



SAFE WORKING ON CONTAINER SHIPS

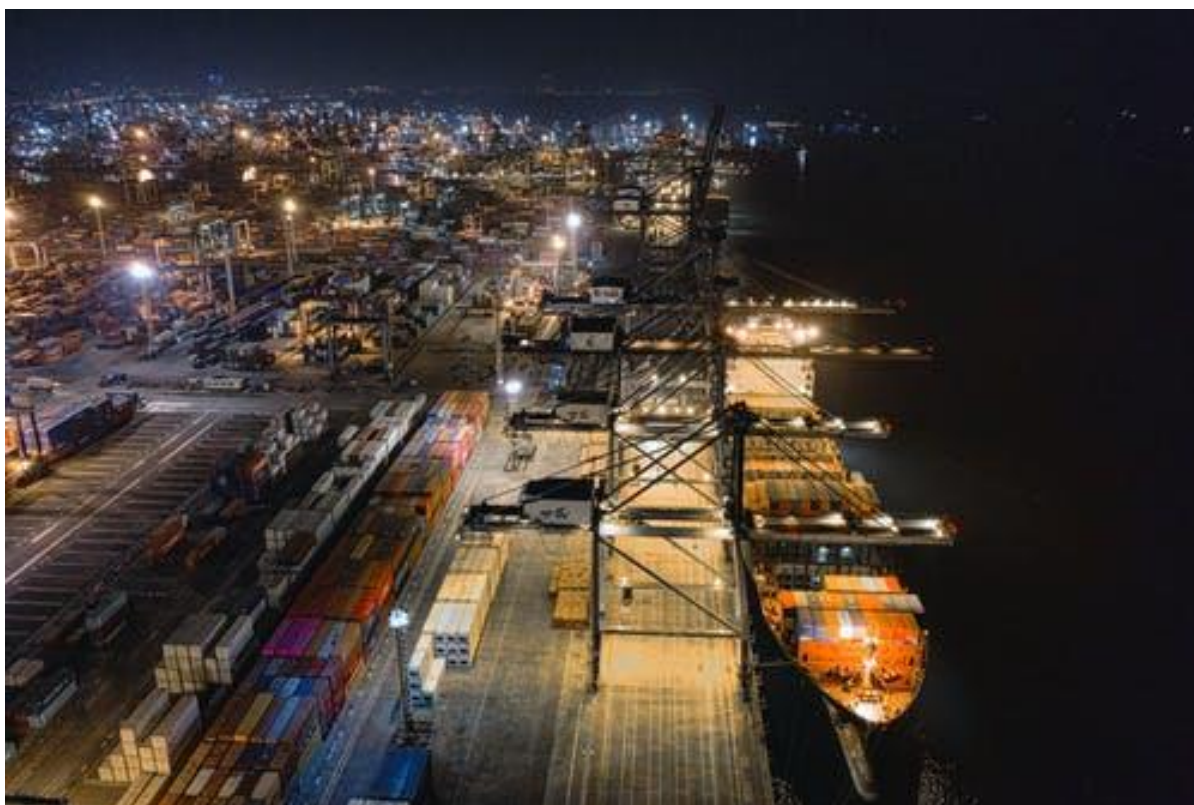


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Warning

This document provides an introduction to Working on Container Ships. For detailed advice it is necessary to read this in conjunction with the relevant national and international legislation and guidance.

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SAFE WORKING ON CONTAINER SHIPS

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1. | INTRODUCTION

This pamphlet is written as a general guidance for use in connection with stevedoring operations on container ships. It is recommended that it should form the basis of operational procedures for all terminals.

The majority of accidents to dock workers on container ships occur during lashing and unlashings operations due to falling objects, openings in decks or inadequate walkways. The most serious accidents are either due to falls from container tops or crushing injuries during the movement of containers.

Such shipboard accidents may be the result of defects on board ships such as inadequate lighting, defective equipment or poor access. Though these may be outside the control of the stevedore, such defects should be brought to the notice of both the Master and the shipping line with a view to improvement. In all cases however the dutyholder remains responsible for ensuring the safety of their employees.

2. | GENERAL RESPONSIBILITIES

Terminal management should draw up rules for safe systems of work and operational procedures to ensure the health, safety and welfare of their entire workforce and third parties for which they have responsibility. The procedures should include contingency plans for any emergency.

Safety rules should be applicable to all people working on container ships including but not limited to management, maintenance and engineering staff, marine services staff, customs, Immigration, Port Health, ships' crews, shipping agents etc. Ship's crews will be affected by such rules, although their activities are the responsibility of the ship's master, who should be made aware of these requirements.

Terminal duty holders should:

- provide Personal Protective Equipment (PPE) to all persons entering any work area for which they have responsibility. PPE requirements should be identified by suitable and sufficient risk assessment in conjunction with regulatory requirements. PPE may include but is not limited to high visibility clothing, safety headwear and footwear, hand protection, eye and hearing protection. Duty holders should ensure that all persons wear the identified PPE. All persons should use PPE as directed by the duty holder in line with national legislation.
- should identify to employees and others entering the site the person(s) or method for reporting defects or unsafe conditions and acts, this may include but is not limited to notifying a supervisor or manager. Employees and others entering or working at the site should report any defect in plant, equipment or PPE or any unsafe act or condition via the designated route. The duty holder should ensure that appropriate action is implemented on the report being made.

- ensure appropriate numbers of first aid facilities are provided, bearing in mind national legislation, risks associated with operations and the possible effect on numbers of first-aiders caused by moving shift patterns, holidays etc.
- put into place means of managing occupational health risks that may arise due to terminal operations. This includes but is not limited to mental and physical health related risks associated with shift patterns, hours worked and night work. It also includes health related controls including monitoring that may be required. Examples of health risks may include but are not limited to
 - noise levels within plant (particularly relevant when good communication is necessary)
 - fumes, such as those within quay crane cabs produced by funnel smoke, dust from neighbouring bulk cargo operations
 - the ergonomic factors of the design of cabs of plant and other seating
- implement appropriate drug, alcohol and substance misuse policies in line with national regulations and guidance and in consultation with the workforce. Alcohol should not be sold within terminals.
- ensure that adequate information, instruction, training and supervision of personnel is provided
- ensure that all plant is properly maintained on a planned basis.
- ensure that only trained personnel are deployed in cargo handling operations. Training should take into account not only established working practice but also changes and new practices. It should include the need for planning and safe systems of work and periodic re-assessment of personnel. Refresher training should be provided as appropriate.
- put into place arrangements to adapt or suspend operations should circumstances give rise to risks that cannot be managed by standard operating controls. Taking as an example risks associated with high winds; arrangements should be made to monitor weather and establish action levels for wind speed and visibility. Actions may include but are not limited to additional anchoring of cranes and breaking down stows. Empty or part-loaded containers (particularly those under 10 tonnes) are more likely to be affected by wind.

3. | ACCESS AND EGRESS TO PLACES OF WORK

Only authorised persons should be allowed to board the ship and then only in compliance with the terminal safety rules and procedures.

Walkways to ships should be clearly defined and marked. Signs of international standard type should be provided to guide pedestrians to walkways.

Whilst it is the responsibility of the ship to provide a secure gangway, adequately lit and with a safety net, it is the responsibility of all management and supervision to ensure that the gangway is safe before use by their employees. Any defects in ship's gangways should be reported to the ship for rectification.

When containers are being loaded or discharged the working inshore alleyway of the ship should not be used, unless a suitable and sufficient risk assessment determines that it is safe to do so with appropriate controls in place. The operation should be so designed that no person has to stand or walk beneath overhead loads.

Work near to unfenced drops (e.g. raised tank tops at the turn of bilge) should be eliminated where practicable. Where it is not practicable adequate controls should be put in place to prevent falls.

Adequate lighting should be provided for all operations set at least to the minimum standard set out in relevant legislation.

Portable ladders should only be used if no safer means is reasonably practicable. If portable ladders are used for access to stows they should be secured against movement. In particular they should not be used as access to ships in place of gangways.

Mobile platforms may be designed and fabricated to be used on well-decks and alleyways to lash and unlash outriggers. The need for fencing should be identified via a suitable and sufficient risk assessment. Such platforms should not be used unless the wheels are locked.

Where persons need to access container tops, safe means of access and egress should be provided.

Personnel should never go into the working bay of a hold. If personnel have to go into areas out of sight of the crane driver, they should only do so in accordance with a safe system of work.

Consideration in planning of operations should be given to any special needs of the ship such as bunkering or immobilisation of main engines and its effect on cargo work, in particular upon dangerous goods such as explosives or highly flammable liquids. Such planning may require separation in timing between certain operations, provision of fire wire or emergency towing wires, availability of tugs, etc.

4. | STARTING AND FINISHING WORK

When starting work on a vessel, communication between the crane driver(s) and riggers should ensure that riggers are allowed sufficient time to unlash and clear the immediate operational area before discharge starts. A check should be made to ensure that they are all clear.

Discharging of containers should be so designed as to prevent carrying loads over the heads of riggers and other persons as they work ahead of the operation. Typically this will require unlashingshore-side first, working to seaward and in the opposite direction when loading.

Before cargo work commences all should be aware of the loading/discharging lists, the order of work and problem areas should be identified and resolved in a safe manner.

If the ship's lifting equipment is to be used to move containers, stevedores should be satisfied as to the capacity and suitability of the equipment. They should make a visual inspection for defects and check the records of certification and maintenance.

Safe systems of work should be devised for particular situations arising due to either local procedures, e.g. particular lines using particular equipment such as automatic twistlocks or ship's gear, or local incidents, e.g. jammed twistlocks.

Twistlocks, though rated to a load, are not certificated lifting equipment and should therefore never be used as such, e.g. by picking up 'doubled-up' empties, unless they are so certificated.

When loading/discharging operations have finished adequate lighting should be maintained until lashing is completed. A check that all riggers are safely ashore should be made on completion of lashing.

5. | CONTAINER TOP WORKING

5.1. General

Planning of deck cargo should be such as to minimise the need for walking across or climbing onto cargo if this involves an approach to the edge of a dangerous drop. When necessary, suitable slip-resistant footwear should be provided and weather conditions should be assessed. If it is necessary to work near the edges of dangerous drops, personnel cages or some other safe system should be used.

Grease, oil, ice, snow and similar slippery surfaces on container top working surfaces should be cleaned so as to create safe working surfaces, or if not so cleaned then personnel cages or some other safe system should be used.

Employees should not be required to walk on or work on top of soft top/open containers. Personnel cages or some other safe system should be used. Where several soft tops are being

loaded, planners should attempt to 'chequerboard' the stow (hard top, soft top, hard top, soft top, etc) to allow safer access for stevedores engaged in coning/deconing operations.

Employees should not jump to adjacent containers in stow when there is a hazard of falling between those containers.

No employee should work on a deck load of cargo or containers or lash containers directly adjacent to an open hatch, except when adequate protection against falling into the hatch is provided. No hold should be left open for dock operations longer than is required.

Where twistlock poles cannot reach the top of stacks due to the height of the sheer face, i.e. there is no stagger in the stow, twistlock poles may be used from the top of the stow assuming weather conditions allow and fall protection is provided.

Lashings, twistlocks, cones, etc., should not be dropped or thrown to or from aloft.

5.2. Access

Initial access to container tops should be via a protected personnel platform or a similar safe means. Holding onto or standing on a spreader is not acceptable. The crane should be operating in a slow personnel-carrying mode where personnel platforms are used to hoist or lower employees. Such means of access should only be used to carry personnel, their tools, necessary materials and equipment to perform the work.

Spreaders used for carrying personnel onto container stows should where practicable, be landed on those stows for personnel to disembark. If this is not practicable, for example due to lack of working space on isolated stacks, an alternate and controlled safe working practice should be put into place for the operation.

Personnel cages should be maintained to their design specifications. They should be taken out of service if any defects are found affecting their safe use.

If the rigid type of cage is used there should be a secondary positive form of attachment to the spreader in addition to the twistlocks.

The crane driver should remain at the controls at all times while employees are suspended in cages. Employees being hoisted should remain in continuous sight of and in communication with the crane driver or a signaller. The crane driver should move the cage only on a clearly understood communication from an agreed person. This may be a signaller. The speed of the crane should be commensurate with the safety of the passengers.

Employees should keep their bodies and extremities within the periphery of the cage whilst it is in motion and wherever practical such hazards should be eliminated, or minimised, by the design of the cages. All cage openings (gates, doors, etc) should be self-closing and closed before hoisting.

The cage should not be loaded in excess of its maximum rated capacity as marked.

6. | USE OF FALL PREVENTION OR FALL ARREST SYSTEMS

The purpose of fall prevention or fall arrest systems is to allow employees to work at heights in safety when outside personnel cages. Fall prevention devices are designed to avoid persons falling over the edge, whereas fall arrest systems will ensure that, if a fall is experienced, the individual will not fall more than a limited distance. Fall prevention is preferable.

Such equipment should consist of a full body harness meeting national or international standards (safety belts can induce internal injuries unless falls are very short), a fall arrest block with a line of a suitable material and length for the normal operation and a firm anchorage point. Any hooks used should be of a type that positively locks.

This equipment should be used in accordance with national legislation and whenever identified by a suitable and sufficient risk assessment. If a situation occurs where it is impractical to use fall prevention or fall arrest, another safe system should be implemented as an alternative.

Before container top operations commence, the fall prevention, fall arrest or other safe system should be securely fitted and communications established with the crane driver.

Anchorage points for the fall arrest system may be to the head-block or spreader or to a purpose-built attachment that may be landed or kept attached to the crane. Otherwise, it may be necessary to attach the fall arrest system to a riggers' cage or a part of the stow (e.g. container corner casting) or ship, before work can commence. Anchor points should be tested to ensure that they are capable of taking the load associated with a falling person.

If a purpose-built attachment to the spreader is used as an anchorage point, it may be designed to carry gear, as this prevents damage to twistlocks and decreases walking distances on container tops, improving both safety and productivity.

Edge working procedure, supervision and training should be put into place to ensure that:

- persons are attached (e.g. to the fall arrest block)
- the connection (e.g. by carabinier) is positively locked
- a pull test has been conducted to ensure the fall arrest mechanism is working

before approaching any edges.

Container top work should continue in line with procedure and providing employees remain attached to the anchorage points at all times when approaching edges.

On completion of the operation employees should disengage from the block and return to the personnel cage (or other means of safe access/egress) which will then be moved to a new location or returned to the quay as appropriate.

When all container top work is finished employees should return safety harnesses to their allotted storage area. The dutyholder should put into place a means of identifying, reporting and correcting defects in fall protection equipment including but not limited to harnesses.

Fall protection equipment including harnesses should be subject to regular examination and statutory inspection procedures.

It should be recognised that there may be other methods of ensuring container top safety than cages or fall-arrest systems, equally that a combination of systems may be relevant to particular ports.

7. | SEMI-AUTOMATIC TWISTLOCKS

The principal safety advantage of a quay-based semi- automatic twistlock (SATL) operation is the considerable reduction in the amount of container top working and a similar reduction in the need to lift employees on and off container tops.

Most SATL shipping line operators incorporate a storage bin system within their system of work removing the hazards of 'gear' lying all over the ship and minimising damage to twistlocks.

By removing employees from container top to quays, the hazard is changed from that of falls to traffic incidents. Quay traffic systems should be strictly controlled during SATL operations, particularly lane discipline in multi-crane operations.

Care should be taken in the placing of SATL's during loading operations to ensure the unlocking handle is facing correctly to allow accessibility at the discharging port.

Care should be exercised by crane drivers during loading to ensure all four twistlocks engage first time rather than only one. Similarly when discharging if the crane driver hits the container next to the one being lifted, it is possible that the twistlocks may re-engage.

Care should be taken during SATL operations to stand clear from overhead loads. There is the potential for SATL's to fall off, often due to their not being fully engaged.

Defects to or evidence of lack of maintenance of SATL's should be reported to the line to avoid future problems. It should be ensured that ALL SATL's are returned to the ship after use and defective items separated.

For detailed information concerning the types and usage of SATL's reference should be made to the ICHCA publication on Semi-Automatic Twistlocks.

8. WORKING IN ADVERSE WEATHER CONDITIONS

Safe systems of work should set limits for safe working of ships during severe weather as appropriate to local climatic conditions. e.g. high winds, snow and ice, poor visibility or flooding.

Such systems should take into account the provision of adequate warning, such as meteorological reports, to allow activities to be phased down as appropriate.

Due regard should be paid to the physical constraints placed upon plant and equipment by both the manufacturer and the use of plant.

When determining wind speeds for stopping crane work, due regard should be paid to the manufacturer's recommendations, differing wind speeds at differing heights, direction and natural lees, gusts, local climatic conditions (e.g. dust etc.) and the need for time to allow the crane to be secured and the driver to descend from his cab in safety.

Crane personnel lifts will also have wind speed restrictions. All restrictions should be derived as a result of national legislation and guidance combined with suitable and sufficient risk assessment.

Due to differing construction or configuration of cranes and their position and aspect, it is possible for one crane to work safely and another in the same proximity to be unable to do so in borderline wind speeds.

When working personnel on container tops in adverse weather, in particular snow and ice, it is safer to work from within personnel cages of purpose-built type.

Working of ships in poor visibility should be determined by risk assessment taking into account factors including but not limited to visibility from the crane driver's cab.

When working in severe weather conditions, the need for good communications and clear systems of control between crane driver and ship workers is heightened and, particularly in poor visibility, may require the provision of extra personnel to ensure the operation may be carried out safely. In all cases however, it should be agreed from whom the crane driver is to take instructions.

Bibliography

ICHCA Research Paper No 1 - Semi-Automatic Twistlocks

The Safe handling of ISO Freight Containers by Hooks and General Guide to the Container Safety Convention Container Top Safety

The above are all published by ICHCA International Ltd. Full details from the registered office of the International Secretariat

Lashing and Securing of Deck Cargoes by Captain John R Knott, published by The Nautical Institute, 202 Lambeth Road, London SE1 7LQ, UK

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At the time of publishing Mr Barnes was Head of Safety and Emergency Services for the Port of Felixstowe, where he had been for six years, his responsibilities included port safety, environmental audit, transportation of dangerous goods and the operation of the Port's fire and ambulance service.

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Thomas Cooper & Stibbard, Solicitors

This document was published in association with Thomas Cooper & Stibbard, Solicitors. It is one of a series of loss prevention guides produced by ICHCA.

The issue of safe working on container ships is one of tremendous importance from both an operational and legal point of view. As specialist maritime lawyers, instructed by leading organisations in the container industry, Thomas Cooper & Stibbard have been involved in numerous container related cases. These matters include the defence of personal injuries and fatalities claims arising out of accidents caused by the unsafe handling of containers on board containers ships, as well as the pursuit and defence of claims for damage to both cargo and containers. This pamphlet provides a valuable reminder of the causes of these accidents. It also provides useful guidance to stevedores, terminal operators and shipowners on practical methods for reducing both the incidence of such occurrences and their associated exposure to liability.

Thomas Cooper & Stibbard provide assistance and advice in relation to other aspects of maritime law, including collisions, salvage pollution and disputes arising out of charter parties, bills of lading and international trade. We also offer specialist legal advice in respect of ship finance and registration, banking, EEC problems, commercial litigation and property matters. If you would like to know more about us or obtain a copy of our brochure, please contact: Thomas Cooper & Stibbard, Ibex House, 42-47 Minories London EC3N 1HA

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