowest position in the unit and the lightest on the top.
- Adequate consideration of the 'air draft' of the ship and the relationship between this and the container crane boom height should be made before the start of VTL operations.
- The gross mass of each VTL unit should be verified to ensure it is within the limits specified above before the start of operations.
- The top container of a VTL unit should be lifted from all four top corner fittings directly by a spreader.
- When a VTL unit is lifted, a pause should be made when the initial strain has been taken and the lifting frame wires tensioned in order to check that all liftlocks are properly engaged. Alternative approaches to ensure positive liftlock engagement, such as an “unlock/relock” process, can be used.
- If there are any circumstances that make VTL operations unsafe, the containers in a VTL unit should be lifted individually.
- Defective or “bad order” liftlocks should be separated from sound liftlocks. Separate, clearly marked bins should be provided for this purpose. Once removed from VTL units, all liftlocks should be returned to the appropriate ship.
- Cranes handling VTL units should be fitted with an accurately calibrated load-indicating device.
- Adequate procedures should be in place to ensure the safety of the workers on the ground that break down the units.
- Equipment used to transport VTL units should be adequate and suitable for the task and maintained to preserve that suitability. Particular emphasis should be placed on the speeds at which the equipment operates and enters turns, in order to avoid overturns and other accidents, and to the condition of the ground surface.